



# Diseases & Organisms in Health Care Settings

Modern health care utilizes many types of invasive devices and procedures to treat patients and to help them recover. Infections can be associated with the devices used in medical procedures, such as catheters or ventilators.

These health care-associated infections (HAIs) include central line-associated bloodstream infections, catheter-associated urinary tract infections and ventilator-associated pneumonia. Infections may also occur at surgery sites, known as surgical site infections. The Centers for Disease Control and Prevention (CDC) works to monitor and prevent these infections, because they are an important threat to patient safety.

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The following are some of the more common infectious diseases and a brief overview of their characteristics. Find additional information at <http://www.cdc.gov/hai/organisms/organisms.html>

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### Acinetobacter

- Bacteria commonly found in soil and water
- Outbreaks typically occur in intensive care units and health care settings housing very ill patients.
- Acinetobacter baumannii accounts for about 80% of reported infections.
- Acinetobacter infections rarely occur outside of health care settings.

### Burkholderia Cepacia

- Bacteria often resistant to common antibiotics.
- Poses little medical risk to healthy people.
- Known cause of infections in hospitalized patients.
- People with certain health conditions, like weakened immune systems or chronic lung diseases (particularly cystic fibrosis), may be more susceptible to infections.

### Clostridium Difficile

- Bacterium that causes an inflammation of the colon called colitis.
- Most common symptoms of infection are diarrhea and fever.
- Overuse of antibiotics is most important risk for getting Clostridium difficile infection.

### Clostridium Sordellii

- Rare bacterium that causes pneumonia, endocarditis, arthritis, peritonitis and myonecrosis.
- Bacteremia (when bacteria is present in the bloodstream) and sepsis (when bacteremia or another infection triggers a serious body-wide response) occur rarely.
- Severe toxic shock syndrome among previously healthy persons has been described in a small number of cases, most often associated with gynecologic infections in women and infection of the umbilical stump in newborns.

### Enterobacteriaceae

- Family of germs which are difficult to treat because they have high levels of resistance to antibiotics.
- Examples include Klebsiella species and Escherichia coli (E. coli).
- Most commonly occur among patients who are receiving treatment for other conditions, patients whose care requires devices like ventilators (breathing machines), urinary (bladder) catheters, or intravenous (vein) catheters or patients who are taking long courses of certain antibiotics are most at risk for these type of infections.



## Gram-Negative Bacteria

- Causes infections including pneumonia, bloodstream infections, wound or surgical site infections, and meningitis in health care settings.
- Resistant to multiple drugs and are increasingly resistant to most available antibiotics.
- Infections include those caused by *Klebsiella*, *Acinetobacter*, *Pseudomonas aeruginosa* and *E. coli*, as well as many other less common bacteria.

## Hepatitis

- Means inflammation of the liver.
- Refers to a group of viral infections that affect the liver.
- Most common types are Hepatitis A, Hepatitis B and Hepatitis C.
- Delivery of health care has potential to transmit hepatitis to both health care workers and patients.
- Outbreaks have occurred in outpatient settings, hemodialysis units, long-term care facilities and hospitals, primarily as a result of unsafe injection practices; reuse of needles, fingerstick devices, and syringes; and other lapses in infection control.

## Human Immunodeficiency Virus (HIV/AIDS)

- HIV is the virus that can lead to acquired immune deficiency syndrome (AIDS).
- HIV destroys blood cells called CD4+ T cells, which are crucial to helping the body fight disease. This results in a weakened immune system, making persons with HIV or AIDS at risk for many different types of infections.
- Transmission of HIV to patients while in health care settings is rare. Most exposures do not result in infection.

