



Centra Wellness
NETWORK

BLOODBORNE PATHOGENS & INFECTION CONTROL



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NETWORK

DECREASE FEAR & INFECTIONS THROUGH SAFE INFECTION CONTROL

ONE DAY ON A ROAD IN THE ENGLISH COUNTRYSIDE, A CLERGYMAN HAPPENED TO MEET PLAGUE. "WHERE ARE YOU BOUND?" ASKED THE CLERGYMAN. "TO LONDON," RESPONDED PLAGUE, "TO KILL A THOUSAND." THEY CHATTED FOR A FEW MOMENTS AND WENT THEIR SEPARATE WAYS. WHEN THEY CHANCED TO MEET AGAIN SOME WEEKS LATER, THE CLERGYMAN INQUIRED, "I THOUGHT YOU WERE GOING TO KILL A THOUSAND. HOW IS IT THAT TWO THOUSAND DIED?" "AH, YES," REPLIED PLAGUE, "I KILLED ONLY A THOUSAND. FEAR KILLED THE REST."

LEARNING OBJECTIVES

When you finish this course you will be able to:

Define the three elements required to transmit disease.

Apply standard and transmission based precautions to prevent the transmission of disease.

Identify, label, and dispose of biohazardous waste.

Define protective measures to protect yourself and others from the spread of Hepatitis B, Hepatitis C, HIV , MRSA ,and Tuberculosis.

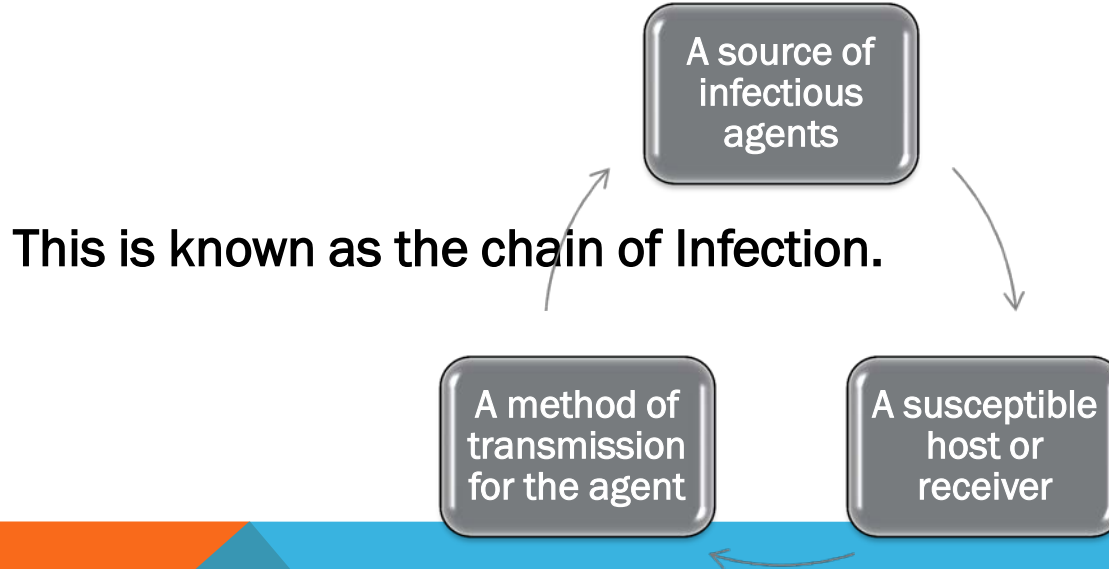
Define measures to take to prevent yourself from occupational exposures.

Describe what to do if an occupational exposure occurs



CHAIN OF INFECTION

Transmission of infectious agents within a healthcare setting requires three elements:



HOW DO THESE ELEMENTS WORK TOGETHER TO CREATE A HEALTHCARE ACQUIRED INFECTION (HAI)?

