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Infection Control for the Allied Health Professional

Leigha J. Jansen, EdD

8/1/18

Welcome!

- Leigha Jansen, EdD
- Clinical audiologist
- Training and education
- Adult continuing education

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Learning Outcomes

- Describe the chain of infection and modes of pathogen transmission
- Define and apply the concepts of clean, disinfect, and sterilize in a healthcare setting.
- Practice proper hand hygiene
- Exercise infection control standard precautions in a healthcare setting.
- Summarize the requirements of an infection control plan in a healthcare setting.

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A typical day …

https://www.youtube.com/watch?v=M8AKTACyiB0

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Agenda

- Why Infection Control?
- Federal Mandates
- Transmission of Infection
- Standard Precautions
- Exposure Management and Follow-Up
- Case Scenarios

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- https://www.youtube.com/watch?v=-FfMCv8FUXI

(CDC, 2014)

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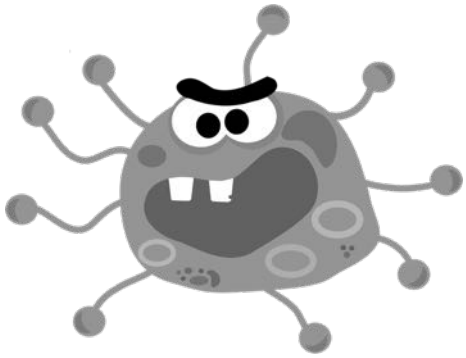
Healthcare Associated Infections



Result from germs entering the body during medical care.

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Yes …

At any one time in the United States, **1 out of 25** hospitalized patients are affected by a healthcare associated infection (HAI).

(HealthyPeople.gov, 2018)

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YOU can make a difference …

- Proper education and training of healthcare professionals increases compliance with and adoption of best practices.

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Occupational Exposure

"reasonably anticipated skin, eye, mucous membrane, or parenteral contact with blood or other potentially infectious materials that may result from the performance of an employee's duties"

-OSHA 1910.1030 Bloodborne Pathogens

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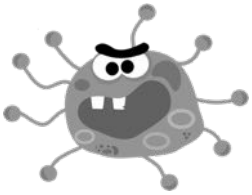
Infection Control

prevents or **stops** the spread of **infection** in healthcare settings.



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Shared Responsibility

- **Employer:** must provide a safe clinical environment for all employees and patients
- **Employee**: must comply with all federal, state and local laws, healthcare industry standards, and lawful employer mandates

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Knowledge Check

____ out of ____ hospitalized patients are affected by a healthcare associated infection.

a) 6 out of 100
b) 1 out of 25
c) 3 out of 1000
d) 1 out of 10

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Knowledge Check

____ out of ____ hospitalized patients are affected by a healthcare associated infection.

a) 6 out of 100
b) **1 out of 25**
c) 3 out of 1000
d) 1 out of 10

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Federal Mandates

- OSHA 1910.1030 – Written Plan
  - Exposure determination
  - Employee education and training
  - HBV Vaccinations
  - Post-exposure evaluation and follow-up
  - Waste disposal
  - Tags, labels, and bags
  - Housekeeping and laundry practices
  - Recordkeeping

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Communicable Diseases

- Modes of transmission
- Examples – definitions and transmission

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The Infection Chain

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Modes of Transmission

- Direct Transmission
  - Person-Person Contact
  - Droplet Spread
- Indirect Transmission
  - Airborne
  - Vehicleborne
  - Vectorborne

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Infectious Diseases

Disease	Description	Transmission
Influenza	Respiratory illness caused by a virus	Droplet
MRSA	An antibiotic resistant staph bacteria that typically presents as a skin infection	Direct or Indirect contact
Norovirus	Highly contagious virus that causes gastroenteritis	Direct or Indirect contact
Pneumonia	*Mycoplasma pneumoniae* is a type of bacteria that causes illness by damaging the lining of the respiratory system	Droplet

(CDC, 2017)

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Disease	Description	Transmission
Tuberculosis	a bacterium called *Mycobacterium tuberculosis* that usually attacks the lungs.	Airborne
Hepatitis B	A virus that can cause an infection of the liver.	Person-to-Person
C.Difficile	*Clostridium difficile* is a bacterium that causes inflammation of the colon, known as colitis.	Direct and indirect contact
HIV	Human immunodeficiency virus the immune system by destroying cells that fight disease and infection	Person-to-Person
Ebola	A rare and deadly virus marked by fever and severe internal bleeding	Person-to-Person

(CDC, 2017)

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Protect YOU and your patients

