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 45.7% and 98.1%, 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.

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

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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 (ASP). In addition to clinician education, BCID results were reviewed by the ASP 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 33.9 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 3 days (IQR: 1–4) (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=61) | Post-BCID (n=69) | p-value |
|----------------|----------------|----------------|---------|
| Age median (IQR) | 67 (69–73) | 67 (61–72) | 0.5961 |
| Sex, Male % (n) | 58% (60) | 96% (66) | 0.372 |
| Race % (n) | | | |
| White | 54% (33) | 57% (39) | 0.781 |
| African American | 36% (22) | 39% (27) | 0.729 |
| Other | 10% (6) | 4% (3) | 0.219 |
| Baseline SGR (> 1.5 mg/dl) % (n) | 29% (15) | 2.1% (16) | 0.582 |
| Active Cancer % (n) | 15% (9) | 7% (5) | 0.168 |
| Causative Organism % (n) | | | |
| Gram-positive | 52% (12) | 51% (35) | 0.843 |
| Gram-negative | 46% (20) | 46% (32) | 0.664 |
| Yeast | 2% (1) | 3% (2) | 0.488 |
| MRSA History* % (n) | 16% (10) | 23% (16) | 0.334 |

*Multidrug resistant organisms – MRSA, VRE, ESBL

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

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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 was 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.

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

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