Healthcare Epidemiology of America (SHEA) updated clinical practice guidelines for CDI. The new guidelines recommend oral vancomycin or fidaxomicin for treatment of initial episode of CDI in adults. We examined the changes in treatment of CDI during 2018 across all types of healthcare settings in metropolitan Atlanta. **Methods:** Cases were identified through the Georgia Emerging Infections program (funded by the Centers for Disease Control and Prevention), which conducts active population-based surveillance in an 8-county area including Atlanta, Georgia (population, 4,126,399). An incident case was a resident of the catchment area with a positive *C. difficile* toxin test and no additional positive test in the previous 8 weeks. Recurrent CDI was defined as >1 incident CDI episode in 1 year. Clinical and treatment data were abstracted on a random 33% sample of adult (>17 years) cases. Definitive treatment categories were defined as the single antibiotic agent, metronidazole or vancomycin, used to complete a course. We examined the effect of time of infection, location of treatment, and number of CDI episodes on the use of metronidazole only. **Results:** We analyzed treatment information for 831 adult sampled cases. Overall, cases were treated at 29 hospitals (568 cases), 4 nursing homes (6 cases), and 101 outpatient providers (257 cases). The mean age was 60 (IQR, 34–86), and 111 (13.4%) had recurrent infection. Moreover, ~28% of first-incident CDI episodes, 8% of second episodes, and 6% of third episodes were treated with metronidazole only. Compared to facility-based providers, outpatient providers were more likely to treat initial CDI episodes with metronidazole only (44% vs 21%; relative risk [RR], 2.1; 95% CI, 1.7–2.7). Treatment changed over time from 56% metronidazole only in January to 10% in December (Fig. 1). First-incident cases in the first quarter of 2018 were more likely to be treated with metronidazole only compared to those in the fourth quarter (RR, 2.76; 95% CI, 1.91–3.97). **Conclusions:** Preferential use of vancomycin for initial CDI episodes increased throughout 2018 but remained <100%. CDI episodes treated in the outpatient setting and nonrecurrent episodes were more likely to be treated with metronidazole only. Additional studies on persistent barriers to prescribing oral vancomycin, such as cost, are warranted.

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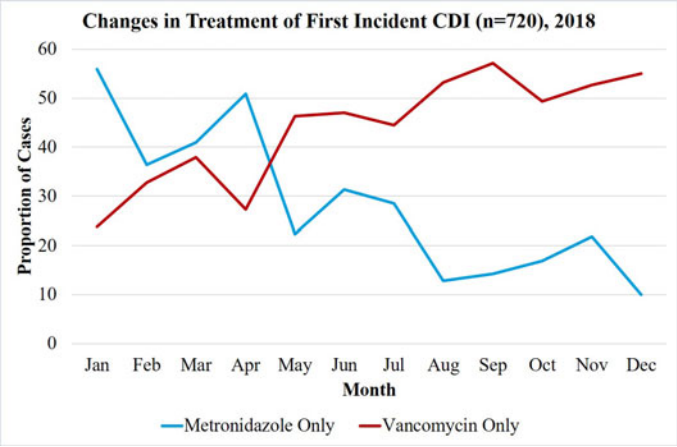

Fig. 1

Presentation Type:
Poster Presentation

Carbapenem-Resistant *Acinetobacter baumannii* Incidence Trends Identified Through the Emerging Infections Program, 2012–2018