- Lines of defense
- Standard precautions

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Three Lines of Defense

PPE

Administrative and Work Practices

Engineering Controls

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Standard Precautions

Perform hand hygiene	Use personal protective equipment (PPE)	Follow respiratory/cough etiquette
Ensure proper patient placement	Properly handle, clean and disinfect patient care equipment and environment	Handle textiles and laundry carefully
Follow safe infection principles	Proper handing of needles and other sharps	

(CDC, 2017)

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Clean Hands Count

- Healthcare providers clean their hands **less than half** the times thy should
- Healthcare providers might need to clean hands as many as **100 times** per 12 hour shift
- Know the patient zone
- Alcohol-based hand sanitizer
- Gloves are not enough!

(CDC, 2016)

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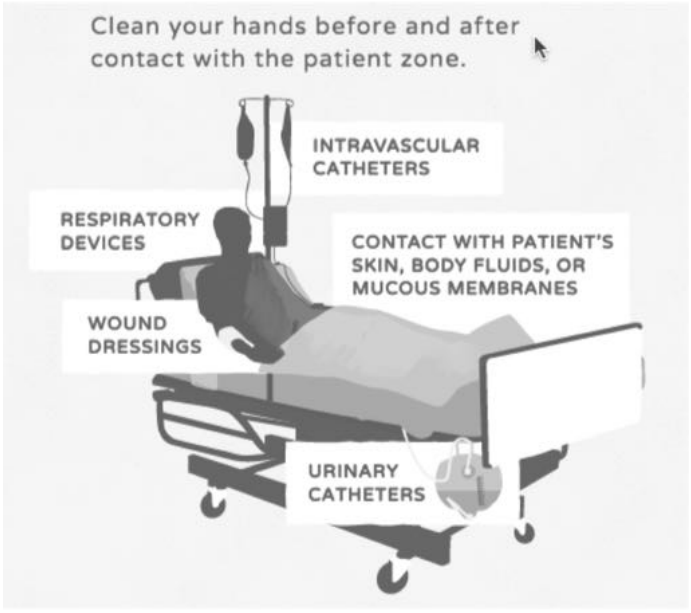

(CDC, 2016)

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Hand Hygiene

- https://www.cdc.gov/cdctv/healthyliving/hygiene/fight-germs-wash-hands.html

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(CDC, 2016)

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Knowledge Check

The most impactful line of defense for infection control is:

a) Hand Hygiene
b) Engineering Controls
c) PPE
d) Administrative and Work Practices

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Personal Protective Equipment

- May include:
  - Gown
  - Mask or respirator
  - Goggles or face shield
  - Gloves
- The type of PPE used varies based on the potential mode of transmission.
- Recommended sequence for putting on and safely removing PPE
- Hand hygiene

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(CDC, 2016)

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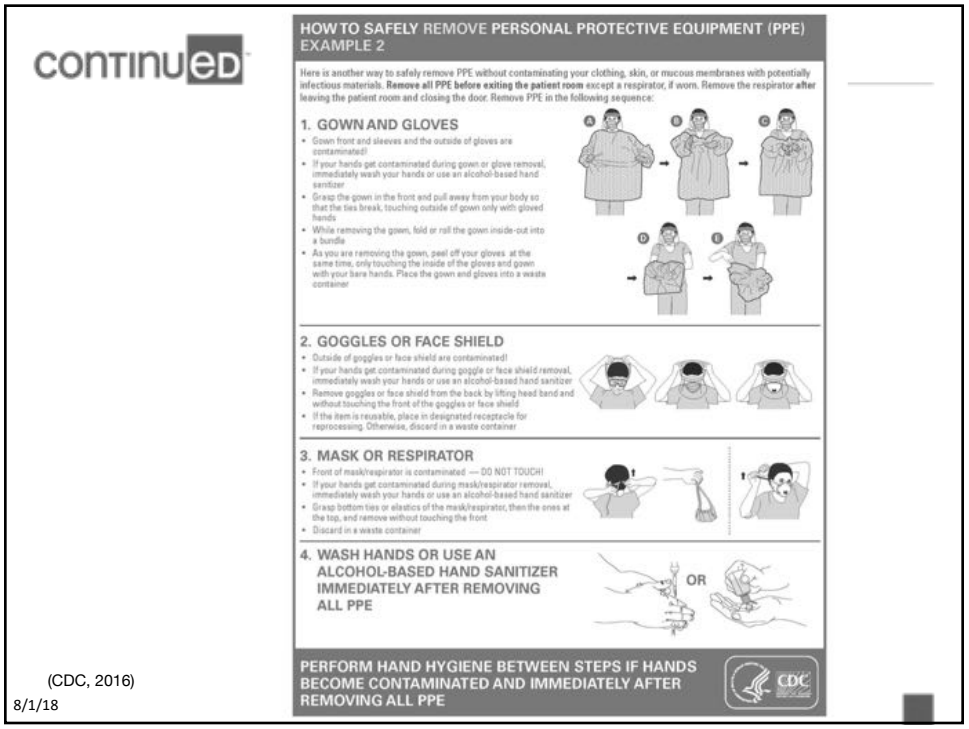

