Conclusion. NHSN and NEDSS represent two unique data sources that allow for a more comprehensive assessment of CDIs. The number and type of facility that report to each system is slightly different but there is some overlap. Therefore, this comparison allows for detection of a greater number of reports overall and also provides an opportunity for data validation. This assessment identified discrepancies in reporting among facilities that can be targeted for further collaborative efforts to improve CDI reporting and management in Nebraska.

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1.300. Antimicrobial Exposure and Risk of Community-associated Clostridium difficile Infection (CA-CDI): A Self-Controlled Case Series Analysis
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Background. CA-CDI accounts for up to 50% of all CDIs. Case-control studies (CCS) have been used to estimate the odds ratio (OR) of CA-CDI associated with antibiotic exposure. These ORs demonstrate significant heterogeneity across studies. Unlike CCS, a self-controlled case series (SCCS) design can be used to control for all time-invariant confounders leading to less biased effect estimates.

Methods. Adults (≥18 years) registered (N = 139,670) with the Barrie and Community Family Health Team (BCFHT) were included in the study. Cases were defined as any patient with an incident case of CA-CDI and ≥1 antibiotic exposure occurring between January 1, 2011 and December 31, 2016. The SCCS model was used to estimate the association between antibiotic exposure and CA-CDI. The SCCS model yields estimates of the relative incidence of CA-CDI in exposure periods relative to non-exposure periods within a case. Exposure periods were defined as starting two days after any antibiotic prescription and ending 60 days later. Multiple exposure periods and time-invariant confounders due to calendar year were included in the final model. The relative incidence rate ratio (IRR) was estimated using conditional poison regression analysis. Proton pump inhibitor (PPI) use was included as an effect modifier. Antibiotics were divided into high-risk (fluoroquinolone, clindamycin, and cephalosporin) and low-risk exposures. Research ethics approval was obtained from the BCFHT research ethics board.

Results. Among 544 total CDI cases, N = 189 CA-CDI cases met the inclusion criteria. Any antibiotic exposure increases the risk by 2.2-fold, with no difference observed between high and low-risk groups (IRR=1.11, 95% CI 0.93–2.36) (Table 1). Antibiotic exposure increases the risk of CA-CDI, with IRR estimates similar to those observed for healthcare-associated-CDI. This, along with the control of all time-invariant confounders by the SCCS method suggests a less biased effect estimate previously reported from CCS.

| Variable | IRR (95% CI) |
|----------|-------------|
| PPI | 0.80 (0.62–1.03) |
| Low risk | 1.95 (0.94–4.24) |
| High risk | 1.20 (0.42–3.40) |
| Overall | 2.03 (1.19–3.47) |
| High risk | 2.26 (1.29–3.86) |

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1.301. Predictors of 30-day All-Cause Mortality in Veterans with First Recurrence of Clostridium difficile Infection (CDI)
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Background. Recurrent CDI is an important cause of mortality, however few studies have evaluated independent predictors of mortality in patients with recurrent CDI.

Methods. We conducted a case–control study nested in a national cohort of adult veterans with a CDI episode (defined as a positive stool sample for C. difficile toxin(s) & receipt of ≥2 days of CDI treatment [IV or PO metronidazole, PO or PR vancomycin, or fidaxomicin]) during an inpatient admission or outpatient encounter at a Veterans Affairs facility from 2010–2014. Only patients with a first recurrence were included, defining a subsequent CDI episode within 30 days from the end of treatment of the first CDI occurrence. Cases were those that experienced 30-day all-cause mortality and controls included survivors matched to cases on year of episode, facility, and severity. Multivariable conditional logistic regression was used to identify predictors of mortality.

Results. 110 cases were included in the study (1:4). Five predictors of mortality were identified including concurrent use of any antibiotic (OR 4.61, 95% CI 2.45–8.69), pulmonary heart disease (OR 4.70, 95% CI 1.30–17.06), the use of proton