

Methicillin-Resistant
Staphylococcus aureus

(MRSA)

What is *Staphylococcus aureus*?

- A common bacteria that can cause a wide variety of infections, from skin boils to bloodstream infections.
- It lives primarily in/on skin, axillae (the armpit), perineum, in the nostrils, and on hands.

What is *Staphylococcus aureus*?

- Staph bacteria are one of the most common causes of skin infections in the U.S. Most of these skin infections are minor (such as pimples and boils).
- However, staph bacteria also can cause serious infections (such as surgical wound infections, bloodstream infections and pneumonia).

What is Methicillin-Resistant *Staphylococcus aureus* (MRSA)

- Some staph bacteria are resistant to antibiotics.
- Some of these antibiotics are Methicillin, Oxacillin, Penicillin and Amoxicillin.
- MRSA is resistant to some antibiotics, NOT TO ALL ANTIBIOTICS.

Terms

- HealthCare Associated (HA) MRSA:
Can occur as a result of a patient's contact with the healthcare system.
(hospitalized, medical procedure, etc)
- Community Associated (CA) MRSA:
Can occur in persons who have not had recent contact with the healthcare system.

Why Are We Worried About MRSA?

- Because antibiotic resistance limits the number of antibiotics that can be used to treat an infection.
- Drug companies are not developing new antibiotics (they invest more in the meds that make them the most money such as high blood pressure, high cholesterol meds, Viagra, etc), so if bacteria become resistant to most/all antibiotics, common infections might become fatal.

What is Antibiotic Resistance?

- Antibiotic resistance occurs when certain bacteria can no longer be killed by certain antibiotics.
- The bacteria have one goal – to survive and reproduce.
- In order to do this, the bacteria have developed mechanisms to “resist” certain antibiotics.

Emergence of MRSA

- MRSA was first reported in the 1950s.
- Now accounts for >50% of infections caused by *Staphylococcus aureus* in the ICU and >40% outside the ICU.

Where Does It Live?

- Humans are the natural reservoirs for *S. aureus*. 20-50% of healthy adults are colonized with *S. aureus*, and 10-20% are persistent carriers,
- Colonization rates are highest among people with type 1 diabetes, IV drug users, hemodialysis, dermatologic conditions and AIDS.

Colonization Vs. Infection

■ Colonization:

- Bacteria are present in/on the person.
- Grow and multiply.
- Do not invade tissues.
- No signs and symptoms.

■ Infection:

- Bacteria are present in/on the person.
- Grow and multiply
- Invade tissues.
- Produce signs and symptoms of infection.

Who Gets HA-MRSA?

- Patients in hospitals.
- Patients in other health care facilities, such as long term care facilities.
- People who have had some encounter with the healthcare system.
- People who have had surgery, dialysis, other medical procedures.

Who Gets CA-MRSA

- People who have not been in a hospital or nursing home, or had dialysis, or a medical procedure .
- Especially prominent in crowded living conditions, contact sports, injection drug use, history of close contact with someone else with MRSA.

How Common are MRSA Infections?

- Staph bacteria is one of the most common causes of skin infections in U.S.
- HA-MRSA usually causes pneumonia, surgical wound infections, bloodstream infections. People are sicker to start with.
- CA-MRSA usually causes skin and soft tissue infections.

How is MRSA Spread

- By direct person to person contact with an infected or colonized person, such as on hands or unchanged gloves.
- By indirect contact from an infected or colonized person through contaminated equipment or the environment to another person.
- MRSA is not spread by the airborne route.

How Can I Prevent staph or MRSA Infection?

■ PRACTICE GOOD HYGIENE!

- Keep your hands clean by washing thoroughly with soap and water or using an alcohol-based hand sanitizer.
- Keep cuts and scrapes clean and covered with a bandage until healed.
- Avoid contact with other people's wounds or bandages.
- Avoid sharing personal items such as towels or razors.

What should I do if I think I have an staph or MRSA infection?

- See your healthcare provider.

Are staph and MRSA infections treatable?

Yes. Most staph and MRSA infections are treatable with antibiotics. If you are given an antibiotic take all of the doses, even if the infection is getting better, unless your doctor tells you to stop. Do not share antibiotics with other people or save unfinished antibiotics to use at another time.

Treatment Cont.

Many staph skin infections may be treated by draining the abscess or boil and may not require antibiotics. Drainage of skin boils or abscesses should only be done by a healthcare provider.

If after visiting your healthcare provider the infection is not getting better after a few days, contact them again. If other people you know or live with get the same infection tell them to go to their healthcare provider.

Is it possible that treated staph or MRSA skin infection will come back after it is cured?

- Yes. It is possible to have a staph or MRSA skin infection come back after it is cured. To prevent this from happening, follow your healthcare provider's directions while you have the infection.

If I have staph or MRSA what can I do to prevent others from getting it?

- **Cover your wound.** Keep wounds that are draining or have pus covered with clean, dry bandages. Bandages or tape can be discarded in the regular trash.
- **Clean your hands frequently.** Wash hands with soap and warm water or use alcohol-based hand sanitizers, especially after changing the bandage or touching the infected wound.

Cont.

- **Do not share personal items.** Avoid sharing personal items such as towels, washcloths, razors, clothing, or uniforms that may have had contact with the infected wound or bandage. Wash sheets, towels, and clothes that become soiled with water and laundry detergent. Drying clothes in a hot dryer, rather than air-drying, also helps kill bacteria on clothes.

Cont.

- **Talk to your healthcare provider.**
Tell any healthcare providers who treat you that you have or have had a staph or MRSA skin infection.

References – General Public

- http://www.cdc.gov/ncidod/dhqp/ar_mrsa_ca_public.html
- <http://www.cdc.gov/ncidod/dhqp/pdf/ar/MRSAPatientInfoSheet.pdf>
- <http://www.cdc.gov/Features/MRSAinSchools/>

References – healthcare professionals

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- http://www.cdc.gov/ncidod/dhqp/ar_MRSA_spotlight_2006.html
- http://www.edcp.org/pdf/Guidelines_for_Staph_10-19-2007b.pdf