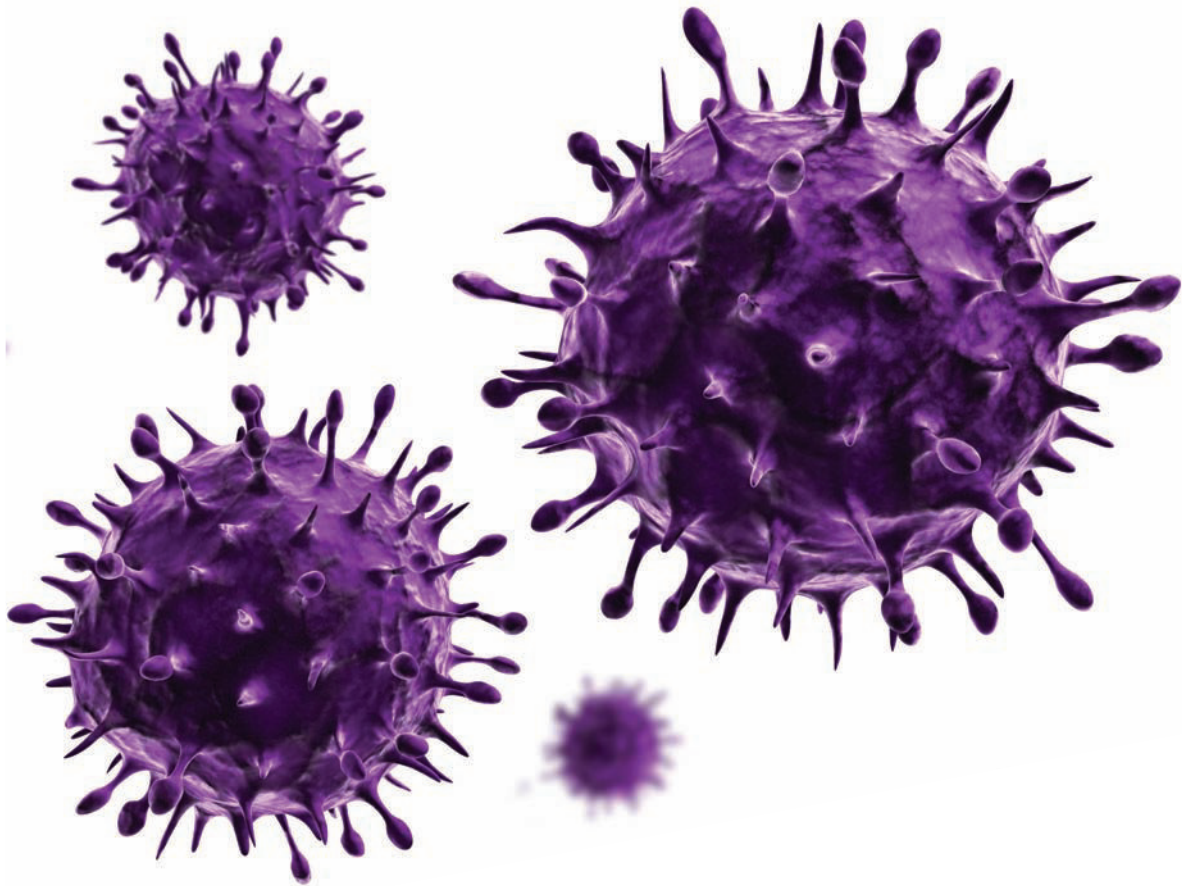


Infection Control Course



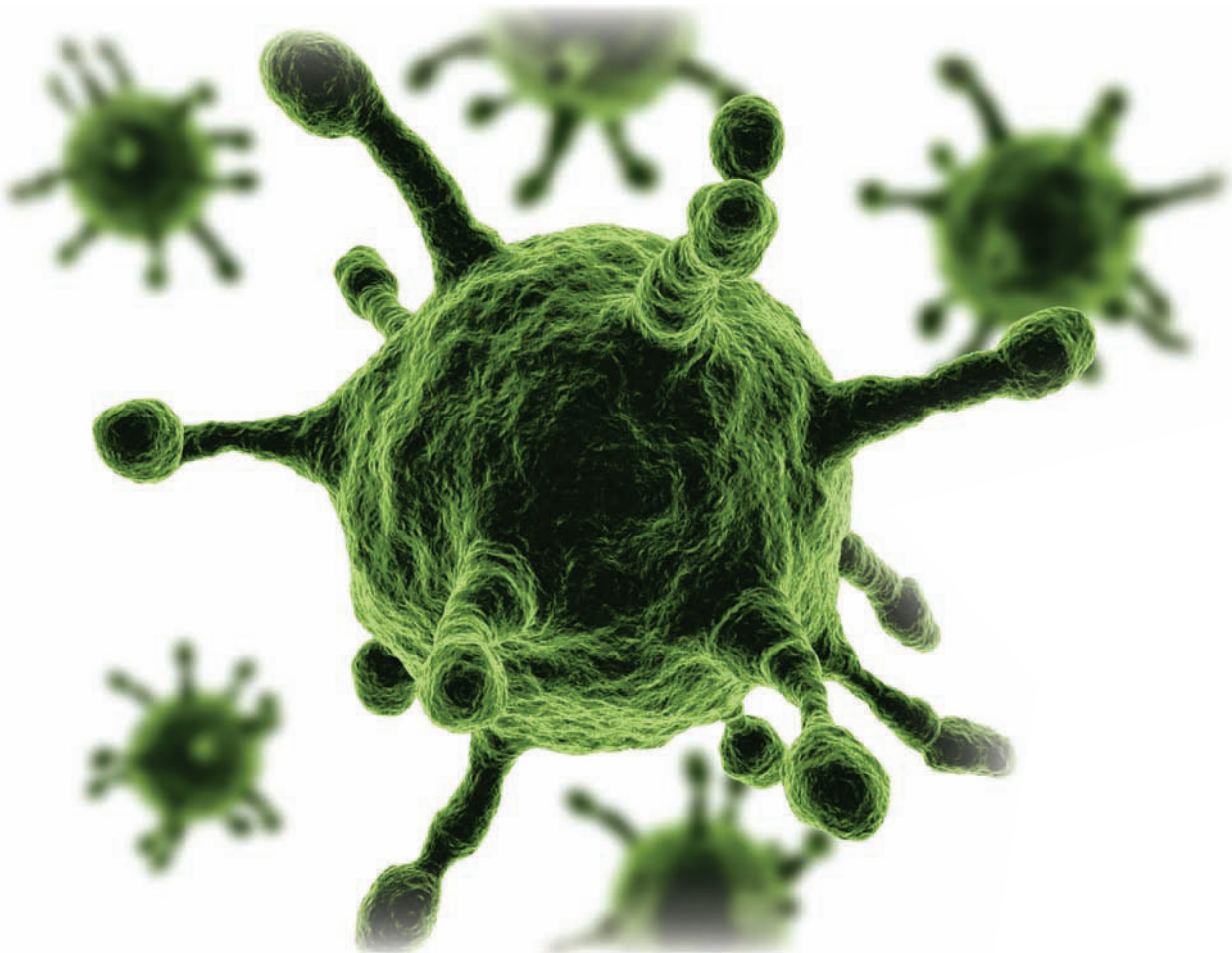
North Carolina Department of Health and Human Services
Division of Health Service Regulation • Division of Public Health
Center for Aide Regulation and Education
Adult Care Licensure Section

Preface



Infections In Long Term Care

In the United States, residents get 1.5 million infections in long-term care facilities each year. This equals about one infection per resident per year. One infection that is of great concern for the adult care home is Hepatitis B. Hepatitis B is spread through blood and other body fluids. One way it is spread in adult care homes is through unsafe practices during blood sugar monitoring. This is a growing problem with multiple outbreaks being investigated each year. These infections can be prevented.



HOUSE BILL 474 - An Act to Protect Adult Care Home Residents

House Bill 474 - An Act to Protect Adult Care Home Residents was recently passed in the North Carolina General Assembly. The law **REQUIRES** adult care homes to do the following:

- Have a written infection prevention policy in place, that protects not only the staff, but also the residents;
- Monitor compliance by staff with the infection prevention policy (and non-compliance must be addressed);
- Update policies as necessary to keep up with changes in national and state infection prevention guidance;
- Designate one on-site staff member to direct the infection prevention activities and to ensure that all adult care staff are trained in the facility's infection prevention policy;
- Report suspected communicable disease outbreaks to local health department;
- Ensure that medication aides have met all infection prevention training requirements; and
- Ensure that supervisors complete mandatory annual infection prevention training.



Objectives

At the completion of this module, the participant will be able to:

- Describe basic infection prevention principles.
- Discuss infection prevention measures in the adult care home.
- Demonstrate correct practices and infection prevention measures involving bloodborne pathogens.

SECTION I



What is an Infection?

Infection – Words and Meanings

Infection

An **infection** is a disease or a condition of the body that occurs when harmful germs get into the body and grow in number.

What are some kinds of **common infections** that you may already know?

- Urinary tract infection, also called a “bladder infection” or a “kidney infection”
- Skin infection, including infected wounds or cuts
- Respiratory infection, including pneumonia, flu or the “common cold”
- Stomach, intestinal infection, or “food poisoning”

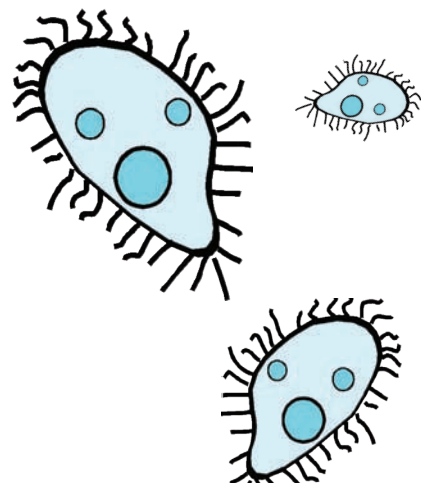


Germs

Germs are tiny living things. They live almost everywhere – both inside and outside of our bodies. Some germs help people and others (the harmful germs) cause problems or diseases.

You have probably heard the names of some **harmful germs** that cause infections in people.

- Bacteria
- Fungi
- Parasites
- Viruses



Host

A **host** is an animal or a person. You will often see the word **host** used when someone is talking about infection and the spread of infection.

Healthcare-Associated Infection (HAI)

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

Infection Prevention

The prevention of infection is extremely important in an adult care home.

