between January 2014 and October 2017. A manual chart review was performed. Sensitivity (SEN), specificity (SPEC), PPV, and NPV were calculated for NE prediction. Vancomycin use was quantified during the same period. Linear models with prediction intervals (PI) were generated to identify potential outbreaks, which were linked to monthly NE counts defined as a binary factor.

Results. A total of 220 NE cases were electronically identified for vancomycin at NM (n = 197) and HF (n = 23). Random cases were matched 1:1 (NM = 200) and 1:5 (HF = 115) to controls for manual review. At NM and HF, 35 and 24 true positives were identified, respectively. Thus, overall SEN and SPEC were 93.7% and 75.1% and PPV and NPV were 95.7% and 98%, respectively. Linear models revealed 11 potential outbreak periods at HF and 5 at NM. A PI of 80% showed a combined SEN below 10% and SPEC above 90%, respectively.

Conclusion. The methodology was generalizable across two centers. In the pilot review, our method was highly sensitive and an effective screening tool for NE identification. Antibiotic consumption trends did not correlate with NE. In summary, the NE classification was sensitive in assessment of antibiotic appropriateness, whereas consumption alone does not predict NE.

Disclosures. All authors: No reported disclosures.

2001. Assessment of Real-world Effectiveness of a Rapid Blood Culture Diagnostic Panel at a Veterans Affairs Medical Center

Jordi Chiaisson, PharmD; 1 James B. Cutrell, MD; 2 James B. Cutrell, MD; 2 Jodkowski Tomasz, PharmD; 2 Winter Smith, PharmD; 2 Marcus Kouma, PharmD; 2 VA North Texas Health Care System, Dallas, Texas; 2 UT Southwestern Medical Center, Dallas, Texas; 2 Ben and Maytee Fisch College of Pharmacy, University of Texas at Tyler, Dallas, Texas

Session: 235. Antibiotic Stewardship: Diagnostics and Diagnostic Stewardship Saturday, October 5, 2019: 12:15 PM

Background. Rapid blood culture diagnostics can improve patient outcomes, particularly when paired with robust interventions such as 24/7 stewardship coverage. We sought to determine the clinical impact of a rapid blood culture identification (BCID) panel (BioFire FilmArray Multiplex PCR) in an established antimicrobial stewardship program (ASPI). In addition to clinician education, BCID results were reviewed by the ASPI team during weekday business hours, for an average of 2 hours daily based on availability.

Methods. Data on demographics, blood cultures, antimicrobial use, length of stay and mortality were collected on inpatients at the VA North Texas Health Care System with at least one positive blood culture for bacterial or yeast isolates from March 2017 to June 2017 (pre-BCID) and from March 2018 to June 2018 (post-BCID). The primary outcome was a composite of time to optimal therapy from blood culture collection, defined as escalation, de-escalation, discontinuation, or optimization of antimicrobials retrospectively adjudicated based on final culture results. Secondary outcomes included time to effective therapy, total days of therapy (DOT), length of stay and 30-day mortality and readmission rates.

Results. 195 patients were screened with 130 patients included in the study. No significant differences in baseline characteristics were observed between groups (Table 1). Sixty-one patients were included in the pre-BCID arm and 69 in the post-BCID arm. Median time to optimal therapy was 82.9 hours (IQR; 12.8–99.8) in the pre-BCID arm and 33.5 hours (IQR; 11.2–64.8) in the post-BCID arm (P = 0.005) (Table 2). No significant change in 30-day mortality or 30-day readmission rates was noted. Vancomycin DOT was 4 days (IQR; 2–5) and 4 days (IQR; 2–5) (P = 0.043), in the pre-BCID and post-BCID groups, respectively (Figure 1).

Conclusion. Introduction of BCID into the daily workflow of our ASP resulted in a significant reduction in time to optimal therapy for bloodstream infections. DOT for select broad-spectrum antibiotics were also significantly reduced. This study highlights the potential benefit of rapid diagnostics without negative impact to patient care even in settings without resources for 24/7 ASP review.

Table 2: Baseline Characteristics

| Characteristic | Pre-BCID (n=62) | Post-BCID (n=59) | p-value |
|----------------|-----------------|-----------------|---------|
| Age median (IQR) | 67 (63–73) | 67 (61–72) | 0.5961 |
| Sex, Male % (n) | 98% (60) | 96% (58) | 0.372 |
| Race % (n) | White 54% (33) | 57% (39) | 0.781 |
| African American 36% (22) | 39% (27) | 0.719 |
| Other 10% (6) | 4% (3) | 0.219 |
| Baseline SGR > 1.5 mg/dl (%) | 25% (15) | 28% (16) | 0.852 |
| Active Cancer % (n) | 15% (9) | 7% (5) | 0.158 |
| Causative Organism % (n) | Gram-positive 52% (12) | 51% (35) | 0.843 |
| Gram-negative 46% (9) | 46% (12) | 0.664 |
| Yeast 3% (1) | 3% (2) | 0.488 |
| MDRO History % (n) | 16% (10) | 23% (16) | 0.334 |

*Multidrug-resistant organism – MRSA, VRE, ESBL

Table 3: Clinical Outcomes Pre- and Post-BCID Implementation

| Outcome | Pre-BCID (n=62) | Post-BCID (n=59) | p-value |
|---------|-----------------|-----------------|---------|
| Time to Optimal Therapy hours (median [IQR]) | 8.29 (12.8–99.8) | 33.9 (11.2–64.8) | 0.005 |
| Time to Effective Therapy hours (median [IQR]) | 6.2 (1–15.5) | 2.6 (1–4) | 0.294 |
| Length of hospitalization days (median [IQR]) | 11 (8–18) | 10 (6–13) | 0.059 |
| Total duration of antibiotics days (median [IQR]) | 8 (6–14) | 9 (6–12) | 0.332 |
| 30 day mortality % (n) | 11.5% (7) | 4.3% (3) | 0.128 |
| 30 day readmission rates % (n) | 19.7% (12) | 10.1% (7) | 0.175 |

Figure 1: Days of Select Broad Spectrum Antimicrobials

Disclosures. All authors: No reported disclosures.

