

MRSA Polymerase Chain Reaction (PCR) Testing FAQ

Clinical and Diagnostic Utility

- PCR is the most sensitive method to identify patients colonized with methicillin resistant *Staphylococcus aureus* (MRSA), both community and healthcare associated strains.
- Sensitivity and specificity are generally above 95-100% compared to other molecular methods.
- Do NOT submit multiple specimens for testing. No improvement to yield (test positive predictive value) is achieved by testing multiple specimens.
- The test delivers nearly on-demand results (TAT is < 4 hours from receipt in laboratory (on first and second shift. Expansion to 3rd shift will follow).
- Assay detects SCCmec types I-Iva

Testing Criteria **New test code/test name: MRSAP, MRSA Screen PCR** (old test code/test name: AMRSA, MRSA Screen PCR)

- Limit testing to patients that require active surveillance for MRSA
- Due to the high sensitivity of the PCR assay, we recommend only 1 specimen be tested per patient admission, with exceptions for some units where are “screened” on certain days of the week for all patients currently on unit, ICU’s, etc.)
- **Specimens and Stability Nares swab collection (white cap molecular swab):** Tilt patient’s head back. Insert both dry swabs approximately 1–2 cm into each nostril. Rotate the swabs against the inside of the nostril for 3 seconds. Apply slight pressure with a finger on the outside of the nose to help assure good contact between the swab and the inside of the nose. Using the same swabs, repeat for the second nostril, trying not to touch anything but the inside of the nose. Remove the plastic transport tube. Twist off the tube cap and discard it. Place the swabs into the labeled plastic transport tube. The swabs should go all the way into the tube until they rest on top of the sponge at the bottom of the tube. Make sure the white cap is on tightly. **Note:** The swabs should stay attached to the white cap at all times.
- **Transport/Stability: Transport to the laboratory at room temperature (15–30°C), Stable for 24 hours at room temperature (15-30°C) or 5 days refrigerated at 2-8°C.**
- **Unacceptable:** Any specimen source other than nares, nose, and nasal swab.

Cautions/Limitations to Testing

- An assay positive result does not rule out the presence of other pathogens
- Because the detection of MRSA is dependent on the number of organisms present in the sample, reliable results are dependent on proper specimen collection, handling, and storage.
- A positive test result does not necessarily indicate the presence of viable organism. It is however, presumptive for the presence of MRSA DNA.
- Test results might also be affected by concurrent antibiotic therapy. Therefore, therapeutic success or failure cannot be assessed using this test because DNA might persist following antimicrobial therapy.
- Mutations or polymorphisms in primer or probe binding regions may affect detection of new/unknown variants resulting in a false negative result.
- Potentially **interfering substances** include blood, mucus and nasal sprays