

# A LOOK INSIDE AN ANTIMICROBIAL STEWARD'S TOOLBOX: MRSA NASAL PCR



## ABOUT THE TEST

- The molecular test for methicillin resistant *Staphylococcus aureus* (MRSA) takes ~ 90 minutes whereas cultures take several days
- If **positive**, the bacteria are present at the site and the patient could be colonized
- If **negative**, MRSA is either not present or the number is too low to detect colonization
- The test is **not** recommended following recent nasal decolonization and recent MRSA infection

## APPLICATION

- The **American Thoracic Society (ATS) and Infectious Diseases Society of America (IDSA) pneumonia guidelines** states treatment for MRSA pneumonia can generally be withheld when the nasal swab is negative, especially in non-severe community acquired pneumonia (CAP)
- MRSA nasal screening is a **useful tool** used by antimicrobial stewardship programs to avoid unnecessary anti-MRSA therapy

Consulted to dose  
vancomycin for  
pneumonia? Remember  
to recommend an MRSA  
Nasal PCR!



Created by Alabama Infectious Diseases Society (ALIDS)

## EVIDENCE

- **Recent studies have shown that antibiotics can be de-escalated in the absence of MRSA nasal colonization, specifically for pneumonia**
- A survey of 59 US hospitals [from **Rubenstein et al**] reported the incidence of MRSA to be 8.9% of CAP cases, 22.9% of hospital acquired pneumonia (HAP) cases and 14.6% of ventilator acquired pneumonia (VAP) cases
- A meta-analysis [from **Parente et al**] that included 22 studies has a primary outcome of evaluating the clinical utility of MRSA nasal screening for predicting MRSA pneumonia
  - Most studies obtained an MRSA nasal surveillance culture upon admission
  - The overall prevalence of MRSA pneumonia was 10% (95% CI 8-13%; I<sup>2</sup>=89.6%; p<0.001)

## SUMMARY

- Reported MRSA pneumonia rates are variable
- **A positive MRSA nasal PCR is NOT diagnostic of MRSA pneumonia.**
- A recent negative MRSA nasal PCR effectively rules out MRSA pneumonia
- MRSA nasal PCR screening is a valuable tool to deescalate empiric anti-MRSA therapy in patients with pneumonia
- Stopping unnecessary antibiotics helps reduce adverse events, resistance development, and costs