account for the impact of an expansion in the MBI-LCBI organism list in 2017 from 489 organisms (32 genera) to 1,003 organisms (89 genera), we removed the MBI-LCBI events that met the newly added MBI organisms and generated additional MBI SIRs for 2017 and 2018. Results: The annual SIRs remained above 1 since 2015, indicating a greater number of MBI-LCBIs identified than were predicted based on the 2015 national data (Fig. 1). Each year’s SIR was significantly different than the national baseline, and the highest SIR was observed in 2017 (SIR, 1.377). In 2017, 12% of MBI events were attributed to an organism that was added to the MBI organism list, and in 2018 it was 10%. After removal of MBIs attributed to the expanded organisms, the 2017 and 2018 SIRs remained higher than those of previous years (1.241 and 1.232, respectively).

Conclusions: The distinction of MBI-LCBIs from all other CLABSI provides an opportunity to assess the burden of this infection type within specific patient populations. Since 2015, the increase of these events in the oncology population highlights the need for greater attention on prevention strategies pertinent to MBI-LCBI in this vulnerable population.

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Disclosures: None

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Presentation Type: Poster Presentation
Incidence Rate and Risk Factors for Recurrent Clostridium difficile Infection in Pediatric At-Risk Groups
Verinsa Mouajou, CHU Ste Justine Lucila Baldassarre, Université de Montreal

Background: Recurrence rates and risk factors of Clostridium difficile infection (CDI) are well established in adults, though little is known about the rate of recurrent CDI (rCDI) within the pediatric population. The purpose of this study was to identify rates and risk factors of rCDI in pediatric at-risk groups to guide the optimization of targeted prevention efforts against disease recurrence.

Methods: We report on the ongoing retrospective cohort study of pediatric patients at the CHU Sainte-Justine with a laboratory-confirmed diagnosis of CDI between April 1, 2012, and March 31, 2017. Incidence rates of rCDI were per 100 cases. Frequencies of rCDI were compared using the Fisher exact test. Univariate and multivariate logistic regression were used to identify risk factors for rCDI. Two-tailed P < .05 was considered significant. All statistical calculations were performed using R version 3.5.2 software.

Results: Of 80 patients analyzed with CDI, 16 had rCDI, for a rCDI rate in this population of 20%. Most recurrences were observed in secondarily immunosuppressed patients including, but not limited to, oncology patients undergoing chemotherapy and/or radiotherapy. Most patients had inflammatory bowel disease (IBD) (29.2%). Patients that were administered vancomycin orally (PO) had recurrent infection less often than patients that administered metronidazole PO or IV (8.3% vs 23.4%, respectively). This trend was observed in all at-risk patient groups. Patients with secondary immunodeficiency had 7.4 times increased odds of recurrence compared to nonimmunodeficient patients (adjusted OR, 7.43; 95% CI, 1.84–50.4; P = .0126).

Conclusions: Initial vancomycin PO therapy seems to be associated with a lower risk of recurrence. Pediatric patients with IBD and with secondary immunodeficiency are at increased risk of rCDI. Given that these populations have an increased underlying risk of diarrhea, it would be worthwhile to determine whether toxin is actually produced (EIA testing) and to prioritize prevention efforts.

Funding: None
Disclosures: None

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Presentation Type: Poster Presentation
Incidence Trends of Central-Line–Associated Bloodstream Infections in Acute-Care Hospitals, NHSN, 2009–2018
Allan Nkwata, CDC; Minn Soe, CDC; Quinna Li, CDC; Dominique Godfrey-Johnson, CDC; Jonathan Edwards, CDC; Margaret Dudeck, CDC

Background: Central-line–associated bloodstream infections (CLABSIIs) are an important cause of healthcare-associated morbidity and mortality in the United States. CLABSI surveillance in the CDC NHSN began in 2005 and has been propelled by state CLABSI reporting requirements, first introduced in 2005 and subsequently by the CMS requirements for intensive care units (ICUs) in 2011 and select ward locations in 2015. Although trend analyses were previously reported, no recent assessment of the NHSN CLABSI incidence rate changes has been performed. In this analysis, we evaluated trends in CLABSI rates in neonatal ICUs and all wards reported from acute-care hospitals. Methods: CLABSI rates, including blood stream infections attributed to mucosal barrier injury reported to the NHSN from 2009 to 2018, were analyzed. To evaluate trends in CLABSI incidence and to account for the potential impact of definitional changes in catheter-associated urinary tract infections (CAUTIs) that indirectly impacted CLABSI rates, as well as the CMS mandate for select wards, we conducted an interrupted time-series analysis using negative binomial random-effects modeling with an interruption in 2015. ICUs and ward locations were analyzed separately. Models were adjusted for patient care location type and hospital-level characteristics: hospital type, medical affiliation, teaching status, bed size, number of ICU beds, and average length of inpatient stay. Random intercept and slope models were used to account for differential baseline incidence and trends among reporting hospitals. Results: The overall crude incidence of CLABSI per 1,000 central-line days decreased from 1.6 infections in 2009 to 0.9 infections in 2018, times increased odds of recurrence compared to nonimmunodeficient patients (adjusted OR, 7.43; 95% CI, 1.84–50.4; P = .0126).
Table 2: CLABSI Trend Model Coefficients, Incidence Rate Ratios and Annual Percentage Change by Location Type