2002. BioFire® FilmArray® Pneumonia Panel: A Powerful Rapid Diagnostic Test for Antimicrobial Stewardship

Daiksu Furukawa, MD; 1 Brian Kim, PharmD; 2 Arthur Jeng, MD; 2 David Geffen School of Medicine at UCLA, Los Angeles, California; 3 Olive View-UCLA Medical Center, Sylmar, California

Session: 235. Antibiotic Stewardship: Diagnostics and Diagnostic Stewardship Saturday, October 5, 2019: 12:15 PM

Background. BioFire® FilmArray® Pneumonia Panel (BFPP) is a multiplex PCR panel that identifies 33 common bacterial and viral pathogens seen in community- and hospital-acquired pneumonias. It rapidly identifies these pathogens in addition to 7 antibiotic resistance genes on sputum and bronchoalveolar lavage samples in 1 hour. As one of the test centers for this panel, our institution utilized this panel for clinical and laboratory use. We reviewed the impact of BFPP on antimicrobial stewardship, particularly its role in early discontinuation of empiric antibiotics and prompt initiation of optimized targeted therapy.

Methods. We retrospectively reviewed all cases by which BFPP was ordered. We reviewed medical records of each case to identify the results of the panel, culture data, antibiotics used, and subsequent clinical intervention.

Results. 43 tests were ordered in total. 17 were for clinical use by an infectious disease specialist and 26 were randomly obtained by the microbiology lab. All 17 clinical cases were intervened upon with the following interventions: discontinuation of anti-pseudomonal antibiotics (8 cases), discontinuation of anti-MRSA antibiotics (5 cases), discontinuation of azithromycin (4 cases), discontinuation of carbapenem (1 case), prevention of inappropriate antibiotic escalation or initiation of inappropriate antibiotics (2 cases), and early IV to PO transition (3 cases). Of the random 26 samples ordered by lab, 13 had opportunities for antibiotic de-escalation if a physician were notified of the results. Viruses were identified in 15 samples with coronavirus being the most common. Virus was the sole pathogen in 9 of the 15 samples. Bacterial pathogens were identified in 20 samples that were reported as normal flora by conventional culture; none of these cases led to or potentially could have led to antibiotic escalation as the sole intervention.

Conclusion. Clinical use of BFPP had 100% intervention rate with all interventions leading to de-escalation of antibiotics or prevention of inappropriate antibiotics use. Though over-identification of colonizers is a potential limitation, BFPP is a powerful tool for antibiotic stewardship that results in rapid interventions to achieve optimal targeted therapy.

Disclosures. All authors: No reported disclosures.

2003. Vancomycin Discontinuation Is Supported by negative Nasal Methicillin-Resistant Staphylococcus aureus (MRSA) in Patients with Pneumonia

Katherine A. Pleasants, PharmD; Karly Low, PharmD; Sara A. Lucas, PharmD, BCPS; Audrey Kivlehan, PharmD; Ronald G. Washburn, MD; Ralph H. Johnson Vet. Medical Center, Charleston, South Carolina

Session: 235. Antibiotic Stewardship: Diagnostics and Diagnostic Stewardship Saturday, October 5, 2019: 12:15 PM
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. 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 30.6% (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

Figure 2. PCT use in LRTI and associated LOS

Disclosures. All authors: No reported disclosures.

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

John R. McCoy, PharmD; Randolph V. Fogit, PharmD; Mary T. Bessesen, MD; VA Eastern Colorado Health Care System, Aurora, Colorado; Denver VA Medical Center, Aurora, Colorado; University of Colorado-Denver, Aurora, Colorado

Session: 235. Antibiotic Stewardship: Diagnostics and Diagnostic Stewardship Saturday, October 5, 2019: 12:15 PM

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 result. 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.

Appropriate testing for LRTI occurred in 33 (29%) cases. Antibiotics were used in 75% of cases with low (< 0.5) PCT levels (Figure 1). Length of stay (LOS) was higher in groups that received antibiotics (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 $24,000, of which $19,050 was not consistent with guidelines.

Conclusion. Clinicians routinely ordered PCT in the ED. Antibiotics 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 $19,050. 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

Disclosures. All authors: No reported disclosures.

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

Alfredo J. Menon Lora, MD; Samah Qaimah, PharmD; Eric Wenzler, PharmD; Scott Borgetti, MD; Naman Jhaveri, MD; Richard Doyle, MD; Martin Cortez, PharmD; Susan C. Bleasdale, MD; University of Illinois at Chicago, Chicago, Illinois; Saint Anthony Hospital, Chicago, Illinois

Session: 235. Antibiotic Stewardship: Diagnostics and Diagnostic Stewardship Saturday, October 5, 2019: 12:15 PM

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 was not generally used for LRTIs prior to roll-out of our program.

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 result. 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.