Sources of infectious agents

Susceptible hosts

Methods of transmission

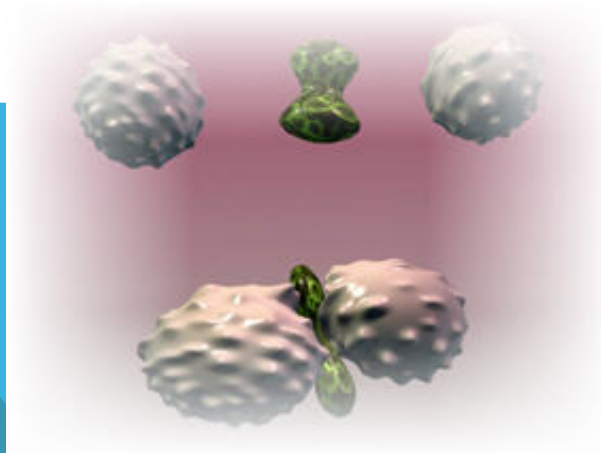


SOURCES OF INFECTIONS AGENTS

Infectious agents (germs) transmitted during healthcare are primarily from human beings but inanimate environmental sources also are implicated in transmission.

Human reservoirs (where germs reside) include patients, healthcare personnel, household members and other visitors.

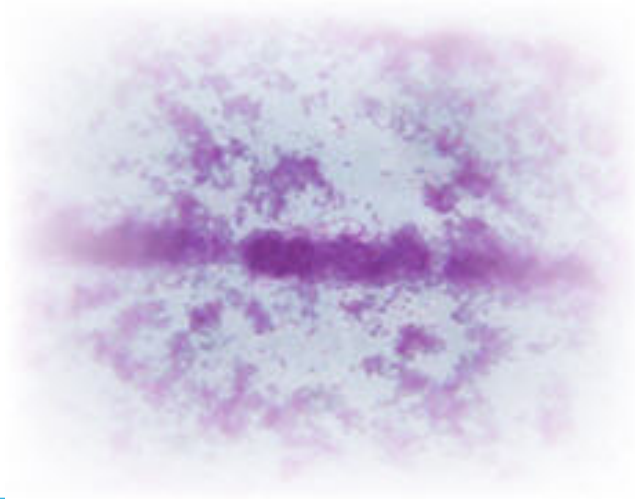
These individuals may have active infections, may be in the asymptomatic (having no symptoms) and/or may be in the incubation period of an infectious disease.



METHODS OF TRANSMISSION

Infections can be caused by:

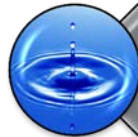
- Bacteria
- Viruses
- Fungi
- Parasites



METHODS OF TRANSMISSION

The methods of transmission vary by type of organism and some infectious agents may be transmitted by more than one route: some are transmitted primarily by direct or indirect contact.

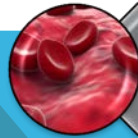
Methods of transmitting Germs



Droplet



Airborne routes



Bloodborne



Contact transmission

SUSCEPTIBLE HOSTS

Infection is the result of a complex interrelationship between a potential host and an infectious agent.

The host is the place where germs grow, usually a human being.

Germs grow in blood, sputum, infected wounds and other bodily fluids.



HAND HYGIENE

How Do We Break The Chain of Infection?
Through Hand Hygiene.



Hand hygiene is the single most important practice to reduce the transmission of infections in healthcare settings and is an essential element of Standard Precautions.

The term “hand hygiene” includes both hand washing with either plain or antiseptic- containing soap and water, and use of alcohol-based products (gels, rinses, foams) that do not require the use of water.

Use alcohol rub or wash before and after every contact
with a client.

FIVE STEPS TO PROPER HAND WASHING

- 1. Hands should be washed using soap and warm running water**
- 2. Hands should be rubbed vigorously during washing for at least 20 seconds with special attention paid to the backs of the hands, wrists, between the fingers and under the fingernails**
- 3. Hands should be rinsed well while leaving the water running**
- 4. With the water running, hands should be dried with a single-use towel**
- 5. Turn off the water using a paper towel, covering washed hands to prevent re-contamination.**



ALCOHOL WASH OR RUB

Use alcohol wash or rub before and after every contact with a client

- Before putting gloves on and after taking them off
- Before preparing or eating food
- Before preparing medication
- After using the toilet
- After sneezing or coughing into hands
- After contact with objects that might be contaminated
- After any accidental exposure to body fluids, mucous membranes or skin with cuts and sores
- After handling animal waste
- Before and after treating a cut or wound



THREE STEPS TO USING A ALCOHOL-BASED HAND RUB

When using an alcohol-based hand rub:

Apply product to the palm of one hand

Rub hands together

Rub the product over all surfaces of hands and fingers until hands are dry.



PRECAUTIONS TO PREVENT TRANSMISSION OF INFECTIOUS AGENTS

There are two tiers of precautions to prevent transmission of infectious agents:

Standard or Universal Precautions and Transmission-Based Precautions.

