Entasis (Individual(s) Involved: Self); Consultant; Fujifilm (Individual(s) Involved: Self): Advisor or Review Panel member; Gilead (Individual(s) Involved: Self); Consultant; GSK (Individual(s) Involved: Self); Consultant; Kanto Chemical (Individual(s) Involved: Self); Grant/Research Support; MSD (Individual(s) Involved: Self); Speaking Fee; Pfizer (Individual(s) Involved: Self); Grant/Research Support; Schoenberg (Individual(s) Involved: Self); Grant/Research Support; Speakers’ bureau; Teijin Healthcare (Individual(s) Involved: Self); Speakers’ bureau; Vatenox (Individual(s) Involved: Self); Consultant

786. Facility Reported vs. CLSI MIC Breakpoint Comparison of Carbenapenem Non-susceptible (Carb-NS) Pseudomonas aeruginosa (PSA) From 2016-2019: A Multicenter Evaluation
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Methods. All adults with a positive non-contaminant PSA culture (first isolate per 30-day period from blood, respiratory, urine, skin/wound, intra-abdominal, or other) in ambulatory and inpatient settings from 298 US hospitals from Q1 2016-Q4 2020 were evaluated (BD Insights Research Database). Becton, Dickinson and Company. Facility-reported Carb-non susceptible (NS) was defined as lab information system feed designations of susceptible (S), intermediate (I) or resistant (R) to imipenem (IPM), meropenem (MEM) and/or doripenem (DOR) per commercial panels. Where available, MICs were interpreted using CLSI 2012 Carb breakpoints (μg/mL) of ≤0.5 (I), 1 (R) for IPM/MEM/DOR. For evaluable PSA isolates we compared susceptibility results as reported by the facility to those using CLSI MIC breakpoints.

Results. Overall, 86.9% (255,844/294,426) of non-duplicate PSA isolates with facility-reported IPM/MEM/DOR susceptibility interpretations also had interpretable MIC results. S rates were 84.9% and 83.3% as reported by facilities and determined by CLSI criteria, respectively (Table). Facilities under-reported Carb-NS by 9.8%, using CLSI criteria as the standard (10.4% and 7.7% of R and I isolates, respectively, were missed by facility reporting).

Conclusion. Systematic application of CLSI Carb breakpoints in 2016-20 would have had minimal impact on PSA S rates in the US. However, facility reporting failed to identify ~10% of Carb-NS isolates. The clinical implications of this observation are unknown. Facilities should know their local epidemiology, decide if under-reporting might be an issue, and assess if there is any impact on their patients.

Disclosures. Vikas Gupta, PharmD, BCPS, Becton, Dickinson and Company (Employee, Shareholder); Kalvin Yu, MD, BD (Employee) Jason M Pogue, PharmD, BCPS, BCIDP, Merck (Consultant) VenatoRx (Consultant) Danet Weeks, PhD, Becton, Dickinson and Company (Employer) Cornelius J. Clancy, MD, Merck (Grant Support)

787. Clinical and Genomic Epidemiology of mcr-9 Containing Carbenapenem-resistant Enterobacteriaceae Isolates in Metropolitan Atlanta, 2012-2017
Ahmed Babiker, MBBS1; Chris W. Bower, MPH2; Sarah W. Satola, PhD3,4,5; Jesse T. Jacob, MD, MSc2, Michael H. Woodworth, MD, MSc3; 1Emory University School of Medicine, Atlanta, GA; 2Georgia Emerging Infections Program, Decatur, GA; 3Emory University, Atlanta, GA

Methods. Ambulatory and inpatient settings from 298 US hospitals from Q1 2016-Q4 2020 were evaluated (BD Insights Research Database). Becton, Dickinson and Company. Facility-reported Carb-non susceptible (NS) was defined as lab information system feed designations of susceptible (S), intermediate (I) or resistant (R) to imipenem (IPM), meropenem (MEM) and/or doripenem (DOR) per commercial panels. Where available, MICs were interpreted using CLSI 2012 Carb breakpoints (μg/mL) of ≤0.5 (I), 1 (R) for IPM/MEM/DOR. For evaluable PSA isolates we compared susceptibility results as reported by the facility to those using CLSI MIC breakpoints.

