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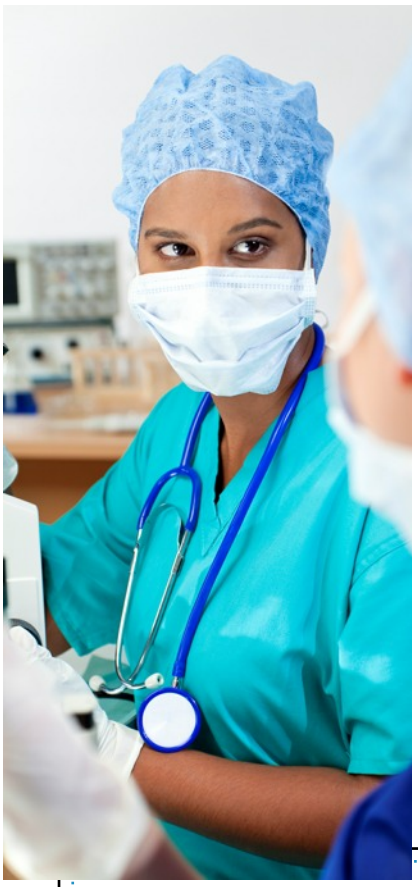


An Infection Control Module:

UNDERSTANDING DRUG RESISTANT BACTERIA

IN THE KNOW

Developing Top-Notch CNAs, One Inservice at a Time

An Infection Control Module:

UNDERSTANDING DRUG RESISTANT BACTERIA

We hope you enjoy this inservice, prepared by registered nurses especially for nursing assistants like you!

Instructions for the Learner

If you are studying the inservice on your own, please do the following:

- Read through **all** the material. You may find it useful to have a highlighting marker nearby as you read. Highlight any information that is new to you or that you feel is especially important.
- If you have questions about anything you read, please ask _____.
- Take the quiz. Think about each statement and pick the best answer.
- Check with your supervisor for the right answers. You need **8 correct** to pass!
- Print your name, write in the date, and then sign your name.
- Keep the inservice information for yourself and turn in the quiz page to _____ no later than _____. Show your Inservice Club Membership Card to _____ so that it can be initialed.
- Email In the Know at feedback@knowingmore.com with your comments and/or suggestions for improving this inservice.

THANK YOU!

After finishing this inservice, you will be able to:

Describe how bacteria become resistant to antibiotics.

❖

Name at least three drug-resistant bacteria.

❖

Describe at least six ways to help prevent drug-resistant bacteria from spreading.

❖

Explain the steps involved and list the personal protective equipment needed to care for a client on contact precautions.

❖

Demonstrate proper infection control procedures—including standard precautions and handwashing— in your daily work.

IN THE KNOW

Developing Top-Notch CNAs, One Inservice at a Time

Inside This Inservice:

An Infection Control Module:
Understanding Drug Resistant Bacteria

ARE BACTERIA SMARTER THAN PEOPLE?

In the early 1900's, bacterial infections were the main cause of death in America. Before the discovery of antibiotics , we had no way to fight these deadly "germs."

Then the discovery of the penicillin changed everything!

Encouraged by the success of penicillin, pharmaceutical companies and the medical community hopped onto the antibiotic bandwagon.

As more and more antibiotics were created, everyone hoped ***this was the miracle solution we needed to wipe out diseases*** like small pox, meningitis and typhoid. We would make bacteria extinct!

For a while, this plan seemed to be working. ***But, now it's clear that the bacteria are fighting back.***

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, once again, we will have ***no defense*** against certain infections.

The reason for this is ***the rise of Drug Resistant Bacteria.***

- ***Drug resistant bacteria are "germs" that have learned how to stop even our most powerful antibiotics from working against them.***

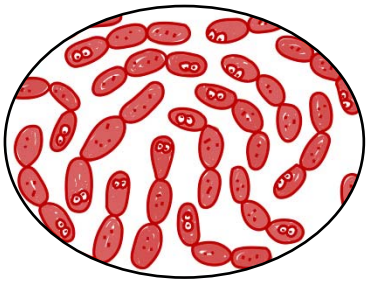
Drug-resistant bacteria are *not* new. The man who discovered penicillin, Sir Alexander Fleming, warned of the dangers of drug resistance in 1929.

