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# Impact of methicillin-resistant staphylococcus aureus (MRSA) nasal swab on total duration of MRSA therapy for pneumonia patients

Darren D. Yum
*HCA Healthcare*, Darren.Yum@hcahealthcare.com

Kayihura Manigaba
*HCA Healthcare*, kayihura.manigaba@hcahealthcare.com

Danielle Gagne
*HCA Healthcare*, Danielle.Gagne@hcahealthcare.com

Heather Ellis
*HCA Healthcare*, Heather.Ellis@HealthTrustPG.com

# Impact of negative methicillin-resistant *Staphylococcus aureus* (MRSA) nasal swab on total duration of MRSA therapy for pneumonia patients

**Darren Yum PharmD; Danielle Gagne PharmD; Heather Ellis PharmD; Kayihura Manigaba PharmD, BCIDP**
North Florida Regional Medical Center (NFRMC), Gainesville, FL

## Background

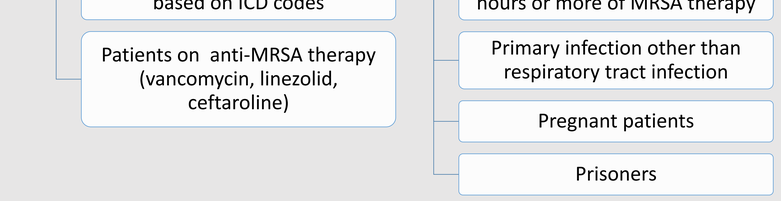
- It is estimated that up to 50% of antimicrobials prescribed in the acute care settings are either inappropriate or unnecessary.[1]
- Despite low prevalence of MRSA in community acquired pneumonia, empiric antibiotic regimens sometimes include coverage of MRSA with an agent such as vancomycin, and it can be difficult to narrow coverage in a timely manner, or even at all, as sputum cultures are not usually available.[2]
- One study reported the prevalence of MRSA in community acquired pneumonia to be 0.6%.[3]
- Based on HCA data from 2014-2017, the incidence of MRSA pneumonia was estimated to be 1.7%, indicating the majority of patients with pneumonia do not need anti-MRSA therapy.
- Nasal screening for MRSA has been shown to have a high negative predictive value (>94%) across different types of pneumonia.[4]
- Recent literature has highlighted MRSA nasal screening as a possible antimicrobial stewardship program tool to avoid unnecessary empiric MRSA therapy for pneumonia.[5]
- When compared to blood and sputum cultures, MRSA nasal swab offers quicker turn-around time, and is less affected by preceding anti-MRSA antibiotic administration as it detects genetic material rather than viable organisms.[7]
- Rapid de-escalation from unnecessary anti-MRSA coverage could prevent patient harm, such as renal toxicity and development of healthcare acquired infections and resistance.[8]
- Reduction in unnecessary anti-MRSA therapy could save resources by decreasing both anti-MRSA cost and cost associated with lab monitoring, as well pharmacist time spent dosing agents such as vancomycin.

## Purpose

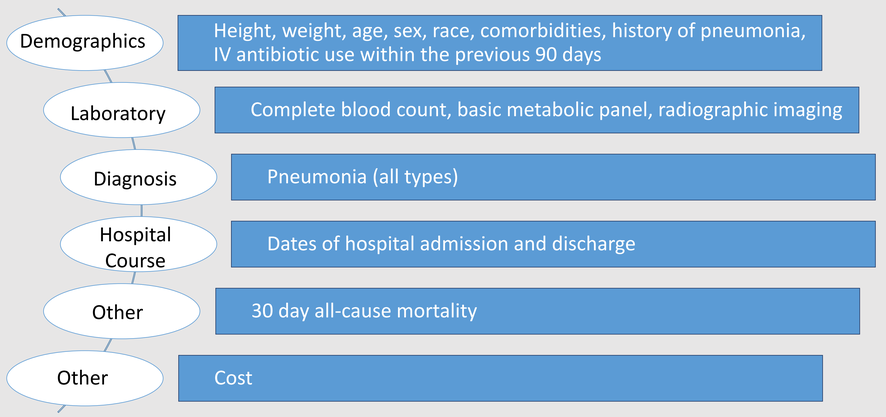
This study will assess the impact of negative MRSA nasal swabs on the duration of anti-MRSA therapy.

## Methodology

- Retrospective cohort study exempted from the Institutional Review Board.
- The Wilcoxon Signed Rank Test will be used to measure continuous data while the Chi Square or Fisher's Exact Test will be used to measure categorical data.
- Study period will take place from July 2018 to July 2019.




## Data Collection




Data will be collected using the clinical surveillance platform, Vigilanz, the electronic health record (EHR) and the computerized physician order entry system, Meditech.

## Outcome Measures

- **Primary endpoints:**
  - Anti-MRSA days of therapy
- **Secondary endpoints:**
  - Patient length of stay
  - Cost to the facility
  - 30 day all-cause mortality
  - Nephrotoxicity as defined by the KDIGO guidelines ( increase in serum creatinine > 1.5 times the base line, > 0.3 mg/dL within 48 hours, and Urine volume < 0.5 ml/kg/h for 6 hours.)

## Results

Research study in progress, no results available at this time.

## Disclosures

The investigators of this study have no conflicts of interest to disclose. This research is supported (in whole or in part) by HCA Healthcare and/or an HCA Healthcare affiliated entity. The views expressed in this publication represent those of the authors and do not necessarily represent the official views of HCA Healthcare or any of its affiliated entities.

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