among those who received a CHG bath. Presence of tracheostomy was associated with a significantly higher odds of gram-negative bacteria detection on skin. No clinical factors were independently associated with recovery of *Candida* spp. **Conclusions:** Central venous catheter presence was associated with lower odds of gram-positive bacteria detection on skin, suggesting the possibility of higher quality CHG bathing among such patients. Tracheostomy presence was associated with greater odds of gram-negative bacteria detection, suggesting that it may be a potential reservoir for skin contamination or colonization. Indwelling medical devices may influence CHG bathing effectiveness in reducing microorganism burden on skin.

Funding: None
Disclosures: None

Antimicrobial Stewardship & Healthcare Epidemiology 2022;2(Suppl. S1):s43–s44
doi:10.1017/ash.2022.139

Presentation Type:
Poster Presentation - Poster Presentation
Subject Category: Diagnostic/Microbiology
Assessment of the effects of rapid diagnostic biofire blood culture identification panel in hospitalized patients
Amy Cohen; Thomas Erwes; Dora Wiskirchen and Jessica Abrantes-Figueiredo

Background: Bloodstream infections (BSIs) have life-threatening consequences; they contribute to increased global morbidity and mortality, particularly in critically ill patients. Consequently, early implementation of effective antimicrobial therapy is crucial. Microbiology stewardship efforts, such as rapid diagnostic testing, streamline healthcare resources while also optimizing clinical outcomes. These outcomes include decreased mortality, fewer days of hospitalization, and more efficient time to appropriate anti-infective regimens. Biofire Blood Culture Identification (BCID) is a 2-stage multiplexed PCR system yielding multiple pathogen etiologies, as well as antimicrobial resistance genes. Results are published ~60 minutes after a blood-culture Gram stain turns positive. The purpose of this study was to assess the clinical impact of rapid diagnostic PCR testing, which was introduced at Saint Francis Hospital in March 2020. **Methods:** We conducted a single-center, retrospective observational chart review before and after implementation of Biofire BCID, surveying all positive cultures from December 2019 through June 2020. Medical records were more thoroughly reviewed for patients who met study inclusion criteria. The primary outcome of interest, time to appropriate antimicrobial therapy, included both days to targeted therapy in the setting of a probable pathogen, and days to antibiotic discontinuation in the case of a likely contaminant (nonpathogenic normal skin flora introduced into culture at the time of collection or processing). Secondary outcomes included in-hospital mortality (death during hospitalization), and inpatient length of stay (LOS). Wilcoxon rank-sum tests were used for primary outcomes and Fisher exact tests were used for secondary outcomes. **Results:** Among 643 patients with positive blood cultures, 410 (63.8%) met the criteria. In the study, 220 patients before the intervention and 190 patients after the intervention were reviewed. The difference in mean days to targeted therapy with a probable pathogen and days to antibiotic discontinuation with a likely contaminant were both observed at a significance level (3.62 vs 1.79, P Inpatient mortality rates were higher prior to launching Biofire BCID, but they were not statistically significant (15.5% vs 14.2 %; $P = .782$). The average LOS before and after implementation was 12.6 days (range, 2–92 days), and 10 days (range, 2–68 days), respectively. This parameter was also not statistically significant ($P = .597$). **Conclusions:** We detected a trend toward a significant reduction in time to appropriate antimicrobial therapy following the launch of Biofire BCID. Incorporation of molecular rapid diagnostics for BSI evaluation should be the standard of care in hospital settings.

Funding: None
Disclosures: None

Antimicrobial Stewardship & Healthcare Epidemiology 2022;2(Suppl. S1):s44
doi:10.1017/ash.2022.140

Presentation Type:
Poster Presentation - Poster Presentation
Subject Category: Diagnostic/Microbiology
The impact of GenMark Dx ePlex blood-culture identification on the treatment and outcomes of gram-positive bacteremia
B. Matthew Kiszla; Todd McCarty; Cameron White; Derek Moates; Sixto LealJr. and Rachael Lee