Infection prevention in an adult care home is defined as all of the things that people do to control and prevent the spread of infection. You will learn **all about infection** and ways to **prevent infection** in the adult care home.

Symptoms of an Infection

In order for **YOU** to know if a resident, or even you or a co-worker may have an infection, you need to know the symptoms of an infection.

Two Types of Infection

There are two types of infections:

1. Localized
2. Systemic

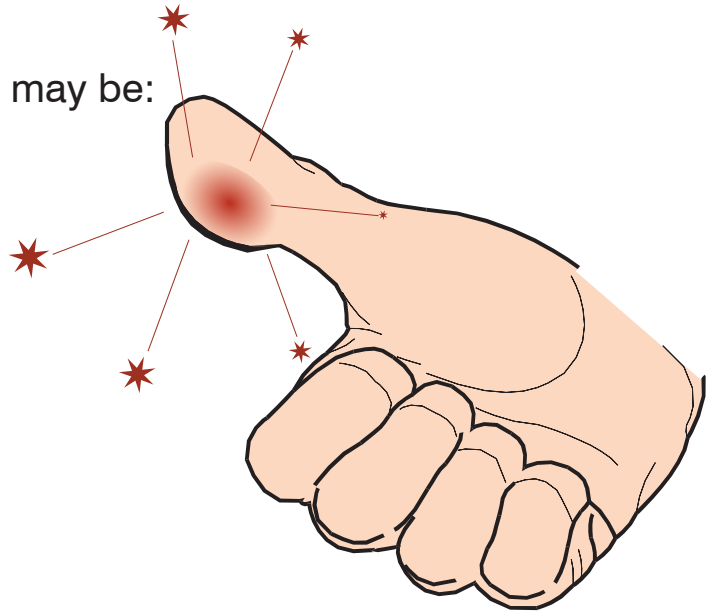
Definition of a Localized Infection

A **localized infection** is an infection that is only found in one part of the body and symptoms are seen only at that one part of the body.

An **example** of a localized infection is an infected finger.

When a finger becomes **infected**, it may be:

- Red
- Painful
- Hot
- Puffy
- Drainage coming out of it

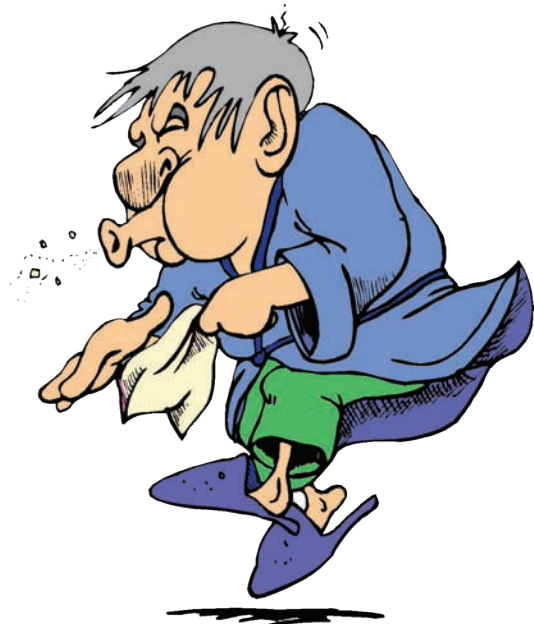


Definition of a Systemic Infection

A **systemic infection** is an infection that affects an entire body part or a whole body system and the person will have different types of symptoms:

- Fever
- Chills
- Confusion
- Feeling tired
- Nausea
- Vomiting

Now, let us think about what **kinds of symptoms** you may see if certain areas of the body have an infection:



Lungs – an infected person will probably be sniffing, snorting, coughing, sneezing, and may be “hacking up” globs of green or yellow, slimy secretions (mucous).

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?

Bladder – an infected person will probably have pain when using the bathroom, the urine will smell bad or strong and might look like it contains blood.

Think about it. Normal urine does not have a strong odor. So, if you walk in a resident’s room and she says her “urine stinks or smells bad and it hurts down there when I go to the bathroom” you need to let someone know.



Stomach – an infected person will probably have stomach pains and may vomit.

Have you ever had someone “throw up” on you? Have you had to clean up after you, or someone else, has “thrown up?” How did you feel if you got the vomited liquid on your hand? What did you do?



The Chain of Infection

Most people know what a **chain** of a necklace looks like – links that are joined together in a circle.

Often, people explain how an infection is passed around from one living being (or host) to another living being (or host), by using a picture of a chain. It is called **the chain of infection**. Each link of the chain stands for something (or someone) needed to pass on an infection from one to another.

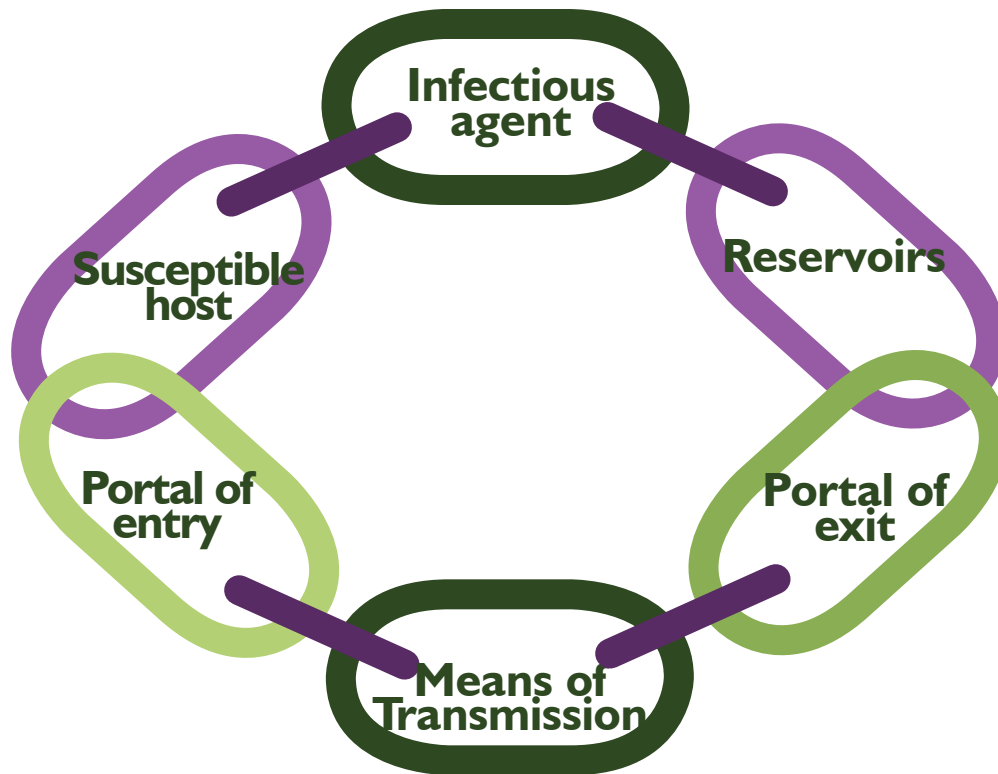


As long as the links of the chain are joined together, an infection will be passed from one person, to another person, to another person, and so on.


So, as long as the links of the chains are joined together, an infection will be passed from one resident, to another resident, to a staff member, to another resident, and so on.

Later in this manual, **YOU** are going to learn ways to break the chain of infection and help keep you, your co-workers, and your residents **INFECTION FREE!**

Below is a picture of **the chain of infection**:

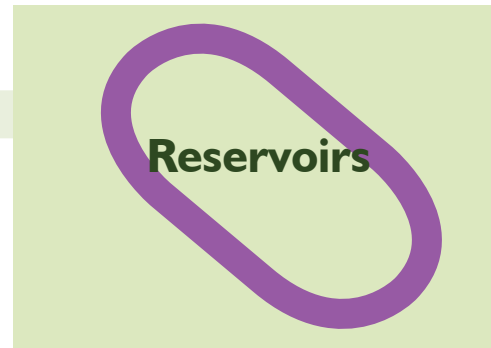


Notice, there are six links in the chain of infection. You are going to learn about each of the links.

	<p>1ST LINK = Infectious Agent or “The Harmful Germ”</p>
	<p>The first link in the chain of infection is the infectious agent. An infectious agent is a harmful germ that causes an infection. The harmful germ can be bacteria, a virus, a fungus, or a parasite.</p>

2ND LINK = Reservoir or “Hiding Places”

So far, you have learned about the harmful germs that cause an infection.



Now, you are going to learn about where harmful germs live, grow, and how they increase in number.

The second link in the chain of infection is the reservoir. A **reservoir** is the place where harmful germs live, grow, and increase in numbers. Think about it as a home of germs.

A reservoir or hiding place for harmful germs can be:

- A person
- An animal
- Dirt, water, or other places in the environment

When the reservoir is a person, some places where harmful germs may be living include:

- Blood
- Skin
- Digestive tract (mouth, stomach or intestines)
- Respiratory tract (nose, throat or lungs)

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? The answer is “NO, not always.”

When you think about people being reservoirs for harmful germs, all human beings belong in one of three groups:

- **Not infected:** The first group includes people who are well and are not being used as hiding places for harmful germs.
- **Infected:** The second group includes people who have the harmful germs, and the germs are making them sick. Because they are sick, you might be able to tell that these people have infections. You also might know these people can infect you, your co-workers, and your residents.
- **Carriers:** The third group includes people who have the harmful germs living on or in their body, but the germs are not making them sick. Because they are not sick, you **do not know** they have infections. Carriers of an infection do not show symptoms of infection, but can still infect others. A carrier of an infection can infect you, your co-workers, and your residents. These human reservoirs are being used as hiding places, for harmful germs.

NOW, think about infection in terms of an iceberg.

The people we know about who have infections and can infect you, your co-workers, and your residents are **ONLY THE TIP OF THE ICEBERG.**

Think about **ALL those large numbers of carriers of infection out there that we do not know about and who could possibly infect us!**

People We Know Who Are Infected

**People We Do Not Know
Who Are Infected**



The key to preventing you, your co-workers, and your residents from getting infected is to treat everyone,

E-V-E-R-Y-O-N-E

as possible reservoirs or hiding places for harmful germs.

You will be learning more about this in the next section.



3RD LINK = Portal of Exit or “The Way Out”

So far, you have learned about:

- The harmful germs that cause an infection;
- Where harmful germs live, grow, and increase in number.

