

FACT SHEET

Methicillin-Resistant *Staphylococcus aureus* (MRSA)

For Health Professionals

What is MRSA?

MRSA stands for methicillin-resistant *Staphylococcus aureus* (*S. aureus*). Methicillin-resistant *S. aureus* is also resistant to other penicillins and to cephalosporins.

How does Community Associated MRSA differ from Healthcare Associated MRSA?

Previously, infections with MRSA occurred primarily in hospitals and nursing homes. Several years ago, outbreaks of MRSA began occurring in groups of people who had not recently been in the medical system. Subsequently, it was found that MRSA isolates in the community (CA-MRSA) had bacteriologic characteristics that differed from healthcare associated (HA-MRSA) isolates. CA-MRSA isolates often possess genes for the Panton-Valentine leukocidin (PVL) toxin, which are rare in HA-MRSA. The significance of the toxin is still being investigated, but it has been associated with primary skin infections and necrotizing pneumonia. Additionally CA-MRSA responds to a wider spectrum of antibiotics than HA-MRSA.

Who is at risk for MRSA infections?

- **CA-MRSA:** Conditions that make the spread of CA-MRSA more likely include close skin-to-skin contact, cuts or scrapes, and crowded living conditions. Outbreaks have been reported in athletes, military recruits, children, prisoners, and men who have sex with men.
- **HA-MRSA:** Infections with HA-MRSA usually are associated with time spent in hospitals, nursing homes, or dialysis centers. Other risk factors include immune compromise and the presence of invasive lines.

How is MRSA transmitted?

The bacteria are spread from person-to-person by direct contact. Skin-to-skin contact with an infected person is the most significant risk factor for transmission. However, carriers can also transmit the infection. Survival of the bacteria on linens and surfaces is possible, but the environment is not thought to be a significant route of transmission.

How does MRSA affect people?

Approximately 0.8% of the US population has nasal colonization with MRSA. When MRSA causes infections, it most commonly causes skin infections such as furuncles and abscesses. These infections can initially be misdiagnosed as spider bites. More serious infections, such as sepsis, osteomyelitis, and necrotizing pneumonia are also possible. MRSA should be considered whenever a patient presents with skin or soft tissue infection. MRSA should also be in the differential diagnosis when a patient presents with sepsis, osteomyelitis, septic arthritis, or pneumonia.

How is MRSA diagnosed?

Clinicians should collect specimens for culture and sensitivity from all patients with abscesses or purulent skin lesions, especially if they have severe local infection or systemic symptoms. If invasive infection with MRSA is suspected, a specimen from the appropriate sterile site should be collected. It is not necessary to collect nasal cultures from patients with suspected MRSA infection.

How is MRSA treated?

- **Colonization:** There is continuing debate regarding decolonization of carriers. Currently, decolonization with mupirocin is suggested only if colonized individuals are thought to be the source of recurrent infections or if there is ongoing MRSA transmission in a well-defined cohort, such as a family.
- **HA-MRSA:** In most cases requiring hospitalization intravenous antibiotics are the standard treatment. There are specific antibiotics recommended for treatment of HA-MRSA.

- **CA-MRSA:** Some superficial skin infections may be treated with incision and drainage. If antibiotics are warranted, CA-MRSA is often susceptible to more antibiotics than HA-MRSA.

How can the spread of MRSA be prevented?

Practicing good hand hygiene is essential to control the spread of MRSA. Other measures to prevent becoming infected or transmitting infection to others are avoiding cross-contamination between clean and dirty linen, daily environmental cleaning, and proper handling of infectious waste.

What are special considerations for MRSA infections in people treated as outpatients?

Standard Precautions should be used for all patients. Contact Precautions should be used empirically for patients whose wound drainage cannot be contained. Precautions needed for other situations will vary on a case-by-case basis. Ideally, patients treated as outpatients should return within 48 hours for a follow-up visit. Patients and close contacts should be given these instructions:

- Keep wounds that are draining covered with clean, dry, bandages.
- Clean hands regularly with soap and water or alcohol-based hand gel (if hands are not visibly soiled). Always clean hands immediately after touching infected skin or any item that has come in direct contact with a draining wound.
- Maintain good general hygiene with regular bathing.
- Do not share items that may become contaminated with wound drainage, such as towels, clothing, bedding, bar soap, razors, and sports equipment that touches the skin.
- Wash clothing that has come in contact with wound drainage after each use and dry thoroughly.
- If you are not able to keep your wound covered with a clean, dry bandage at all times, do not join in activities where you have skin to skin contact with other persons (such as in child care centers or sports) until your wound is healed.
- Clean equipment and other environmental surfaces with which multiple individuals have bare skin contact with an over the counter detergent/disinfectant that specifies *Staphylococcus aureus* on the product label and is suitable for the type of surface being cleaned.

What are special considerations for MRSA colonization or infection in hospitalized patients?

The CDC recommends the use of Contact Precautions for all patients in acute care inpatient settings who are known or suspected to be infected or colonized with MRSA.

What are special considerations for MRSA colonization or infection in nursing home residents?

A person who is a carrier of MRSA should not be denied admission to a nursing home. When a person who is a carrier or has an active infection is transferred to another facility, the receiving facility should be told of the MRSA status in advance of the move. See the Report of the Iowa Antibiotic Resistance Task Force for patient placement guidance.

Are there MRSA guidelines available in Iowa?

The *Report of the Iowa Antibiotic Resistance Task Force: A Public Health Guide* published addresses antibiotic resistance in the state and puts forth guidelines for various levels of care. These guidelines can be obtained at: www.idph.state.ia.us/adper/antibiotic_resistance_iartf.asp