Conclusion. MRSA nasal PCR screening showed high NPV across blood and bone/soft tissue cultures. These results indicate the clinical utility of MRSA nasal PCR assays beyond respiratory infections and can further support antimicrobial stewardship activities.

Disclosures. All Authors: No reported disclosures

80. The Utility of Cultures for Isolated Fevers in Patients with Influenza or COVID-19 Receiving Extracorporeal Membrane Oxygenation
Joseph E. Marcus, MD; Valerie Sams, MD; Michel Sobieszczuk, MD; Alice E. Barsoumian, MS; San Antonio Uniformed Services Health Education Consortium, San Antonio, Texas; 2Brooke Army Medical Center, San Antonio, Texas; 3SAUHEC, San Antonio, Texas
Session: P-05. Antimicrobial Stewardship: Diagnostics/Diagnostic Stewardship

Background. Critically ill patients receiving extracorporeal membrane oxygenation (ECMO) are at elevated risk for nosocomial infection. Physiological responses to infection on ECMO are difficult to interpret as many clinical characteristics are controlled by the circuit including temperature. This study aimed to determine the culture positivity rate in patients receiving ECMO with influenza or COVID-19.

Methods. A single center retrospective study was performed on all patients who received ECMO support at a single institution between December 2014 and December 2020 with influenza or COVID-19. All cultures ordered were reviewed for indication. Patients with fever without specific clinical syndrome or signs of decompensation, such as increasing vasopressor requirement were included. Infections and contaminants were defined by treatment team.

Results. A total of 45 patients received ECMO with an admission diagnosis of influenza or COVID-19 during the study period. This cohort had a median age of 44 (interquartile range (IQR): 36-53) and was predominantly male (84%). The median time on ECMO was 360 hours (IQR: 183-666). 43/137 (31%) of infectious workups were ordered for isolated fever. The most common workup ordered for fever was combination blood cultures (BC) and urine cultures (UC) (13, 30%), followed by combination BC, UC, and respiratory cultures (RC) (11, 26%). Four (9%) infections were identified (3 blood stream, 1 respiratory) and five (12%) grew contaminants (1 blood, 1 respiratory, 2 urine). Culture positivity rate was greatest for BC (3/35, 9%) followed by RC (1/19, 5%), and lowest for UC (0/26, 0%).

Conclusion. Although cultures are commonly ordered for isolated fever in patients with influenza and COVID-19 receiving ECMO, culture positivity rate is low. In particular, no urinary tract infections were identified and the screening for urinary tract infection in patients receiving ECMO with isolated fever is not beneficial. Further work identifying signs and symptoms associated with infection is needed to improve diagnostic stewardship in this population that is high risk for nosocomial infections.

Disclosures. All Authors: No reported disclosures

81. Reducing Unnecessary Blood Cultures Through Diagnostic Stewardship
Sujeet Govindan, MD; Luke Strnad, MD; Oregon Health & Science University, Portland, Oregon
Session: P-05. Antimicrobial Stewardship: Diagnostics/Diagnostic Stewardship

Background. At our institution, we learned the frequency of blood cultures was sometimes being changed from “Once” to “Daily” without a defined number of days. We hypothesized this led to unnecessary blood cultures being performed.

Methods. Over a 3 month period from 12/6/2019-3/6/2020, we retrospectively evaluated the charts of patients who had a blood culture frequency changed to “Daily”. We evaluated if there was an initial positive blood culture within 48 hours of the “Daily” order being placed and the number of positive, negative, or “contaminant” sets of cultures drawn with the order. Contaminant blood cultures were defined as a contaminant species, present only once in the repeat cultures, and not present in initial positive cultures.