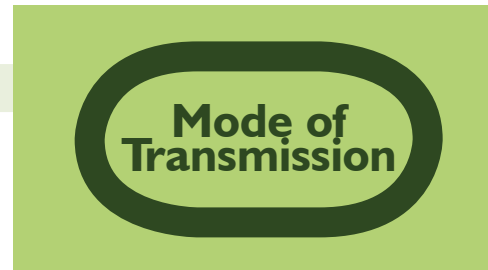
Now, we are going to talk about how harmful germs can get out from where they are living and spread to others.

The third link in the chain of infection is the **portal of exit**. The portal of exit can be any way that harmful germs escape from the reservoir (where they have been living).

Portals of Exit Include:

- Nose and mouth (allows harmful germs to leave in mucous droplets and saliva or spit)
- Gastrointestinal tract, or the “guts” (allows harmful germs to leave in stool, or vomit)
- Skin (allows harmful germs to leave through direct contact or in blood, pus, or other liquids that come from inside of the body)

**4TH LINK = Mode of Transmission or
“I Get Around”**



So far, we have talked about:

- Harmful germs that cause an infection
- Where harmful germs live, grow, and increase in number
- How harmful germs can get out from where they are living

Now, we are going to talk about how harmful germs travel, after they leave from where they live.

The fourth link in the chain of infection is the **mode of transmission**. The mode of transmission is how the harmful germs travel or “**get around**” from place to place.

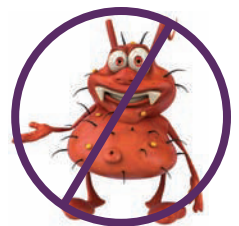
The number one way a harmful germ travels from place to place is by our hands. We get germs on our hands after coughing, sneezing, wiping our noses, or using the restroom and then we spread them to someone else or to an object that someone else might touch. We touch the blood, infected wound, stool, or vomit of an infected person and then we do not clean our hands properly before going to the next resident or before touching something that someone else might touch. This is the number one way that we spread infection.

Remember: Hand washing is the NUMBER ONE way to stop the transmission of infections!

Direct Contact

One way that harmful germs travel is by **direct contact** with body fluids where these germs live. These fluids could include:

- Blood
- Sputum (mucous that is coughed up)
- Pus or wound fluid (from a cut or sore)
- Saliva (or spit)
- Stool (or bowel movement)
- Vomit



Direct contact includes:

- Needle sticks
- Contact with skin that has a rash, cuts or scratches
- Splash or spray to the mucous membranes of the eyes, nose and/or mouth

Indirect contact

Another way for the person to get infected by body fluids is by **indirect contact**. **Indirect contact** means that the harmful germs were spread by an object that had touched **body fluids from an infected person**. **When another person touches the object, that person might get the infection.**

Infections can be spread by lots of different objects such as dirty needles or instruments, or used bandages. They can also be spread by the hands of family members or care-givers who didn't practice good hand washing.

Droplet Spread

Some harmful germs (like the flu) can be spread or travel by way of **droplets**. Droplets are spread after being sprayed from the nose or mouth when the infected person sneezes, coughs, sings, talks, or laughs. These droplets might land on another person (direct contact), or they might land on a doorknob, railing, or other surface that another person might touch (indirect contact).



REMEMBER
Droplets are
Body Fluids



The key to preventing you, your co-workers, and your residents from getting infected is to treat everyone,

**E-V-E-R-Y
S-I-N-G-L-E
O-N-E**

as possible carriers of harmful germs.

You will be learning more about

Other Ways That Harmful Germs Get Around



- Through **animal and insect bites**. Harmful germs from a person or animal, which gets bitten, are then shared with a new person or animal that is bitten by the same animal or insect; and
- Through eating or drinking **food or water** that is infected with harmful germs.

5TH LINK = Portal of Entry or “The Way In”

So far, we have talked about:

- Harmful germs that cause an infection
- Where harmful germs live, grow, and increase in number
- How harmful germs can get out from where they are living
- How harmful germs travel, after they leave from where they live



Now, we are going to talk about how harmful germs get into the next person they are going to infect.

The fifth link in the chain of infection is the **portal of entry**. The **portal of entry** is any body opening on a person who does not have an infection that allows harmful germs to enter into the body.

Germs can usually get in the same way they got out, so the main portals of entry are the same as the portals of exit.

Portals of Entry Include:

- Nose and mouth (when the person breathes in harmful germs)
- Gastrointestinal tract, or the “guts” (when the person eats food or drinks liquids that have harmful germs in it)
- Any breaks in the skin (that allows harmful germs to get past the skin)
- Open sore
- Cut
- Needle stick
- Cracked skin



6TH LINK = Susceptible Host or “The Possible Next Infected Person”

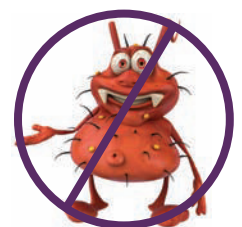
So far, we have talked about

- Harmful germs that cause an infection
- Where harmful germs live, grow, and increase in number
- How harmful germs can get out from where they are living
- How harmful germs can get out from where they are living
- How harmful germs travel, after they leave from where they live
- How harmful germs get into the next person they are going to infect

Now, we are going to talk about the **susceptible host**, who is not infected now, but who is at risk for becoming infected next.

The sixth link in the chain of infection is the **susceptible host**. A susceptible host is a person who does not have an infection now, but is at risk for becoming the next person to get infected from harmful germs.

A **susceptible host** is a person whose **body for some reason cannot fight off an infection**.



Reasons why a person's body cannot fight off an infection include:

- Age
- Stress
- Fatigue
- Poor nutrition
- Chronic illnesses
- Not having proper vaccinations
- Open cuts or skin breakdown

Residents living in adult care homes are more likely to get an infection than other people who live in our community because:

- Many have several things wrong with their health, such as a resident who may have lung, heart, and kidney problems.
- Many are elderly.

For these reasons, residents living in adult care homes are more **susceptible** to infections. They are also more likely to come into contact with harmful germs because they live close together and because they share staff and medical equipment.



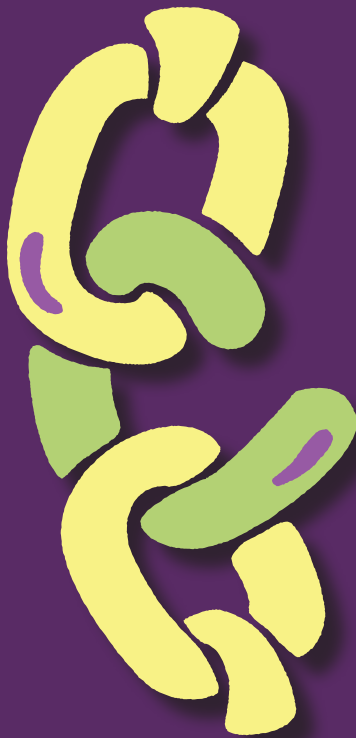


Now, after reading the first section of this manual, you are probably asking yourself:

“How can I keep from getting an infection?”

AND

“How can I prevent others from getting an infection?”



ANSWER:

YOU are going to learn how to break the chain of infection and keep you, your co-workers and your residents safe!



Check for Understanding – Section I

Let's see how much you remember about what you just read from the first section, "What is an Infection?" Circle the correct answer for the following questions:

1. A disease or condition of the body when harmful germs get into the body and grow in number:

- a. host
- b. infection
- c. reservoir
- d. portal of exit

2. An example of a respiratory infection is:

- a. food poisoning
- b. infected cut
- c. bladder infection
- d. flu

3. Tiny living things that live almost everywhere and can cause problems or diseases:

- a. host
- b. infection
- c. germs
- d. reservoir

4. Which type of infection is found in only one part of the body only?

- a. localized infection
- b. carrier infection
- c. systemic infection
- d. host infection

5. Of the following, which is a symptom of a localized infection?

- a. chills
- b. confusion
- c. nausea
- d. red skin

6. When you have a stomach infection, you may most likely have which symptoms?

- a. coughing
- b. vomiting
- c. sneezing
- d. smelly urine

7. What is the Number 1 way to prevent the spread of infections?

- a. covering coughs
- b. handwashing
- c. staying away from infected people
- d. getting a good nights sleep

8. When should you wash your hands with soap and water?

- a. If hands have visible soil on them
- b. After using the restroom
- c. After cleaning a spill of blood or other body fluids
- d. All of the above

9. Germs can be spread indirectly through:

- a. Used bandages
- b. Shared medical equipment
- c. After cleaning a spill of blood or other body fluids
- d. All of the above

**10. Put the links of the chain of infection in order, from first to last.
Put a 1 by the first link, 2 by the second link, etc.**

_____ Mode of transmission (travel)

_____ Susceptible host (next infected person)

_____ Portal of exit (the way out)

_____ Portal of entry (the way in)

_____ Infectious agent (harmful germ)

_____ Reservoir (hiding places)

Answers

1. The answer is b.
2. The answer is d.
3. The answer is c.
4. The answer is a.
5. The answer is d.
6. The answer is b.
7. The answer is b
8. The answer is d
9. The answer is d.
10.
 4. Mode of transmission (travel)
 6. Susceptible host (next infected person)
 3. Portal of exit (the way out)
 5. Portal of entry (the way in)
 1. Infectious agent (harmful germ)
 2. Reservoir (hiding places)

SECTION 2



Breaking the Chain of Infection

Review of Section I

In Section I, we learned that:

An **infection** is a disease or a condition of the body. An infection occurs when harmful germs get into the body and grow in number.

Harmful germs are tiny living things that live almost everywhere – both inside and outside of our bodies that cause problems or diseases.

A **host** is an animal or a person who has the harmful germ living on them or in them.

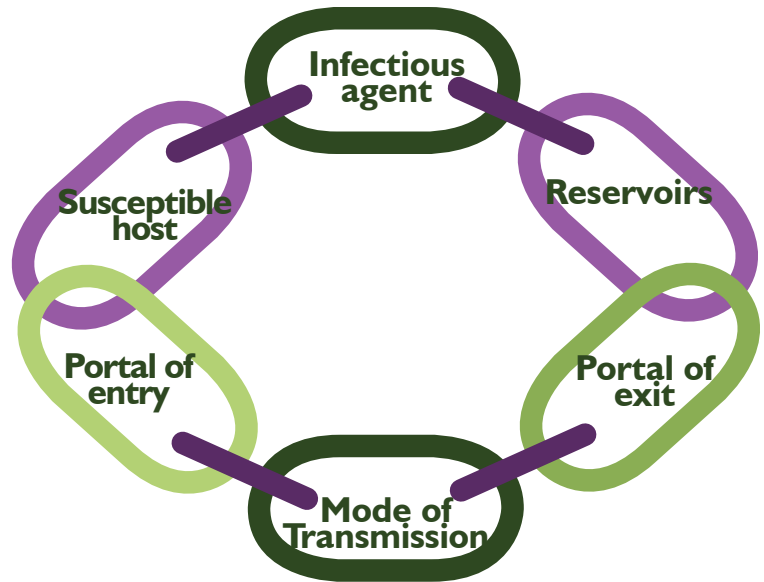
Healthcare-associated infection (HAI) is an infection that a resident gets while staying or living in a health care setting that he did not already have before he was admitted.