Standard or Universal Precautions should be used in the care of all clients in all healthcare settings regardless of the suspected or confirmed presence of an infectious agent. You cannot tell by looking at someone that they have an infection.

Implementation of *Standard or Universal Precautions* constitutes the primary strategy for the prevention of healthcare-associated transmission of infections among clients and healthcare personnel.



STANDARD OR UNIVERSAL PRECAUTIONS CONTINUED

Standard or Universal Precautions are designed to protect people from diseases carried by the blood and other bodily fluids. They are called standard or universal because they apply to *everyone*.

Standard or Universal Precautions include a group of infection prevention practices that apply to all clients, regardless of suspected or confirmed infection status, in any setting in which healthcare is delivered.

These include:

Hand hygiene.

The use of Personal Protective Equipment (PPE) including gloves, gown, mask, eye protection, or face shield.



RESPIRATORY HYGIENE/COUGH ETIQUETTE

The transmission of Severe Acute Respiratory syndrome (SARS) in emergency departments by patients and their family members during the widespread SARS outbreaks in 2003 highlighted the need for vigilance and prompt implementation of infection control measures at the first point of encounter within a healthcare setting.

This is called
Respiratory Hygiene/Cough Etiquette
and is a new component of Standard or
Universal Precautions.



RESPIRATORY HYGIENE/COUGH ETIQUETTE

CONTINUED

Respiratory Hygiene/Cough Etiquette Includes:

Cover the nose/mouth when coughing or sneezing.

Use tissues to contain respiratory secretions and dispose of them in the nearest waste receptacle after use.

Perform hand hygiene (e.g., hand washing with non-antimicrobial soap and water, alcohol-based hand rub, or antiseptic handwash) after having contact with respiratory secretions and contaminated objects/materials.

Healthcare facilities should ensure the availability of materials for adhering to Respiratory Hygiene/Cough Etiquette in waiting areas for patients and visitors by:

Providing tissues and no-touch receptacles for used tissue disposal.

Providing conveniently located dispensers of alcohol-based hand rub; where sinks are available, ensure that supplies for hand washing (i.e., soap, disposable towels) are consistently available.



APPLICATION

The application of Standard or Universal Precautions during patient care is determined by the nature of the health care worker and patient interaction and the extent of anticipated blood, body fluids, secretions or excretions.

Standard or Universal Precautions also protect clients by ensuring that healthcare personnel do not carry infectious agents to patients on their hands or via equipment used during patient care.



HOW CAN NEEDLESTICKS BE PREVENTED?

Many needle sticks and other cuts can be prevented by using safer techniques which include:

Not recapping needles by hand.

Disposing of used needles in appropriate sharps disposal containers.

Using medical devices with safety features designed to prevent injuries.

Using appropriate barriers when contact with blood is expected, including gloves, eye and face protection and gowns.



HOW TO PREVENT EXPOSURE TO BLOODBORNE PATHOGENS FROM NEEDLESTICKS

Healthcare workers are at risk for exposure to bloodborne pathogens including hepatitis B virus (HBV), hepatitis C virus (HCV), and human immunodeficiency virus (HIV).

Exposures occur through needle sticks or cuts from other sharp instruments contaminated with an infected patient's blood or through contact of the eye, nose, mouth, or skin with a patient's blood.



PPE CONTINUED

Mask and Eye Protection and Face Shield

Wear a mask and eye protection or a face shield to protect mucous membranes of the eyes, nose and mouth during procedures and patient-care activities that are likely to generate splashes or sprays of blood, body fluids, secretions and excretions.



PPE CONTINUED

Gown

Wear a gown (a clean, non-sterile gown is adequate) to protect skin and to prevent soiling of clothing during procedures and patient-care activities that are likely to generate splashes or sprays of blood, bodily fluids, secretions or excretions.

Select a gown that is appropriate for the activity and amount of fluid likely to be encountered. Remove a soiled gown as promptly as possible and wash hands to avoid transfer of microorganisms to other patients or environments.



TRANSMISSION BASED PRECAUTIONS

Transmission based precautions are always used along with standard or universal precautions.

Transmission based precautions are for clients who are known or suspected to be infected.

Transmission based precautions are practices used in health care to help prevent the spread of diseases that can be transmitted without contact with body fluids.

