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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Poster Presentation

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)

(mean ± SD, 2.4±2.3 vs 3.0±2.6; $P < .01$), and were less commonly at a long-term care facility (24% vs 31%) or hospital (15% vs 21%; $P < .01$) in the 4 days prior to the CRE culture. CRE-EO were more susceptible to all antibiotics tested at the clinical laboratory ($P < .01$) except for tigecycline ($P = 1.0$) (Table 1). Of the 300 (32%) isolates tested for carbapenemase genes, 98 (33%) were positive (7% CRE-EO vs 62% CRE-O; $P < .01$). Of the CP isolates, we identified *bla*KPC in 93 cases (95%), *bla*NDM in 3 cases (3%), *bla*OXA-48-like in 2 cases (2%). CRE-EO cases had lower 90-day mortality (13% vs 21%; $P < .01$). **Conclusions:** CRE-EO are epidemiologically distinct from CRE-O and are less likely to harbor carbapenemase genes. CRE-EO may require less intensive infection prevention interventions and have more therapeutic options.

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Central-line–Associated Bloodstream Infections Among Adult Intensive Care Unit Patients in Canadian Hospitals, 2011–2018

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Background: Nosocomial central-line–associated bloodstream infections (CLABSIs) are an important cause of morbidity and mortality in hospitalized patients. CLABSI surveillance establishes rates for internal and external comparison, identifies risk factors, and allows assessment of interventions. **Objectives:** To determine the frequency of CLABSIs among adult patients admitted to intensive care units (ICUs) in CNISP hospitals and evaluate trends over time. **Methods:** CNISP is a collaborative effort of the Canadian Hospital Epidemiology Committee, the Association of Medical Microbiologists and Infectious Disease Canada and the Public Health Agency of Canada. Since 1995, CNISP has conducted hospital-based sentinel surveillance of healthcare-associated infections. Overall, 55 CNISP hospitals participated in ≥1 year of CLABSI surveillance. Adult ICUs are categorized as mixed ICUs or cardiovascular (CV) surgery ICUs. Data were collected using standardized definitions and collection forms. Line-day denominators for each participating ICU were collected. Negative-binomial regression was used to test for linear trends, with robust standard errors to account for clustering by hospital. We used the Fisher exact test to compare binary variables. **Results:** Each year, 28–42 adult ICUs participated in surveillance (27–37 mixed, 6–8 CV surgery). In both mixed ICUs and CV-ICUs, rates remained relatively stable between 2011 and 2018 (Fig. 1). In mixed ICUs, CLABSI rates were 1.0 per 1,000 line days in 2011, and 1.0 per 1,000 line days in 2018 (test for linear trend, $P = .66$). In CV-ICUs, CLABSI rates were 1.1 per 1,000 line days in 2011 and 0.8 per 1,000 line days in 2018 ($P = .19$). Case age and gender distributions were consistent across the surveillance period. The 30-day all-cause mortality rate was 29% in 2011 and in 2018 (annual range, 29%–35%). Between 2011 and 2018, the percentage of isolated microorganisms that were coagulase-negative staphylococci (CONS) decreased from 31% to 18% ($P = .004$). The percentage of other gram-positive organisms increased from 32% to 37% ($P = .34$); *Bacillus* increased from 0% to 4% of isolates and methicillin-susceptible *Staphylococcus aureus* from 2% to 6%). The gram-negative organisms increased from 21% to 27% ($P = .19$). Yeast represented 16% in 2011 and 18% in 2018; however, the percentage of yeast that were *Candida albicans* decreased over time (58% of yeast in 2011 and 30% in 2018; $P = .04$). Between 2011 and 2018, the most commonly identified species of microorganism in each year were CONS (18% in 2018) and *Enterococcus* spp

Figure: Central line-associated bloodstream infection (CLABSI) rate per 1000 line-days in mixed- and cardiovascular (CV) surgery intensive care units (ICUs) among adult patients at CNISP hospitals, 2011–2018, with 95% confidence intervals

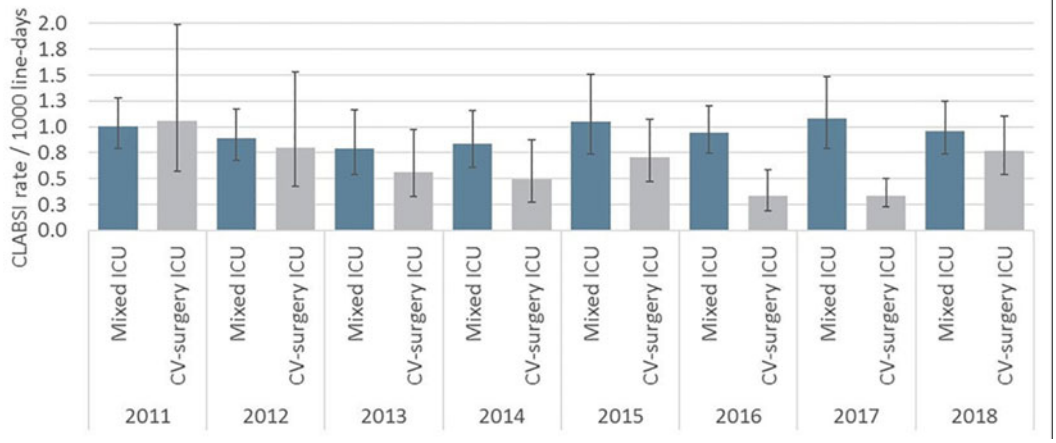

Fig. 1