Infection prevention in an adult care home is all of the things that people do to control and prevent the spread of infection.

As long as the **chain of infection** is joined together, an infection will be spread to others. The **ONLY** way to stop the spread of infection is to break the chain.

The Chain of Infection

1ST LINK. An **infectious agent** is a **harmful germ** that causes an infection. The **harmful germ** can be bacteria, a virus, a fungus, or a parasite.



2ND LINK. A **reservoir**

is the place where harmful germs live, grow, and increase in numbers. A reservoir can be a person, an animal, or something in the environment. If the reservoir is a person, harmful germs may be living in many different places such as the lungs, the intestines, or the blood.

REMEMBER: You cannot look at a person and **ALWAYS** tell if he has a harmful germ that can be given to you, a co-worker, or a resident.

3RD LINK. The **portal of exit** is any opening on an infected person's body that lets harmful germs escape from the reservoir (where they have been living). Portals of exit include the nose and mouth, the eyes, the gastrointestinal tract, and the skin.

4TH LINK. The **mode of transmission** is how the harmful germs travel or "get around" from place to place. Many harmful germs travel by **direct or indirect contact with body fluids from the infected reservoir**. These fluids can include blood, sputum (mucous), pus or wound fluid (from a

cut or sore), saliva (or spit), stool (or bowel movement), urine, and vomit. Harmful germs can also travel by way of droplets when the infected person sneezes, coughs, sings, talks, or laughs.

REMEMBER: The number one way a harmful germ travels from place to place is on our hands.

5TH LINK. The **portal of entry** is any body opening on a person who does not have an infection that allows harmful germs to enter into the body. Portals of entry include the nose and mouth when you breathe, the gastrointestinal tract or “guts” when you eat or drink, and any breaks in the skin.

6TH LINK. A **susceptible host** is a person who does not have an infection now, but is at risk for becoming the next person to get infected.

A **susceptible host** is a person whose **body for some reason cannot fight off an infection.**



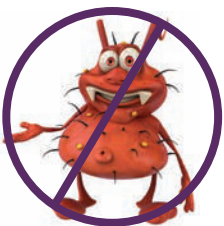
Reasons why a person's body cannot fight off an infection:

- Age
- Stress
- Fatigue
- Poor nutrition
- Chronic illnesses
- Not having proper vaccinations
- Open cuts or skin breakdown

Residents living in an adult care home are more likely to get an infection than other people who live in our community.

Thank you for taking the time to review Section 1, What is an Infection?

Now, YOU will learn all the ways that you can break the chain of infection and PREVENT THE SPREAD OF INFECTION IN ADULT CARE HOMES.



Two Levels of Precautions in Infection Prevention

You have probably heard about the “CDC” – maybe on the news or in a movie. CDC stands for Centers for Disease Control and Prevention.

About the CDC

- It is an agency of the federal government that is charged with the control and prevention of disease, in our country.
- They work to protect the public, by helping keep them healthy and safe, by education.
- The agency has developed a two-tiered (two level) way to prevent and control infections in health care:
 - Standard Precautions, and
 - Transmission-Based (Isolation) Precautions.

First Level - Standard Precautions

Standard Precautions is the first level of precaution used to prevent and control infections in adult care homes.

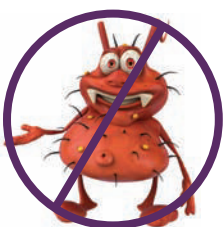
Standard Precautions are the basic tasks that health care workers must do when caring for **EACH** and **EVERY RESIDENT**, in order to prevent and control the spread of infection. You will learn about ways to do things so that you can prevent and control the spread of infection, in Section 2.

Why must **Standard Precautions** be used with each and every resident?

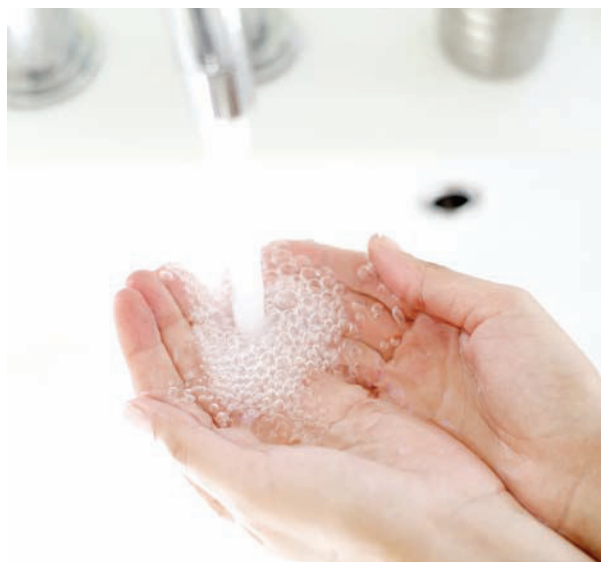
Because there are residents you care for in adult care homes who have infections and **you do not know** they are infected. A resident may be infected who is not showing any signs or symptoms of being sick. Without using standard precautions, you can get the infection and pass it along to others.

Standard Precautions mean that you must treat **ALL** body fluids, non-intact skin, and mucus membranes, as if they were infected.

- You learned in Section 1, that body fluids can carry harmful germs. Some of the body fluids that you may come in contact with while at adult care homes include blood, pus, liquid from sores, urine, stool, tears, spit, droplets from sneezes and coughs, and mucous that is coughed up from lungs (sputum).
- Non-intact skin includes cuts, scratches, and sores that might ooze fluids which are infected with harmful germs. Also, remember that non-intact skin which is not infected can also be a portal of entry for infections to enter the body.
- Mucus membranes are the linings of natural body openings, such as the mouth, nose, rectum, genitals and eyes.



Standard Precaution Rules That You Should Follow in the Adult Care Home:



Wash your hands

- Wash, wash, wash your hands.
- Because hand washing is so VERY important in the prevention and control of infections in adult care homes, you will be reading a lot more about when and how to wash your hands later in Section 2.



Wear gloves

- ANY time you will or think you will come into contact with blood, body fluids, non-intact skin, or mucus membranes (linings of natural body openings).

This means if you will (or think you will) come into contact with any of the following:

- Blood
- Urine
- Stool
- Spit
- Mucous that a resident coughs up
- Opened up skin (sores, cuts)
- Inside or outside of the rectum
- Inside of the mouth
- Inside of the nose

YOU MUST WEAR GLOVES



Splish splash. Put on a disposable gown, goggles, and even a face shield, if you think you are going to come into contact with a lot of blood or body fluids during resident care, especially if you think a lot of splashing or spraying of body fluids are likely. This probably will not happen that often in adult care homes.

OH NO! If you get blood or body fluids on you, **IMMEDIATELY** wash all of the areas of your skin that got contaminated.

Handling Sharps

- Wear gloves and be careful when using or handling anything that is sharp such as:
 - Razors
 - Needles from injections
 - Diabetic testing equipment
 - Anything else that is sharp that could have touched blood or body fluids
- Be careful not to cut yourself or your resident during shaves.
- Be careful not to stick yourself with diabetic testing supplies.

Because this is so **VERY** important in prevention and control of infections in adult care homes, you will be reading a lot more about diabetic testing later, in Section 3.

- **ALWAYS** put anything sharp that has been used on a resident in a biohazard container (needle disposal or “sharps” box) which is:
 - only used just for sharps;
 - hard and leak-proof; and
 - labeled with a warning that the contents of the container are harmful.
- **NEVER** stick your hand or fingers in a sharps container or try to cram “one more needle” in the sharps container.
- **NEVER** over fill a needle disposal box – it should only be filled $\frac{3}{4}$ full and then disposed of.
- **NEVER** re-cap a needle or other sharp object because you may jab yourself.
- **NEVER** put anything sharp in a regular trashcan.

Clean all surfaces. Anytime blood or body fluids get on any surface in adult care homes:

- You must clean the surface with whatever product is provided where you work.
- You must follow facility procedures and product instructions closely.
- Examples of surfaces that may need to be cleaned include over-bed tables, wheelchairs, counter tops in utility rooms, and shower chairs.

Trash talking. Know the proper way to get rid of trash. (You are probably thinking that you know how to throw away a piece of trash. That may be true in your home, but it gets tricky in an adult care home.)

- If it is plain trash that does not have any blood or body fluids on it, then throw it away in the regular trashcan.
- **BUT**, if that piece of trash (whether it is a tissue, bandage, tubing, or other things that are meant to be thrown away) has blood, body fluids, then throw it away in a **SPECIAL BIOHAZARD WASTE BAG**.

Because the best place to throw away contaminated trash is where the waste happened, biohazard waste may be placed in the regular trashcan with a liner, then replace the liner and take the used liner to a utility room where it can be thrown in a biohazard container.

Handling Linen. Place soiled linen in special containers for linen.

Multiple-Use Resident Care Equipment. Commonly used equipment or supplies (such as a stethoscope) must be cleaned and disinfected after each use or when soiled. Single-use equipment is much better, but must be discarded correctly.

This is something you need to remember:
These Standard Precaution Rules MUST be followed
when you care for any and every
resident in the adult care home,

- *To Protect You*
- *To Protect Your Co-workers*
- *To Protect Your Residents*

Growing up, you probably remember being told to “wash your hands” before eating and after coming inside from play.

The health care workers’ **hands** are the single most common way that health care workers get infections from residents, and pass on infections to other residents.



So.....washing your hands is the single most important thing you can do to prevent the spread of infection. Now, how easy is that?

Hand hygiene is the new term that you will be hearing about all the time in health care.

The CDC defines **hand hygiene** as washing your hands with:

- soap and water, or
- alcohol-based hand rubs.