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Background: Carbapenem-resistant *Acinetobacter baumannii* (CRAB) is a serious threat to patient safety due to limited treatment options and propensity to spread in healthcare settings. Using Emerging Infections Program (EIP) data, we describe changes in CRAB incidence and epidemiology. **Methods:** During January 2012 to December 2018, 9 sites (Colorado, Connecticut, Georgia, Maryland, Minnesota, New Mexico, New York, Oregon, and Tennessee) participated in active laboratory- and population-based surveillance. An incident case was defined as the first isolation of *A. baumannii* complex, in a 30-day period, resistant to ≥1 carbapenem (excluding ertapenem) from a normally sterile site or urine of a surveillance area resident. Cases were considered hospital-onset (HO) if the culture was collected >3 days after hospital admission; all others were community-onset (CO). Cases were classified as device-associated (DA) if the patient had 1 or more medical devices (ie, urinary catheter, central venous catheter (CVC), endotracheal/nasotracheal tube, tracheostomy, or another indwelling device) present in the 2 days prior to culture collection. Temporal trends were estimated using generalized linear models adjusted for age, race, sex, and EIP site. **Results:** Overall, 984 incident CRAB cases were identified, representing 849 patients. Among these patients, 291 (34%) were women, 510 (61%) were nonwhite, and the median age was 62 years (mean, 59; range, 0–102). Among the cases, 226 (23%) were HO; 758 (77%) were CO; and 793 (81%) were DA. Overall incidence rates in 2012 and 2018 were 1.58 (95% CI, 1.29–1.90) and 0.60 (95% CI, 0.40–0.67) per 100,000 population, respectively. There was a 15% annual decrease in incidence (adjusted rate ratio [aRR] 0.85; 95% CI: 0.82-0.88, $P < .0001$). Decreases were observed among sterile site (aRR 0.88; 95% CI, 0.84–0.93) and urine cases (aRR 0.83; 95% CI, 0.80–0.87). Annual decreases occurred for HO cases (aRR, 0.78; 95% CI, 0.73–0.85) and CO cases (aRR, 0.86; 95% CI, 0.83–0.9). The DA cases decreased 16% annually overall (aRR, 0.84; 95%

CI, 0.81–0.88). Decreases among cases in patients with CVC (aRR, 0.85; 95% CI, 0.80–0.90) and urinary catheters (aRR, 0.84; 95% CI, 0.80–0.88) were smaller than what was seen in patients with other indwelling devices (aRR, 0.81; 95% CI, 0.77–0.86). **Discussion:** Overall, from 2012 to 2018, the incidence of CRAB decreased >60%. Decreases were observed in all case groups, regardless of source, infection onset location, or types of devices. Smaller annual decreases in rates of CO-CRAB than HO-CRAB suggest that there may be opportunities to accelerate prevention outside the hospital to further reduce the incidence of these difficult-to-treat infections.
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Carbapenem-Resistant Enterobacteriaceae Resistant Only to Ertapenem: An Epidemiologically Distinct Cohort, Atlanta, 2016–2018

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Background: Carbapenem-resistant Enterobacteriaceae (CRE), particularly carbapenemase-producing (CP) CRE, pose a major public health threat. In 2016, the phenotypic definition of CRE expanded to include ertapenem resistance to improve sensitivity for detecting CP-CRE. We compared characteristics of CRE resistant to ertapenem only (CRE-EO) to CRE resistant to ≥1 other carbapenem (CRE-O). **Methods:** The Georgia Emerging Infections Program performs active, population-based CRE surveillance in metropolitan Atlanta. CRE cases were defined as any *Escherichia coli*, *Klebsiella pneumoniae*, *K. oxytoca*, *K. variicola*, *Enterobacter cloacae* complex, or *Enterobacter aerogenes* resistant to ≥1 carbapenem by the clinical laboratory and isolated from urine or a sterile site between 2016 and 2018. Data were extracted from retrospective chart review and 90-day mortality from Georgia vital statistics for 2016–2017. Polymerase chain reaction (PCR) for carbapenemase genes was performed on a convenience sample of isolates by the CDC or Georgia Public Health Laboratory. We compared characteristics of CRE-EO cases to CRE-O cases using χ^2 tests or *t* tests. **Results:** Among 927 CRE isolates, 553 (60%) were CRE-EO. CRE-EO were less frequently isolated from blood (5% vs 12%; $P < .01$) and less commonly *K. pneumoniae* (21% vs 58%; $P < .01$) than CRE-O. CRE-EO cases were more often women (65% vs 50%; $P < .01$), had a lower Charlson comorbidity index

Table 1.

CRE-EO vs CRE-O Antibiotic Susceptibility Test Results

(Clinical Laboratory Testing)

Antibiotics	CRE-EO (n=553) % Susceptible	CRE-O (n=374) % Susceptible
Aminoglycosides		
Amikacin	96%	64%
Gentamicin	77%	60%
Tobramycin	73%	34%
Cephalosporins		
Ceftazidime	42%	19%
Cefepime	42%	14%
Carbapenems		
Ertapenem	0%	15%
Imipenem	91%	7%
Doripenem	95%	6%
Meropenem	90%	9%
β -Lactam/ β -Lactamase inhibitors		
Piperacillin/Tazobactam	49%	21%
Ampicillin/Sulbactam	20%	6%
Others		
Levofloxacin	53%	27%
Tigecycline	75%	75%
Trimethoprim/ Sulfamethoxazole	59%	36%

* P-values were <.01 except tigecycline (p=1.00)