Results. 95 unique orders were placed with 406 sets of cultures drawn from 89 adults. ~20% of the time (17 orders) the order was placed without an initial positive blood culture. This led to 62 sets of cultures being drawn, only 1 of which came back positive. 78/95 orders had an initial positive blood culture. The most common initial organisms were Staphylococcus aureus (SA) (38), Candida sp (10), Enterobacterales sp (10), and coagulase negative staphylococci (7). 43/78 (55%) orders with an initial positive set had positive repeat cultures. SA (26) and Candida sp (8) were most common to have positive repeats. Central line associated blood-stream infections (CLABSIs) were found in 5 of the orders and contaminant species were found in 4 of the orders. 54% of the patients who had a “Daily” order placed did not have positive repeat cultures. The majority of the cultures were drawn from Surgical (40 orders) and Medical (35 orders) services. Assuming that SA and Candida sp require 48 hours of negative blood cultures to document clearance and other species require 24 hours, it was estimated that 51% of the cultures drawn using the “Daily” frequency were unnecessary. Cost savings over a year of removing the “Daily” frequency would be ~$14,000.

Results.

Data from “Daily” blood culture orders drawn at Oregon Health & Science University from 12/6/2019-3/6/2020

Conclusion. Unnecessary blood cultures are drawn when the frequency of blood cultures is changed to “Daily”. Repeat blood cultures had the greatest utility in blood-stream infections due to SA or Candida sp, and with CLABSIs where the line is still in place. These results led to a stewardship intervention to change blood culture ordering at our institution.

Disclosures. All Authors: No reported disclosures

82. Assessment of Clinical Outcomes and Antibiotic Prescribing Patterns Following Implementation of the GenMark ePlex Blood Culture Identification Panel for Gram-positive Bloodstream Infections
Megan Wein, PharmD; Shawn Binkley, PharmD; Vasiliou Athana, PharmD, BCPS, BCIDP; Stephen Saw, PharmD; Tiffany Lee, PharmD; Sonal Patel, PharmD; Keith W. Hamilton, MD; Amanda Binkley, PharmD, AAHPV; Kathleen Degnan, MD; Laurel Glaser, MD, PhD; Lauren Dutcher, MD, MSCE; Naasha Talati, MD, MSCE; Melissa Richard-Greenblatt, PhD; Hospital of the University of Pennsylvania, Philadelphia, PA; Penn Presbyterian Medical Center, Philadelphia, PA; University of Pennsylvania, Philadelphia, PA
Session: P-05. Antimicrobial Stewardship: Diagnostics/Diagnostic Stewardship

Background. Rapid diagnostic testing (RDT) of bloodstream pathogens provides key information sooner than conventional identification and susceptibility testing. The GenMark ePlex bloodstream culture identification gram-positive (BCID-GP) panel is a molecular-based multiplex platform, with 20 Gram-positive target pathogens and 4 bacterial resistance genes that can be detected within 1.5 hours of blood culture positivity. Published studies have evaluated the accuracy of the ePlex BCID-GP panel compared to traditional identification methods; however, studies evaluating the impact of this panel on clinical outcomes and prescribing patterns are lacking.

Methods. This multi-center, quasi-experimental study evaluated clinical outcomes and prescribing patterns before (December 2018 – June 2019) and after (August 2019 – January 2020) implementation of the ePlex BCID-GP panel in June 2019. Hospitalized, adult patients with growth of Enterococcus faecalis, Enterococcus faecium, or Staphylococcus aureus from blood cultures were included. The primary endpoint was time to targeted antibiotic therapy, defined as time from positive Gram-stain to antibiotic adjustment for the infecting pathogen.

Results. A total of 200 patients, 100 in each group, were included. Time to targeted therapy was 47.9 hours in the pre-group versus 24.8 hours in the post-group (p< 0.0001). Time from Gram-stain to organism identification was 23.03 hours (pre) versus 2.56 hours (post), p< 0.0001. There was no statistically significant difference in time from Gram-stain to susceptibility results, hospital length of stay (LOS), or all-cause 30-day mortality.

Conclusion. Implementation of the GenMark ePlex BCID-GP panel reduced time to targeted antibiotic therapy by nearly 24 hours. Clinical outcomes including hospital LOS and all-cause 30-day mortality did not show a statistical difference, although analysis of a larger sample size is necessary to appropriately assess these outcomes. This study represents the effect of RDT implementation alone, in the absence of stewardship intervention, on antibiotic prescribing patterns. These findings will inform the design of a dedicated RDT antimicrobial stewardship intervention at our institution, while also being generalizable to other institutions with RDT capabilities.