But, scientists had faith that they could develop newer and more powerful antibiotics, so they ignored the warnings. ***Now, scientists are beginning to wonder just who is smarter . . . people or bacteria?***

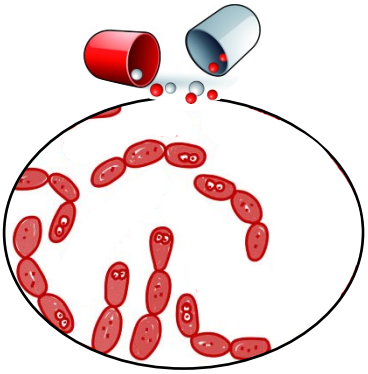
By learning more about drug-resistant bacteria, you'll understand the importance of proper infection control procedures. And, you'll be able to help protect yourself and your clients from dangerous infectious diseases.

HOW DO BACTERIA BECOME RESISTANT?

ORIGINAL INFECTION

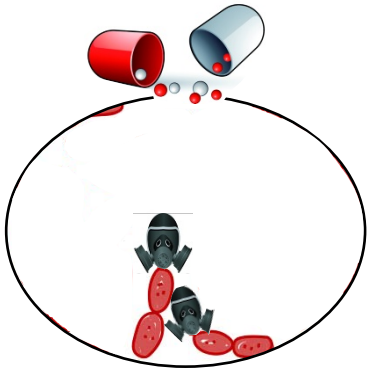


AFTER 1st DOSE OF ANTIBIOTIC



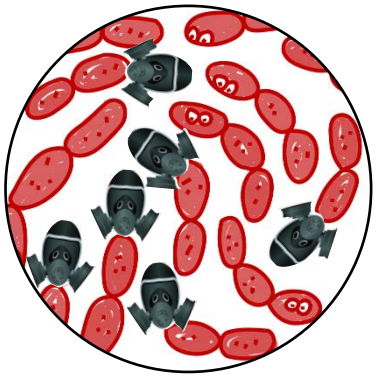
Some bacteria are killed—but not all!

AFTER 2nd DOSE OF ANTIBIOTIC



The bacteria that are left get stronger and multiply!

A SMARTER, RESISTANT BACTERIA IS FORMED



WHAT IS REALLY HAPPENING?

Have you heard the expressions "survival of the fittest" or "the strong will survive"? Well, both statements are true about bacteria. Bacteria know how to survive—even when they are attacked by strong antibiotics. Here's what is really happening:

- Antibiotics kill just enough bacteria to control an infection. Unfortunately, the *weak* germs get wiped out first.
- Since no antibiotic can destroy <u>every</u> germ, there are always a few that survive. And, only the *strongest* germs can survive!

There are a number of ways these "stronger" bacteria can become resistant to an antibiotic:

1. Some learn how to produce an enzyme that stops the drug from working.
2. Others "mutate", or change their outside structure which allows them to *hide* from the antibiotic.
3. And, some can change on the inside, finding a new way to produce their harmful toxins.

Unfortunately, that's not the end of the story.

- Bacteria that have become drug-resistant can <u>share</u> this information with other bacteria—teaching them how to fight the drugs, too. This means that germs can learn how to fight an antibiotic <u>before</u> even being exposed to it!

But, wait . . . there's more.

- Bacteria can figure out how to fight several different antibiotics by being exposed to only one. This means that a germ can become resistant to every antibiotic we have—by being exposed to only a few!

WHAT'S NEW?

Grab your favorite highlighter! As you read through this inservice, **<u>highlight five things</u>** you learn that you didn't know before. Share this new information with your supervisor and co-workers!

INTERESTING FACTS ABOUT BACTERIA

- One single bacterium can multiply to 250,000 bacteria in just a few hours.
- There are no male or female bacteria. They reproduce by simply dividing in two.
- There are over 10 million bacteria on every square inch of a person's armpit.

- Between our toes, we probably have tens of millions of bacteria—even right after a bath!
- Each of us has about a trillion bacteria on our skin. *(That's 1,000,000,000,000,000 bacteria.)*
- There are about 10 billion bacteria living in your teeth, mouth and gums.

- There are more bacteria in <u>one</u> person's gut than *the total number of people who have ever lived*!
- Unborn babies are bacteria-free. But, by the time they are one day old, babies are covered by a thin film of bacteria.