Results. Overall, 86.9% (255,844/294,426) of non-duplicate PSA isolates with facility-reported IPM/MEM/DOR susceptibility interpretations also had interpretable MIC results. S rates were 84.9% and 83.3% as reported by facilities and determined by CLSI criteria, respectively (Table). Facilities under-reported Carb-NS by 9.8%, using CLSI criteria as the standard (10.4% and 7.7% of R and I isolates, respectively, were missed by facility reporting).

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788. Enterobacter cloacae Infection Characteristics and Outcomes in Military Personnel who Sustained Trauma in Iraq and Afghanistan
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Conclusion. The presence of mcr-9 was not associated with significant changes in colistin resistance or clinical outcomes.

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S490 • OFID 2021:8 (Suppl 1) • Abstracts
Background. Enterobacter cloacae is a Gram-negative rod with chromosomally induced Amp-C β-lactamase with multidrug-resistant potential. Joint Trauma System guidelines for treating combat wounds include piperacillin with ceftazolin and erapenem, potent inducers of Amp-C. We evaluated clinical characteristics, antibiotic utilization, and outcomes associated with battlefield-related E. cloacae infections.

Methods. All initial solitary (those with single isolates) and serial E. cloacae isolates (≥24 hours from initial isolate from any site) were collected from the Trauma Infectious Disease Outcomes Study (2009-12/2014). Inclusion required E. cloacae isolation from a clinical infection. Amp-C-inducing β-lactams were classified based on inactivation potential and liability to the Amp-C-β-lactamase as Amp-C induction levels.

Results. Of 653 E. cloacae isolates, 253 met inclusion criteria – 64 patients had only initial isolates, 54 patients had serial isolates. Patients were largely male (99%), median age 23 years (IQR 21-27), with injury severity score of 34 (IQR 24-45). Initial isolates were wound (70%), respiratory (22%), blood (7%), and other (1%). Patients commonly had blast injuries (89%), required ICU admission (95%), and had a median hospital stay of 57 days (IQR 39-82). Patients with serial isolates showed a trend towards earlier clinical infection (5 vs 8 days, P = 0.07). They were also less likely to receive carbapenems prior to E. cloacae isolation compared to those with only initial isolates (4% vs 38%) and more likely to receive 1st generation cephalosporins (79% vs 58%, P = 0.01). The serial isolate group received more days of 1st generation cephalosporins (median 6 days vs 2.5 days, P = 0.01). Cumulative antimicrobial therapy trended towards significance and was greater with the serial isolates (median 100 days vs 74 days, P = 0.08). There was no difference in number of surgical interventions between those with and without serial isolates (P = 0.54).

Conclusion. E. cloacae infections after battlefield trauma were frequently encountered and associated with exposure to 1st generation cephalosporins. Serial infections did not correlate to worse patient outcomes but displayed a trend towards an overall greater duration of antibiotic use.

Disclosures. William N. Bennett, V, MD, Abbvie (Shareholder)Amgen (Shareholder)Nabriva (Shareholder)

789. Susceptibility of Phenotypic Subsets of Pseudomonas aeruginosa Isolates to Cefiderocol and Comparator Agents from SIDERO-WT 2014-2019

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Session: P-39. HAI: Gram-negatives (MDR-GNR)

Background. Multidrug-resistant (MDR) phenotypes are frequently observed among P. aeruginosa (PaA) isolated from hospitalized patients. This study describes the in vitro activities of cefiderocol (CFDC) and comparator agents against various non-susceptible (NS) phenotypic subsets of MDR PaA isolates from the SIDERO-WT multi-national surveillance program.

Methods. Clinical PaA isolates were collected from North America (NA) and Europe in 2014-2019 and tested for susceptibility at a central laboratory. MICs (µg/mL) were determined for CFDC, ceftazidime/avibactam (CZA), cefotaxime/tazobactam (C/T), colistin, cefepime, meropenem (MEM), and ciprofloxacin by broth microdilution according to CLSI guidelines. Astreanom-avibactam (avibactam fixed concentration of 4 µg/mL) and imipenem/relebactam (I/R) were only tested during SIDERO-WT Year 5 (i.e. 2019). Susceptibility was interpreted according to current FDA and 2021 CLSI breakpoints.

