Table 1. Detection and quantification of mucosal enterotoxins and viral loads in infants with RVF infection

| Organism     | Detection n (%) | Viral Load (Log10 PFU/mL) |
|--------------|-----------------|---------------------------|
| Type-1        | 21 (26%)        | 6.4 ± 0.5 (1.0–7.0)       |
| Type-2        | 7 (9%)          | 6.7 ± 0.6 (2.4–8.2)       |
| Type-3        | 3 (4%)          | 3.3 ± 0.5 (2.8–3.8)       |
| Type-4/5      | 6 (8%)          | 4.3 ± 0.7 (3.6–5.5)       |

Notes:
- HC: healthy controls; IP: infected persons; OP: outpatient values. Values represent absolute numbers and percentages or medians (25th–75th interquartile range–IQR). Man–Whitney test or Chi-square was used to determine differences between IP and OP (P-value).
- 0.05 is considered statistically significant. Days since onset of diarrhea ≤32 were below the limit of detection or detected at very low levels. In all groups, RVF loads expressed as log10 PFU/mL.

Disclosures.

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80. Opioid Analgesics Are Associated with Increased Clostridioides difficile Infection Risk in the United States 

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Session: 31. Not Just Your Everyday Diarrhea

Thursday, October 3, 2019: 11:19 AM

Background.

Clostridioides difficile infection (CDI) is the leading cause of healthcare-associated diarrhea. Several drugs are known to increase CDI risk, although the association between opioids and CDI risk has not been clearly established. Opioid analgesics have gastrointestinal antimotility and immunomodulatory effects, which may predispose patients to infection. The purpose of this study was to determine the association between opioid use and CDI risk.

Methods.

This was a retrospective case–control study that utilized inpatient and outpatient data from the national United States Veterans Health Administration (VHA). CDI patients included those age 18 to 89 years with an ICD-9-CM code for CDI (008.45), a positive stool test, and active CDI therapy between October 1, 2002 and September 30, 2014. A control cohort of VHA patients was created by randomly sampling patients without a CDI ICD-9-CM code during the study period and matched to CDI patients by visit setting and fiscal year. Opioid use was defined as at least one prescription for morphine, hydromorphone, hydrocodone, and/or codeine in the 90 days prior to study inclusion. The χ2 test was used to compare the proportion of patients who received an opioid in the CDI and control groups. Opioid risk factors for CDI were analyzed using a multivariable logistic regression model that included 53 covariates.

Results.

A total of 85,451 patients were included in this study (26,149 CDI patients and 59,302 controls). Overall, 50.1% and 30.1% of patients were prescribed an opioid in the CDI and cohort group, respectively. Overall, opioids were associated with significantly increased CDI risk (OR 1.92, 95% CI 1.86–2.00) and was even greater for >1 opioid (OR 2.40, 95% CI 2.25–2.55). Opioids with the strongest association with CDI risk include morphine (OR 2.04, 95% CI 1.95–2.13), followed by hydromorphone (OR 1.74, 95% CI 1.63–1.87), codeine (OR 1.56, 95% CI 1.44–1.70), and hydrocodone (OR 1.14, 95% CI 1.09–1.19).

Conclusion.

In a national cohort of veterans, patients with recent opioid analgesic use had an increased risk of developing CDI compared with a control group. Opioid analgesics with greater immunomodulatory and constipating effects were associated with increased risk compared with other opioids.

Disclosures.

All Authors: No reported Disclosures.

82. First 5 Years of Experience with the Illinois Extensively Drug-Resistant Organism (XDRO) Registry and Implementation of Automated Alerting

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Session: 32. Surveillance in Healthcare-associated Infections

Thursday, October 3, 2019: 10:50 AM

Background.

The Illinois XDRO Registry was created in November 2013 as an information system for XDROs; currently, the registry includes carbapenem-resistant Enterobacteriaceae (CRE), carbapenemase-producing Pseudomonas aeruginosa, and Candida auris. All Illinois healthcare facilities can manually query the registry at the time of admission to assess patients’ prior colonization status. A subset of facilities, mainly hospitals, participate in the registry’s automated querying process; alerts are sent automatically and sent via email, page, or text to infection preventions at the time of patient admission.

Methods.

We assessed counts of XDRO report submissions and total queries (manual and automated) over time, by organism. Facilities achieved automated alerts by sending a near-real-time feed of inpatient admission data (patient name and date of birth) to Illinois Department of Public Health (IDPH) via one of the three connection types: direct (data sent directly to IDPH), vendor (data sent via vendor software), and syndromic surveillance (existing syndromic surveillance data adapted for registry).

Results.

In total, 6,445 unique patients (11,258 total reports) from 213 facilities have been reported to the XDRO registry (counts by organism type, Table). The registry has been manually queried 39,678 times by 232 facilities. Seventy-five facilities have achieved automation of alerting; the types of data connections used were direct (N = 56), vendor (N = 18), and syndromic surveillance (N = 1). In total, 5,344 automated alerts have been sent for 1,555 unique patients. Automated alerts per month have increased over time (P < 0.001, Figure). Infection preventions reported feedback on 3,008 CRE alerts via a website questionnaire; among 1,176 first alerts/patient/facility, 49% of patients’ XDRO status were previously unknown to the facility, and 33% were not in contact precautions at the time of alert.

Conclusion.

The XDRO registry, originally focused on CRE, successfully expanded to include emerging XDRO threats such as Candida auris and is poised for rapid response to emerging threats. The registry’s adoption, reporting structure, and expanding automation have enabled it to deliver an increasing number of actionable infection-control alerts over time.

Table: Extensively Drug Resistant Organism Types Reported to XDRO Registry

| Organism                      | Date That Contaminated Culture First Identified in Illinois | Date of First Report to XDRO Registry | Lag From Outbreak to Report in Months | Unique Patients (as of April 2019) |
|-------------------------------|----------------------------------------------------------|---------------------------------------|---------------------------------------|-----------------------------------|
| Carbapenem-resistant Enterobacteriaceae | December 27, 2007 | November 2015 | 72 | 6,340 |
| Candida auris | May 2016 | January 2017 | 6 | 588 |
| Vancomycin-resistant A. pheumoniae | November 2016 | April 2017 | 6 | 78 |