- Scientists have identified about 4000 different types of bacteria—and there are probably millions of others waiting to be identified.
- Of the millions of different bacteria, scientists know of only 100 that are harmful to humans. These "harmful" bacteria are not trying to destroy humans. They are just looking for a nice place to live and grow!
- Most of the bacteria that live on and around us are <u>helpful</u>. They fight off the "bad" bacteria, eat up waste we don't need, and help produce the air we breathe. In fact, <u>we couldn't live on this earth without them</u>!
- Some bacteria only live in certain parts of the world. We all get used to the germs that live in our own area, but *unfamiliar* germs are more dangerous to us. This is why many people get sick when they travel to a foreign country—they meet up with germs that their bodies have never had to deal with before.

WHO LOVES COCKROACHES?

You just might . . . after you learn about the latest research in the battle against drug resistant bacteria!

Scientists in England have discovered certain chemicals inside the brains of cockroaches that do the same job as powerful antibiotics.

This gross but exciting discovery could lead to a new and effective treatment for drug resistant bacterial infections!

The study found that the tissues of the brain and nervous system of the insects were able to kill more than 90 percent of MRSA and E coli, *without* harming human cells.

"Antibiotic resistance is a problem that will always be with us. If we don't maintain our vigilance, it will come back and bite us."
~ Dr. Allison McGeer

THE HISTORY OF GERMS

B.C. In ancient times, people believed that disease was caused by demons or sorcerers.

400's By the year 450, people came to believe that "bad blood" caused disease.

600's During the sixth century, the bubonic plague killed 25% of the people in Northern Africa and Greece.

700's In 762, the plague killed over half of the people living in one Chinese province .

1600's In the 1600's, a man named Anton van Leeuwenhoek became the first person to see bacteria through a homemade microscope. (He picked his teeth and looked at this "crud" with his microscope!) However, people didn't make the connection between these tiny microbes and disease for another 200 years.

In 1624, there were about 7500 colonists living in Jamestown, Virginia—until typhoid killed all but 1100 of them.

1800's In the 1800's, two European scientists helped us understand that germs cause infectious diseases. Louis Pasteur's research led to a vaccine for rabies and a method for pasteurizing milk. Robert Koch identified the bacteria that causes anthrax. For his work, he won the Nobel Prize in 1905.

In 1825, cholera killed over two million people in Russia.

1900's Between the years 1880 and 1925, many deadly germs were identified, including typhoid, tuberculosis, tetanus and scarlet fever.

1920's In 1928, Alexander Fleming discovered penicillin. It killed harmful bacteria and became known as a miracle drug. It was widely prescribed by doctors everywhere.

1940's In 1947, the first penicillin resistant bacteria was observed.

1960's In 1961, MRSA was discovered.

TODAY ***Today, there is a growing list of infectious diseases caused by a variety of drug resistant bacteria. These diseases are among the most difficult challenges we face in healthcare today.***

DID YOU know?

THE LIST GROWS LONGER . . .

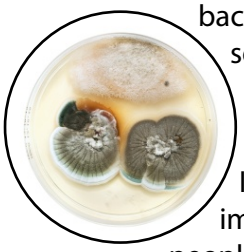
Here are just a few drug resistant bacteria that doctors battle today:

- **Anthrax:** Causes skin infections, abdominal problems and can even lead to death.
- **Gonorrhea:** A sexually transmitted disease (STD) that grows easily in the reproductive tract, the mouth, throat, eyes, and anus.
- **Group B Strep:** Causes illness in newborn babies, the elderly, and adults with diabetes or liver disease.
- **Klebsiella pneumonia:** Can cause pneumonia, bloodstream infections, wound infections, and meningitis. This bacteria recently developed resistance and is now called CRKP (carbapenem resistant klebsiella pneumonia).
- **MRSA:** Can cause serious or life-threatening "Staph" infections.
- **Streptococcus pneumonia:** A leading cause of serious illness among young children worldwide and is the most frequent cause of pneumonia, and blood, sinus, and ear infections.
- **"TB"** (tuberculosis): Can become resistant to the medicines used to treat it. Multidrug-resistant TB (MDR TB) is TB that is resistant to *at least* two of the best anti-TB drugs.
- **Typhoid fever:** A life-threatening illness common among travellers.
- **VRE** (Vancomycin-resistant Enterococci): Can cause UTI, wound or bloodstream infections.

