

Background. A negative nasal MRSA PCR test has a 98–99.6% sensitivity in confirming that MRSA is not the causative organism associated with pneumonia in hospitalized patients. Evidence supporting the clinical utility of nasal MRSA PCR testing in the Veteran patient population is limited, with no identified publications to date. The purpose of this project was to share outcomes associated with implementation of nasal MRSA PCR testing in the Veteran population to guide duration of vancomycin therapy.

Methods. This retrospective cohort quality initiative compared treatment of pneumonia that included vancomycin during a pre-Antimicrobial Stewardship Program (ASP) intervention phase (August 2013–February 2014) to an active ASP intervention phase (August 2017–March 2019). ASP intervention consisted of utilization of a negative nasal MRSA PCR as a rapid diagnostic test to support discontinuation of vancomycin prior to microbiologic culture results. Retrospective chart review evaluated vancomycin days of therapy (DOT), hospital length-of-stay (LOS), 30-day hospital readmission, and 30-day mortality. Patients admitted to the intensive care unit during the identified hospitalization were excluded.

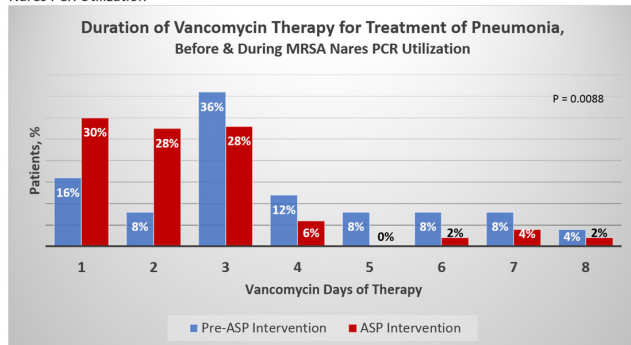
Results. The average vancomycin DOT significantly declined by 1.08 days when comparing the pre-ASP intervention phase ($N = 25$) to the ASP-intervention phase ($N = 47$) (3.6 vs. 2.52 days, respectively; $P = 0.0088$). Mean hospital LOS decreased by 1.5 days (6.04 vs. 4.54 days, respectively, $P = 0.0885$). There was no significant difference in 30-day hospital readmission rate (12% vs. 8.5%) or 30-day mortality rate (12% vs. 10%).

Conclusion. Vancomycin DOT was reduced by 30% (1.08 days) and hospital LOS was reduced by 24.8% (1.5 days) in patients with pneumonia during a Vet. Affairs medical center's utilization of negative nasal MRSA PCR testing to support vancomycin discontinuation. This project highlights the role of nasal MRSA PCR as a rapid diagnostic test to aid in diminishing empiric vancomycin usage and its associated toxicities.

Table 1. Clinical Outcomes in Pre-ASP vs. ASP Intervention Phases

	Pre-ASP Intervention (N = 25)	ASP-Intervention (N = 47)	P-value
Vancomycin DOT, mean (range)	3.6 (1–8 days)	2.52 (1–8 days)	0.0088
Hospital LOS, average	6.04 days	4.54 days	0.0885
30-day Readmission	12%	8.5%	0.6876
30-day Mortality	12%	10%	0.7098

Figure 1. Duration of Vancomycin Therapy for Treatment of Pneumonia, Before & During MRSA Nares PCR Utilization



Disclosures. All authors: No reported disclosures.

2004. Impact of Procalcitonin Roll-out Without Antimicrobial Stewardship Guidance in a Community Hospital Emergency Department

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Background. Lower respiratory tract infections (LRTIs) are one of the most common infectious disease-related emergency department (ED) visits in the United States. The ID Society of America and the Agency for Healthcare Research and Quality support the use of procalcitonin (PCT) for antimicrobial stewardship (ASP) in LRTI. Though not widely available, awareness and access to PCT is rising. At our facility, PCT became available in February 2018. The aim of our study is to assess the impact of PCT at an urban community hospital and identify possible targets for ASP interventions.

Methods. Retrospective review of cases from February to August 2018. Cases from the ED were selected for review. Appropriateness of testing was assessed, defined as guideline-based use for cessation of antibiotics in uncomplicated LRTIs without critical illness or immunosuppression. Demographic variables and clinical characteristics, such as, diagnosis, antimicrobial use and PCT levels were obtained.

