Conclusion. Verigene BC-GN, in combination with antibiotic stewardship, successfully improved time to effective antibiotic therapy among MDR GN organisms causing bacteremia.

Disclosures. All authors: No reported disclosures.

213. Successful Implementation of BCID Across Large Healthcare System Using a Central Testing Laboratory and Multidisciplinary Pharmacy Team
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Background. Molecular testing has been shown to improve turnaround time (TAT) for identifying bloodstream pathogens. Early results can inform directed escalation or de-escalation of antimicrobial therapy. Paired with antibiotic stewardship, rapid pathogen identification has been shown to reduce antibiotic utilization and improve patient outcomes. However, many of these studies were in single site institutions. We evaluated implementation of the BioFire® FilmArray Blood Culture Identification System (BCID) across 3 acute care facilities utilizing a central testing laboratory at Carolinas Healthcare.

Methods. BCID testing was implemented over a 2-month period. A multidisciplinary team developed standard protocols for processing, transport and testing, with communication of results across teams of stewardship pharmacists. Standard algorithms were used across all facilities to guide antibiotic prescribing. Data were collected at 1 acute care facility from September 2016 to February 2017 and at 2 additional facilities from January 2017 to May 2017.

Results. 78% of positive blood cultures were identified at 3 acute care facilities and tested using BCID. TAT from positive bottle to BCID result was 4.6 (95% CI 4.4–4.8) hours. 86.7% (614/708) were on appropriate empiric antimicrobials at the time of BCID result.

Conclusion. BCID testing was successfully implemented across a large integrated healthcare system using central testing laboratory paired with a team of stewardship and virtual care pharmacists. Our strategy provided timely and reproducible results across facilities and shifts. Implementation of BCID allowed for more pathogen-directed therapy at all facilities with variability in need for escalation and de-escalation of therapy based on BCID results.

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2132. Evaluation of the Clinical Impact of the Biofire FilmArray™ Rapid Multiplex PCR Assay in Blood Culture Identification Combined with Antimicrobial Stewardship Intervention
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Background. Bloodstream infections are a major cause of morbidity and mortality worldwide, with favorable clinical outcomes associated with early optimal antimicrobial selection. Rapid diagnostics have become a key part in achieving this. Biofire FilmArray has been shown to improve antimicrobial stewardship by rapidly identifying patients with susceptible vs resistant infections. We assessed clinical outcomes in patients with suspected bloodstream infections treated at our institution.

Methods. All adult patients admitted to our institution with positive blood culture result who had no evidence of infection at another institution were included. Clinical outcomes were measured using the APACHE-III system. We performed a single-center retrospective cohort study of patients who were positive blood culture samples from 2016 to 2017. For each patient, we had access to the results of the standard diagnostic workup and the BCID system. Cost savings were calculated using the difference in labor and materials. Statistical analysis consisted of paired t-test and chi-square analysis. Sensitivity, specificity, positive predictive value and negative predictive values were calculated.

Results. 240 patients with positive blood cultures were analyzed, 173 before and 67 after implementation. Significantly improved time to effective antibiotic therapy was demonstrated in patients with gram-negative infections (3.62 ± 1.44 vs. 1.46 ± 0.61 hours, P = 0.03). The results were similar when patients were stratified by isolated organism. In the group of patients with MDR gram-negative infections, the median time to effective antibiotic therapy was significantly reduced (2.6 ± 1.45 vs. 0.97 ± 0.36 hours, P = 0.01). The cost savings associated with the use of BCID were significant ($20,360 ± $10,617 vs. $8,730 ± $4,360, P<0.001). The sensitivity, specificity, positive predictive value and negative predictive values were 66%, 96%, 91% and 70% respectively. Management was altered in 12 patients, of whom a positive and 13 had a negative result.

Conclusion. We found that Biofire® FilmArray Blood Culture Identification System had a significant clinical impact, but the yield of this test can be optimized by careful patient/specimen selection. Utility was highest in patients with microbial evidence of infection by gram stain or histopathological examination. Specificity was high. The use of this comprehensive, difficult to interpret, and expensive test should be limited to infectious disease physicians incorporating all available clinical information to optimize performance.

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2134. Impact of Accelerate Pheno System on Time to Antimicrobial Stewardship Intervention in Patients with Gram Negative Blood Stream Infections
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Background. Rapid diagnostic tests in combination with antimicrobial stewardship interventions provide the opportunity to improve antimicrobial use and improve patient outcomes in patients with blood stream infections (BSIs). The Accelerate Pheno® System (APS) has a potential advantage over many currently approved rapid diagnostic tests in that it can quickly provide both identification and antimicrobial susceptibility (AS) information. This study aimed to explore the impact of utilization of the APS when compared with VITEK®-2 on time to simulated antimicrobial stewardship service intervention (ASTEW-I) in patients with Gram-negative BSIs. Potential impact of availability of ASTEW-I based on time of day was also examined.

Methods. Consecutive patients with Gram-negative rod bloodstream infections were enrolled during a 3 month time frame (February-May 2017). The standard of care (SOC) laboratory protocol consisted of matrix-assisted laser desorption ionization time of flight (MALDI-TOF) for pathogen identification and VITEK®-2 for AS results. The primary outcome was the time from electronic notification to the electronic reporting of the ASTEW-I recommendation. This time was measured once daily in the morning. The isolates that were analyzed through SOC measures were also simultaneously tested on the APS. Time to ASTEW-I was simulated utilizing ASTEW-I software. Simulated ASTEW-I was compared with VITEK®-2 on time to simulated antimicrobial stewardship service intervention (ASTEW-I) based on time of day.

Results. 27 patients with positive blood cultures for Gram-negative rods were enrolled in the study. Mean decrease in time to simulated ASTEW-I with APS was 18.39 ± 11.09 hours (IQR 2.97–31.10, P = 0.87). Analysis of the composite outcome revealed a median of 23.95 (6.29–58.50) vs. 14.82 (IQR 4.07–44.79) hours. (Hazard ratio 1.33, 95% confidence interval 0.96–1.84, P = 0.09).

Conclusion. Implementation of the Biofire FilmArray® did not have a statistically significant effect on our composite outcome of time to adequate therapy and time to discontinuation in the case of contamination. Our findings suggest that when added to other effective AS surveillance and interventions, the magnitude of the clinical impact of rapid PCR diagnostics for BC identification is minimal.

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