There are three types of transmission based precautions:

- Contact Precautions: direct and indirect contact
- Droplet Precautions
- Airborne Precautions



BIOHAZARDOUS WASTE

Biohazardous waste is waste material from a facility or medical office that involves blood or body fluids that contains or may reasonably be expected to contain enough germs that exposure to the waste by an individual could result in the transmission of an infectious disease.

Biohazardous waste includes:

Used sharps (needles, syringes, blades, pipettes, broken glass, and blood vials), body fluids or materials mixed with body fluids, bandages, and other materials that have come in contact with body fluids such as personal protective equipment.



HOW SHOULD I HANDLE BIOHAZARDOUS WASTE?

Any trash that has been in contact with blood or other body fluids must be placed in "biohazard" bags. These bags are usually red, are marked "Biohazard" and labeled with the facility's mailing address, and are specially designed to be leak proof. They are referred to as Red Bags.

Red Bags should NOT be used for regular trash and should NEVER be discarded with regular trash; for example, a defective Red Bag should be disposed of as biohazardous waste even if it has not been used.

Handle it as little as possible.

Always hold it away from your clothing.

If laundry is visibly soiled, use gloves when removing it so that you do not touch any blood or other material.

Always put soiled laundry into laundry bags with lids.

Wash your hands frequently.

There are special procedures for disposing of any materials that may contain blood or other sources of germs so that these germs are not spread to others. If the clinic or facility uses cloths, towels or other laundry, you should treat all facility laundry as if it contains germs.



HOW TO PROTECT YOURSELF

Always use standard or universal precautions:

Do not recap needles.

Use appropriate sharps disposal boxes.

Wear protective personal equipment when indicated.

Know and follow your facilities' infection control plan.



WHAT IS HEPATITIS?

Hepatitis is an inflammation of the liver that makes it stop working well.

Viruses cause most cases of hepatitis.

The type of hepatitis is named for the virus that causes it; for example:

Hepatitis A Hepatitis B Hepatitis C Hepatitis D & Hepatitis E

Hepatitis B (HBV) and Hepatitis C (HCV) are the two most serious kinds of hepatitis and are similar types of infections caused by different viruses.

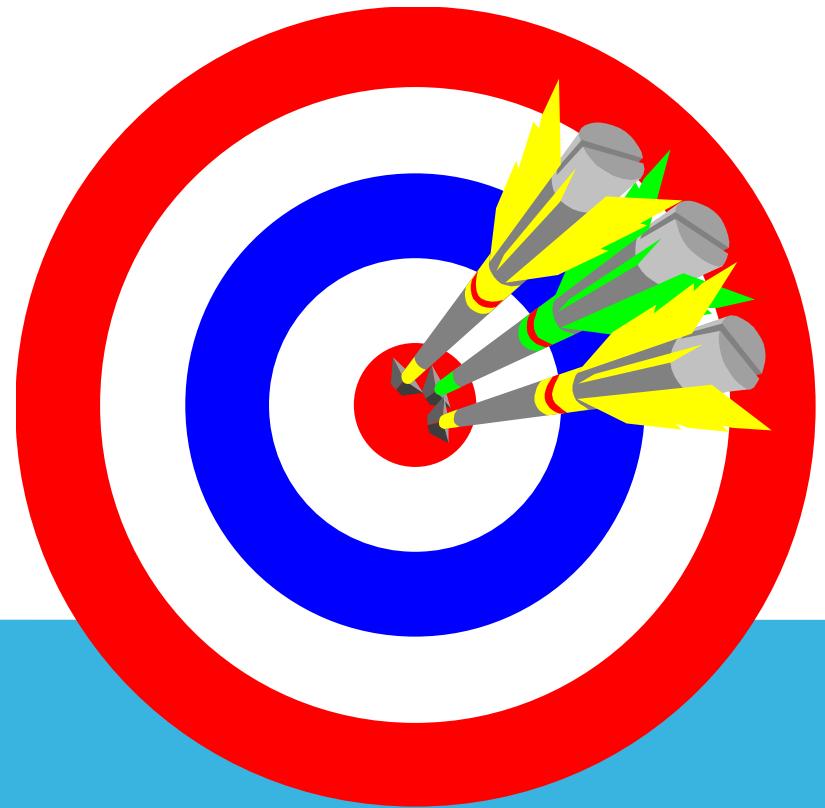
30% of people with Hepatitis B do not have symptoms during the acute stage of the infection or even for years afterwards. An even higher percentage of people with Hepatitis C show no symptoms.