Alcohol-based rubs (or hand rubs) may be gels, rinses, or foams that do not need water to use.



Now that you know the importance of hand hygiene, we are going to talk about **when** to wash your hands while you are working in the adult care home.

You **SHOULD** wash your hands

- when you get to work;
- when you see that your hands are dirty;
- before, between, and after each and every time you provide resident care;
- before you put on gloves and after you take gloves off;
- before you touch a clean meal trays and after you touch a used meal tray;
- before you touch food;
- before and after you feed a resident;
- before you get clean linen;
- before and after you eat;
- after you touch (or are around) blood or any other body fluid, mucus membranes, non-intact skin, or wound bandages;
- after touching dirty items;
- after touching any object in the resident's room;
- after touching trash;
- after cleaning up spills;
- after picking up anything off the floor;
- after using the bathroom;
- after you cough, sneeze, or blow your nose;
- after you smoke;
- after messing with your hair or touching other areas of your body, such as your mouth or nose;
- before you leave work; and
- after you get home from work (before you touch anybody or anything).

Hands should be washed with soap and running water:

- If hands have visible soil on them
- After using the restroom
- After blowing your nose
- After sneezing in your hands
- After changing incontinent briefs
- After cleaning a spill of blood or other body fluids
- Before and after using shared medical equipment

Alcohol hand rubs may be used:

- Before and after eating
- Before and after handling food
- Before and after routine resident care

Proper handwashing includes:

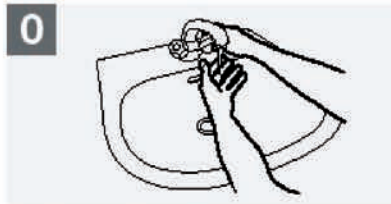
- Removal of rings and watches before washing
- If hands-free paper towel dispenser is not available, get your paper towels before washing
- Wet your hands
- Apply soap
- Rub your hands together for 10-15 seconds being sure to wash all surfaces (backs of hands, wrists, between fingers and under nails)
- Rinse well
- Dry hands, turn off water, and open door with paper towel.
- Throw paper towel in the trash can.



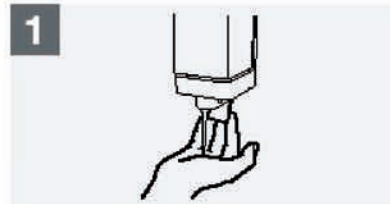
How to Handwash?

WASH HANDS WHEN VISIBLY SOILED! OTHERWISE, USE HANDRUB

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



0 Wet hands with water;



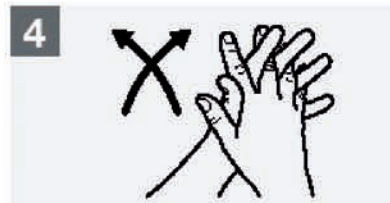
1 Apply enough soap to cover all hand surfaces;



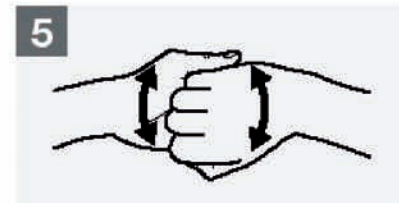
2 Rub hands palm to palm;



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



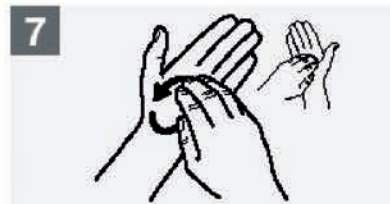
4 Palm to palm with fingers interlaced;



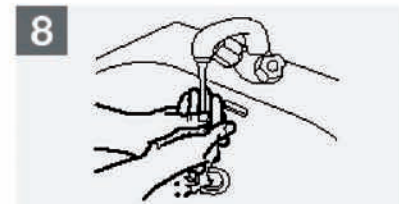
5 Backs of fingers to opposing palms with fingers interlocked;



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



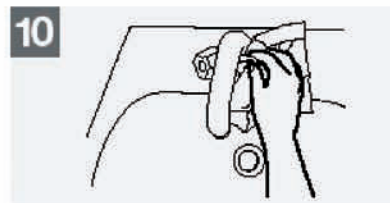
7 Rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa;



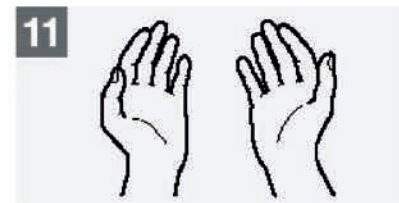
8 Rinse hands with water;



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 Better 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 Handrub?

RUB HANDS FOR HAND HYGIENE! WASH HANDS WHEN VISIBLY SOILED

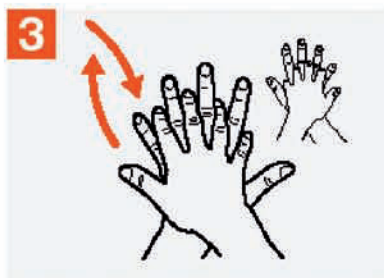
 **Duration of the entire procedure: 20-30 seconds**



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;



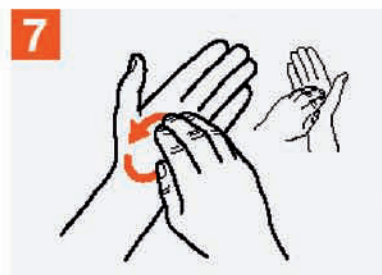
4 Palm to palm with fingers interlaced;



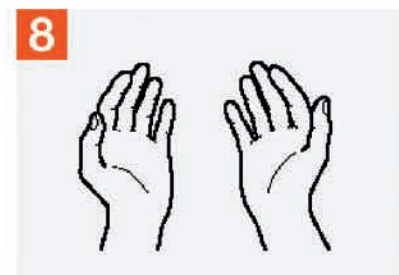
5 Backs of fingers to opposing palms with fingers interlocked;



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 materials 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

Your Hands – Important Points

There are other things you can do to prevent the spread of infection:

- **Fingernails**

- Keep nails short and clean.
- Do not wear fake nails, gel nails or nail extensions, because they can hide harmful germs.



- **Jewelry**

- Leave at home because harmful germs can stick to jewelry.

- **Lotions**

- May be used to keep hands soft and skin intact (not chapped or cracked).
- Use unscented type.
- When at work, only use facility provided lotion.
- Some lotions make medicated soaps less effective.
- Some lotions breakdown latex.

- **Open sores on your hands**

- Cover with bandage.
- Wear gloves and change after contact with residents or sooner if they become torn.

Personal Protective Equipment (PPE)

Personal protective equipment (PPE) is a group of items used by health care workers to block harmful germs from getting on their skin and clothes. PPE is what you will put on at work to keep blood, urine, stool, spit, and sputum that a resident coughs up, off of your skin and your clothes.



PPE includes

- **gloves** that protect your skin on your hands;
- **gowns** that protect your skin and clothes;
- **masks** that protect your mouth and nose;
- **goggles** that protect your eyes; and
- **face shields** that protect your whole face.

The PPE that you will wear in adult care homes and that you will learn more about in this module are gloves, gowns, and masks.

The adult care home in which you work will give you the PPE that you will need.

The type of PPE you wear will depend on what you are doing and what kind of contact you will have with blood, body fluids, non-intact skin, and mucus membranes that line the natural openings of the body.

The type of PPE you wear will also depend on the type of Transmission-Based (Isolation) Precautions that you need to do when certain types of infections have been identified for residents. You will learn more about this later.

ALWAYS wash your hands after you take off PPE.

Gloves. Gloves are the most common type of PPE that you will wear while working at an adult care home.

- **Description**

- Two types of gloves that health care workers wear – sterile and non-sterile (clean). You will wear non-sterile (clean) gloves at the adult care home.
- Gloves come in different sizes.
- Gloves are made using different materials, such as vinyl or latex. If you are allergic to latex, you need to wear non-latex gloves.

- **Rules**

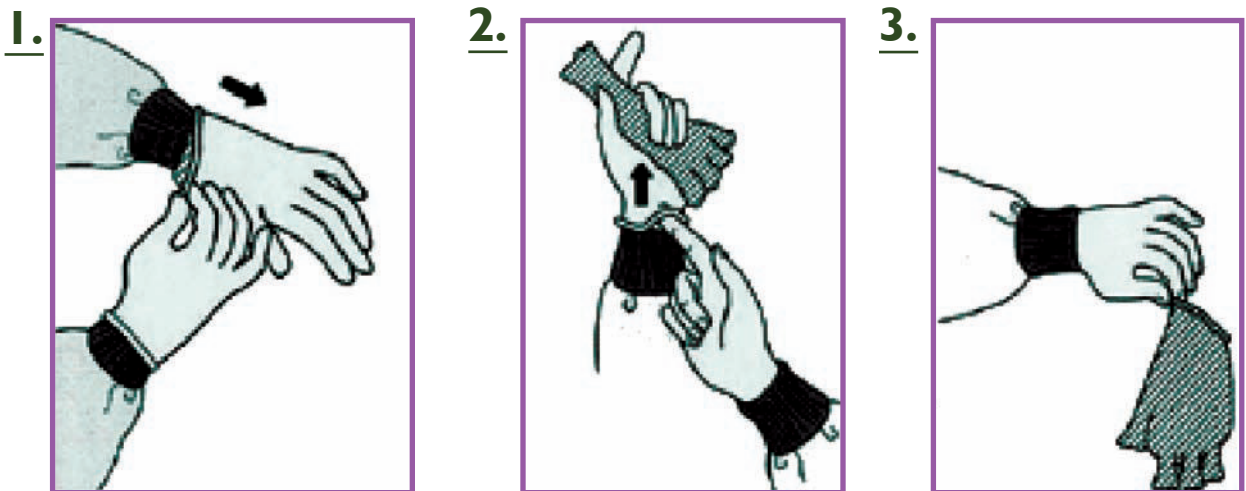
- Gloves should be worn once and then thrown away.
- When you wear gloves, always work from (or touch) a clean area, before you touch the contaminated area.
- Change gloves if your hands are going to move from a body part that is contaminated, to a body part that is not contaminated.
- Change gloves right away if they get dirty or tear.
- Take gloves off carefully and do not touch your skin or clothes with the dirty sides of the gloves.
- Do not touch anything with your dirty gloves that anyone may touch without gloves, like a doorknob.
- The fit should be comfortable – not too loose or not too tight.