A CLOSER LOOK AT ANTIBIOTICS

The rise of drug resistant bacteria should be no surprise. Researchers can trace a clear path in history to our present state of emergency. It all started with a man named Alexander Fleming.

AN IMPORTANT DISCOVERY: In 1928, Fleming accidentally discovered the antibiotic, penicillin. He was "growing" some staph bacteria in his laboratory when he noticed that one section of the bacteria seemed to be covered by mold. After some more research, Fleming found a way to use this mold to treat infections in humans.



It was great news for mankind and became an important tool for fighting infections and saving people that otherwise may have died.

But, Fleming also learned quickly that without proper dosing, the very bacteria the penicillin was designed to kill would outsmart the drug and grow stronger and smarter in a very short time.

A WARNING: In a New York Times interview in 1945, Fleming warned the world that the misuse and overuse of penicillin would lead to the creation of ***deadly antibiotic resistant bacteria.***

WE DIDN'T LISTEN: Fleming's warnings fell on deaf ears. Several decades passed while doctors prescribed antibiotics for ***everything***, even if the illness wasn't caused by a bacteria.

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.

IT GETS WORSE: Since penicillin only killed certain bacteria, researchers worked to discover other antibiotics, such as sulfa drugs, cephalosporin and streptomycin. Each new antibiotic was able to kill different kinds of bacteria.

There are now over 150 different antibiotics—***and some bacteria are resistant to all of them***! Developing new antibiotics buys us a little time, but it doesn't solve the problem of drug resistance.

SO, HERE WE ARE: Since many antibiotics are no longer effective, many bacteria have become difficult, or even impossible, to treat.

Now you know that using too many antibiotics, or using antibiotics the wrong way—such as not finishing a prescription—can lead to the creation of a drug resistant bacteria.

On page 9 you will learn that giving antibiotics to livestock and poultry also leads to drug resistant, disease causing organisms.

- ***So, what do you think about the widespread use of antibacterial soaps, lotions, laundry detergents . . . even plastic products like children's toys and shopping cart handles that promise to keep you germ free?***
- ***Look around your home. How many antibacterial products do you use at home?***
- ***Do you think these products are helping or hurting in the battle against drug resistant bacteria?***
- ***Discuss your thoughts with your supervisor and co-workers and find out what they think.***

SPOTLIGHT ON MRSA

MRSA stands for Methicillin Resistant Staphylococcus Aureus. Basically . . . it's a staph infection. Staph germs were the first bacteria to become resistant to penicillin.

- ***Staphylococcus Aureus****—or "staph," for short—is commonly found on the skin of healthy people. It is usually a harmless "passenger," but when it turns toxic, it can cause anything from a minor issue (like pimples or boils) to a serious illness (like pneumonia or toxic shock syndrome).*
- ***Methicillin*** *is an antibiotic, in the same family as penicillin. It has been used for years to treat staph infections, and is still successful in some cases. However, bacteria known as MRSA are staph germs that have learned how to fight back against methicillin. They are drug-resistant!*

- Elderly and/or very sick people are most at risk for MRSA. If they have an open wound *(such as a bedsore)* or a tube going into the body *(like a Foley catheter),* their risk is even higher.
- MRSA is also ***highly contagious*** and can be spread easily, with or without skin-to-skin contact. For these reasons, experts have classified it as a highly dangerous **SUPERBUG**!
- ***MRSA is almost always spread by the hands of healthcare workers after contact with an infected person or a surface like a table, bed rail or telephone that an infected person regularly uses.***

CARING FOR CLIENTS WITH MRSA:

People with active MRSA infections should be isolated with ***"Contact Precautions"***. This means that anyone who has contact with the client or the client's environment must wear a ***gown*** and ***gloves*** during that contact.

Here are the guidelines for contact precautions:

- Gather supplies you will need in advance.
- ***Wash your hands!***
- Put on clean ***gown*** and ***gloves*** before entering the environment.
- Remove and dispose of the gown and gloves just before leaving.
- ***Wash your hands again!***

IMAGINE THIS!