Results. PCT was ordered 268 times hospital-wide, of which 160 (60%) were in the ED. Ages ranged from 0–90, with an average of 47. Most cases were male (51%).

Appropriate testing for LRTI occurred in 33 (29%) cases. Antimicrobials were used in 75% of cases with low (< 0.5) PCT levels (Figure 1). Length of stay (LOS) was higher in groups that received antimicrobials (Figure 2). Testing was not appropriate in 127 cases (71%), with upper respiratory (21%), soft-tissue (17%), genitourinary (15%) and abdominal (13%) infections as the most common reasons for testing. Other diagnosis included alcohol withdrawal, seizures and altered mental status. Cumulative cost of PCT testing was \$24000, of which \$19050 was not consistent with guidelines.

Conclusion. Clinicians routinely ordered PCT in the ED. Antimicrobials were used for LRTIs despite low PCT levels. This may have contributed to higher LOS and excess antimicrobial use. Unwarranted PCT testing had a cost of \$19050. As PCT becomes widely available in hospitals across the United States, education and decision support by ASP to clinicians may be needed to enhance guideline-appropriate evidence-based use of PCT. Targeted ASP interventions in the ED may have cost savings by reducing excess testing, length of stay and improving antimicrobial use.

Figure 1. PCT levels and antimicrobial use

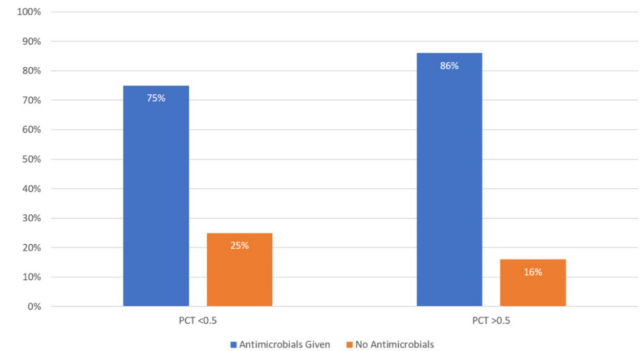
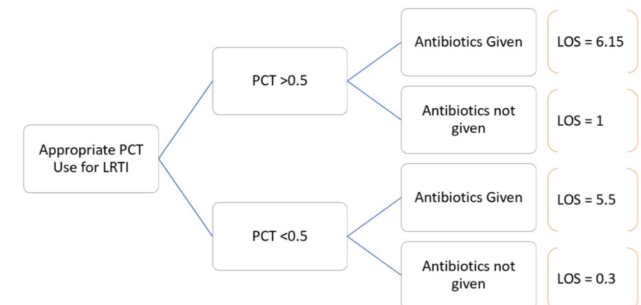


Figure 2. PCT use in LRTI and associated LOS



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2005. Successful Implementation of a Procalcitonin Algorithm Associated with Reduction in Antibiotic Days

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Background. Randomized controlled trials of procalcitonin (PCT)-based algorithms for antibacterial therapy have been shown to reduce antimicrobial use and improve survival. Translation of PCT algorithms to clinical settings has often been unsuccessful.

Methods. We implemented a PCT algorithm, supported by focus groups prior to introduction of the PCT test in April 2016 and clinician training on the PCT algorithm for testing and antimicrobial management after test roll-out. The standard PCT algorithm period (SPAP) was defined as October 1, 2017 to March 31, 2018. The antimicrobial stewardship team (AST) initiated an AST-supported PCT algorithm (ASPA) in August 2018. The AST prospectively evaluated patients admitted to ICU for sepsis and ordered PCT per algorithm if the primary medical team had not ordered them. The ASPA period was defined as October 1, 2018–March 31, 2019. The AST conducted concurrent review and feedback for all antibiotic orders during both periods, using PCT result when available. We compared patient characteristics and outcomes between the two periods. The primary outcome was adherence to the PCT algorithm, with subcomponents of appropriate PCT orders and antimicrobial discontinuation. Secondary outcomes were total antibiotic days, excess antibiotic days avoided, ICU and hospital length of stay (LOS), 30-day readmission and mortality. Continuous variables were analyzed with Student t-test. Categorical variables were analyzed with chi-square or Mann–Whitney test, as appropriate.