(CDC, 2016)

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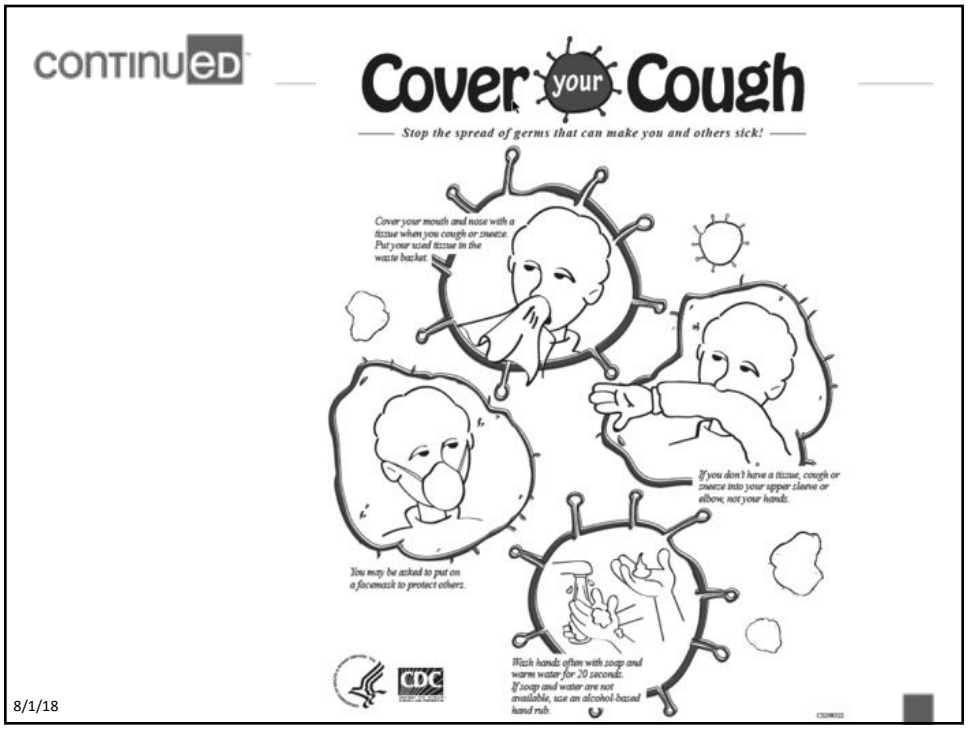

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Knowledge Check

Which of the following PPE statements is incorrect?

a) Glove use negates the need for hand hygiene.

b) The use of a mask or respirator minimizes the contact risk with an airborne pathogen.

c) The use of a gown minimizes the contact risk with bloodborne pathogens (i.e. bodily fluids)

d) Hand hygiene is required following removal of PPE.

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Patient Placement

- Place patients who pose a risk of transmission to others in a single-patient room when available.
- Consider:
  - Transmission route(s) of the infection
  - Risk factors for transmission
  - Risk factors for resulting HAIs in other patients
  - Availability of single-patient rooms
  - Patient options for room sharing

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Care of the Environment

- Clean
  - Contaminated surfaces that increase potential for transmission of bacteria and viruses
- Disinfect
  - Non-Critical items: contact with intact skin
  - Semi-Critical items: contact non-intact skin or mucous membranes
- Sterilize
  - Critical items: enter tissue or the vascular system

(County of Los Angeles Public Health, 2016)

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Care of the Environment

Clean
- High touch surfaces
- Furniture, counters, keyboards
- Floors

Disinfect
- Clean first!
- Scopes, respiratory therapy equipment
- BP cuffs, stethoscopes, durable equipment

Sterilize
- Clean first!
- Surgical instruments
- Surgical accessories

(County of Los Angeles Public Health, 2016)

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Knowledge Check

Which of the following statements is true?

a) Cleaning is the general removal of foreign debris and is appropriate for reusable medical equipment.

b) High touch surfaces must always be sterilized.

c) Disinfection removes most organisms present on surfaces that can cause infection or disease, while sterilization kills all microorganisms present on a surface.

d) Disinfection is suitable for devices that contact human tissue.