HEPATITIS A,B,C,D & E

Signs & Symptoms of infection may be right quadrant pain, Jaundice, muscle & joint pain, anorexia

B,C,D & E can lead to cancer, cirrhosis & death



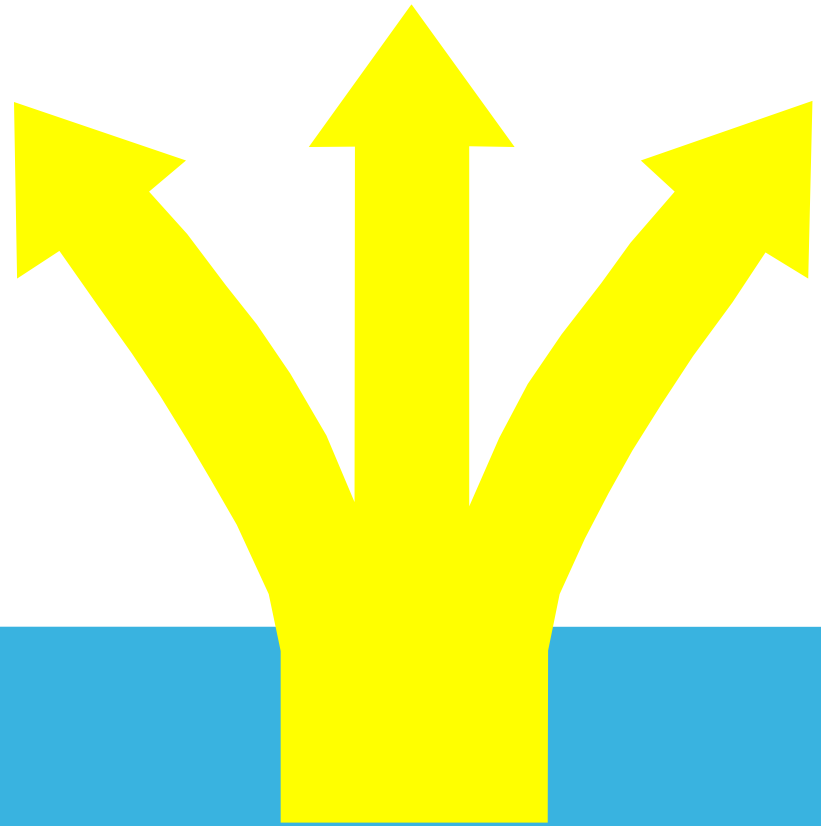
PREVENTION: HEPATITIS B VACCINE

A Safe Re-engineered
yeast cell

Receive a series of 3
injections

CDC does not
recommend boosters

Vaccine is offered 10
days after date of
hire



H.I.V. & A.I.D.S.

HIV: Known as Human
Immunodeficiency Virus

AIDS Known as Acquired
Immunodeficiency
Syndrome

Disease is primarily
sexually transmitted &
behaviorally linked



SIGNS & SYMPTOMS OF HIV RELATED DISEASE



Flu-like symptoms 2-4 weeks after exposure

Swollen Lymph nodes

Fever/night sweats

Weight loss

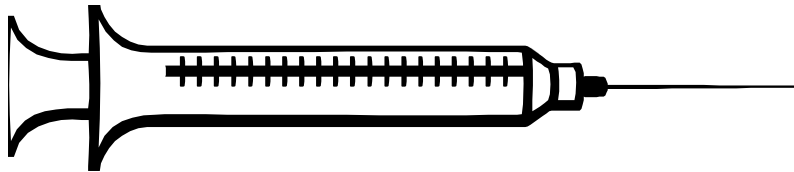
Diarrhea

Candida (Yeast Infections)

Kaposi's Sarcoma (Skin Lesions)

Pneumonia

EXPOSURE FOLLOW UP



Wash exposed area

Notify Supervisor

Follow policy &
procedures for
reporting

May need testing for
for months
afterwards

TUBERCULOSIS

What is TB?

Tuberculosis (TB) is a disease caused by bacteria called Mycobacterium tuberculosis. The bacteria usually attack the lungs. TB bacteria can attack any part of the body such as the kidney, spine, and brain.