- **Always wear gloves when you**

- might touch blood, body fluids, non-intact skin, and mucus membranes that line the natural openings of the body;
- provide or assist with mouth care;
- help care for any mucus membrane (such as wiping a nose that is “running”);
- help with perineal care (the genitals and the buttocks);
- care for a resident that has non-intact skin (such as cuts and sores);
- shave a resident;
- change and dispose of soiled bed linen, gown, pads, or bandages;

- touch a surface or equipment that is contaminated or may be contaminated;
- have direct contact with a resident who is on Contact Precautions (You will be learning about this.); and
- (YES, YOU) have open sores or cuts on your hands.

Proper Glove Removal



- Grasp outside edge near wrist.
- Peel away from hand turning glove inside-out.
- Hold in opposite gloved hand.
- Slide ungloved finger under the wrist of the remaining glove, be careful not to touch the outside of the glove.
- Peel off from inside, creating a bag for both gloves.
- Discard.
- Wash hands thoroughly.



Gown. Gowns protect the skin and clothes from contamination. You may need to wear a gown while working at an adult care home, but not often.

- **Description**

- The gown is made of liquid-resistant material.

- **Rules**

- Gowns should be worn once and discarded immediately after use.
- Gown should be changed right away if it gets wet, dirty, or tears.
- Take gown off carefully and do not touch your skin or clothes with the dirty sides of the gown.
- Do not leave the resident's room until you remove your gown.

- **You will wear a gown when you**

- are in situations where you may come in contact with blood and body fluids – the gown will provide additional protection beyond the gloved hand.
- change and dispose of soiled bed linen, gown, pads, or bandages that you may get on your skin beyond the gloved area or your clothes soiled; and
- have direct contact with a resident who is on Contact Precautions.

Removing Gown



- Unfasten ties
- Peel gown away from neck and shoulder
- Turn contaminated outside toward the inside
- Fold or roll into a bundle
- Discard

PPE Use in Healthcare Settings

Mask. A mask protects you from breathing in harmful germs through your nose and mouth. You may need to wear a mask, but not often, while working at an adult care home.

- **Description**

- Facemasks are loose-fitting, disposable masks that cover the nose and mouth. These include products labeled as surgical, dental, medical procedure, isolation, and laser masks.
- Masks are held in place by ties or an elastic strap.

- **Rules**

- Masks should be worn only once and discarded immediately after use.
- Masks should fit snugly over your mouth and nose.
- Change mask right away if it gets wet, dirty, or tears.
- Take mask off carefully and do not touch your skin or clothes with the dirty side (the outside) of the mask.
- Do not leave the resident's room until you remove your mask.

- **You will wear a mask when you**

- are caring for a resident who has a lung infection that requires Droplet Precautions (You will be learning about this.) or when there is a possibility of splashing or spraying of a body fluid.

Removing a Mask



- Untie the bottom tie, then untie the top tie
- Remove from face
- Discard



What About Spills ?

Spills that involve body fluids are a safety threat in the adult care home because of falls and risk of infection. What should you do when you see a spill?

- Clean up spills based on the procedures listed in the infection control policy at your adult care home.
- In general,
 - put on gloves (regular, disposable);
 - absorb the spill and clean the area with the correct product, following directions of the product;
 - discard waste in the appropriate container (a biohazard bag if the spill involved body fluids);
 - apply disinfectant to the area, following directions of the product; and
 - place a warning cone or sign to warn others if there is a wet surface.

What do you do when you have soiled linen?

- Wear gloves when you change, carry, and discard in correct container.
- Roll linen up during linen change so that the dirty side is inside.
- Carry soiled linen away from your clothes.
- Do not shake dirty linen.

What do you do when you have to cough or sneeze?

- Cover your mouth and nose with a tissue and discard right away.
- If you do not have a tissue, then cough or sneeze into your elbow.

Never cough or sneeze into your hand.

- Wash your hands immediately.

Second Level – Transmission Based Precautions

Transmission Based Precautions are the second level of precautions used to prevent and control infections.

Transmission Based Precautions are for residents who are infected or may be infected with specific types of infections.

The three types of transmission based precautions are

- Airborne Precautions;
- Droplet Precautions; and
- Contact Precautions.

Airborne Precautions

- Prevent the spread of harmful germs that travel in air at a distance.
- Harmful germs can float around for a while and can be carried by dust, moisture, and air currents.
- PPE – People caring for a resident on Airborne Precautions should follow Standard Precautions, plus wear a respirator depending on the specific disease.
- Example is tuberculosis (or TB), chicken pox, measles.
- Precautions are complex.

Droplet Precautions

- Prevent the spread of harmful germs that travel by droplets in the air.
- Droplets usually do not go farther than three feet, but could travel farther.
- Droplets are spread when an infected resident coughs, sings, sneezes, or laughs.
- PPE – follow Standard Precautions, plus wear a mask and gloves.
- Examples are influenza, meningitis, mumps, and whooping cough.

Contact Precautions

- Prevent the spread of harmful germs spread by direct contact.
- PPE – follow Standard Precautions, plus wear a gown and gloves.
- Examples are Methicillin-Resistant Staphylococcus Aureus (MRSA) infection (bacteria known for causing skin infections in addition to many other types of infections), Vancomycin-Resistant Enterococci (VRE) infection (type of bacteria that have developed a resistance to many antibiotics) and norovirus (virus that causes diarrhea and vomiting).

Housekeeping

A clean environment is important in the prevention of infection. Routine cleaning is important to make sure that you have a clean and dust-free environment. There could be harmful germs present in dirt that can be seen and regular cleaning helps to get rid of these germs.

Surfaces

- Clean surfaces (floors, walls, tabletops) regularly and per policy of your adult care home.
- For resident areas, use the type of detergent/ disinfectant, per policy, and in a manner, per directions of the product.
- Clean and disinfect high-touch surfaces more often. These include door knobs, hand rails, light switches, and surfaces in and around resident toilets.
- Use detergent and water for cleaning surfaces in non-resident areas (such as administrator offices).
- Clean walls, blinds, and window curtains, in resident areas, when they are visibly dusty or dirty.

Mops, Cloths, and Solutions

Follow procedures for effective use of mops, cloths, and solutions.

- Prepare cleaning solutions daily or as needed, and replace with fresh solution according to policy and procedure.
- Change the mop head at the beginning of each day and also according to policy and procedure.
- Clean mops and cloths after use and allow to dry before re-use; or use single-use, disposable mop heads and cloths.

Carpeting

Follow procedures for the care of carpeting on the floor.

- Vacuum carpeting in public areas and in general resident areas regularly, with equipment that is working well and designed to not stir up dust, but rid the area of dust.
- Routinely perform a good, deep cleaning of carpeting, according to policy and procedure.
- Follow appropriate procedures for dealing with spills on carpeting. Spot-clean blood or body fluid spills, using appropriate cleaner and disinfectant.

Medical Waste Disposal

Disposable syringes, needles, finger stick devices and other sharps, as well as blood of 20 ccs or more shall be treated as Medical Waste and disposed of as mandated by North Carolina Law.



Healthcare Associated Infections (HAI)

Remember when you learned about **Healthcare-associated Infections (HAI)**? As a review, the definition of an **HAI** is an infection that a resident gets while staying or living in a health care setting that he or she did not already have when admitted.

Three important HAIs, common to adult care homes include

- Influenza;
- Norovirus; and
- Hepatitis B (will be discussed in Section 3).

Influenza (“the flu”)

- Description
 - Influenza is a contagious respiratory illness caused by the influenza virus.
 - Outbreaks are common in adult care homes.
- Symptoms include fever, cough, sore throat, runny or stuffy nose, muscle or body aches, headache, and feeling tired. Influenza can look different in the elderly and people with many medical conditions.
- It is spread by droplets, during coughs and sneezes.
- People 65 years and older are at greater risk of serious complications and death from the flu compared with young, 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.

This is because human immune defenses become weaker with age. So influenza can be a serious disease for people 65 and older.

- Healthy adults may be able to infect others one day before showing flu symptoms and then five to seven days after becoming sick.
- **The following steps should be taken to prevent influenza infections:**

- 1. ALL residents and staff should get yearly flu vaccinations. Yearly flu vaccination is the first and most important step in protecting against flu.**
- 2. Encourage EVERYONE (employees, residents, and visitors) to practice good hand hygiene and to cover their mouth and nose when coughing or sneezing.**
 - Post signs and posters where they will be seen by all visitors
 - Make sure employees, residents, and visitors have easy access to soap and water or alcohol-based hand sanitizers.
- 3. Monitor and manage sick employees.**
 - 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.
 - Develop sick leave policies that are flexible and don't punish workers for doing the right thing.
- 4. Follow Standard Precautions and Transmission – Based Precautions, as described above.**

- **Control of outbreaks**

- Call your local health department to report all suspected outbreaks. A single confirmed case of influenza in a long-term-care resident is considered an outbreak. An outbreak could also be a sudden increase in the number of residents with fever and respiratory symptoms (such as cough or sore throat).
- Outbreaks must be reported by phone within 24 hours of the time when the outbreak is reasonably suspected.
- Your local health department might recommend widespread use of antiviral medications, confining ill residents to their rooms until they are no longer sick, restricting visitors, stopping group activities or other measures.
- Contact information for all North Carolina local health departments is available at www.ncalhd.org/county.htm.

Norovirus

- Description
 - It is an extremely contagious gastrointestinal illness.
 - Outbreaks are common in adult care homes.
 - Most people call the norovirus, the stomach flu, viral gastroenteritis, and food poisoning
- Symptoms include vomiting and diarrhea.
- Norovirus is spread through vomitus and diarrhea.
- Most people get well in 1 to 2 days, but are contagious until at least 3 days after vomiting and diarrhea have stopped.
- Dehydration can be a problem and the elderly must replace fluids, when able (sometimes intravenous fluids are needed).
- No vaccination available or specific drug available to get rid of the harmful germ.

