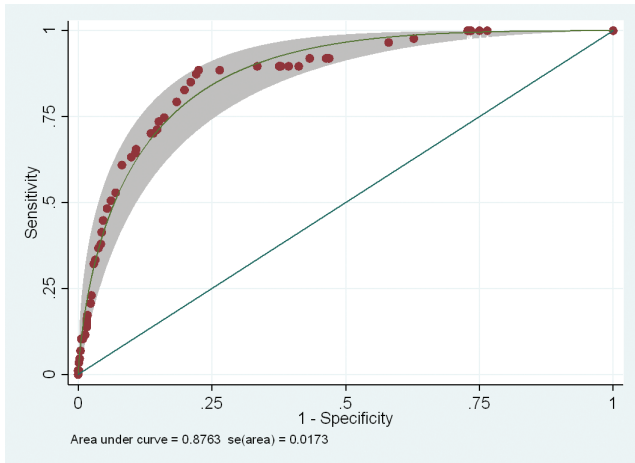


at bedside for patients admitted with sepsis. A future prospective interventional study is needed in order to validate the score, captured at bedside electronically, in terms of improving patients' outcomes.



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1205. Emergence of Carbapenemase Producing *Enterobacteriaceae* in South Central Ontario, Canada

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Session: 136. Healthcare Epidemiology: MDR-Gram Negative Infections
Friday, October 5, 2018: 12:30 PM

Background. The spread of CPE is an increasing global threat to patient safety. We describe the introduction and evolution of CPE in south-central Ontario, Canada.

Methods. The Toronto Invasive Bacterial Diseases Network has performed population based surveillance for CPE in metropolitan Toronto and Peel region from first identified isolates in 2007. All laboratories test/refer all carbapenem non-susceptible *Enterobacteriaceae* isolates for PCR testing for carbapenemases. Demographic and medical data and travel history are collected from chart review and patient/physician interview.

Results. Since 2007, 659 patients have been identified as colonized/infected with CPE; 362 (57%) have at least one clinical isolate. Annual incidence has increased from 0 in 2006 to 1.3 per 100,000 in 2016/17 (Figure 1). First bacteremia occurred in 2010, the incidence in 2017 was 0.14 per 100,000 population. 388 (59%) patients were male, median age was 70 years (range 3 months–100 years). Most common genes among first isolates were NDM (306, 46%), OXA48 (149, 23%), KPC (122, 19%). Most common species were *K. pneumoniae* (268, 41%) and *E. coli* (259, 39%). Over time, second species/same gene were identified in 113 (16%) patients. In addition, 34/xxx patients with isolates with NDM and/or OXA-48 subsequently had a second isolate with a different gene/gene combination. Of 518 patients whose travel and hospitalization history are available, patients with VIM were less likely than other patients to have a foreign hospitalization or travel history (9/28 vs. 341/490, $P < 0.0001$). Patients with KPC were more likely to have a hospitalization history outside Canada and the Indian subcontinent (25/70, 36%), in Canada (47/164, 29%) than to have no hospitalization in the last year (13/93, 14%), or a history of hospitalization in the Indian subcontinent (2/191, 1%) ($P < 0.001$). The number of incident patients with different hospitalization and travel history over time is shown in Figure 2.

Conclusion. CPE is increasingly recognized in southern Ontario, both in patients with a history of exposure in healthcare in other countries, and to healthcare in Canada. Intensification of control programs is urgently needed.

Figure 1. Incidence of clinical isolates of CPE over time.

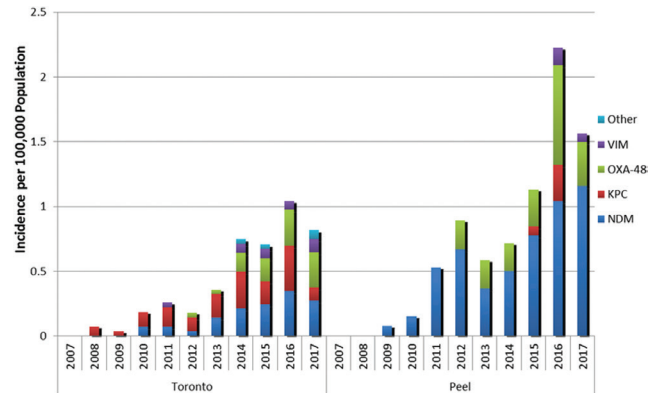
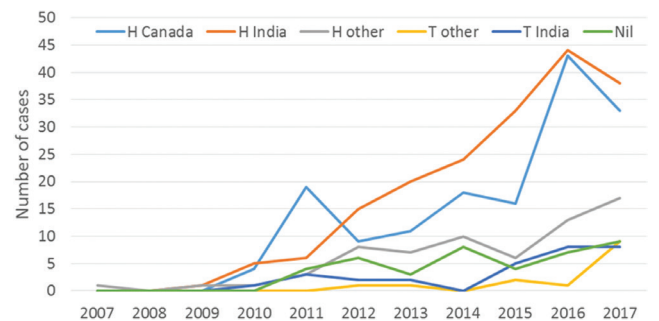


Figure 2. Number of incident CPE cases with different hospitalization (H) and travel (T) history over time.



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1206. Risk Factors of Antibiotic Resistance in *E. coli* Isolated from the MAL-ED Birth Cohort Study in Rural Tanzania

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Background. The emergence and spread of antimicrobial resistance is a serious global public health crisis. Drug-resistant Gram-negative bacteria, like *Escherichia coli*, are particularly concerning given their significant morbidity and mortality. Despite the increasing prevalence of drug-resistant Gram-negative bacteria worldwide, there are significant knowledge gaps in low resource countries. We aimed to characterize the prevalence, phenotypes, and risk factors of drug-resistant *E. coli* carriage in children up to age 5 from stool collected in the Etiology, Risk Factors, and Interactions of Enteric Infections and Malnutrition and the Consequences for Child Health and Development (MAL-ED) birth cohort study in rural Tanzania.

Methods. Two hundred sixty-two children were enrolled in the MAL-ED Tanzania site. We randomly selected 100 children who had *E. coli* specimens archived every 6 months through 60 months. Up to five lactose-fermenting colonies were selected from growth on MacConkey agar. Drug susceptibility testing of 18 antibiotics was performed by disk diffusion. CLSI interpretive criteria were used for determination of resistance. Generalized estimating equations were used to create a multivariate Poisson regression model for drug resistance risk factors.

Results. Eight hundred twenty-three *E. coli* specimens were available for testing. The highest rates of resistance were to ampicillin, cefazolin, and cotrimoxazole, respectively. No carbapenem resistance was found. 1.8% met criteria for extended-spectrum β -lactamase production based on combination disk testing. 696 (84.6%) specimens met criteria for multi-drug resistance (nonsusceptible to at least 1 drug in at least three drug categories). In terms of dynamic risk factors, there was no association between antibiotic use or episodes of diarrhea and antibiotic resistance. For static risk factors, there was an association between higher income and increased antibiotic resistance.