SCENARIO: Your co-worker, Zach goes into a room where the client has MRSA. This client is on ***contact precautions***. But, since Zach is just going in to pick up a meal tray, he doesn't stop to put on his gown and gloves.

He touches the tray the client has touched, now the MRSA is on ***Zach's hands.*** He takes the tray to the cart.

Zach doesn't wash his hands before going to the next room to pick up another tray. In this room, the client asks for help getting back into bed. He doesn't use gloves. Now the MRSA is on the ***second client***.

Zach finishes picking up trays, then goes to the computer to chart. Now the MRSA is on the ***computer***. He takes a call and leaves MRSA bacteria on the ***telephone.***

Later that day . . . you sit down to make a call on that telephone. Now the MRSA is on **YOU!**

- ***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!***

SPOTLIGHT ON VRE

VRE stands for **V**ancomycin **R**esistant **E**nterococci. Most VRE infections occur in hospitals.

- ***Enterococci*** *are bacteria that normally live in people's bowels. They can also live on the skin and in the environment for days—or even weeks.*
- ***Vancomycin*** *is an antibiotic that was discovered in 1956, but was rarely used. Why? Doctors believed it was the final defender against certain bacteria. They wanted to save it for special cases when no other antibiotic would do. But, now, enterococci bacteria have become resistant to the strongest drug we have!*

- The people who are most at risk for VRE include:
  - Intensive care patients.
  - People who have recently taken several other antibiotics.
  - People who are recovering from abdominal surgery.
- ***VRE is spread by unwashed hands or from gloves that are dirty from touching a client or a contaminated environment.***

CARING FOR CLIENTS WITH VRE:

Depending on your client's health, he or she may or may not be on contact precautions. If your client is on contact precautions, follow the guidelines on page 6. If not . . . follow ***standard precautions.***

Standard precautions are the "common sense" infection control guidelines you should follow as you perform your daily tasks with all clients, no matter what their diagnosis—even if they don't seem sick!

Following Standard precautions means you assume all blood, body fluids, secretions, open wounds, and mucous membranes contain an infection,
and use:

- **GLOVES** – To protect your hands.
- **GOWNS** – As needed, to protect your skin and clothing.
- **MASKS** – As needed, to protect you mouth and nose.

Apply what you've learned!

COMMIT THE ROUTINE TO MEMORY

Without looking back on the previous page, see if you can list five (5) steps involved in contact precautions.

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

Check your answers! How did you do? If you find you routinely forget one step, like washing your hands after removing gloves . . . then make an effort to commit the routine to memory!

SPOTLIGHT ON MDR-TB

In the early 1900's, tuberculosis was the number one cause of death in the United States. If someone came down with TB back then, he had a 50% chance of dying. Today, people with tuberculosis have a 98% chance of being cured.

The problem is that anti-tuberculosis drugs need to be taken every day for six months! Because so many people with TB stop taking their medication *before* the six months is up, we now have drug-resistant tuberculosis.

1. ***Multidrug-resistant TB (MDR-TB)*** is TB that is resistant to at least two of the best anti-TB drugs.
2. ***Extensively drug resistant TB (XDR-TB)*** is a rare type of MDR TB that is resistant to three of the best anti-TB drugs.

- Multidrug resistant TB is common in places where people are confined and overcrowded—such as prisons.
- MDR-TB and XDR-TB are also a big risk for people with HIV or AIDS. Since they have weakened immune systems, their bodies aren't able to fight the TB germs.
- The best way to control the spread of drug-resistant TB is to watch people take their anti-TB medication. This is called "Directly Observed Therapy" or DOT for short.

CARING FOR CLIENTS WITH ACTIVE T B or MDR-TB:

People with active TB infections should be ***isolated*** in a room that is equipped with special air handling and ventilation to keep the germ from leaving the room.

Anyone who has contact with the client or the client's environment should use both ***"Airborne and Contact Precautions"***. This means that you must follow all the guidelines on page 6 and wear a ***specially fitted mask*** during contact.

- If you are asked to watch your client swallow anti-TB pills, be sure you know what to watch for and what to document.
- Be sure to report if your client has symptoms of TB, including: fever, night sweats and a hacking cough—which often produces mucus and/or blood.

TB AND THE EMOTIONS

Clients with active TB have to be isolated. This means they spend all of their time alone in a room with little outside contact.

