

Methicillin Resistant *Staphylococcus aureus* (MRSA)

Site Applicability

PHC Acute Care Sites, excluding mental health units/programs

Practice Level

Basic: Physicians, NPs, Nursing, Clinical Nurse Leader, Clinical Site Coordinator, Bed Placement Coordinator

Standards

In addition to Routine Practices, [Contact Precautions](#) will be initiated for all patients who have been confirmed positive for MRSA or are known to be positive from any body site for the duration of their stay in hospital. [Droplet and Contact Precautions](#) will also be implemented for coughing patients with MRSA in the sputum.

If the patient is identified as having MRSA that is also resistant to vancomycin (i.e., VRSA), ensure the patient is on Contact Precautions in a private room and notify Infection Prevention and Control.

Admitted patients who are known to be MRSA positive will have a “Disease Alert” appear in the banner bar of the patient’s Cerner chart that will indicate that the patient is positive for MRSA.

[Screening for AROs in acute care](#) will be conducted using the Infectious Disease Risk Screening (IDRS) form in Cerner. The IDRS will be ordered on all admitted patients and completed by the admitting RN/RPN/LPN. The RN/RPN/LPN will take swabs of patients that are identified as high risk for [AROs](#) as identified from the IDRS ARO Risk Factors questions.

Screening swabs for MRSA will include swabs from the anterior nares, perineum, and any open, draining wound/skin lesion/sore/puncture site (e.g., IV site, PEG tube, etc.). For infants admitted to the NICU, collect nares and umbilicus swabs.

Note:

- Admission swabs are not routinely required on patients that are already alerted for MRSA in the Cerner system.

- Repeat MRSA swabs and swabs of other sites are not required unless ordered by physician or directed by Infection Prevention and Control.

Description of the Disease

Staphylococcus aureus is part of the normal human skin microbial flora, and as many as 30% of adults may be colonized, most often in the nasopharyngeal cavity. Infection due to *S. aureus* may occur when bacteria evade mucosal barriers which can lead to skin and soft tissue infections or more invasive infections like osteomyelitis, endocarditis, and bacteremia/sepsis.

Methicillin Resistant *Staphylococcus aureus* (MRSA) is a strain of *S. aureus* that is resistant to the antibiotic methicillin (cloxacillin) and other semisynthetic antibiotics related to penicillin (i.e., other beta-lactam antibiotics) and often to other classes of antibiotics as well.

Signs & Symptoms

Positive MRSA cultures may indicate either:

- Colonization: this occurs when the organism is recovered from a patient in the absence of clinical signs and/or symptoms or immune response. Common areas for colonization are the anterior nares (nostrils) and skin folds.
- Infection: this occurs when the organism enters a body site, multiplies in tissue and causes the clinical manifestations of disease, e.g., fever, draining wound or immune response.

Incubation Period

Variable

Period of Communicability

Variable, as MRSA may be transmitted whether the patient is colonized or infected.

Routes of Transmission

MRSA can spread from one person to another through direct contact or through indirect contact with contaminated surfaces, equipment, and via contaminated hands.

Populations at Risk

Patients at increased risk for MRSA colonization include those who in the past year had a previous hospital admission, admission to long-term care or a rehab facility, or certain other outpatient healthcare encounters (e.g., chemotherapy or dialysis).

Those at high risk for infections include those who are undergoing complex or prolonged healthcare (such as patients in acute care hospitals or ICUs) or patients with weakened immune systems (such as patients undergoing cancer treatment or with organ transplants).

