outcomes. For carbapenems, achieving greater than 40% time above minimum inhibitory concentration (T>MIC) has been shown to be correlated with clinical efficacy. Increasing bacterial resistance and rising MICs makes it more difficult for clinicians to rely on traditional dosing strategies to meet pharmacodynamic goals. Further optimization methods beyond extended infusion may be necessary to achieve certain pharmacodynamics goals.

Methods. We performed a Monte Carlo simulation investigating a novel method of meropenem administration, bolus to prolonged infusion (BPI). Multiple meropenem dosing regimens utilizing BPI were evaluated over 5000 patients utilizing pharmacokinetic profiles from total patients. Patients were studied in 3 separate groups: <120 kg, ≥120 kg/non-critically ill and ≥120 kg/critically ill. Bolus doses varied from 250–1000 mg, and were paired with infusion doses varying from 500–1500 mg. Bolus plus infusion time totaled 3 hours and each dose was modeled with an 8-hour interval for both first dose and at steady state; BPI dosing was utilized for each dose. The primary outcome was probability of target attainment (PTA) of 40% time above minimum inhibitory concentration (T>MIC). Secondary outcomes included PTA 54% T>MIC and PTA 100% T>MIC.

Results. A total of 4,763 cultures (91 blood, 1,570 urine) grew Enterobacteriaceae. One-hundred and twenty-five (7%) cultures grew isolates with a ciprofloxacin MIC of 0.5 or 1 μg/mL. Eighteen patients with Enterobacteriaceae isolated (4 blood, 14 urine) received an FQ. Among these patients, the median LOS was 4 days; one patient was readmitted within 30 days, and 0% mortality was observed. The patient readmitted within 30 days received an FQ for a blood isolate with MIC 0.5. Overall, with the revised breakpoints, we observed a 4.2% decrease in the number of Enterobacteriaceae that would be susceptible to ciprofloxacin (Figure 1).

Conclusion. The new FQ breakpoints for Enterobacteriaceae will have a marginal impact on overall FQ susceptibility rates at our medical center. In this single-center study, patients that received FQ antibiotics for Enterobacteriaceae with MIC values now considered intermediate or resistant did not appear to experience poor outcomes.

Disclosures. All authors: No reported disclosures.

1548. Characterizing Cefepime Neurotoxicity: Experience from a Tertiary Care Center Performing P-lactam Therapeutic Drug Monitoring
Cara Nys, 2019 PharmD Candidate; Natalie Hurst, 2021 PharmD Candidate; Jiajun Liu, PharmD; Kartikaya Cherabuddi, MD; Nicole M. Jovine, MD, PhD; Marc H. Schetz, PharmD, MSc; Nathaniel J. Rhodes, PharmD, MSc, BCPS-AQ ID; Kenneth Klinker, PharmD; Venugopal Venkata, PharmD; University of Florida College of Pharmacy, Tequesta, Florida; Midwestern University/Northwestern Memorial Hospital, Downers Grove, Illinois; University of Florida, Gainesville, Florida; Midwestern University, Downers Grove, Illinois; Merck & Co, Inc., Chaped Hill, North Carolina; University of Florida, College of Pharmacy, Gainesville, Florida

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Background. Based on prior studies, elderly patients and those with renal dysfunction are prone to cefepime (CFP) toxicity. The toxicokinetics and toxicodynamics for CFP are not well established. Lamoth et al. reported a 50% probability of CFP neurotoxicity at a serum trough concentration of ≥35 mg/L. We performed a Monte Carlo simulation investigating a novel method of CFP neurotoxicity when concentrations exceeded 35 mg/L. The objectives of this study were to quantify the incidence of CFP neurotoxicity and to assess the association between CFP concentrations and neurotoxicity.

Methods. We conducted a retrospective review between March 2016 and May 2018, of adult patients with serum CFP trough concentrations ≥25 mg/L. To be considered a CFP neurotoxicity case, patients were required to fulfill at least two of the NCI criteria for neurological toxicity such as, presence of new-onset confusion, delirium, or drowsiness. Following this, cases were classified as (1) high likelihood of toxicity (HLT) if they either had a neurology consult or EEG findings consistent with CFP toxicity and if their symptoms improved after discontinuation of CFP, (2) possible toxicity (PT) if neurology consult or EEG was absent or if we were unable to assess improvement after CFP was discontinued, or (3) no toxicity (NT). Cases were independently reviewed by an ID pharmacist and physician. Additional data such as comorbidities, renal function, and use of anti-epileptics were collected.

Results. One hundred and forty-two patients were included in the analysis. Neurotoxicity (HLT+PT) related to CFP occurred in 18/142 (13%) patients; 67% of cases were confirmed by a neurology consult. We assessed the length of stay (LOS), mortality, and 30-day readmissions among patients who received an FQ for treatment. The impact of the new breakpoints on overall Enterobacteriaceae susceptibility rates from urine and blood isolates was also determined.

Conclusion. The new FQ breakpoints for Enterobacteriaceae will have a marginal impact on overall FQ susceptibility rates at our medical center. In this single-center study, patients that received FQ antibiotics for Enterobacteriaceae with MIC values now considered intermediate or resistant did not appear to experience poor outcomes.

Disclosures. All authors: No reported disclosures.

1549. Impact of New Fluoroquinolone Breakpoints on Enterobacteriaceae Susceptibility Rates and Clinical Outcomes
Natalia N. Pettit, PharmD; Cynthia T. Nguyen, PharmD; Jennifer Pisano, MD; Angelia Charnot-Katsiakas, MD; University of Chicago Medicine, Chicago, Illinois

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Background. In January 2019, the Clinical and Laboratory Standards Institute (CLSI) lowered the fluoroquinolone (FQ) susceptibility breakpoints for Enterobacteriaceae. The new breakpoints were updated primarily based on FQ pharmacodynamics, and only limited clinical data. We sought to evaluate clinical outcomes among patients who received an FQ for infection with Enterobacteriaceae with MIC values that would now be considered resistant, using the new interpretive criteria. We also assessed the potential impact of the new breakpoints on overall blood and urine Enterobacteriaceae susceptibility rates at our medical center.

Methods. All positive blood and urine cultures with Enterobacteriaceae between September 1, 2018 and February 28, 2019 were included. Enterobacteriaceae isolates with ciprofloxacin MICs of 0.5 and 1 μg/mL (based on new breakpoints, now considered non-susceptible) were identified. We assessed the length of stay (LOS), mortality, and 30-day readmissions among patients who received an FQ for treatment. The impact of the new breakpoints on overall Enterobacteriaceae susceptibility rates from urine and blood isolates was also determined.

Results. A total of 4,763 cultures (91 blood, 1,570 urine) grew Enterobacteriaceae. One-hundred and twenty-five (7%) cultures grew isolates with a ciprofloxacin MIC of 0.5 or 1 μg/mL. Eighteen patients with Enterobacteriaceae isolated (4 blood, 14 urine) received an FQ. Among these patients, the median LOS was 4 days; one patient was readmitted within 30 days, and 0% mortality was observed. The patient readmitted within 30 days received an FQ for a blood isolate with MIC 0.5. Overall, with the revised breakpoints, we observed a 4.2% decrease in the number of Enterobacteriaceae that would be susceptible to ciprofloxacin (Figure 1).

Conclusion. The new FQ breakpoints for Enterobacteriaceae will have a marginal impact on overall FQ susceptibility rates at our medical center. In this single-center study, patients that received FQ antibiotics for Enterobacteriaceae with MIC values now considered intermediate or resistant did not appear to experience poor outcomes.

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