Clients on isolation precautions face issues of loneliness, boredom, and loss of a sense of time.

When nurses, doctors or visitors come into to room, their faces and clothing are completely covered leaving only the eyes visible. This can be very distressing.

It can be difficult to understand people because their speech is muffled by the mask and it is difficult to communicate with others when we can't see their entire face for non-verbal cues such as a smile or a frown.

- ***Think of some ways you might help clients on isolation precautions deal with boredom, loneliness, trouble hearing, and/or loss of a sense of time.***
- ***Share your ideas with your co-workers and supervisor and find out how they help clients on isolation precautions.***

SPOTLIGHT ON SALMONELLA AND E. COLI

In the 1950's, scientists discovered that if they gave antibiotics to animals, they could prevent infection and make the animals grow faster and bigger.

Since then, the livestock and poultry animals that we use for food have been fed antibiotics. *(For example, the average chicken lives for 45 days . . . and is given antibiotics for 42 of them.)*

- Of course, the bacteria that live in and on animals have also learned to resist antibiotics . . . and these bacteria can be passed on to the people who eat the meat or poultry.
- At the same time, the bacteria have learned how to survive inside a refrigerator and even the high temperatures used in cooking!

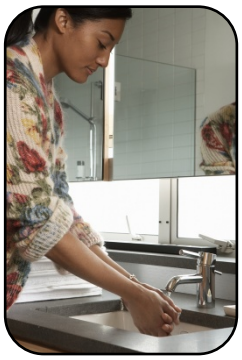
Two of the most harmful germs are called ***Salmonella*** and ***E. Coli:***

- Salmonella live in the ovaries of most chickens, so people are most at risk when they eat raw or undercooked eggs.
- The E. Coli germs live in the intestines of most animals (and humans). It shows up most often in raw milk and undercooked beef. ***Both germs can cause serious cases of food poisoning—and may even be fatal.***

The problem is getting worse. In 1963, there were only 723 cases of Salmonella poisoning in the United States. By 1986, there were nearly 19,000. Today, there are *millions* of cases every year. (And, 9,000 people die every year from infected food.)

TO AVOID FOOD POISONING:

- Always wash your hands before handling your client's food!
- If you prepare food in the home for your client, wash all surfaces used for food preparation before and after cooking.
- Cook all foods for the recommended time and to the recommended temperature.



- Wash ALL fruits and vegetables before preparing.
- Use two cutting boards, if possible—one for meats and one for fruits and vegetables.
- A mixture of one teaspoon of chlorine bleach in one quart of water is an effective and inexpensive bacteria buster!

Thinking outside the box!

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

- **THE PROBLEM:** You are caring for Mr. Frank, a 75 year old man who lives at home alone. One of your job duties is to prepare his meals.
- After a few weeks, he tells you he is not happy with the way you cook his foods. He tells you he prefers his meats rare and his eggs runny.
- **WHAT YOU KNOW:** You know that rare meat and undercooked eggs put Mr. Frank at risk of becoming sick from E. coli and salmonella.
- You explain this to him but he gets upset and threatens to call your supervisor to request a different Aide.
- **GET CREATIVE**: Think of **3 creative solutions** you might try to handle this situation. Remember, you want to preserve Mr. Frank's right to make his own choices while keeping him safe from harm.
- **TALK ABOUT IT:** Share your ideas with your co-workers and supervisor and find out how they would solve the problem.

THIS BATTLE NEEDS A SUPERHERO!

YOU CAN'T UN-RING A BELL . . . and you can't go back in time and stop drug resistant bacteria from forming.

BUT, YOU CAN BECOME PART OF THE SOLUTION! You can help educate clients and the public on the safe use of antibiotics . . . you can help strengthen and protect your most vulnerable clients . . . and **YOU** can prevent the spread of drug resistant bacteria.

HERE IS THE SUPERHERO PART: You have to make the decision to do all these things simply because it is ***the right thing to do***.

No one is going to follow after you and remind you to wash your hands, use standard precautions or follow isolation guidelines. It's up to you to follow the guidelines to protect your clients, your co-workers, the public and yourself!

SUPERHERO TIPS: PREVENTING THE SPREAD!

The single, most important thing you can do to prevent the spread of drug resistant bacteria is to **WASH YOUR HANDS** before and after ***any*** contact with your clients and their environment.