Results. The different phenotypic subsets and susceptibility of tested compounds are shown in the table. Among 770 PaA isolates, 47.7% and 23% were from respiratory and gastrointestinal sources of infection, CFDC inhibited 97.5% and 99.9% of all PaA at its FDA-S and CLSI-S MIC breakpoint of ≤1 and ≤4, respectively. CFDC had the lowest MIC50 of all tested agents and >99% at a MIC ≤4 for all phenotypic subsets. At a MIC ≤1, CFDC displayed high susceptibility rates against all subsets including ≥88% S against CZA-NS, C/T-NS, I/R-NS, and MEM-IR-NS isolates. Against MDR subsets, comparator agents consistently demonstrated lower activity than CFDC; 88% of MEM+C/T-NS and MEM+CZA-NS isolates had a CFDC MIC ≤1 while 15.6% and 20.3% were S to I/R, respectively. 86% of MEM+CZA+C/T-NS and 80.4% CZA+C/T-NS isolates were S to CFDC. CFDC inhibited 98.1% and 99.4% of PaA isolates from NA (n = 3548) at a MIC of ≤1 and ≤4, respectively. In NA isolates that were MEM+C/T-NS; 85.7% of PaA isolates had a MIC ≤1 to CFDC and 33.3% and 28.6% were S to CZA and I/R, respectively.

Conclusion. CFDC demonstrated potent in vitro activity against a variety of phenotypic subsets of MDR P. aeruginosa isolates as compared to agents that are commonly used to treat MDR PaA infections including strains NS to other agents. These data support the use of CFDC as an important treatment option for MDR PaA.

Disclosures. Sean Nguyen, PharmD1, Shionogi Inc (Employee) David Fam, PharmD2, Daniel F. Sahm, PhD1 (Employee) Roger Echols, MD3 (Independent Contractor) Meredith Hackel, PhD MPH1, IHMA (Employee) Pfizer, Inc. (Independent Contractor) Roger Echols, MD, Shionogi (Consultant) Yoshihori Yamano, PhD, Shionogi (Employee)

790. Evaluation of an Enhanced CPE Screening Program in an Acute Care Hospital in South Korea

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Session: P-39. HAI: Gram-negatives (MDR-GNR)

Background. Carbenapenemase-producing Enterobacteriaceae (CPE) poses a great challenge in infection control in healthcare settings. A screening and contact precautions are recommended to prevent the spread of CPE among patients. However, screening strategies differ among countries and healthcare facilities.

Methods. In September 2018, we launched a CPE screening program at a 660-bed hospital in South Korea, which targeted previously colonized patients, patients with history of admission < 1 month or transferred patients or ICU-admitted patients. Once patients were identified to have CPE, they were isolated in a single room. After a CPE outbreak in July-Aug 2019, the enhanced screening program was implemented, which included patients with additional risk factors (exposure to hospitals in the past 6 months, receipt of hemodialysis or invasive procedures or rehabilitation) combined with weekly screening in ICU-admitted patients. Screening changed from two consecutive rectal screening swabs with chromogenic agar to initial screening with Xpert-Carba-R PCR, followed by one or two consecutive tests with chromogenic agar. We compared the CPE incidence in screening and clinical cultures before and after the enhanced screening program introduction (Sep 2018-Nov 2020).

Results. A total of 14,318 (2.178 vs. 12.140) were screened among 49,980 admitted patients and screening compliance increased from 18.6% to 94.5%. The number of CPE detection increased from 44 to 154 cases and the proportion of CPE-positive screening per 1000 admissions increased 0.6 to 2.2. However, the number of clinical CPE cultures decreased from 11 to 3 (Figure). Among screened patients, time-to-positivity was markedly reduced by 1.9 days (2.96 vs. 1.02 days) during the post-period. Additional 70 patients were detected: 36 due to serial screening in the ICUs and 44 due to enhanced on-admission screening. Factors significantly associated with positive screening were previous exposure to hospital (OR 3.5; 95% CI 1.7-7.7) and receipt of hemodialysis before admission (OR 4.3; 95%CI 1.9-9.2). CPE isolates and carbapenemase genes were diverse (Figure). Trends in CPE detection in screening and clinical samples (upper), and bacterial species with detected carbapenemase genes (lower).