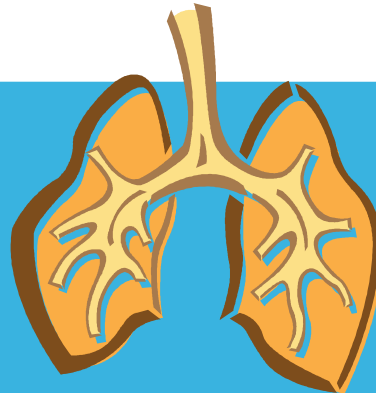
If not treated properly, TB disease can be fatal. Did you know that TB disease was once the leading cause of death in the United States?

How is TB spread?

TB is spread through the air from one person to another. The bacteria are put into the air when a person with active TB disease of the lungs or throat coughs or sneezes. People nearby may breathe in these bacteria and become infected.

However, not everyone infected with TB bacteria becomes sick. People who are not sick have what is called latent TB infection. People who have latent TB infection do not feel sick, do not have any symptoms, and cannot spread TB to others. But, some people with latent TB infection go on to get TB disease.

People with active TB disease can be treated if they seek medical help. Even better, most people with latent TB infection can take medicine so that they will not develop active TB disease.



TESTING FOR HEALTHCARE WORKERS

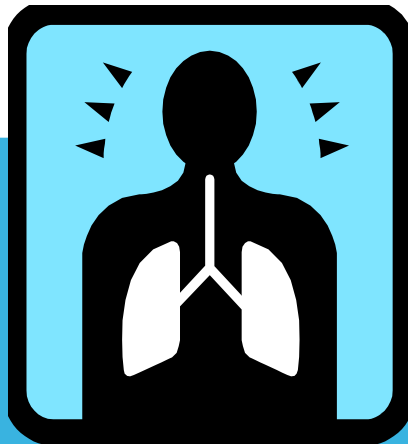
Healthcare workers and persons exposed to TB need to have a tuberculin skin test (TST) skin test or a chest X-ray. Positive test results indicate the person is infected with TB but may not have TB disease. He or she may be given preventive therapy to kill germs that are not doing any damage now, but could break out later.

TST testing (or chest X-ray) can determine whether medication is necessary to prevent incidence of Active TB.

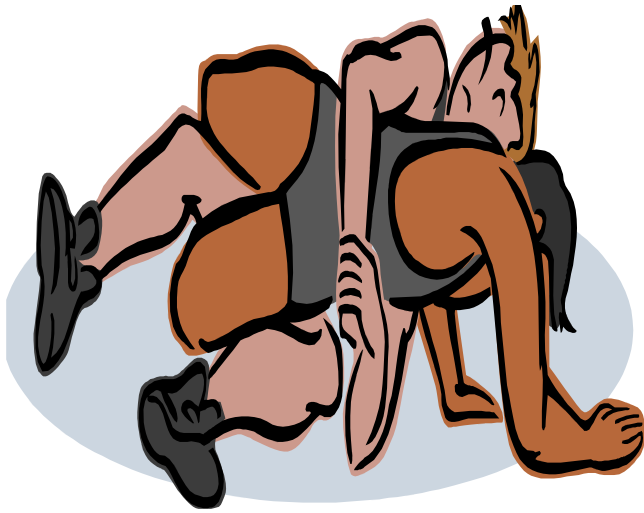
Your facility may require you to have a routine TST or chest X-ray at specified intervals or on exposure to TB.

Most healthcare facilities require that every employee be tested at least once a year.

However, testing may be more or less frequent depending on the risk of exposure to patients with tuberculosis.



METHICILLIN-RESISTANT STAPHYLOCOCCUS AUREUS: MRSA

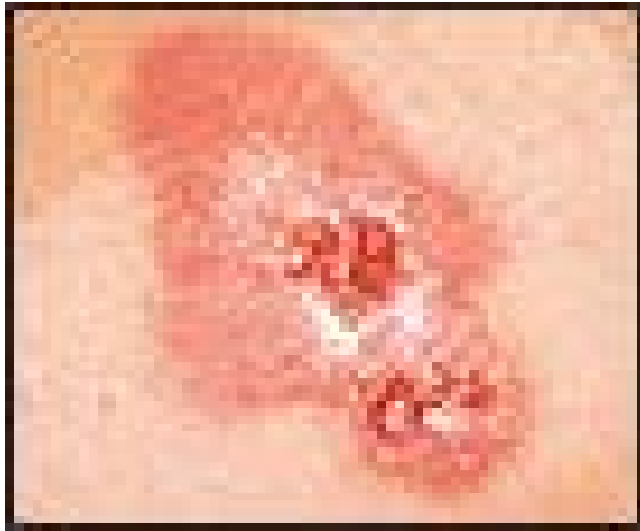


Methicillin-resistant *Staphylococcus aureus* (MRSA) infection is caused by a strain of staph bacteria that's become resistant to the antibiotics commonly used to treat ordinary staph infections.

