

Fig. 1.

42.4% were African-American; mean age was 43.5 years; mean Charlson comorbidity index was 3.2; 67.8% were admitted for medical care (vs surgical); and 13.3% had a previous history of *S. aureus* infection. Of all HO-SA-BSIs, 49.2% were acquired in the ICU, 53.8% were primary BSIs, and 37.9% were catheter associated. Patients were hospitalized a mean of 19.9 days prior to HO-SA BSI, and the mean overall length of stay was 48.5 days. Compared to HO-MSSA BSIs, there were no significant differences in these characteristics among MRSA LabID BSIs except that a significantly greater proportion were catheter associated (46.2% vs 32.5%; OR, 1.78; 95% CI, 1.07–2.96; $P = .04$). Overall, 101 patients (38.3%) died: 41 with MRSA LabID BSI (39.4%) and 60 with HO-MSSA BSI (37.5%). Mortality rates have not changed significantly over time. The mean number of days to death was 154.2, and 59 patients (22.3%) died during incident hospitalization: 26.9% of MRSA patients and 19.4% of MSSA BSI patients. Moreover, 28.3% of patients were readmitted within 30 days of discharge from incident hospitalization, and compared to HO-MSSA BSI, this rate was significantly higher among MRSA LabID BSI patients (34.2% vs 24.8%; OR, 2.07; 95% CI, 1.09–3.93; $P = .03$). Among those who died, 58.4% died during hospitalization, 52.5% died within 30 days, 66.3% died within 60 days, and 74.3% had died within 90 days. Also, 47.5% died as a result of their HO-SA BSI, and compared to HO-MSSA BSI, this rate was significantly higher among those with MRSA LabID-BSI (63.4% vs 36.7%; OR, 2.99; 95% CI, 1.31–6.83; $P = .02$). **Conclusions:** Among patients with HO-SA BSI, methicillin-resistance continues to be associated with higher attributable

mortality, and in our study, higher rates of 30-day readmission. There has been no significant change in HO-SA BSI rates (MSSA or MRSA) since reporting for MRSA LabID events began. Furthermore, mortality rates have not changed and remain high for both MRSA BSI and MSSA BSI patients. Given these findings, MSSA LabID event reporting should be considered.

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Presentation Type:

Poster Presentation

Epidemiology of NDM-Producing Enterobacteriaceae in Michigan

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Background: Carbapenem-resistant Enterobacteriaceae (CRE) are classified as an urgent antibiotic-resistant threat by the CDC, and they are listed on the critical priority list by the World Health Organization due to the lack of antibiotic treatment options. New-Delhi metallo- β -lactamase (NDM) is an emerging mechanism of carbapenem resistance in the United States. We sought to understand the risk factors and clinical characteristics of patients with NDM CRE in Michigan to improve surveillance.

Methods: A retrospective descriptive study was conducted in collaboration with the Michigan Department of Health and Human Services (MDHHS). CRE isolates submitted to MDHHS between April 2014 and July 2019 were tested for the presence of NDM using CDC PCR protocols. Additional information on case demographics, laboratory results, healthcare and antibiotic exposure history, and travel history were collected. **Results:** In total, 30 NDM cases were identified in Michigan during the study period. Of these 30 cases, 15 (50%) were men, and the median age was 73.5 years (range, 20–88 ±20). Also, 2 of these patients (6.6%) were immunocompromised; 2 patients (6.6%) had had extensive abdominal surgery, and 2 patients (6.6%) had recurrent hospitalization. Furthermore, 12 case isolates (40%) were collected in outpatient settings, whereas 16 (53%) were collected from inpatient settings. In addition, 13 (43%) patients were admitted from home and 4 (13%) presented from an extended-care facility. Urine was the most common site of isolation in 19 of 30 (63%) cases, followed by blood and tissue culture in 4 of 30 (13%) each. *Escherichia coli* was the most common organism (17 of 30, 57%), followed by *Klebsiella pneumoniae* (9 of 30, 30%). Also, 15 of 30 cases (50%) had a recent history of international travel, and of these, 9 of 15 (60%) reported travel to India. Among these 15 cases, 12 (80%) sought medical care in the countries they visited. Two cases (6.6%) had a documented history of multidrug-resistant organism colonization or infection. The mortality rate was 6.6% (2 of 30). The mean time from admission to implementation of contact precautions was 7.3 days (range, 0–20). **Conclusions:** Suspicion of NDM CRE strains should remain high in patients with a travel history from areas known as major reservoirs of NDM. Delay in implementing contact precautions, as noted in the present study, can lead to a greater risk of transmission. Early detection and subsequent isolation of NDM patients are essential strategies for preventing transmission within healthcare facilities. Future efforts include performing whole-genome sequencing of these isolates to assist in identifying potential epidemiological links among the affected patients.

