Meningitis and encephalitis panel, standalone PCR and culture results overall and by age group.

Results. Of 493 vancomycin orders screened, 100 orders in each arm were analyzed. There was an absolute increase of 20.6% in vancomycin orders discontinued within 24 hours of a negative screen between the pre-guideline and post-guideline 2 groups (59.1% vs. 79.7%, p = 0.0177). When compared to the pre-guideline group, utilization of the screen increased by 15% in the post-guideline 1 group (48% vs. 63%, p = 0.0032) and 26% in the post-guideline 2 group (48% vs. 74%, p = 0.000164). There was no difference in re-initiation of vancomycin. A statistically significant reduction in total vancomycin DOT/1000PD from the pre-guideline to the post-guideline 1 and 2 groups (66 to 63, respectively) was also observed.

Table 1: Patient Characteristics

| Age, years (mean ± SD) | Pre-Guideline (n=100) | Post-Guideline 1 (n=100) | Post-Guideline 2 (n=100) |
|------------------------|-----------------------|--------------------------|--------------------------|
| Male                   | 65 ± 9                | 59 ± 8                   | 56 ± 9                   |
| Length of stay, days (mean ± SD) | 11.19 ± 10.4 | 9.55 ± 7.23 | 15.58 ± 12.28 |
| Pneumonia              | 75 ± 76               | 62*                      | 62*                      |
| Ventilator-Associated  | 6 ± 11                | 6 ± 9                    | 6 ± 9                    |
| Aspiration             | 19 ± 13               | 13 ± 12                  | 13 ± 12                  |
| History of hospitalization and IV antibiotic use in the past 90 days | 24 ± 25 | 21 ± 16 | 21 ± 16 |
| Cervical or necrotizing pneumonia found on imaging | 11 ± 4 | 0 ± 0 | 0 ± 0 |

MRSAs isolated in culture during admission** | 3 ± 2 | 2 ± 2 | 2 ± 2 |

*p < 0.05 relative to Pre-Guideline group; Data represented as n (%) unless otherwise noted
** 3 did not have MRSAs nasens screen performed, 1 had a negative screen, and 3 had a positive screen

Table 2: Endpoints

| Endpoint | Pre-Guideline 1 (n=100) | Pre-Guideline 2 (n=100) | Post-Guideline 1 (n=100) | Post-Guideline 2 (n=100) |
|----------|--------------------------|--------------------------|--------------------------|--------------------------|
| MRSAs nasens screen ordered | 84 (84.0%) | 84 (84.0%) | 68 (68.0%) | 55 (55.0%) |
| Emergency department | 1736 (48.4%) | 210 (46.6%) | 2100 (51.0%) | 2100 (51.0%) |
| General microbiology | 224 (5.4%) | 286 (5.1%) | 286 (5.4%) | 286 (5.1%) |
| Microbiology | 64 (1.6%) | 64 (1.6%) | 60 (1.5%) | 60 (1.5%) |
| MRSAs isolated in culture during admission** | 3 ± 2 | 2 ± 2 | 2 ± 2 | 2 ± 2 |

*p < 0.05 relative to Pre-Guideline group; Data represented as n (%) unless otherwise noted

Conclusion.

The addition of the MRSAs nasens screen to the institutional RTI guideline increased utilization of the test and demonstrated a reduction in vancomycin utilization. With an increase in education, prospective audit and feedback, and prescriber comfort with the use of the MRSAs nasens screen in the post-guideline 2 group, there was significant improvement in MRSAs nasens screen utilization, vancomycin discontinuation after a negative screen, and vancomycin utilization.

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79. Clinical Utility of Methicillin-Resistant Staphylococcus aureus (MRSA) Nasal PCR Assays Beyond Respiratory Infections

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Background. Empiric use of vancomycin is common in clinical practice. Currently there is strong evidence to support the use of MRSAs nasal PCR to predict the absence of MRSA in respiratory infections; however, minimal data exists regarding its utility as a de-escalation tool beyond pulmonary indications. Furthermore, MRSAs nasal PCR has been shown to be a more efficient way to detect the presence of MRSAs colonization than traditional culture methods. The purpose of this study was to evaluate the correlation between results of MRSAs nasal PCR assays and blood or bone/soft tissue cultures.

Methods. This was a retrospective study of patients who presented to any of three hospitals part of an integrated health system in Des Moines, Iowa, from March 1, 2019 to February 29, 2020. Included patients were those who underwent MRSAs nasal PCR screening and had a clinical culture (blood, bone, tissue, deep podiatric wound, joint aspirate, or synovial fluid) obtained within 3 days of the PCR assay. Patients were divided into pre-guideline (Jan-Feb 2019), post-guideline 1 (Jan-Mar 2020), and post-guideline 2 (Feb-Mar 2021) groups. The primary endpoint was the difference in percent of vancomycin orders discontinued within 24 hours of a negative screen. Secondary endpoints included the percent of screens ordered, re-initiation of vancomycin within seven days for RTIs, and total vancomycin days of therapy (DOT) per 1000 patient days (PD).

Results. A total of 1989 patients were included in the study. Of these patients, 1953 patients had a blood culture obtained and 171 patients had a bone/soft tissue culture obtained. The median age was 66 years, and 1086 (54.6%) patients were male. At baseline, 33.1% and 3.8% of patients had diabetes or were on dialysis, respectively. The overall prevalence of MRSAs colonization was 12.3%. The sensitivities of the MRSAs nasal PCR screening were 67.9% for all clinical cultures, 81.8% for blood cultures, and 55% for bone/soft tissue cultures. Specificities were 88.8%, 88.5%, and 92.7% for all cultures, blood cultures, and bone/soft tissue cultures, respectively. The PPVs were 11%, 7.5%, and 50% for all cultures, blood cultures, and bone/soft tissue cultures, respectively.

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