as compared with the pre-BCID group (40.2 hours [pre] vs 24.6 hours [post] vs 25.9 hours [ASP]; P = 0.46).

Conclusion. Implementation of the BCID in a cancer hospital was associated with reduced time to appropriate antimicrobial therapy; however, additional reductions were not seen when compared with AS intervention. Further scale-up evaluation is warranted due to unbalanced study groups and small study size to understand the role of rapid diagnostics and AS interventions for BSIs in immunocompromised populations.

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2127. Impact of Multiplex Polymerase Chain Reaction Technology with Antimicrobial Stewardship Interventions in the Management of Patients with Positive Blood Cultures

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Session: 240. Stewardship: Impact of Diagnostics Saturday, October 7, 2017: 12:30 PM

Background. Traditional blood culture identification methods often lead to delayed time to optimal antimicrobial agents. This delay may increase morbidity and mortality. Rapid diagnostic tests decrease time to organism identification. The BioFire FilmArray™, a multiplex Polymerase Chain Reaction (mPCR) technology, was implemented at CHI Memorial in October 2016. We aimed to evaluate the tool’s blood culture identification panel in conjunction with antimicrobial stewardship (AS) on improving the management of patients with blood stream infections.

Methods. During the post-mPCR period, the AS team received real-time notifications of blood culture results via a pager system, reviewed available patient data, and made recommendations to the primary service as necessary. A retrospective chart review was performed on the first 200 patients from blood cultures with positive blood cultures from January 1, 2015 to December 31, 2015 (pre-mPCR period) and November 1, 2016 to January 31, 2017 (post-mPCR period). The primary endpoint was the time to effective and de-escalated antimicrobial therapy in the pre- and post-mPCR periods. Secondary endpoints included time in- and post-mPCR periods in the time to positive and de-escalated susceptibilities, adverse drug reactions, Clostridium difficile infections, length of stay, in-hospital mortality, 30-day readmission and antimicrobial costs.

Results. A total of 149 patients were included; 77 in the pre-mPCR and 72 in the post-mPCR period. The median age was 70 years; 81% of patients were admitted to ICU, most common source of infection was urinary tract and most common organisms were Escherichia coli and Staphylococcus aureus. There were more patients with sepsis in the post-mPCR group. Time to pathogen identification was significantly reduced from 34.4 hours (P < 0.01). Median times to effective and de-escalated therapy were also significantly reduced from 5.8 to 3.8 hours (P = 0.04) and 73.6 to 36.3 hours (P < 0.01), respectively. No significant differences in secondary outcomes were noted between groups.

Conclusions. mPCR blood culture identification tool combined with antimicrobial stewardship leads to faster time to effective and de-escalated antimicrobial therapy.

Disclosures. All authors: No reported disclosures.

2128. Direct Disk Diffusion Susceptibility Testing for Staphylococcus aureus from Blood Cultures: Diagnostic Accuracy and Impact on Antimicrobial Stewardship

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Background. In order to detect multidrug resistant strains of bacteria, our laboratory routinely performs direct susceptibility (DS), in addition to standardized susceptibilities (SS), testing from positive blood cultures. We conducted a prospective study to determine the accuracy, reporting time (RT), and antimicrobial stewardship impact of DS testing with Staphylococcus aureus positive blood cultures. We performed direct susceptibility (DS) and MALDI-TOF MS (August-November 2015); bacterial identification and susceptibility testing performed on liquid blood culture broth by MALDI-TOF MS; susceptibility testing performed by Vitek®2.

Methods. Both groups received baseline antimicrobial stewardship program (ASP) intervention. Outcomes: times to positive identification, DS testing performed by Vitek®2. Both groups received baseline antimicrobial stewardship program (ASP) intervention.

Results. DS testing is an accurate and rapid method to determine whether isolates are MSSA or MRSA. We had no major or minor errors. PBP2a testing was concordant for all isolates tested. DS also has the added benefit of detecting mixed S. aureus infections. Clinicians acted on the reported results of DS testing, with 15/21 (71%) of our patients narrowed to a cloxacillin/cefazolin 23 hours before the availability of SS.

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219. MALDI-TOF MS in Adult Inpatients with Bloodstream Infections: Pre- and Post-intervention Study

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Background. Delays in diagnosis of bloodstream infections (BSI) can lead to adverse outcomes. Matrix-assisted laser desorption ionization-time of flight mass spectrometry (MALDI-TOF MS) can rapidly identify bacteria directly from blood culture bottles. We describe our experience in patients with BSI before and after implementation of MALDI-TOF MS.

