

Genesis MRSA Nares PCR Guidelines
GENESIS HEALTH SYSTEM OR MEDICAL CENTER

[] GMC – Aledo [X] GMC – Davenport [] GMC – DeWitt [X] GMC –Silvis

Population:

Patients 18 years of age or older who are being treated with vancomycin for diagnosis of pneumonia.

Inclusion Criteria:

- Patients 18 years of age or older on vancomycin for indication of pneumonia who have been on vancomycin for < 72 hours

Exclusion Criteria:

- Patients 18 years of age or older on vancomycin for indications other than pneumonia
- Patients 18 years of age or older on vancomycin for \geq 72 hours
- Existing MRSA nares PCR test performed within previous 7 days

Skill Level:

- Advanced Practice Provider
- Physician
- Pharmacist

Definitions:

- Methicillin-resistant Staphylococcus aureus (MRSA): a strain of bacteria, Staphylococcus aureus, that is resistant to methicillin and other penicillins
- Polymerase chain reaction (PCR): molecular test used to exponentially amplify small amounts of DNA in order to study the DNA; can be used to identify bacteria and certain resistance mechanisms based on their genomes
- MRSA nares PCR swabs: a nasal swab used to swab the nares to collect a sample of bacteria to determine if a patient's nares are colonized with MRSA

General Considerations:

This protocol is intended to allow pharmacists to order MRSA nares PCR swabs when vancomycin is ordered for patients being treated for pneumonia. MRSA nares PCR swabs should be ordered within <72 hours of vancomycin initiation. Ideally, MRSA nares PCR swabs will be ordered when vancomycin is initiated, but the negative predictive value (NPV) of MRSA nares PCR swabs is still high up to 72 hours after vancomycin initiation. Past 72 hours, the NPV becomes less reliable and Genesis does not recommend routine use of MRSA nares PCR swabs. If the MRSA nares PCR results as negative, indicating the patient does not have nasal carriage of MRSA, the pharmacist should call the provider and discuss discontinuing vancomycin. A positive MRSA nares PCR test should **NOT** be used to initiate vancomycin unless otherwise clinically indicated. This is because a positive MRSA nares PCR means the patient is colonized with MRSA and therefore has a greater likelihood of having MRSA pneumonia, but does **NOT** necessarily mean that the patient has MRSA pneumonia. The purpose of this guideline is to enable pharmacists to order MRSA nares PCR tests to facilitate de-escalation of empiric antibiotics meant to cover for MRSA pneumonia and thereby improve antimicrobial stewardship.

Orders:

- MRSA by PCR

Sources:

- Chaudhry A, Allen B, Paylor M, Hayes S. Evaluation of the reliability of MRSA screens in patients undergoing universal decolonization. *Am J Health Syst Pharm.* 2020 Nov 16;77(23):1965-1972. doi: 10.1093/ajhp/zxaa284. PMID: 32959059.
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- Shenoy ES, Noubary F, Kim J, Rosenberg ES, Cotter JA, Lee H, Walensky RP, Hooper DC. Concordance of PCR and culture from nasal swabs for detection of methicillin-resistant *Staphylococcus aureus* in a setting of concurrent antistaphylococcal antibiotics. *J Clin Microbiol.* 2014 Apr;52(4):1235-7. doi: 10.1128/JCM.02972-13. Epub 2014 Jan 22. PMID: 24452168; PMCID: PMC3993487.