- Use soap and water to wash your hands. ***Scrub for at least 30 seconds.*** *(Or, follow your workplace policy.)*
- The key to washing your hands is *not* the kind of soap or the temperature of the water. It's the energy you put into scrubbing your hands. ***Friction*** gets rid of bacteria—not soap.

Sadly, studies have found that up to 75% of health care workers don't wash their hands between patients. ***Don't be one of them!*** Wash your hands according to your workplace policy.

Wash your hands before putting on and just after taking off gloves. Wearing gloves **DOES NOT** take the place of washing your hands!

Only use waterless hand rubs when hands are *not* visibly soiled.

- **To use waterless hand rubs:** 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 completely dry.***

Teach your clients to ask you if you have washed your hands. *(They should also ask everyone else who works with them.)* When they do ask you, be grateful for the reminder!

Never take personal items into an isolation room. This means you leave your notebook, pen, your phone, your mp3 player, your personal stethoscope, and your sweater or jacket outside.

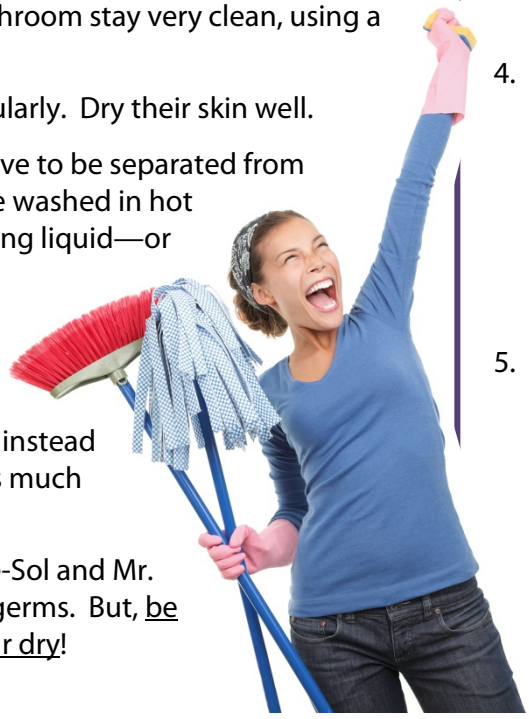
NEVER share personal hygiene items such as towels and razors (with or between clients). If you must share equipment (like stethoscopes or wheelchairs) between clients, follow your workplace policy for cleaning it.

Clean the environment. Commonly touched surfaces around the client such as doorknobs, toilets, tables, chairs, counter tops, cabinets and sinks need extra cleaning to avoid spreading bacteria.

Make sure wounds are covered with clean bandaging. Always wear gloves and properly dispose of any bandage materials used by your client. Report any loose, worn or seeping bandages to your supervisor.

MORE SUPERHERO TIPS!

- If your clients are taking antibiotics, encourage them to take them properly. This includes:
  - Taking each dose on time. (Some antibiotics are given only once a day, but most are two, three or even four times a day. Help your clients remember to take each dose.)
  - Following instructions for taking the medication. *(Some antibiotics work best on an empty stomach and some need to be taken with food or milk.)*
  - Finishing the medication as prescribed—even after they start feeling better.
  - Not sharing antibiotics with others or taking someone else's leftover pills.
- Keeping your clients' skin clean, dry and intact will go a long way toward preventing infections. (The skin is the body's first line of defense against germs.)
- Remember that some favorite areas for bacteria are places that are warm and moist—like the face, neck, armpits and genital area. Make sure your clients wash these areas with soap and water . . . and dry them carefully before getting dressed.
- When working with clients who have MRSA or VRE, follow these tips:
  - Make sure the toilet and bathroom stay very clean, using a household disinfectant.
  - Help the client to bathe regularly. Dry their skin well.
  - The client's dishes do not have to be separated from other people's. They may be washed in hot water and regular dishwashing liquid—or in a dishwasher.
  - Clothing and bedding needs to be machine washed often and thoroughly. Machine drying instead of hanging (to air-dry) works much better at killing bacteria.
  - Cleansers such as Lysol, Pine-Sol and Mr. Clean all kill MRSA and VRE germs. But, <u>be sure to let the disinfectant air dry</u>!