Methods. Patients: adult inpatients with BSI. Design: pre-intervention group (August-November 2015); bacterial identification and susceptibility testing performed by Vitek®2. Post-intervention group (August–November 2016); bacterial identification on liquid blood culture broth by MALDI-TOF MS; susceptibility testing performed by Vitek®2. Both groups received baseline antimicrobial stewardship program (ASP) intervention. Outcomes: time to pathogen identification, DS testing performed by Vitek®2, bacterial identification and susceptibility testing performed by Vitek®2.

Results. The pre-intervention group had significantly shorter in the MALDI-TOF MS group (40.2 hours [pre] vs 24.6 hours [post] vs 25.9 hours [ASP]; P = 0.46). Implementation of the BCID in a cancer hospital was associated with a decrease in mortality in gram-negative (GN) bacteremia. In an effort to detect multidrug resistant strains of bacteria, our labo-

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2130. Outcomes of Rapid Identification of Multi-Drug Resistant Gram-Negative Organisms Causing Bacteremia in Combination with Antimicrobial Stewardship in a Community Health System

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Session: 240. Stewardship: Impact of Diagnostics Saturday, October 7, 2017: 1:20 PM

Background. Rapid initiation of effective antibiotic therapy has been strongly associated with a decrease in mortality in gram-negative (GN) bacteremia. In an effort to improve time to effective antibiotic therapy in the treatment of multi-drug resistant (MDR) GN bacteremia, we implemented Verigene GN Blood Culture (BC-GN) assay, which can rapidly identify GN bacteria at the genus/species level and specific resistance markers from blood cultures within 2 hours of positivity.

Methods. The objective of this multi-center, pre-post quasi-experimental study was to assess outcomes of Verigene BC-GN in combination with antibiotic stewardship in treatment of MDR GN bacteremia. A retrospective chart review was performed one year prior and four months post-implementation of Verigene BC-GN. Patients > 18 years old with MDR GN bacteremia identified by Verigene BC-GN within 5 days of admission were included. The primary endpoint was time to effective antibiotic therapy for MDR GN bacteremia. Secondary outcomes included overall and ICU length of stay (LOS) and 30-day mortality. Education regarding interpretation of resistance markers and selection of optimal antibiotic therapy was provided to physicians and pharmacists prior to implementation.

Results. A total of 110 patients were included, 86 in the pre-intervention group and 24 in the post-intervention group. Mean time to effective antibiotic therapy decreased significantly from 47.6 ± 23.1 vs. 18.8 ± 9.1 hours, respectively (P < 0.0001). Median overall LOS was 60 vs 5.5 days (P = 0.88), ICU LOS was 3.0 vs 4.0 days (P = 0.57), and 30-day mortality was 4.7% vs 4.2% (P = 1) pre and post-implementation, respectively.
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, testing, and reporting, with communication of results across teams of stewardship pharmacists. Standard algorithms were used across all facilities to guide antibiotic prescribing. Data were collected at an Integrated Pharmacy and Antimicrobial Stewardship (IPS) Site at the Translational Sciences Institute from January 1 to May 31, 2017. Implementation was performed through a virtual care pharmacist. Time from BC result reported to health care provider to start antibiotics (TAT) was measured and compared with VITEK-2. Time to any change in antibiotic therapy was calculated using Electronic Medical Records. Time to any change in antibiotic therapy was calculated using Electronic Medical Records. Time to any change in antibiotic therapy was calculated using Electronic Medical Records. Time to any change in antibiotic therapy was calculated using Electronic Medical Records.

Results. 72% (115/160) 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 the BCID result. 28.0% (198/708) required a recommendation by a pharmacist. 59.6% (78/131) had an escalation recommendation while 26.4% (52/197) had a de-escalation recommendation. There was no significant variation across shifts or sites except with de-escalation where variation was greater than 10% across sites (P = 0.02).

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 AMSSM guidelines.

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2132. Evaluation of the Clinical Impact of the Biofire FilmMarry® 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 FilmMarry® Rapid Multiplex PCR Assay in Blood Culture Identification Combined with Antimicrobial Stewardship Intervention was implemented at our institution for rapid blood culture (BC) identification, coupled with antimicrobial stewardship (AS) interventions. We aimed to assess the impact of this test in a large integrated healthcare system with pre-existing effective AS interventions. We performed an observational retrospective chart review, pre and post study was performed. We reviewed adult positive BC before and after implementation of Biofire FilmMarry® Rapid Multiplex PCR Assay in Blood Culture Identification Combined with Antimicrobial Stewardship Intervention. 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 on time to day was also examined.

Methods. Consecutive patients with Gram-negative rod blood stream isolates 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. Time to ASTEW-I was the time from the electronic health record was performed once daily in the morning. The isolates that were analyzed through SOC measures were 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 on time to day was also examined.

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