## Influenza

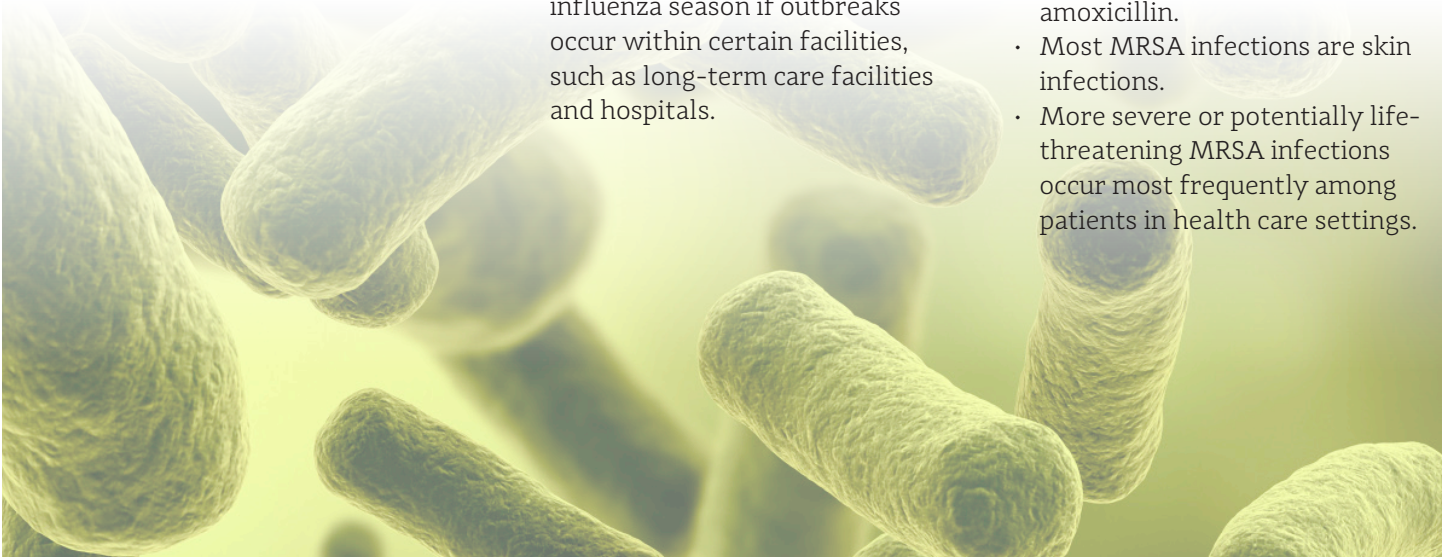
- Community-based infection that is transmitted in households and community settings.
- 5% to 20% of U.S. residents acquire an influenza virus infection each year: many will seek medical care in ambulatory health care settings.
- More than 200,000 persons, on average, are hospitalized each year for influenza-related complications.
- Influenza prevention measures should be implemented in all health care settings. Supplemental measures may need to be implemented during influenza season if outbreaks occur within certain facilities, such as long-term care facilities and hospitals.

## Klebsiella

- Type of Gram-negative bacteria that can cause health care-associated infections including pneumonia, bloodstream infections, wound or surgical site infections and meningitis.
- Increasingly, the bacteria have developed antimicrobial resistance, most recently to the class of antibiotics known as carbapenems.
- *Klebsiella* bacteria are normally found in the human intestines and human feces.
- In health care settings, *Klebsiella* infections commonly occur among sick patients who are receiving treatment for other conditions.
- Patients who have devices like ventilators or intravenous catheters and patients who are taking long courses of certain antibiotics are most at risk for infection.

## Methicillin-Resistant Staphylococcus Aureus (MRSA)

- Type of staph bacteria that is resistant to certain antibiotics called beta-lactams, which include methicillin and other more common antibiotics, such as oxacillin, penicillin and amoxicillin.
- Most MRSA infections are skin infections.
- More severe or potentially life-threatening MRSA infections occur most frequently among patients in health care settings.



## Mycobacterium Abscessus

- Bacterium distantly related to ones that cause tuberculosis and leprosy.
- Found in water, soil and dust.
- Known to contaminate medications and products, including medical devices.
- Infections due to this bacterium are usually of the skin and soft tissues under the skin.
- Can cause lung infections in persons with various chronic lung diseases.

## Norovirus

- Group of viruses that cause gastroenteritis, which is an inflammation of the lining of the stomach and intestines, causing an acute onset of severe vomiting and diarrhea.
- Illness is usually brief in people who are otherwise healthy.
- Young children, the elderly and people with other medical illnesses are most at risk for more severe or prolonged infection.
- Like all viral infections, these are not affected by treatment with antibiotics.

## Pseudomonas Aeruginosa

- Caused by strains of bacteria found widely in the environment.
- Serious infections usually occur in people in the hospital and/or with weakened immune systems.

## Staphylococcus Aureus

- Bacterium commonly found on the skin and in the nose of about 30% of individuals.
- Most of the time, staph does not cause any harm.
- Infections can look like pimples, boils or other skin conditions and most are able to be treated.

## Tuberculosis (TB)

- Caused by a bacterium called Mycobacterium tuberculosis.
- Transmission most likely to occur from patients who have unrecognized pulmonary tuberculosis or tuberculosis related to their larynx, are not on effective anti-tuberculosis therapy and have not been placed in tuberculosis isolation.
- Transmission in health care settings has been associated with close contact with persons who have infectious tuberculosis, particularly during the performance of cough-inducing procedures, such as bronchoscopy and sputum induction.
- Can be spread through air and travel long distances.
- Cases of multidrug-resistant tuberculosis have been recognized and are more difficult to treat.

## Vancomycin-Intermediate Staphylococcus Aureus and Vancomycin-Resistant Staphylococcus Aureus

- Specific staph bacteria that have developed resistance to the antimicrobial agent vancomycin.
- Persons who develop this infection may have underlying health conditions, devices going into their bodies, previous infections with methicillin-resistant Staphylococcus aureus and recent exposure to vancomycin and other antimicrobial agents.

## Vancomycin-Resistant Enterococci (VRE)

- Specific types of antimicrobial-resistant bacteria that are resistant to vancomycin, the drug often used to treat infections caused by enterococci.
- Enterococci are bacteria normally present in the human intestines and in the female genital tract and are often found in the environment.
- Most infections occur in hospitals.

United Heartland is committed to providing and directing our customers to helpful resources regarding exposures to infectious diseases and bloodborne pathogens. For questions or more information, contact us at 800-258-2667.