Disclosures. All Authors: No reported disclosures

83. Impact of a Urine Culture Best Practice Advisory on Collection of Urine Cultures and Subsequent Antibiotic Therapy
Logan White, Pharm.D; 1Andrea Dooley-Wood, Pharm.D, BCACP; 2Hien Nguyen, Pharm.D, BCGP; 3Aiman Rashidi, Pharm.D, AAHPVP; BCPS, BCIDP; 4Penn Medicine/Lancaster General Health, Lancaster, Pennsylvania; 5Atlantic Health System, Summit, New Jersey

Session: P-05. Antimicrobial Stewardship: Diagnostics/Diagnostic Stewardship

Background. Supportive care and antibiotics are associated with increased hospital LOS and all-cause 30-day mortality. Urinary tract infections (UTIs) are a common cause of bloodstream infections and may also increase hospital LOS and all-cause 30-day mortality. A recent systematic review (SR) and meta-analysis found that RDTs for urine cultures provided improved diagnostic accuracy over traditional methods [1]. Published studies have evaluated the accuracy of the ePlex BCID-GP panel compared to traditional identification methods; however, studies evaluating the impact of this panel on clinical outcomes and prescribing patterns are lacking. This multi-center, quasi-experimental study evaluated clinical outcomes and prescribing patterns before and after implementation of the ePlex BCID-GP panel in June 2019. Time to diagnostic test results was shorter in the post-group (p< 0.0001). Time from Gram-stain to organism identification was 23.03 hours (pre) versus 2.56 hours (post), p< 0.0001. There was no statistically significant difference in time from Gram-stain to susceptibility results, hospital length of stay (LOS), or all-cause 30-day mortality.

Conclusion. Implementation of the GenMark ePlex BCID-GP panel reduced time to targeted antibiotic therapy by nearly 24 hours. Clinical outcomes including hospital LOS and all-cause 30-day mortality did not show a statistical difference, although analysis of a larger sample size is necessary to appropriately assess these outcomes. This study represents the effect of RDT implementation alone, in the absence of stewardship intervention, on antibiotic prescribing patterns. These findings will inform the design of a dedicated RDT antimicrobial stewardship intervention at our institution, while also being generalizable to other institutions with RDT capabilities.

Disclosures. All Authors: No reported disclosures

Abstracts • OFID 2021:8 (Suppl 1) • S157
Session: P-05. Antimicrobial Stewardship: Diagnostics/Diagnostic Stewardship

Background. In the acute care setting, urinary tract infections (UTIs) may be over-diagnosed in up to 40% of cases. In most scenarios, asymptomatic bacteriuria (ASB) is not an indication for antibiotic therapy; inappropriate therapy is associated with a higher incidence of antibiotic-resistant bacteria and adverse drug reactions. Limiting inappropriate collection of urine cultures may decrease unnecessary treatment of ASB. The objective of this study is to assess the impact of a urine culture best practice advisory (BPA) on collection of unnecessary urine cultures.

Methods. This retrospective, observational, single-center study included adult inpatients with an order for urinalysis/urine culture. Those who were pregnant, had a concomitant infection other than UTI and/or were taking antimicrobials for a non-UTI indication, and were undergoing urological procedures were excluded. Duplicate urine culture collections and/or admissions were excluded. Incorporation of a BPA into computerized provider order entry, allowing providers to assess need and documentation for urine culture collection, was implemented on July 2019. The following clinical outcomes were assessed: number of unnecessary urine cultures collected, number of antibiotic treatments, and antibiotic-associated adverse reactions.

Results. Two hundred met criteria for inclusion; 96 in the pre-BPA group (Aug – Oct 2018) and 104 in the post-BPA group (Aug – Oct 2019). Seventy-four (37%) were male and the mean age was 64 and 70 years (p=0.249), respectively. The Charlson Comorbidity Index (CCI) was similar between groups (4 vs. 5, p=0.162) and majority were admitted to a general medical ward (94.5%). Seventy patients (72.9%) in the pre-BPA group and 47 (51.6%) in the post-BPA group had inappropriately ordered urinalysis/urine cultures (OR 0.40; 95% CI 0.22-0.73; p=0.003). Of these patients, 15 (21.4%) and 9 (19.1%) from the pre- and post-BPA groups, respectively, were treated (p=0.077). Among those treated, only two adverse drug reactions were reported.