- Prevention
 - 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.
 - Use gowns and gloves when in contact with, or caring for residents with diarrhea or vomiting.
 - Routinely clean and disinfect high touch patient surfaces and equipment with an Environmental Protection Agency-approved product with a label claim for norovirus.
 - Remove and wash contaminated clothing or linens
 - Employees who have symptoms consistent with norovirus should be excluded from work until at least 2 days after symptoms have resolved.
- Control of Outbreaks:
 - Call your local health department as soon as you suspect an outbreak.
 - Norovirus outbreaks can be difficult to control. The local health department might recommend that you confine ill residents to their rooms, restrict visitors, stop group activities, or take other measures.
 - Staff members with vomiting or diarrhea should not come to work until at least 2 days after symptoms have resolved.
 - Noroviruses are difficult to kill. Special cleaning and disinfection are needed to help control an outbreak.
 - Immediately clean and disinfect contaminated surfaces by using a bleach-based household cleaner as directed on the product label, or a solution made by adding 5 to 25 tablespoons of household bleach to 1 gallon water.
 - Immediately remove and wash clothing or linens that may be contaminated with vomit or stool. Handle soiled items carefully and do not shake them – to avoid spreading virus. They should be washed with detergent at maximum washing machine cycle length and then machine dried.

Time to Check for Understanding of Section 2

Let's see how much you remember about what you just read from the second section, Breaking the Chain of Infection.

Read each activity listed below and circle the activities that require you to wash your hands, before performing.

- Every time you provide resident care
- When you put on gloves
- When you touch meal trays
- When you feed a resident
- When you need to get clean linen
- When you get ready to leave work

Read each activity listed below and circle the activities that require you to put on clean gloves, before performing.

- Mouth care for a resident
- Perineal care for a resident
- Giving a bath to a resident with open sores
- Change linen with urine on it
- Shave a resident
- Do a fingerstick blood sugar check

Time for Check for Understanding of Section 2 Answers

Hand washing: Each activity listed should be circled.

Gloving: Each activity listed should be circled.





SECTION 3



Bloodborne Pathogens

Review of Section I

In Section 1, we learned that:

An **infection** is a disease or a condition of the body. An **infection** occurs when harmful germs get into the body and grow in number.

Harmful germs are tiny living things that can live almost anywhere – both inside and outside of our bodies – that cause problems or diseases.

Healthcare-associated infection (HAI) is an infection that a resident gets while staying or living in a health care setting that she/he did not already have.

Infection prevention in an adult care home is all of the things that people do to control and prevent the spread of infection.

Bloodborne Infection Words and Meanings

Bloodborne Pathogens

Bloodborne pathogens are harmful germs that are found in human blood and can cause infection and disease. The three most common bloodborne pathogens are hepatitis B virus, hepatitis C virus, and HIV (human immunodeficiency virus). This will be explained below.

A RESIDENT in an adult care home can get an infection from bloodborne pathogens by:

- Sharing contaminated needles;
- Sharing contaminated fingerstick devices; and
- Direct contact with blood from an infected person

YOU can get an infection from bloodborne pathogens by:

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

Sharps

Sharps are devices found in adult care homes that are used to puncture the skin (needles and fingerstick devices) or to shave a resident

OSHA (Occupational Safety and Health Administration)

OSHA is an agency of the United States federal government that enforces safety and health regulations affecting workers.

- It makes and enforces rules that protect workers from dangers while working;
- Provides training on workplace safety;
- Sets standards for use of equipment and activities in the workplace, including Bloodborne Pathogen Standard, that required employers in healthcare to protect employees from bloodborne pathogen contact. The facility's infection control plan has steps to protect both health care workers and residents.

Hepatitis

Hepatitis is a disease of the liver. The disease is often caused by viruses.

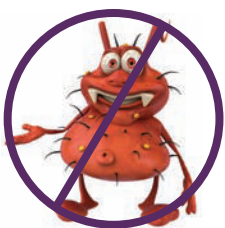
HEPATITIS B is a contagious liver disease caused by hepatitis B virus (HBV).

- HBV is usually spread when blood, semen, or another body fluid from a person infected with HBV enters the body of someone who is not infected. This can happen through sexual contact with an infected person or sharing needles, syringes, or other drug-injection equipment.
- In adult care homes, HBV is often spread by sharing infected needles, syringes, fingerstick devices or blood sugar monitors among residents during diabetes care.
- **HBV can live outside the body on equipment and on surfaces like table tops for seven days. It can infect others during that time.**
- About one third of people infected with HBV do not show symptoms. Most adults who are infected will have some symptoms, which can include fever, extreme tiredness, stomach pain, nausea, dark-colored urine, and yellowing of the skin and eyes.
- HBV infection can — but does not always — lead to chronic infection. Chronic Hepatitis B virus infection is a long-term illness that occurs when the Hepatitis B virus remains in a person's body. Chronic Hepatitis B is a serious disease that can result in long-term health problems, and even death.
- The great news is a vaccine is available to prevent you from getting this disease. **The best way to prevent Hepatitis B is by getting the Hepatitis B vaccine.** The Hepatitis B vaccine is safe and effective and is usually given as 3-4 shots over a 6-month period.

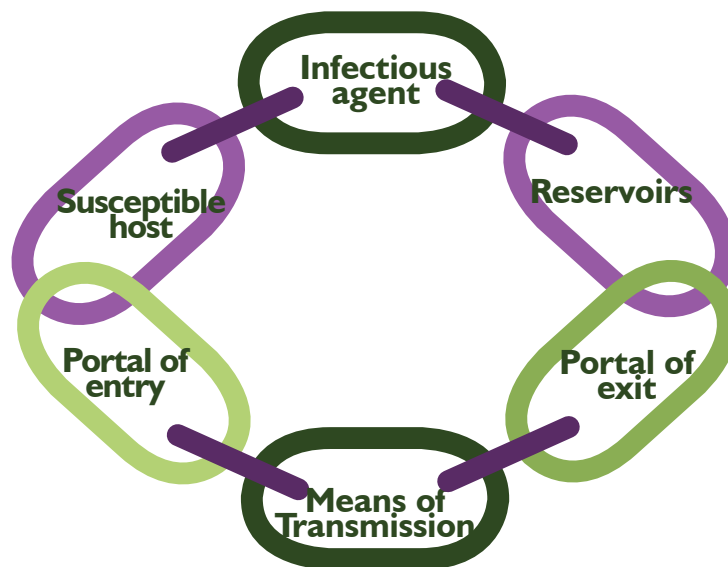
Hepatitis C is a contagious liver disease caused by hepatitis C virus (HCV).

- HCV is also spread by blood or body fluids.
- HCV is usually spread when blood from an infected person enters the body of someone who is not infected.
- HCV ranges in severity from a mild illness lasting a few weeks to a serious, lifelong illness that attacks the liver.
- There is no vaccine to protect against HCV infection.

Human Immunodeficiency Virus (HIV) is the virus that can cause AIDS (acquired immune deficiency syndrome). HIV attacks the immune system and limits the body's ability to fight infection.



The Chain of Infection



1ST LINK. The **infectious agent** is a **harmful germ** that causes an infection. When we talk about bloodborne pathogens, the **harmful germs** are the Hepatitis B virus, the Hepatitis C virus, and HIV.

2ND LINK. A **reservoir** is the place where harmful germs live, grow, and increase in numbers. The reservoir for Hepatitis B Virus, Hepatitis C Virus, and HIV is the person who is infected.

REMEMBER: You cannot look at a person and **ALWAYS** tell if that person is infected with Hepatitis B virus, Hepatitis C virus, or HIV.

3RD LINK. The **portal of exit** is any opening on an infected person's body that lets harmful germs escape from the reservoir (where they have been living). Portals of exit for the Hepatitis B Virus, Hepatitis C Virus, and HIV include cuts, open sores, or any equipment that pierces the skin and comes into contact with blood (like needles or lancets).

4TH LINK. The **mode of transmission** is how the harmful germs travel or "**get around**" from place to place.

Hepatitis B Virus, Hepatitis C Virus, and HIV travel by way of blood.

One way to get infected with a bloodborne pathogen is to come into **direct contact with (or touching) blood** or other body fluids from a person who is infected with Hepatitis B Virus, Hepatitis C Virus, and HIV.

Another way to get infected with Hepatitis B Virus, Hepatitis C Virus, and HIV is by **indirect contact**. **Indirect contact** is when blood from an infected person touches something (like needles, syringes, blood glucose meters, or a care giver's hands) and then is carried to an uninfected person.

5TH LINK. The **portal of entry** is any body opening on a person who does not have an infection that allows harmful germs to enter into the body. Portals of entry include any breaks in the skin or mucus membranes. Portals of entry for **Hepatitis B Virus, Hepatitis C Virus, and HIV** include open sores or wounds and puncture sites from injections and fingerstick devices.

A resident is at a higher risk for contracting (getting) **Hepatitis B, Hepatitis C, and HIV** if the resident receives injections and/or is tested using fingerstick devices, in an adult care home.

6TH LINK. A **susceptible host** is a person who does not have an infection now, but is at risk for becoming the next person to get infected, from harmful germs.

People become more **susceptible** when their **bodies' ability to fight infection is not good**. Reasons why a person's body is not good at fighting infection:

- Age
- Stress
- Fatigue
- Poor nutrition
- Poor hand washing

Residents living in an adult care home are more likely to get an infection than other people who live in our community.

Now, **YOU** will learn all the ways that you can break the chain of infection and **PREVENT THE SPREAD OF HIV, Hepatitis B Virus, and Hepatitis C Virus INFECTIONS IN ADULT CARE HOMES.**





Diabetes

Diabetes mellitus is a disease that many people have in our country. Diabetes mellitus (or simply diabetes) is sometimes called, “sugar diabetes.” According to the American Diabetic Association, in the United States, for people aged 65-years and older, 26.9% of them have diabetes. In 2010, North Carolina ranked 13th in incidence of diabetes among all the states (NC DPH).

Diabetes mellitus is caused by the body’s inability to use glucose (sugar), in the blood, for energy. The reason the body cannot use glucose for energy is because of a total lack of, or not enough insulin in the body. Insulin is needed to help the body use blood glucose (sugar) for energy.

Residents who are diabetic usually need their blood checked for glucose (sugar) regularly. A blood glucose meter is used by residents with diabetes to check their levels of sugar in their blood. The resident pricks the skin with a lancet, and then places a drop of blood on a test strip. The test strip is placed in the machine and then the blood glucose (sugar) level shows up on the little screen.

Based on the blood glucose (sugar) level, the resident may or may not need an injection of insulin.

Blood glucose monitoring and insulin administration can be done in adult care homes by:

- **self-monitoring of blood glucose and insulin administration**, when residents perform all the steps of blood glucose testing and then administers insulin to themselves, and
- **assisted monitoring of blood glucose and insulin administration**, when providers assist with or perform testing and insulin administration for residents.

The Centers for Disease Control and Prevention (CDC) is concerned about the risks for transmitting bloodborne pathogens during assisted blood glucose (blood sugar) monitoring and insulin administration.