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Laundry and Textiles

- 5 billion pounds of laundry in healthcare settings annually in the US
- Can be contaminated with microorganisms
  - Negligible number of contamination reports linked to textiles
- Hygiene, common sense and consensus

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Safe Injection Practices

- Use sterile, single use disposable needle and syringe for each injection
- Use single dose vials
- Prevent contamination of injection equipment and medication

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SHARPS

- 1,000 healthcare workers are injured with a needle or sharp device daily (CDC, 2015)
- Increased risk of transmission of hepatitis B and C, HIV, and other bloodborne pathogens
- Prompt disposal of contaminated sharps in readily accessible containers
  - Puncture resistant, leakproof (bottom and sides) and closeable
  - Color coded and labeled

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Exposure Management

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Hepatitis B Vaccine

- Hepatitis B:
  - Bloodborne virus
  - Liver infection that can become a chronic condition
- Vaccine must be offered free of charge to all workers with occupational exposure risk
- Employer must also provide vaccine information
  - Efficacy, safety, administration method, benefits

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VACCINE INFORMATION STATEMENT

Hepatitis B Vaccine

What You Need to Know

Many Vaccine Information Statements are available in Spanish and other languages. See www.immunize.org/vis

Hojas de información sobre vacunas están disponibles en español y en muchos otros idiomas. Visite www.immunize.org/vis

1 Why get vaccinated?

Hepatitis B is a serious disease that affects the liver. It is caused by the hepatitis B virus. Hepatitis B can cause mild illness lasting a few weeks, or it can lead to a serious, lifelong illness.

Hepatitis B virus infection can be either acute or chronic.

Acute hepatitis B virus infection is a short-term illness that occurs within the first 6 months after someone is exposed to the hepatitis B virus. This can lead to:

- fever, fatigue, loss of appetite, nausea, and/or vomiting
- jaundice (yellow skin or eyes, dark urine, clay-colored bowel movements)
- pain in muscles, joints, and stomach

Chronic hepatitis B virus infection is a long-term illness that occurs when the hepatitis B virus remains in a person's body. Most people who go on to develop chronic hepatitis B do not have symptoms, but it is still very serious and can lead to:

- liver damage (cirrhosis)
- liver cancer
- death

Chronically-infected people can spread hepatitis B virus to others, even if they do not feel or look sick themselves. Up to 1.4 million people in the United States may have chronic hepatitis B infection. About 90% of infants who get hepatitis B become chronically infected and about 1 out of 4 of them dies.

Hepatitis B is spread when blood, semen, or other body

Hepatitis B vaccine can prevent hepatitis B and its consequences, including liver cancer and cirrhosis.

2 Hepatitis B vaccine

Hepatitis B vaccine is made from parts of the hepatitis B virus. It cannot cause hepatitis B infection. The vaccine is usually given as 3 or 4 shots over a 6-month period.

Infants should get their first dose of hepatitis B vaccine at birth and will usually complete the series at 6 months of age.

All **children and adolescents** younger than 19 years of age who have not yet gotten the vaccine should also be vaccinated.

Hepatitis B vaccine is recommended for unvaccinated **adults** who are at risk for hepatitis B virus infection, including:

- People whose sex partners have hepatitis B
- Sexually active persons who are not in a long-term monogamous relationship
- Persons seeking evaluation or treatment for a sexually transmitted disease
- Men who have sexual contact with other men
- People who share needles, syringes, or other drug-injection equipment
- People who have household contact with someone infected with the hepatitis B virus
- Health care and public safety workers at risk for exposure to blood or body fluids
- Residents and staff of facilities for developmentally

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Managing Exposure

- In the event of an emergency involving bloodborne pathogens, the employer must have documented procedures regarding:
  - Appropriate actions
  - Persons to contact
- This plan must be readily available and reviewed annually.