5 KEY points

Key Points to Remember

1. Drug resistant bacteria are "germs" that have learned how to stop even our most powerful antibiotics from working against them.
2. Today, there is a growing list of infectious diseases caused by a variety of drug resistant bacteria. These diseases are among the most difficult challenges we face in healthcare, today.
3. There are now over 150 different antibiotics—and some bacteria are resistant to all of them!
4. Standard precautions are the "common sense" infection control guidelines you should follow as you perform your daily tasks with all clients, no matter what their diagnosis—even if they don't seem sick!
5. The single, most important thing you can do to prevent the spread of drug resistant bacteria is to **WASH YOUR HANDS** before and after any contact with your clients and their environment.

FINAL SUPERHERO TIPS

- Remember that older people "catch" infections more easily than younger people. (They tend to get sicker, too.) Encourage your elderly clients to prevent infections by getting vaccines for flu and pneumonia.
- Help your clients keep strong immune systems by encouraging them to eat nutritious foods. The following foods provide the immune system with important vitamins:
  - Carrots—or any yellow-orange vegetables. (Vitamin A)
  - Leafy greens. (Folate)
  - Kidney beans, bananas, meat and whole grain breads. (Vitamin B6)
  - Citrus fruits and juices. (Vitamin C)
  - Sunflower seeds and wheat germ. (Vitamin E)
  - Dark meat turkey, spinach. (Iron)
  - Beef, seafood and pumpkin seeds. (Zinc)
- Regular exercise and a positive attitude also help keep the immune system strong. Encourage your clients to move their bodies and to keep a smile on their faces!
- If you cook meat for your clients, be sure to cook it until the juices run clear—not pink!
- If you use a knife to cut raw meat, don't cut anything else with it until you have washed the knife with soap and *hot* water.
- If a client has diarrhea, be extra careful with washing your hands before and after client care. Also, help the client wash his or her hands after each bowel movement.
- Remember eating raw cookie dough as a kid? Don't allow any client to eat raw cookie dough—or any other product that contains raw eggs. They could become very sick.
- Help your clients wash their hands before every meal.

TAKE IT A STEP FURTHER!

Learn more about drug resistant bacteria!

Check out the **CDC's Website at:**
www.cdc.gov/drugresistance/index.html

WHAT I KNOW NOW!

Now that you've read this inservice on drug resistant bacteria, take a moment to jot down a couple of things you learned that you didn't know before.

EMPLOYEE NAME
(Please print):

_____

DATE: _____

- ***I understand the information presented in this inservice.***
- ***I have completed this inservice and answered at least eight of the test questions correctly.***

EMPLOYEE SIGNATURE:

_____

SUPERVISOR SIGNATURE:

_____

Inservice Credit:	
☐ Self Study	1 hour
☐ Group Study	1 hour

File completed test in employee's personnel file.

IN THE KNOW

Developing Top-Notch CNAs, One Inservice at a Time

An Infection Control Module:

Understanding Drug Resistant Bacteria

Are you "In the Know" about drug resistant bacteria? <u>Circle the best choice.</u>
<u>Then check your answers with your supervisor!</u>

1. Antibiotics generally kill:

A. All germs.
B. The weakest germs first.
C. The smartest germs first.
D. Drug resistant bacteria.

2. MRSA and VRE are:

A. Antibiotics.
B. Viruses.
C. Drug resistant bacteria.
D. Airborne infections.

3. Drug resistant bacteria have developed because:

A. Farmers give antibiotics to the animals we eat.
B. Antibiotics were prescribed for the wrong reasons.
C. Some people fail to complete their entire course of antibiotics.
D. All of the above.

4. When caring for a client on contact precautions, you should:

A. Wear a mask.
B. Wear shoe covers.
C. Wear gloves only.
D. Wear gown and gloves.

5. True or False

Standard precautions should be used with all clients, even if they don't seem sick.

6. True or False

VRE is spread by coughing and sneezing.

7. True or False

Salmonella and E. coli can cause food poisoning.

8. True or False

The most important thing you can do to prevent the spread of drug resistant bacteria is to use antibacterial hand gels.

9. True or False

It's okay to stop taking an antibiotic as long as you are feeling better.

10. True or False

Bacteria prefer to live in warm, moist places.