

MRSA (Methicillin-resistant *Staphylococcus aureus*)

Staphylococcus aureus, often referred to as "staph," is a common bacterium that can be found on the skin, in the nose, and in moist body areas. Methicillin-resistant *Staphylococcus aureus* (MRSA) is a strain of *Staphylococcus aureus* that is resistant to the antibiotic called methicillin. MRSA is not able to be treated with the most common types of antibiotics such as penicillins and cephalosporins that are widely used to treat both clinic and hospital patients. MRSA can cause several infections from skin infections and food poisoning to severe disease which can result in pneumonia and/or septicemia (bacteria gets in the blood), or even death.

Transmission

MRSA bacteria are very common organisms that often live in the human nose. They are spread via:

- **Person-to-Person** through unwashed hands or direct contact with draining skin lesions or other sources of infection.
 - People who are colonized (carry bacteria on the skin or in the nose but are not sick or showing any signs of infection) can infect others without having any symptoms themselves.
- **Environment to person** from an infected or colonized patient to the environment, medical equipment or to the hands of a health care provider (doctor, nurse, etc.) or visitor.

Risk Factors:

- **Age:** Most susceptible are newborns and older adults.
- People who have:
 - **Chronic health conditions**
 - **Open wounds**
 - **Invasive medical devices**, such as catheters or surgical drains
 - **Long-term antibiotic treatments**
 - **Repeated hospital stays**

Symptoms

The symptoms of a MRSA infection depend on the part of the body that is infected. For example, people with MRSA skin infections often can get swelling, warmth, redness, and pain in infected skin. Some MRSA skin infections can have an appearance that can be confused with a spider bite. However, unless you see the spider, the irritation is likely not a spider bite. A person can have a MRSA infection more than once.

Most *S. aureus* skin infections, including MRSA, appear as a bump or infected area on the skin that might be:

- **red**
- **swollen**
- **painful**
- **warm to the touch**
- **full of pus or drainage**
- **accompanied by a fever**

MRSA can also invade the bloodstream or lungs, becoming very serious and even life-threatening to the patient. Symptoms are extremely variable.

Diagnosis

Health care providers diagnose MRSA by checking a tissue sample or nasal secretions for signs of drug-resistant bacteria.

Treatment

- **Antibiotics:** laboratory testing will determine which antibiotics are the most useful.
 - MRSA can be difficult to treat because if it does not respond well to certain antibiotics.
- **Drainage:** health care providers may drain the infection and, in some cases, prescribe an antibiotic.
 - Do not attempt to drain the infection yourself – doing so could worsen or spread it to others.

If you are given an antibiotic, use the prescription exactly as directed by the provider. If you have further questions about the treatment of MRSA, contact your healthcare provider.

Prevention

- **Cover your wounds with clean, dry bandages until healed.** Follow your health care provider's instructions for proper care of the wound. Pus from infected wounds can contain MRSA.
- **Do not pick at or pop** the sore.
- **Throw away bandages and tape in** the regular trash.
- **Clean your hands often.** Those in close contact should wash their hands often with soap and water or use an alcohol-based hand rub, especially after, changing the bandage, touching an infected wound, or touching dirty clothes.
- **Do not share personal items such as towels, washcloths, razors, and clothing, including uniforms.**
- **Wash laundry before use by others and clean your hands after touching dirty clothes.**
- **People should be educated on the proper precautions to not spread the infection** to others and follow good hygiene/hand-washing principles.

Exclusion Guidance

Individuals with MRSA should not be excluded from work, school, or child care unless the general exclusions apply.

For additional information about MRSA, contact the North Dakota Department of Health and Human Services', Public Health Division, at 800.427.2180

Resources:

1. MRSA | CDC. (2019, February 5). MRSA | CDC. <https://www.cdc.gov/mrsa/index.html>
2. MRSA infection - Diagnosis and treatment - Mayo Clinic. (2022, November 8). MRSA Infection - Diagnosis and Treatment - Mayo Clinic. <https://www.mayoclinic.org/diseases-conditions/mrsa/diagnosis-treatment/drc-20375340>
3. Red Book: 2021-2024 Report of the Committee on Infectious Diseases. 32nd ed. [Management and Prevention of Infectious Diseases]. Kimberlin, DW; Brady, MT; Jackson, MA; Long, SS. American Academy of Pediatrics. 2021: 122-133.
4. Red Book: 2021-2024 Report of the Committee on Infectious Diseases. 32nd ed. [Staphylococcus aureus] Kimberlin, DW; Brady, MT; Jackson, MA; Long, SS. American Academy of Pediatrics. 2021: 678-692

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