CDC has looked into multiple outbreaks of viral hepatitis among residents in facilities that were traced to the sharing of devices and other breaches in infection-control practices related to blood glucose monitoring. Any time blood glucose monitoring devices are shared between residents there is a risk of transmitting viral hepatitis and other bloodborne pathogens.

In the United States, during the last 10 years, there have been at least 17 outbreaks of Hepatitis B Viral infections because of health care providers not following basic principles of infection control when helping with blood glucose monitoring. There are likely more cases that have not been identified or reported.

Point of care testing (POCT) is a common practice in facilities. It includes portable devices that allow workers to monitor (keep a check on) a resident's health and response to medical care, at the bedside.

POCT is quick, easy to use, and provides helpful information about the resident.

A point of care test that you may be familiar with, and may have been done in your adult care home, is the testing of a resident's blood for glucose (sugar). Blood glucose meters, the devices that are used to test a resident's blood for glucose (sugar), are used by millions of people with diabetes, a day. These devices are smaller, faster, and more accurate now than ever before and are important to a diabetic resident's health.

Any time you share a point of care test device, such as a blood glucose meter, with residents, there is **A RISK OF PASSING A BLOOD-BORNE PATHOGEN** from resident, to resident, to resident. Outbreaks of Hepatitis B in health care settings have been caused by the sharing of blood glucose meters and lancing devices, among residents! You will read more about this later.

It is critically important that you know what you are doing and know what you are using when you perform fingersticks on your residents and work with blood glucose monitors.

Your knowledge is key to preventing the spread of bloodborne pathogens in your adult care home.

Each time you perform a fingerstick blood sugar check on your resident, you must ask yourself:

- What type of fingerstick device is this?
- Is it meant to be used just for one resident only
- Is it meant to be used only one time and discarded?
- Am I supposed to assist the resident or do it myself?



Blood Glucose Monitoring – Fingerstick Devices

Fingerstick devices are devices that are used to prick the skin and obtain drops of blood for testing. Fingerstick devices use a **lancet** that actually jabs the skin.

Here is a picture of an example of a lancet:



Two main types of fingerstick devices are often used in the adult care home:

- those that are designed for reuse on a single person; and
- those that are disposable and for single-use.

Reusable Devices for a Single Person



Reusable devices often resemble a pen.

Here is a picture of a reusable fingerstick device:

The CDC recommends that these devices should only be used by individual residents, and **NEVER** shared with other residents. These devices are

typically used by residents for self-monitoring of blood glucose (blood sugar).

The lancet must be removed after each use, discarded appropriately, and a new, unused lancet inserted in its place.

Disposal of used lancets should be done immediately, at the point of use (where the fingerstick was done), in an approved sharps container. **Never reuse lancets.**



Single-use, Auto-disabling Fingerstick Devices

Single-use fingerstick devices are disposable and meant to be used once and then discarded. The auto-disabling feature prevents reuse.

Here is a picture of single-use, auto-disabling fingerstick devices:



In adult care home settings where assisted monitoring of blood glucose (blood sugar) is performed, single-use, auto-disabling fingerstick devices should be used.

A fingerstick device that has a single-use lancet that permanently retracts (disappears from view) after puncture (jab) adds an extra measure of safety for the resident and the provider.

REMEMBER:

The shared use of fingerstick devices is one of the common causes of bloodborne pathogen exposure and infection in settings such as long-term care facilities, where multiple people require assistance with blood glucose monitoring.



Blood Glucose Meters



Blood glucose meters are devices that measure a resident's blood glucose (blood sugar) levels. Here is a picture of a blood glucose meter:

Whenever possible, blood glucose meters should be assigned to a single resident and not be shared with other residents.

Hepatitis B virus, Hepatitis C virus, and HIV can get onto blood glucose meters even if you don't see any blood. These harmful germs can survive on the blood glucose meters and can then be spread to other residents. After that, they can enter the bodies of the uninfected residents when their fingers are pricked to check their blood sugars.

If blood glucose meters must be shared, the device should be cleaned and disinfected after **every use**, based on manufacturer's instructions. This must be done to prevent the passing of blood and bloodborne pathogens, from one resident, to the next resident, using the device.

If the manufacturer does not state how the blood glucose meter should be cleaned and disinfected, then it should not be shared.

A simple rule for safe care: Blood glucose meters should be assigned to a single individual and not be shared. If blood glucose meters must be shared, they should be cleaned and disinfected according to the manufacturer's instructions after every use.

Summary of Rules When Using Point of Care Testing Devices to Check Blood for Glucose (Sugar)

The following procedures apply to the use of point of care testing devices, specifically those used to check a resident's blood for glucose (sugar):

1. Always wear gloves when performing finger sticks, when testing the blood for glucose (sugar), and when cleaning and disinfecting the blood glucose device.
2. Change gloves between residents when performing multiple finger sticks in your adult care home.
3. Change gloves that have possibly touched blood-contaminated objects or "jab sites" before touching clean surfaces or objects.
4. Perform hand hygiene right after you remove gloves and before touching other residents or things.
5. Discard the used lancet in an approved sharps container, at the point of use.
6. Remove and discard gloves in appropriate container after every procedure that involves a possible exposure to blood during fingerstick blood sampling.
7. Never, ever reuse lancets.

8. Never, ever recap, bend, or break lancets, because of the danger of jabbing your own finger.
9. If a blood glucose meter is designed for use on a single resident, then the device **cannot** be shared with other residents.
10. If a blood glucose meter is designed for use on multiple residents and that is the method used in your adult care home, then you must follow the manufacturer's directions for use, cleaning, and disinfecting.
11. You must immediately clean and disinfect countertops and surfaces that have been contaminated with blood. Use a germicidal (killer of germs) that is provided by your adult care home.
12. Do not carry alcohol swabs, lancets, or other supplies in your pockets.
13. Only carry the supplies that you need for the fingerstick procedure to the bedside. Any unused supplies should be discarded and not be used with other residents.
14. If you jab your finger with a used lancet, immediately follow your facility's exposure policy regarding care and reporting of the occurrence.

Now, you have tested your resident's blood for glucose (sugar) and it is time to administer a dosage of insulin.

Insulin Administration

Insulin may be self-administered, which means the resident gives himself his own insulin. Insulin may also be given to the resident, by a trained health care provider.

Insulin can be administered to a resident several different ways.

Two methods of insulin administration often used in the adult care home are:

- by injection, using an **insulin pen**; or
- by injection using a syringe, with insulin removed, from a **multiple-dose vial**.

Insulin Pen

This is a picture of an insulin pen:

Insulin pens are injector devices for insulin that are shaped like an ink pen.

Insulin pens have an insulin reservoir, or an insulin cartridge, that usually has enough insulin for a single resident to self-administer several doses (injections) of insulin before the reservoir or cartridge is empty.



Insulin pens are intended for use by a single resident, and **ARE NOT TO BE SHARED WITH OTHER RESIDENTS.**

The resident changes the needle before each insulin injection.

SO.....Insulin pens are designed to be safe for a single resident to use a single pen multiple times, with a new needle for each injection.

Insulin pens should be assigned to individual residents and labeled with their names.

Insulin pens should never, ever be used for more than one person.

Multiple-dose Vials

This is a picture of an insulin syringe and a multiple-dose vial of insulin:



Insulin can be administered using a needle and syringe after withdrawing the correct dose of insulin from a multi-dose vial.

A multi-dose vial of insulin is a vial that has more than one dose of insulin in it.

A multi-dose vial of insulin should be used for a single resident and labeled with the resident's name.

If the multi-dose vial must be used for more than one resident it should be stored and prepared in a specific medication preparation area outside of the resident care area and away from

equipment that may be contaminated.

Multi-dose insulin vials should always be entered with a new needle and new syringe after cleaning of the vial top with alcohol.

Needles and syringes should **never** be used to administer insulin to more than one person. **Never, ever use a needle and syringe more than once.**

Needles and syringes should be disposed of right away after use in an approved sharps container.

Check for Understanding – Section 3

Let's see how much you remember about what you just read from the fourth section, "Bloodborne Pathogens." Circle the correct answer for the following questions:

- 1. I am increasing my risk to get a hepatitis B infection by:**
 - a. washing my hands before and after I assist with a resident's diabetic blood sugar testing
 - b. not wearing gloves when I assist with a resident's diabetic blood sugar testing
 - c. being careful when I put a used needle in the sharps container
 - d. treating everyone as if they were infected

- 2. An example of a bloodborne infection is:**
 - a. pneumonia
 - b. HIV
 - c. food poisoning
 - d. ear infection

- 3. Which resident is at the highest risk of getting infected with the hepatitis B virus?**
 - a. a resident with heart disease
 - b. a resident with cancer
 - c. a resident with diabetes
 - d. a resident who is disease-free

- 4. Hepatitis B is caused by:**
 - a. a bacteria
 - b. a fungus
 - c. a protozoa
 - d. a virus

5. A fingerstick device is used to:

- a. inject insulin using a syringe
- b. test the oxygen in the blood
- c. check the sugar in urine
- d. prick the skin to test the blood for sugar

6. When preparing an injection of insulin from a vial:

- a. multidose vials should be stored and prepared in a specific medication preparation area outside of the resident care area and away from equipment that may be contaminated
- b. remember that multiple dose vials should be labeled with one name only for one resident only
- c. never reuse needles or syringes
- d. all of the above are correct

7. If the manufacturer does not state how the blood glucose meter should be cleaned and disinfected, which of the following is true?

- a. The meter should be cleaned with a bleach-based disinfectant before use on the next resident
- b. The meter should be cleaned with an alcohol swab before use on the next resident
- c. The meter should not be used for more than one resident

8. Place a check mark in front of the correct statements listed below:

The shared use of fingerstick devices is one of the common causes of bloodborne infections in health care facilities.

Single-resident insulin pens should not be shared by multiple residents.

Wear gloves during fingerstick sugar monitoring.

Never carry insulin pens, vials of insulin, and lancets in your pocket.



Check for Understanding - Section 3 Answers

1. The answer is b.
2. The answer is b.
3. The answer is c.
4. The answer is d.
5. The answer is d.
6. The answer is d.
7. The answer is c.
8. Each statement should be checked as correct

Infection Control Course



North Carolina Department of Health and Human Services
Division of Health Service Regulation • Division of Public Health
Center for Aide Regulation and Education
Adult Care Licensure Section