Assessment and Interventions

Infection Control Precautions

- **Additional Precautions:** In addition to Routine Practices, [Contact Precautions](#) will be implemented for all patients with MRSA. This includes previously known patients who were positive and new patients. [Droplet and Contact Precautions](#) are indicated if the patient is coughing with MRSA in the sputum. The Infection Control Practitioner will flag the patient care record on the Cerner system for all patients known to be colonized or infected with MRSA. The most responsible nurse will ensure the appropriate Additional Precautions are ordered in Cerner and post the appropriate sign(s) on the door.
- **Hand Hygiene:** Hands should be cleaned before and after every patient contact, as well as after touching potentially contaminated items in the environment (i.e. commodes). Using an alcohol based hand rub solution is preferred if hands are not visibly soiled. Encourage and assist the patient to perform hand hygiene.
- **Patient Placement:** Preferred accommodation in acute care for patients with MRSA is a single room with a dedicated toilet and patient sink. The door may remain open. If single rooms are unavailable, patients may be cohorted with other patients who are also infected with MRSA (but no other infections). Ensure a two metre separation is maintained between patients if Droplet and Contact Precautions are in place. If a private room or cohort is not available, please refer to the [Patient Placement Guidelines](#) or contact IPAC.
- **Equipment:** Dedicate equipment whenever possible. Clean and disinfect shared patient equipment routinely and between different patients. Clean commodes regularly and wipe touchable surfaces (armrest, seat and back) with disinfectant wipes between patients.
- **Environment:** All high-touch surfaces in the patient's room must be cleaned and disinfected at least daily. Following discharge of the patient, the room should have a terminal clean carried out prior to the next patient being admitted.
- **Visitors:** Education should be provided regarding hand hygiene, and visitors must perform hand hygiene before entry and on leaving the room. PPE (gown and gloves) is not required unless the visitor is providing [direct care](#).
- **Patient Transport:** When the patient is required to leave the room for diagnostic or rehabilitative purposes:
 - Notify receiving department prior to transport of the precautions in place.
 - Encourage and/or assist patient to clean their hands.
 - Cover open wounds and/or lesions with a clean dressing as per Routine Practices, efforts will be made to contain body substances with leak proof garments.

Lab Testing

- Screening swabs for MRSA will include swabs from the anterior nares, perineum, and any open, draining wound/skin lesion/sore/puncture site (e.g., IV site, PEG tube, etc.).
 - For infants admitted to the NICU, collect nares and umbilicus swabs.

- Lab will send a notification to the unit when a specimen results positive for MRSA.

Treatment

- Decolonization therapy is not routinely recommended and will be ordered by the attending physician on a case-by-case basis if necessary.
- To reduce the bacterial load on the skin surface for patients admitted to critical care units, a 2% chlorhexidine cleaning agent (e.g., Sage wipes) can be used daily as a whole body wash.
- Usual wound care protocols will be followed. Intact skin around a wound or insertion site may be cleansed with an antimicrobial agent (i.e. aqueous chlorhexidine, Hibidil, Baxedin).

Transfer/Discharge Planning

- Notify the receiving facility, hospital, nursing home or community agency involved in the patient's care of their status.

Outbreak Management

- Direction will be provided to the unit/hospital staff, should the Infection Control Practitioner/Physician determine there is an outbreak of MRSA.

Documentation

- Complete IDRS form on admission.
- Ensure order for Contact Precautions is in patient's Cerner chart and Disease Alert for MRSA is present in Cerner banner bar.

Patient and Family Education

- [Patient Health Education Materials](#)

Related Documents

- [B-00-07-13029](#) - Contact Precautions - Infection Control
- [B-00-07-13079](#) - Droplet and Contact Precautions - Infection Control
- [B-00-07-13001](#) - Antibiotic Resistant Organisms Screening - Acute Care
- [B-00-07-13087](#) - Patient Placement Guidelines - Infection Control

References

- Centers for Disease Control. (2022). 2007 Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings. Retrieved from <https://www.cdc.gov/infectioncontrol/pdf/guidelines/isolation-guidelines-H.pdf>
- Mitevaska, E., Wong, B., Surewaard, B., & Jenne, C. N. (2021). The Prevalence, Risk, and Management of Methicillin-Resistant *Staphylococcus aureus* Infection in Diverse Populations across Canada: A Systematic Review. *Pathogens* (Basel, Switzerland), 10(4), 393. <https://doi.org/10.3390/pathogens10040393>

Definitions

Antimicrobial-resistant organisms (AROs) - A microorganism that has developed resistance to the action of several antimicrobial agents and that is of special clinical or epidemiological significance (e.g., MRSA, VRE, ESBL, CPO).

Direct care - Providing hands-on care, such as bathing, washing, turning the patient, changing clothing, continence care, dressing changes, care of open wounds/lesions or toileting. Feeding and pushing a wheelchair are not classified as direct care.

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