An Infection Control Module:

AN INFECTION CONTROL UPDATE

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When you are at work, performing client care, you are probably aware of only 10% of the germs around you. Those are the germs that cause symptoms and lead to an actual diagnosis of infection. For example, one of your clients has the flu so you know there are flu germs around that client. The bad news is that the remaining 90% of infectious germs are hidden. It’s like an iceberg. About 10% sticks out of the water and is visible to passing ships, but 90% of the hulking mass remains underwater and out of site. If you could ask the captain of the Titanic, he’d tell you it’s that hidden 90% of the iceberg that causes the most damage! The same can be true with germs!

You may be thinking . . . if I never know what germs are there, how can I protect myself and others from them?

You do it by practicing a few important infection control guidelines all the time, in every situation, and with every client . . . even if they don’t seem sick.

Keep reading to learn all about infection control guidelines like standard precautions, transmission-based precautions and the importance of hand washing. You’ll also learn how to protect your clients from some of the most serious infections they face while they are under the care of the medical team.
HOW ARE INFECTIONS SPREAD?

THE CHAIN OF INFECTION STARTS HERE!

THE INFECTIOUS AGENT
This is any organism with the ability to cause disease. It may be a virus, bacteria, fungus, or a parasite.

THE RESERVOIR
This is any place where the infectious agent is happy to live and grow! The best reservoirs are people, like your clients and co-workers . . . and certain places in the environment, like tables doorknobs, and bathrooms.

THE MODE OF TRANSMISSION
This is the way the organism gets from one place to another. In the healthcare setting—this is almost always YOU!

The most common mode of transmission in healthcare settings is by the hands of healthcare workers.

THE SUSCEPTIBLE PERSON
This is any person who cannot block germs from invading the body, or from multiplying, and causing an infection. Most of your clients are considered susceptible people.

Clean, clean and clean some more! Wash people, clothing, bedding, surfaces and equipment to destroy infectious agents. Without an infectious agent, there is no Chain of Infection!

The Facts
• A Healthcare-Associated Infection (HAI) is any infection that develops while a person is under the care of a medical team. (HAIs were previously referred to as “nosocomial infections.”)

• An HAI is diagnosed when a person becomes infected at least 48 hours after admission, up to one month after surgery, or up to one year after a hip replacement.

• In the U.S., more than 4,600 patients per day become sick from a healthcare-associated infection.

• Of the 4,600 patients infected every day, 271 will die.

• Most HAIs are preventable, and handwashing is the single most important thing you can do to keep your clients (and yourself) healthy.

Imagine you can SEE the germs and wash your hands . . . before you eat, after using the bathroom, after coughing or sneezing, and most importantly, before and after any contact with clients and their environments!

Use standard precautions with everyone, even if they don’t seem sick. Follow transmission-based precautions with people with known infections.
A CLOSER LOOK AT HANDWASHING

Remember...you don’t have to be a scientist to play a major role towards infection control at your workplace. In fact, you are just five easy steps away from preventing an infection in your next client (or in yourself). All you have to do is wash your hands!

Here are the five steps:

- **WATER AND SUDS:** Begin by wetting each hand thoroughly, then apply soap. It can be in either a liquid form or a bar of soap. If using a bar of soap, make sure that it is placed on a clean rack when you are finished so that all of the water can drain off and keep it free from germs.

- **RUB:** Rub your soapy hands together making sure you don’t miss any spots. Scrub all surfaces, including in between each finger and under your fingernails.

- **TAKE YOUR TIME:** Keep scrubbing for at least 15 seconds (but 30 is better). Keep in mind, the type of soap you use and the temperature of the water are not as important as the friction you create when you rub your hands together. *It’s the friction that gets rid of the germs!*

- **RINSE:** Rinse both hands with cool or warm water. Very hot water can scald hands and/or dry out skin, leaving you vulnerable to infection.

- **DRY:** Dry hands thoroughly with a paper towel or a motion-activated hand dryer. Paper towels provide one more opportunity to create friction and get rid of any lingering germs. Motion-activated hand dryers have the added benefit of being touch free, but they take longer and may not get your hands completely dry. (See sidebar on page 6 for more on this!)

A WORD ABOUT WATERLESS HAND SANITIZERS . . .