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Post-Exposure Evaluation and Follow-up

- Report the exposure
  - Document the route and circumstances of the exposure
  - Source individual
- Source's and employee's blood shall be tested as soon as feasible and with consent
- Post-exposure medical care, counseling, prophylaxis (If necessary), and evaluation of reported illnesses must be provided to the employee

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Recordkeeping

- Training records
- Medical records for employees with occupational exposure
- OSHA recordkeeping (exposure incident report)
- Sharps injury log
- Hepatitis B vaccination declination

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Knowledge Check

Infection control is:

a) the responsibility of a designated committee
b) a shared responsibility between the employer and the employees
c) dependent on the interpretation of OSHA 1910.1030
d) a collection of unique processes and rules for individual organizations

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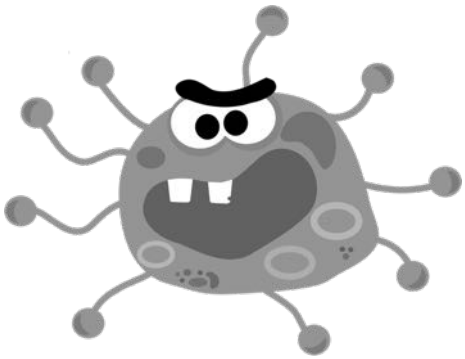
Infection Control Scenarios



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What would YOU do?

- You are seeing an inpatient who just had surgery. The surgeon is making rounds. The physician puts on gloves to inspect the patient. When she is finished, she does not remove the gloves but immediately records her orders on the computer terminal in the room.

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What would YOU do?

A. Ignore the physician and continue with the patient.
B. Request the physician follow proper hand hygiene to reduce the possible spread of infectious agents.
C. Report the physician to the medical director immediately.
D. Dust off the keyboard with a dry paper towel.

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What would YOU do?

- You notice a pediatric patient enters your waiting room with a continuous cough and runny nose. The parent reports the child has also been running a fever of 101 degrees for the last 2-3 days. The child picks up and plays with the plastic blocks in the corner of the room.

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What would YOU do?

A. Kindly offer the parent a face mask for the child.
B. Ask the parent to please leave the facility with the obviously ill child.
C. Require the parent place a face mask on the child and disinfect the toys and books.
D. Nothing. The world is full of germs.

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What would YOU do?

- You are working with a client in an outpatient therapy setting. As you are working with the client, you notice the patient has an small open sore on his forearm that is bleeding and there are traces of blood on both the table and chair. The well-groomed, reportedly healthy patient notices the blood and states, “Oh, there’s nothing wrong with a little blood.”

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What would YOU do?

A. Provide the patient with a bandage to cover the wound, immediately clean and then disinfect both the table and chair, and properly wash your hands.
B. Nothing.
C. Insist the patient consent to a full blood test to evaluate the severity of the situation.
D. Wipe off the table and chair with a paper towel.

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What would YOU do?

- You work in long term care facility and your colleague shares the following: “I was up all night vomiting and diarrhea; I feel simply awful. But, I hate using my PTO for sick time.”

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What would YOU do?

A. Nothing. It's not your job to police the spreading of germs in a facility with adults vulnerable to opportunistic infections.
B. Educate your colleague on the dangers of spreading opportunistic infections and strongly encourage her to immediately consult with her supervisor.
C. Follow proper hand washing hygiene and keep quiet.
D. Tell your colleague to wash her hands.

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What would YOU do?

- You are providing therapy to an inpatient and you notice a tray of equipment was left on the bedside table by the lab technician who was leaving the room as you arrived. Among the items on the tray is used syringe. You also notice there is a Sharps container on the wall in the patient room.

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What would YOU do?

A. Nothing.
B. Assume someone will return to clean up the tray.
C. Throw the whole tray in the trash can.
D. Properly dispose of the syringe in the Sharps container and report the incident.

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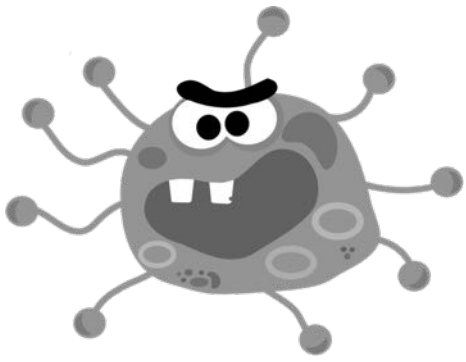
Remember …



- Infection control is EVERYONE's responsibility.

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Questions?

- Leigha.Jansen@continued.com

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References and Resources

- Centers for Disease Control:
  - https://www.cdc.gov/infectioncontrol/
- Cleaning, Disinfection and Sterilization:
  - http://publichealth.lacounty.gov/acd/docs/IPCourseDayTwo/Cleaning.pdf
- OSHA 1910.1030
  - https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=standards&p_id=10051
- OSHA model plans and programs for BBP:
  - https://www.osha.gov/Publications/osha3186.pdf
- Viral Hepatitis:
  - https://www.cdc.gov/hepatitis/index.htm

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