Conclusion. Implementation of a BPA significantly reduced the number of inappropriate urinalysis/urine culture orders. There was a trend towards decreased antibiotic use for ASB. Future studies are warranted to assess sustainability of these results.

Disclosures. All Authors: No reported disclosures

84. A Survey Based Assessment of Provider Practice Around Obtaining Repeat Blood Cultures

Sujeeet Gowindan, MD1; Luke Strnad, MD1; Oregon Health & Science University, Portland, Oregon

Session: P-05. Antimicrobial Stewardship: Diagnostics/Diagnostic Stewardship

Background. Apart from Staphylococcus aureus and Candida species, there is little guidance on whether to obtain repeat blood cultures after an initial positive set. We have noted heterogeneity in practice amongst our Infectious Disease (ID) group at Oregon Health and Science University (OHSU) and suspect there is heterogeneity amongst adult hospitalist providers as well.

Methods. We created a survey using clinical vignettes encompassing commonly encountered scenarios among hospitalized patients on medical wards to assess provider practices in obtaining repeat blood cultures. The survey was sent to adult ID providers and adult hospitalist providers at OHSU. These vignettes represented 9 of the most common bacteria seen in positive blood cultures and asked the question of whether providers would obtain repeat blood cultures after an initial positive set. The organisms included beta hemolytic streptococcus, Enterococcus faecalis, Streptococcus gallolyticus, coagulase-negative staphylococci, alpha hemolytic strep, E. coli, Proteus mirabilis, Pseudomonas aeruginosa, and Bacteroides fragilis. We then asked questions around repeat blood culture practices for Staphylococcus aureus and Candida species, understanding that while repeat blood cultures for these organisms is recommended, the manner in which individual providers implement this may vary.

Results. The survey response rate was ~45%. Results were heterogeneous with only 3 questions having inter- and intra-group agreement. Those 3 questions represented a case of E. faecalis bacteremia without known source, a case of asymptomatic Staphylococcus epidermidis blood culture positivity, and a case of E. coli bacteremia from a pyelonephritis. All other vignettes had inter- and intra-group differences signifying clinical uncertainty around the practice of obtaining repeat blood cultures. There was similar heterogeneity among the responses asking how providers obtain repeat blood cultures around 5 aureus and Candida bloodstream infections.

Clinical vignette survey answers

Answers from 10 clinical vignettes on obtaining repeat blood cultures after an initial positive set for stable patients on medical wards.

85. Evaluation of Urinalysis and Urine Culture Use at a Community Health-system

Martin Brennenman, PharmD1; Brian C. Bohm, PharmD, BCIDP2; Sarah E. Moore, PharmD, BCIDP1; Ashley Wilde, PharmD, BCPS-AQ ID1; Matthew Song, PharmD, BCIDP1; 1Norton Healthcare, Louisville, Kentucky

Session: P-05. Antimicrobial Stewardship: Diagnostics/Diagnostic Stewardship

Background. The Infectious Diseases Society of America asymptomatic bacteriuria (ASB) guidelines recommend against screening for or treating ASB in most patients without symptoms of a urinary tract infection (UTI). The purpose of this study was to characterize current urine testing practices and their potential impact on identification and treatment of asymptomatic bacteriuria on hospitalized adults.

Methods. This retrospective, point prevalence study conducted at a 4 hospital community health-system that included all inpatients ≥ 18 years old present on November 13, 2019. Patients were excluded if they were admitted or transferred to either a labor & delivery or mother-baby unit. A chart review was performed for a sub-group of patients with abnormal urine testing, with a target sample size of 200 (n=50 from each hospital). The primary outcome was the prevalence of patients with a urinalysis, urine culture, or both performed during their admission. Secondary outcomes included abnormal urine testing in the overall cohort and symptomatology and antibiotic use in the sub-group (Figure 1).

Results. 947 patients met inclusion criteria. Of those patients, 516 (54%) had urine testing performed during their admission. 322 (34%) patients had abnormal urine testing results (Table 1). In the sub-group, 192 patients with abnormal urine tests were included. Antibiotics with a documented indication of UTI were administered to