*Waterless hand sanitizers can be a good option in certain situations throughout your work day.* Hand rubs are faster because you can rub your hands while you are moving between patients and they tend to be gentler and less drying on your skin.

- **To use:** Place a small amount in the palm of one hand. Rub hands together, being sure to cover all surfaces of hands and fingers. Rub until hands are dry.

Only use waterless hand rubs when hands are not visibly soiled. If hands are visibly soiled, always wash with soap and water.

“**GEL IN, WASH OUT!”** Clean your hands both before and after client care by using the “Gel In, Wash Out” method. Use *waterless hand cleaner* before client care, then wash with *soap and water* when you are done!

### WHAT EXCITES YOU?

**GERMS HATE SILVER!**

Did you know that the metal, silver can actually kill bacteria? It’s true.

The antibacterial action of silver is in the silver ion. The silver ion holds a positive charge that is attracted to negatively charged bacteria. The silver ion enters the bacteria and damages its ability to multiply.

So, what does that mean for you? Should you go out and order your *silver suit of armor* today?

No! A new company called Infinitude Clothing is currently developing a line of scrubs that are made with real silver fibers in the fabric!

*To learn more, go to:* infinitudeclothing.com /X-Static-Video

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**WHAT'S YOUR ROLE?**

It's Friday night. You're ready to end your shift and start your weekend! You quickly breeze into a room where the client is on contact precautions for MRSA. But, since your are just going in to pick up a meal tray, you skip the gown and gloves. You touch the tray the client has touched, now the MRSA is on you.

You don't wash your hands before going to the next room to pick up another tray. In this room, the client asks for help getting back into bed. Now the MRSA is on the second client.

Before your shift ends, you go to the computer to chart. Now the MRSA is on the computer. As you are charting, your cell phone rings. You reach into your pocket to answer it and place MRSA on your phone.

Think about all the little things you do throughout the day to prevent the spread of infection.

**NOW: Take it a step further and think about how you can do MORE!**

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**CONTROL THE SPREAD OF INFECTION**

**USE YOUR PPEs**

*In the healthcare setting, Personal Protective Equipment (PPE) items are designed to protect you and your clients from infectious diseases.*

- **Gloves** – protect hands.
- **Gowns** – protect skin and clothing.
- **Masks** – protect mouth and nose.
- **Fit Tested Respirators** – protect respiratory tract from airborne germs.

**ALWAYS FOLLOW STANDARD PRECAUTIONS**

Standard Precautions are basic infection control guidelines for you to follow as you perform your daily work. Standard Precautions include:

- Washing your hands.
- Using protective equipment like gloves, gowns and masks.
- Handling infectious waste material properly.

*Standard Precautions apply to all your clients, no matter what their diagnosis—even if they don’t seem sick!*  

**KNOW YOUR TRANSMISSION-BASED PRECAUTIONS**

When a client is known to have a highly contagious infection, use standard precautions in addition to these transmission-based precautions:

<table>
<thead>
<tr>
<th>PRECAUTION</th>
<th>WHAT EQUIPMENT IS NEEDED?</th>
<th>WHEN IS THIS USED?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact Precautions</td>
<td>Gloves and gown must be worn for all contact with the client and the client’s environment.</td>
<td>MRSA, VRE, e-coli, pink eye and hepatitis A.</td>
</tr>
<tr>
<td>Droplet Precautions</td>
<td>A mask must be worn for all contact within 3 feet of the client.</td>
<td>Pertussis, flu, strep throat, mumps, and rubella.</td>
</tr>
<tr>
<td>Airborne Precautions</td>
<td>A mask must be worn when you are in the same room as the client.</td>
<td>Measles, chickenpox, and shingles.</td>
</tr>
<tr>
<td>Expanded Airborne Precautions</td>
<td>A fit tested respirator must be worn for all contact with the client.</td>
<td>Tuberculosis (TB), smallpox and SARS</td>
</tr>
</tbody>
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GET OUT!
THINK OUTSIDE OF THE BOX!

Working with clients in the home often requires coming up with creative solutions to uncommon problems.

- **THE PROBLEM:** You have been assigned to care for Mrs. D. She was recently discharged to home after having back surgery. An RN is assigned to monitor the surgical site and change the dressing. You are in charge of everything else.

