was favorable, except in an Asian cohort reporting 6 patients with poor pregnancy outcomes.

**Conclusion.** The lack of data about murine typhus in pregnancy is of serious concern. Increase awareness of different presentations is needed in this population. Murine typhus infection can mimic other pregnancy-related pathologies that have very different treatments and outcomes. More data are needed about effective treatment and safety of doxycycline use during pregnancy.

**Methods.** As part of active surveillance in our NICU for methicillin-resistant *Staphylococcus aureus* (MRSA), two isolates representing modified MRSA (MOSSA), which are Methicillin resistant but lacking mecA or C were identified. Our current microbiology laboratory workflow for screening for MRSA involves plating isolates on chromoID agar (bioMérieux, Marcy-l’Etoile, France), as well as on sheep blood agar (SBA). β hemolytic colonies on SBA that are catalase and coagulase positive are set up for confirmation and antimicrobial susceptibility testing on the Vitrek 2 (bioMérieux, Marcy-l’Etoile, France).

**Results.** All 10 isolates tested negative by the Cepheid Xpert MRSA assay for MRSA. Phenotypic testing was set up again for all ten isolates using the vitrek GP panel, as well as cefoxitin disk, and oxacillin E test using Mueller-Hinton agar supplemented with 2% NaCl as per CLSI methods. See table attached for results.

**Conclusion.** In conclusion, these two cases highlight the difficulty in identifying non-MecA, non-MecC-mediated MRSA isolates in the clinical microbiology laboratory. This is particularly important as more laboratories rely on testing for MeCa by PCR for surveillance testing. These 2 cases were further complicated by heterogeneous sub-populations of *Staphylococcus aureus*. Failure to recognize these variant forms of MRSA can lead to difficulties in implementing appropriate therapy and infection control measures. Improved methodologies are needed.

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### Table 1 - Results of phenotypic and genotypic testing

| Test                      | Baby 1 | Baby 2 |
|---------------------------|--------|--------|
| **Confirmation SCREEN**   | POS    | POS    |
| **OXACILLIN**             |        |        |
| 0.05                       | POS    | POS    |
| **OXACILLIN E TEST**      |        |        |
| 0.05                       |        |        |
| **OXACILLIN DIS**         | POS    | POS    |
| **OXACILLIN DIS**         |        |        |

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2130. Detection of Carbapenemase-Producing Organisms and Impact on Antimicrobial Utilization for Carbapenem-Resistant Enterobacteriaceae (CRE) Infections

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**Session:** 243. Bacterial Diagnostics

**Background.** CREs are feared pathogens with resistance occurring through the production of carbapenemases. Identification of carbapenemase-producing (CP) organisms assists with proper antimicrobial selection of commonly used agents, such as ceftazidime/avibactam (CA), meropenem/vaborbactam (MV), and tigecycline (TG). AdventHealth Orlando implemented a CRE screening method based on meropenem (MER) and a confirmatory CRE PCR testing in March 2018. Prior to implementing this test, patients were deemed to have CRE infections (CREI) if the organism demonstrated resistance to any carbapenem. The objective of this study was to evaluate the impact of this testing on the utilization of anti-CRE antibiotics.

**Methods.** This was a retrospective pre (March 2017–February 2018) and post (March 2018–February 2019) implementation study examining the impact of CRE PCR testing. Outcomes included the number of antibiotic days saved, average duration of therapy (DOT), median length of stay (LOS), and change in CP-CRE prevalence. The intervention consisted of the implementation of CRE PCR testing and included inpatients ≥ 18 years old who received either CA, MV, or TG for the treatment of a CREI.

**Results.** Post-implementation, 30 unique patients were identified as having a positive *K. pneumoniae* carbapenemase gene by PCR, indicating a CP-CRE and received CA, MV, or TG; whereas, 42 patients in the pre-implementation group had a CREI and received CA, MV, or TG. Testing to identify CP-CREs led to a 50% reduction in the number of antibiotics days saved, average duration of therapy (DOT), median length of stay (LOS), and change in CP-CRE prevalence. The CRE prevalence based on resistance only to MER was 50.5% before and 25.5% after intervention. Additionally, the average DOT decreased by 2.5 days in the post-implementation group (10.5 days vs. 8 days, P = 0.18) along with a 3.5-day shorter median LOS (15 days vs. 11.5 days, P = 0.48). The CRE prevalence based on resistance only to MER decreased from 50.5% to 25.5%.

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is 0.27%, compared with the previously reported rate of 2.5% that included resistance to ertapenem or MER.

Conclusion. Implementing CRE PCR testing to identify CP-CRE organisms resulted in a significant reduction in utilization of anti-CRE agents for CREs. Additionally, the testing algorithm allowed for accurate reporting of our local CRE prevalence. By avoiding CA, MV, or TG in patients without CP-CREs, this has the potential to optimize therapy while reducing collateral damage associated with broad-spectrum agents.

Disclosures. All authors: No reported disclosures.

2131. Multicenter Evaluation of Meropenem/Vaborbactam MIC Results for Enterobacteriaceae Using MicroScan Dried Gram-Negative MIC Panels

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Background. A multicenter study was performed to evaluate the accuracy of meropenem/vaborbactam on a MicroScan Dried Gram-negative MIC (MSDGN) Panel when compared with a frozen CLSI broth microdilution reference panel.