Background: In the treatment of bloodstream infections, the identification of the causal pathogen, and the evaluation of its susceptibility to antibiotics, often serve as the rate-limiting steps of the patient's hospital stay. The GenMark Dx ePlex blood culture identification gram-positive (BCID-GP) panel aims to alleviate this bottleneck, thereby reducing the risk of severe complications and the spread of resistance, using electrowetting technology to detect the most common causes of GP bacteremia (20 targets) and 4 antimicrobial resistance (AMR) genes. We hypothesized that implementation of the ePlex BCID-GP panel would improve antimicrobial choice and de-escalation where appropriate. **Methods:** A mixed blinded and unblinded study was conducted to assess the effect of the BCID-GP panel on the outcomes and antibiotic stewardship of GP bacteremic patients before ePlex results were made clinically available (before implementation, N = 73) and once they accompanied the standard-of-care work-up (after implementation, N = 82). Differences in time to different benchmarks between the 2 modalities and the effect on patient outcomes were analyzed using null-hypothesis significance testing. **Results:** During the study, the BCID-GP panel identified 63 (42%) *Staphylococcus epidermidis* isolates, 31 (21%) *Staphylococcus* spp, 24 (16%) *Staphylococcus aureus* isolates, 12 (8%) *Streptococcus* spp, and 7 (5%) *Enterococcus* spp, and results were similar in the pre- and postimplementation groups ($P = .13$). The panel saved an average of 32.0 ± 24.2 hours in pathogen identification over standard-of-care methods, with no statistical difference made by the clinical availability of the data (Table 1). In terms of susceptibility testing, the panel saved an average of 70.1 ± 58.2 hours but with less unity between the 2 cohorts ($P = .005$). Of the 66 cases with follow-up, identification via ePlex indicated an escalation of therapy in 20 (30%) and a narrowing of coverage in 31 (47%). In patients identified to have *Staphylococcus aureus,* BCID-GP could change antimicrobial therapy in 79%; the need for escalation of antibiotics was identified in 58% of cases. In patients with *Staphylococcus epidermidis* bacteremia, implementation of BCID-GP panel could have resulted in de-escalation of antimicrobial therapy in 67% of patients. The implementation of the BCID-GP panel was correlated with no significant change of in-hospital mortality ($P = .72$) but was correlated with a significantly decreased death-censored total length of stay (LOS) ($P < .001$) and LOS after culture ($P = .001$). **Conclusions:** Our study has demonstrated that nonculture identification of bacteria and susceptibility can result in major improvements in antimicrobial therapy in patients, particularly those with contaminants identified.

Funding: GenMark DX
Disclosures: None

Antimicrobial Stewardship & Healthcare Epidemiology 2022;2(Suppl. S1):s44
doi:10.1017/ash.2022.141

Table 1. Patient Demographics and Outcomes of Implementing the ePlex BCID-GP Panel for Patients with Gram Positive Blood Cultures

Outcome	Modality	Pre-implementation (N=73)	Post-implementation (N=82)	Total	P-value
Time from collection to identification—Mean ± SD (hours)	ePlex BCID-GP	27.8 ± 8.8	30.2 ± 16.1	29.1 ± 13.2	0.98
	MALDI-TOF	61.0 ± 23.5	62.1 ± 33.2	61.6 ± 29.6	0.73
Time saved in identification (hours)		32.6 ± 21.7	31.4 ± 26.4	32.0 ± 24.2	0.59
Time from collection to susceptibility (hours)	SOC	81.8 ± 19.4	114.4 ± 83.5	95.9 ± 58.8	0.011
	ePlex BCID-GP	61.0 ± 23.5	62.1 ± 33.2	61.6 ± 29.6	0.73
Time saved in susceptibility (hours)		56.4 ± 18.9	88.0 ± 82.9	70.1 ± 58.2	0.005
In-hospital mortality		16 (22)	14 (17)	30(20)	0.72
Total LOS (death censored, days)		31.0 ± 36.0	9.96 ± 9.24	20.0 ± 28.2	<0.001
LOS after culture (death censored, days)		20.7 ± 30.4	8.26 ± 9.17	14.4 ± 23.1	0.001