- **WHAT YOU KNOW:** Mrs. D’s dog, FiFi is adorable, but filthy! She goes outside to eliminate but comes right back in to lie beside Mrs. D. FiFi clearly has not had a bath in a while and Mrs. D. cannot afford to send her to a groomer.

- **GET CREATIVE:** What will you do to make sure that FiFi does not contribute to a surgical site infection for Mrs. D? Think of three creative solutions to this problem.

- **TALK ABOUT IT:** Share your ideas with your coworkers and supervisor.

THE THREE MOST COMMON HAI S

The most common types of infections that occur while someone is under the care of medical professionals are UTIs, pneumonia and surgical site infections.

**URINARY TRACT INFECTIONS**

A urinary tract infection is the most common type of healthcare-associated infection. UTIs are most often associated with catheters, but can also occur in clients who are incontinent of stool and/or urine and when perineal care is not done in a safe and/or timely manner.

**You can help prevent UTIs in your clients!**

- Know your workplace guidelines for safe catheter care. If you are unsure about catheter care, ask your supervisor for an inservice on it.
- Respond to all episodes of incontinence quickly. If you cannot get to a client who has soiled his or clothing or bed, ask for help!
- Teach clients who can clean themselves about the importance of daily perineal care. Help those who cannot help themselves get proper and thorough perineal care every day.

**SURGICAL SITE INFECTIONS (WOUND INFECTION)**

Having surgery increases a person’s risk of getting an infection because it gives bacteria a pathway into the body.

**Here’s how you can prevent surgical site infections in your clients!**

- Wash your hands frequently—especially before and after touching the client near the surgical site.
- Report any signs of infection immediately, including pain, fever, or skin that is red, swollen and warm to the touch.
- Report right away if your client’s wound dressing comes loose, seems wet, smells bad, begins to leak fluid, pus or blood, or if it gets soiled by urine or feces.

**PNEUMONIA (LUNG INFECTION)**

Pneumonia is usually caused a bacteria or virus, but can also be caused by a foreign object, like food or vomit that is breathed into the lungs.

**You can prevent pneumonia in your clients!**

- Watch for and report any coughing, chest tightness, or extreme tiredness.
- Providing frequent mouth care to people who are unable to do it themselves. This reduces their risk for pneumonia infection.
- Help clients get some form of physical activity every day and encourage smokers to quit!
A “TOUCH” ABOUT CONTACT GERMS

Did you know that 80% of all infectious diseases are spread by touch? Here are a few germs you could be carrying on your hands right now:

- MRSA (Antibiotic resistant staph)
- Clostridium difficile (C. diff)
- Hepatitis A
- Strep Throat
- Viral Meningitis
- Norovirus
- Salmonella (Food Poisoning)
- Herpes Simplex (Cold Sores)
- Mono (It’s not just from kissing!)
- Pink Eye
- Ringworm
- Chickenpox and Shingles

A CLOSER LOOK AT MRSA AND C-DIFF

While all of the above germs have the potential to cause serious problems for your clients, MRSA and C-diff just may be the worst.

**MRSA** (pronounced “mersa”) is short for Methicillin Resistant Staphylococcus Aureus. As the name implies, MRSA is a staph infection that is resistant to certain antibiotics, making it very difficult to treat.

- MRSA is highly contagious and spreads easily. In fact, it is almost always spread by the hands of health care workers after coming in contact with an infected person or a surface like a table, bed rail or telephone that an infected person uses.
- About 85 percent of MRSA cases are healthcare-associated and of those, more than half occur in long term care or home health situations.

**Clostridium difficile**, commonly called C. diff, is a bacteria that causes diarrhea and can lead to life-threatening inflammation of the colon. Outbreaks are common in hospitals and long term care facilities.

- C. diff typically occurs after use of antibiotic medications. Antibiotics needed to treat infections also kill normal, helpful bacteria. Without enough healthy bacteria, C. diff quickly grows out of control.
- C. diff lives in the stool and can spread easily to objects and surfaces in the room when infected people don’t wash their hands thoroughly.

You can prevent the spread of MRSA and C. diff!

- When you work with people who are known to have MRSA or C. diff, be sure to wash your hands with soap and water because alcohol-based hand rubs may not be as effective.
- Wash your hands even if you didn’t have direct contact with the client because the C. diff bacteria can live for up to 70 days and MRSA can live for up to 6 months on surfaces in the room and still cause infection.