Methods. For efficacy, an evaluation was conducted at three US sites by comparing MIC values obtained using the MSDGN to MICs using a CLSI broth microdilution method. All frozen reference panels were incubated at 35 ± 2°C and read visually. Frozen reference panels were read at 16–20 hours. FDA breakpoints (μg/mL) used for interpretation of MIC results were: Enterobacteriaceae ≤ 0.5 S. Potential major and very major errors were calculated using the NS result in place of resistant (R).

Results. When compared with frozen reference panel results, essential and categorical agreements for isolates tested in the Efficacy and Challenge are as follows (see table). Reproducibility among the three sites were greater than 95% for all read methods for both the turbidity and Prompt inoculation methods.

Conclusion. This multicenter study showed that eravacycline MIC results for Enterobacteriaceae obtained with the MSDGN panel correlate well with MICs obtained using frozen reference panels using FDA interpretive criteria. PROMPT is a registered trademark of 3M Company, St. Paul, MN USA. Beckman Coulter, the stylized logo and the Beckman Coulter product and service marks mentioned herein are trademarks or registered trademarks of Beckman Coulter, Inc. in the United States and other countries. Xerava® (Eravacycline) is a registered trademark of Tetraphase Pharmaceuticals, Inc.

Disclosures. All authors: No reported disclosures.

2133. Clinical Impact of Implementation of Rapid Diagnostic Testing of Blood Cultures on Patient Outcomes

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Background. Rapid diagnostic testing (RDT) in microbiology labs shortens the time to identification of bacteria in blood cultures. This study evaluates the impact of implementation of Cepheid® GeneXpert® to detect methicillin-resistant Staphylococcus aureus and S. aureus in Gram-positive blood cultures.

Methods. Patients with positive blood cultures for Staphylococcus spp. before (November 2015–August 2016) and after (November 2017–8/2018) implementation of a new rapid diagnostic technology were evaluated. RDT results were reviewed once daily by the antimicrobial stewardship team. The primary outcome was time to appropriate antimicrobial therapy. Secondary outcomes included the duration of antimicrobial therapy from time of positive culture, duration of vancomycin therapy, and length of hospital stay (LOS).

Results. A total of 113 patients were in the pre- and 73 patients were in the post-implementation cohort. Patients treated post-RDT demonstrated significantly shorter median time to appropriate antimicrobial therapy (10.6 hours vs. 49.8 hours, P = 0.03) and numerically shorter median duration of vancomycin therapy (3.0 days vs. 1.0 days, P = 0.32). These numerical differences were present despite the post-RDT cohort having significantly more MSA and MRSA infections. Differences in duration of antimicrobial therapy were not statistically significant. Patients treated pre-RDT demonstrated a shorter median LOS than those treated post-implementation (7.0 days vs. 8.5 days, P = 0.03).

Conclusion. The use of RDT significantly decreased time to appropriate antimicrobial therapy. Patients in the post-RDT cohort had longer LOS, which may due to a higher incidence of S. aureus infections, compared with coagulase-negative Staphylococcus, in this cohort These results are promising for future RDT implementations.

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2134. Differential Changes in Breath Volatile Metabolites to Identify Carbapenem-Resistant Enterobacteriaceae (CRE) in a Murine Pneumonia Model

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Background. A multicenter study was performed to evaluate the accuracy of eravacycline on a MicroScan dried Gram-negative MIC (MSDGN) Panel when compared with a frozen CLSI broth microdilution reference panel.

Methods. For efficacy, an evaluation was conducted at three sites by comparing MIC values obtained using the MSDGN to MICs using a CLSI broth microdilution reference panel. A total of 414 Enterobacteriaceae clinical isolates were tested using the turbidity and Prompt methods of inoculation. For challenge, 79 Enterobacteriaceae isolates were tested on MSDGN panels at one site. For reproducibility, a subset of 11 organisms was tested at each site. MSDGN panels were incubated at 35 ± 2°C and read on the WalkAway System, the autoSCAN-4 instrument, and read visually. Read times for the MSDGN panels were at 16–20 hours. Frozen reference panels were read at 16–20 hours. FDA breakpoints (μg/mL) used for interpretation of MIC results were: Enterobacteriaceae ≤ 0.5 S. Potential major and very major errors were calculated using the NS result in place of resistant (R).

Results. When compared with frozen reference panel results, essential and categorical agreements for isolates tested in the Efficacy and Challenge are as follows (see table). Reproducibility among the three sites were greater than 95% for all read methods for both the turbidity and Prompt inoculation methods.

Conclusion. This multicenter study showed that eravacycline MIC results for Enterobacteriaceae obtained with the MSDGN panel correlate well with MICs obtained using frozen reference panels using FDA interpretive criteria. PROMPT is a registered trademark of 3M Company, St. Paul, MN USA. Beckman Coulter, the stylized logo and the Beckman Coulter product and service marks mentioned herein are trademarks or registered trademarks of Beckman Coulter, Inc. in the United States and other countries. Xerava® (Eravacycline) is a registered trademark of Tetraphase Pharmaceuticals, Inc.