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Epidemiology of Posttransrectal Prostate Biopsy Bloodstream Infections and Impact of a Screening Program

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Background: Antibiotic prophylaxis choice for transrectal prostate biopsy (TRPB) has been affected by the emergence of fluoroquinolone-resistant *Escherichia coli* (FQRE). Prebiopsy FQRE screening and targeted antibiotic prophylaxis may reduce post-TRPB bloodstream infection (BSI). We assessed the impact of a FQRE screening program on post-TRPB BSIs at an academic medical center.

Methods: We implemented a FQRE screening program and targeted TRPB antimicrobial prophylaxis guidelines on May 1, 2017 (Fig. 1). We performed a retrospective cohort study of all TRPB and compared the incidence of post-TRPB BSI (within 7 calendar days) per 100 procedures before the intervention (January 1, 2016, to April 30, 2017) and to the incidence after the intervention (May 1, 2017, to August 31, 2019). We used a subanalysis to compare BSI incidence between patients with positive (+) and negative (–) FQRE screens and appropriate prophylaxis use, defined as administration of guideline-recommended antibiotics. The Fisher exact test of independence was used to analyze nominal data.

Results: The analysis included 2,157 TRPB procedures: 647 in the preintervention period and 1,510 in the postintervention period. FQRE screening compliance was 61% (n = 914) in the post-intervention group (Fig. 2); 168 FQRE screens (18%) were positive. The median time from FQRE screen to procedure was 40 days (IQR, 13–69). Postprocedure BSI rates were higher in than those in the preimplementation group; however, this difference was not statistically significant (0.86 vs 0.46; OR, 2.01; $P = .42$). Among FQRE-screened patients, BSI rates differed significantly between FQRE+ and FQRE– patients (2.98 vs 0.54; OR, 5.67; 95% CI, 1.21–28.94; $P = .01$). Screened patients receiving appropriate prophylaxis had lower BSI rates than those receiving

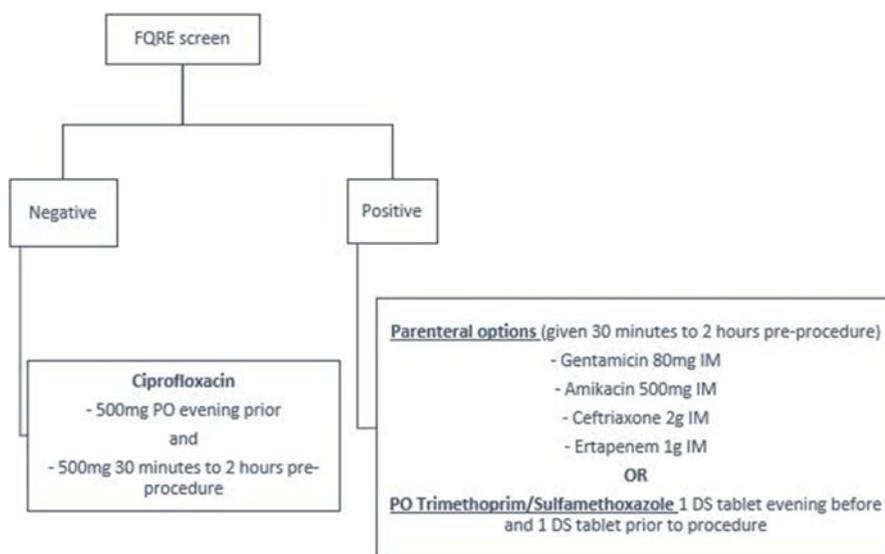


Fig. 1.