THINK ABOUT IT!

WHAT’S BETTER: PAPER TOWEL OR AIR DRYER?

A recent study done by the Mayo Clinic finds that air blowers in public restrooms are NOT better than good ol’ fashioned paper towels at preventing the spread of germs.

Even when compared to hands-free dryers, the study found that paper towels are less likely to spread germs.

"The trouble with blowers is they take so long," says Rodney Lee Thompson, of the Mayo Clinic. "Most people dry their hands for a bit, then wipe them on their dirty clothes, or open the door with their still-wet hands."

And, since only two out of three adults wash their hands after using the bathroom, Thompson also suggests opening the bathroom door with a paper towel, then tossing it over your shoulder and into the trash.

You can’t do that with a hand dryer!
HERE’S THE DEAL ON DROPLETS!

Every uncovered cough and sneeze sends millions of tiny droplets into the air. Germ filled droplets can land on the mouth or nose of people nearby or they can land on a surface where someone can walk by and touch them. Here are a few germs that may be in your droplets right now:

- Influenza
- The Common Cold
- Pertussis (whooping cough)
- Strep throat
- Fifth Disease
- Meningitis
- Leprosy
- Mumps
- Rubella

A CLOSER LOOK AT INFLUENZA AND PERTUSSIS

While all of the above germs have the potential to cause serious problems for your clients, the flu and pertussis are most common.

Influenza season in the United States usually lasts from October through March, but most people tend to “catch” the flu in January or February.

- Symptoms of the flu (fever, chills, headache and muscle aches) tend to start all at once. The fever is often higher than 101 degrees.
- The flu and its complications are the fifth leading cause of death in people over the age of 65.

Pertussis, commonly called whooping cough, is making a comeback! Clusters of pertussis outbreaks are popping up all over. This is partly because more parents are choosing not to vaccinate their children, and partly because there is a decrease in immunity among older adults.

- The symptoms of whooping cough are usually mild at first and may just look like the common cold. In 2 to 3 weeks, thick mucus accumulates inside the airways, causing severe and prolonged coughing attacks where the cough ends with a high-pitched "whoop" sound during the next breath of air.
- Some adults will not develop the characteristic whoop. Sometimes, a hacking cough is the only sign that an adult has whooping cough.

You can prevent the spread of influenza and pertussis!

- Teach your clients and their visitors the rules of “Respiratory Hygiene and Cough Etiquette” (see side bar) and role model the rules yourself!
- Talk to your clients about the importance of getting the flu shot, and get the vaccine yourself every year.
- Remind clients to ask their doctors about getting a booster vaccine for pertussis. They may have been vaccinated when they were younger, but there is now evidence that the vaccine does not last forever and a booster is highly recommended.
AIRBORNE GERMS: NOTHING TO SNIFF AT!

Airborne diseases are also spread by “droplets.” However, unlike the big, wet droplets of the flu virus, airborne droplets are smaller and lighter and can travel much greater distances. Airborne droplets can evaporate and even travel on a speck of dust. Here are a few airborne germs you should be concerned about:

- Tuberculosis (TB)
- Measles
- Chickenpox
- Shingles
- Smallpox
- SARS

A CLOSER LOOK AT TUBERCULOSIS

The good news is that TB infection rates are declining. The bad news is that it remains one of the world’s deadliest diseases. The CDC reports:

- One third of the world’s population are infected with TB, and it is a leading killer of those with HIV.
- In 2011, nearly 9 million people around the world became sick with TB disease and around 1.4 million died from the disease.

Tuberculosis bacteria die very slowly, so people with TB must take medications for many months—even after they stop feeling sick.

People who have a positive TB skin test but who are not sick are said to have TB infection. These people show no signs of the disease and can’t spread it to others. (However, they may need to take anti-TB medications to prevent the disease.)

People who are actually sick with tuberculosis are said to have TB disease. They have active or infectious tuberculosis disease—and can spread it to other people.

You have an important role in preventing the spread of TB!

- Watch your and report any symptoms of TB in your clients. This may include fever, night sweats and a hacking cough that often produces mucus or blood.
- The best way to control the spread of TB is to make sure infected people take their TB medication. For some, this means actually watching them swallow their pills.
- Remind your clients to take their medications on time. If your supervisor asks you to actually watch a client swallow anti-TB pills, be sure you observe the client carefully and report any missed doses.
- Don’t forget to protect yourself when working with a client who has active TB. You must wear a special respirator mask at all times as long as there is any chance that the client is infectious!
DEALING WITH DRUG RESISTANCE

Over the last decade, almost every type of bacteria has become stronger and less responsive to antibiotic treatment when it is really needed.