Most MRSA infections occur in people who have been in hospitals or other health care settings, such as nursing homes and dialysis centers. When it occurs in these settings, it's known as health care-associated MRSA (HA-MRSA). HA-MRSA infections typically are associated with invasive procedures or devices, such as surgeries, intravenous tubing or artificial joints.

Another type of MRSA infection has occurred in the wider community — among healthy people. This form, community-associated MRSA (CA-MRSA), often begins as a painful skin boil. It's spread by skin-to-skin contact. At-risk populations include groups such as high school wrestlers, child care workers and people who live in crowded conditions.

SYMPTOMS OF MRSA



Staph skin infections, including MRSA, generally start as small red bumps that resemble pimples, boils or spider bites. These can quickly turn into deep, painful abscesses that require surgical draining. Sometimes the bacteria remain confined to the skin. But they can also burrow deep into the body, causing potentially life-threatening infections in bones, joints, surgical wounds, the bloodstream, heart valves and lungs.

When to see a doctor

Keep an eye on minor skin problems — pimples, insect bites, cuts and scrapes — especially in children. If wounds become infected, see your doctor.

PREVENTING MRSA



Preventing CA-MRSA

Wash your hands. Careful hand washing remains your best defense against germs. Scrub hands briskly for at least 20 seconds, then dry them with a disposable towel and use another towel to turn off the faucet. Carry a small bottle of hand sanitizer containing at least 60 percent alcohol for times when you don't have access to soap and water.

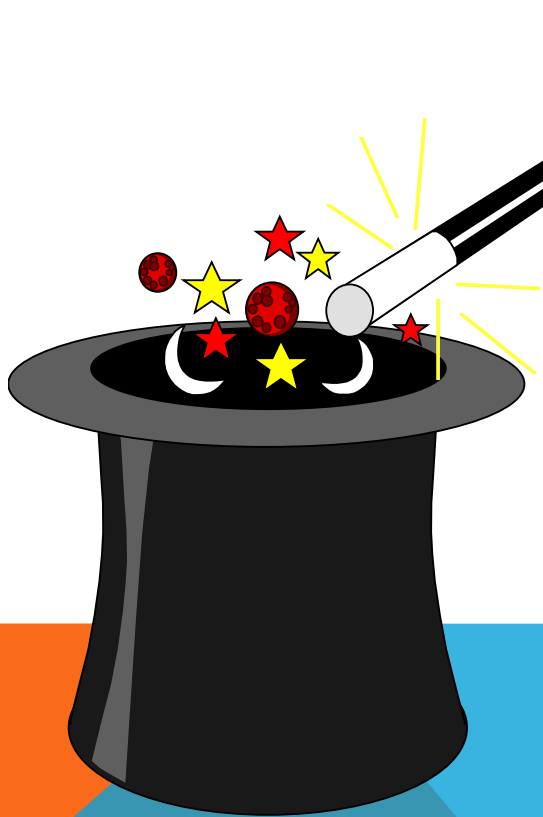
Keep wounds covered. Keep cuts and abrasions clean and covered with sterile, dry bandages until they heal. The pus from infected sores may contain MRSA, and keeping wounds covered will help keep the bacteria from spreading.

Keep personal items personal. Avoid sharing personal items such as towels, sheets, razors, clothing and athletic equipment. MRSA spreads on contaminated objects as well as through direct contact.

Shower after athletic games or practices. Shower immediately after each game or practice. Use soap and water. Don't share towels.

Sanitize linens. If you have a cut or sore, wash towels and bed linens in a washing machine set to the hottest water setting (with added bleach, if possible) and dry them in a hot dryer. Wash gym and athletic clothes after each wearing.

TRICKS OF THE TRADE IN FIGHTING INFECTIONS



Practice Universal
Precautions & safe
behaviors consistently

Wash Hands frequently
using correct
technique

Participate in health
screenings & vaccines

Follow Infection Control
Plan if Exposure
Occurs

CONGRATULATIONS!

You have finished reviewing the course content.



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N E T W O R K