It’s not uncommon to see drug resistant forms of Staph (MRSA), TB (MDR-TB or “multi-drug resistant TB) anthrax, gonorrhea, Group B Strep, Klebsiella pneumonia (also called CRKP), and even Typhoid fever, which is common among travelers.

HOW DID WE GET HERE?

In the early 1900’s, bacterial infections were a leading cause of death. Before the discovery of antibiotics, there was no way to fight these deadly “germs”.

The discovery of the penicillin changed everything! Right away, pharmaceutical companies and the medical community hopped onto the antibiotic bandwagon!

In addition to over-prescribing, many patients failed to complete the course of their antibiotics. When a person fails to take all the antibiotic as prescribed, the bacteria become injured - but not killed. The injured bacteria can then regroup, and reform as a stronger germ that can no longer be harmed by the antibiotic the person stopped taking.

Today, the World Health Organization (WHO) warns we are at risk of returning to pre-antibiotic era infection rates. In other words, we are approaching a time when we, once again, will have no defense against certain infections.

You can prevent the growth and spread of drug resistant bacteria!

- Wash your hands before and after any contact with your clients and their environments, even if you provided care while wearing gloves.
- Always encourage your clients to finish all antibiotics as prescribed by their doctors, and be sure to report right away if your client is on an antibiotic that doesn’t seem to be working.
- Never take personal items into an isolation room. This means you leave your notebook, pen, your phone, your personal stethoscope, and your sweater or jacket outside.
- Adhere strictly to transmission-based precaution guidelines for clients in isolation rooms. In addition, make sure visitors follow the guidelines as well. The rise of MRSA in community settings like schools and prisons can be directly linked to visitors and healthcare professionals who fail to follow the guidelines and carry the germs home.

FIVE KEY POINTS!

REVIEW WHAT YOU LEARNED!

1. The single most important thing you can do to help control the spread of infection—including drug resistant diseases—is to wash your hands!
2. When a client is known to have a highly contagious infection, you must use standard precautions in addition to appropriate transmission-based precautions.
3. The most common types of infections that occur while someone is under the care of medical professionals are UTIs, pneumonia and surgical site infections.
4. About 80% of all infectious diseases are spread by touch.
5. You can’t see 90% of all infectious germs, so use Standard Precautions all the time, in every situation, and with every client . . . even if they don’t seem sick.
FINAL THOUGHTS ON INFECTION CONTROL

• Always use **Standard Precautions** with every client, even if they don’t seem sick. It’s possible for you, a co-worker or a client to have an infectious disease without even knowing it.

• Wear **gloves** to protect your hands from becoming contaminated with blood or body fluids every time you:
  - Perform tasks that you think might involve blood or body fluids.
  - Touch equipment that may have been contaminated by blood or body fluids.
  - Have cuts, scratches or other breaks in the skin of your hands.

• Keep in mind that gloves primarily protect you—not the client. If you have dirty hands when you pick up a pair of gloves, you’ll contaminate them—and your client. It’s important to wash your hands before you put on gloves!

• Using gloves is not a substitute for washing your hands. Always wash your hands after client care—even if you wore gloves.

• **Never rub your eyes or nose during client care.** You don’t want to expose your mucous membranes to unwanted infections.

• Do not shake dirty linens. Instead, roll them up, hold them away from your body and place them in a hamper or bag for cleaning.

• Every healthcare worker should talk to their doctor about getting **vaccinated** against the flu, pneumonia, shingles, pertussis and hepatitis B.

• Help your clients understand how diseases are spread so that they can participate in proper infection control practices, too.

• The single most important thing you can do to help control the spread of infection—including drug resistant diseases—is to **wash your hands**!

• Use soap and water (not hand sanitizer) to wash your hands when they are visibly soiled and when you are caring for a patient with C. diff.

• It is appropriate to use alcohol-based hand rubs when your hands are not visibly soiled, but remember to cover all surfaces of hands, fingers and fingernails and, rub vigorously until hands are completely dry!