<table>
<thead>
<tr>
<th>Model Parameter</th>
<th>Estimate</th>
<th>Standard Error</th>
<th>p-value</th>
<th>Incidence Rate Ratio (95% CI)</th>
<th>Percent change per year²</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICUs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time Trend 2009-14 (d)</td>
<td>-0.03067</td>
<td>0.003123</td>
<td>&lt;0.0001</td>
<td>0.9996 (0.9980, 1.0010)</td>
<td>-0.10 (12.38, -98.45)</td>
</tr>
<tr>
<td>Inverse effect of intervention at 70% (d)</td>
<td>0.22757</td>
<td>0.03189</td>
<td>&lt;0.0001</td>
<td>1.2481 (1.2413, 1.2550)</td>
<td>8.73 (24.37, 35.82)</td>
</tr>
<tr>
<td>Change in site-directed use of line (p)</td>
<td>0.09687</td>
<td>0.007144</td>
<td>&lt;0.0001</td>
<td>1.0717 (1.0712, 1.0721)</td>
<td>0.72 (24.90, 32.70)</td>
</tr>
<tr>
<td>Time trend 2010-15 (d)</td>
<td>-0.03064</td>
<td>0.004155</td>
<td>&lt;0.0001</td>
<td>0.9962 (0.9952, 0.9973)</td>
<td>-0.36 (1.68, -5.61)</td>
</tr>
<tr>
<td>WARDS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time Trend (d)</td>
<td>-0.02829</td>
<td>0.004429</td>
<td>&lt;0.0001</td>
<td>0.9968 (0.9962, 0.9974)</td>
<td>-0.70 (18.80, 47.12)</td>
</tr>
<tr>
<td>Inverse effect of intervention at 70% (d)</td>
<td>0.22757</td>
<td>0.03171</td>
<td>&lt;0.0001</td>
<td>1.2502 (1.2493, 1.2512)</td>
<td>7.90 (24.90, 33.80)</td>
</tr>
</tbody>
</table>

Background: Resin-containing blood culture bottles (RBB) are used to increase the isolation of microorganisms by binding antimicrobials in sampled blood. Since RBB implementation in April 2018, our infection preventionists noted an increase in positive blood cultures on routine surveillance. **Objective:** To describe the change in bacterial isolation post-RBB implementation. **Methods:** All positive blood culture sets drawn in adult inpatient units or the emergency room between October 2017 and September 2018 and their associated organisms were obtained from the hospital laboratory database. Then, regardless of central-line placement or “present on admission” designation, the 2019 NHSN surveillance definitions for laboratory-confirmed bloodstream infection (LCBI-1 and LCBI-2) were applied to categorize all positive cultures as “common commensals” (CCs) or pathogens. A univariate analysis was performed using the Mantel-Haenszel χ² test (OpenEpi version 3.01). **Results:** Although the number of monthly blood cultures drawn remained effectively stable before and after implementation (pre-RBB median, 3,512.5; post-RBB median, 3,626), the rate ratio of positive cultures increased by 1.36 times: pre-RBB median, 127 sets per month and post-RBB median, 172.5 sets per month (χ² = 5.785; P = .008). The rate ratio of pathogen-containing cultures increased by 1.40 times (pre-RBB median, 98 sets per month and post-RBB median, 137.5 sets per month; χ² = 5.615; P = .009) with only a 1.24 increase in CCs (pre-RBB median, 29 and post-RBB median, 36; χ² = 0.553; P = .229) (Fig. 1). **Conclusions:** After RBB implementation, the monthly incidence rate of pathogen-containing sets increased. Additionally, the increase in these sets as well as overall positive blood cultures was statistically significant. Current literature on RBBs does not suggest preferential increased isolation of pathogens. Further study is needed to determine whether our findings are related to blood-culturing practices or the RBBs themselves. **Funding:** None **Disclosures:** None

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Presentation Type: Poster Presentation

Increased Isolation of Pathogens After Resin-Containing Blood Culture Bottle Implementation

Christina Yen, Beth Israel Deaconess Medical Center; Grace Givens; Baevin Feerer, Beth Israel Deaconess Medical Center; Aleah King, Beth Israel Deaconess Medical Center; Linda Baldini; Preeti Mehrorata, Beth Israel Deaconess Medical Center; Sharon Wright, Beth Israel Deaconess Medical Center

Background: Resin-containing blood culture bottles (RBB) are used to increase the isolation of microorganisms by binding antimicrobials in sampled blood. Since RBB implementation in April 2018, our infection preventionists noted an increase in positive blood cultures on routine surveillance. **Objective:** To describe the change in bacterial isolation post-RBB implementation. **Methods:** All positive blood culture sets drawn in adult inpatient units or the emergency room between October 2017 and September 2018 and their associated organisms were obtained from the hospital laboratory database. Then, regardless of central-line placement or “present on admission” designation, the 2019 NHSN surveillance definitions for laboratory-confirmed bloodstream infection (LCBI-1 and LCBI-2) were applied to categorize all positive cultures as “common commensals” (CCs) or pathogens. A univariate analysis was performed using the Mantel-Haenszel χ² test (OpenEpi version 3.01). **Results:** Although the number of monthly blood cultures drawn remained effectively stable before and after implementation (pre-RBB median, 3,512.5; post-RBB median, 3,626), the rate ratio of positive cultures increased by 1.36 times: pre-RBB median, 127 sets per month and post-RBB median, 172.5 sets per month (χ² = 5.785; P = .008). The rate ratio of pathogen-containing cultures increased by 1.40 times (pre-RBB median, 98 sets per month and post-RBB median, 137.5 sets per month; χ² = 5.615; P = .009) with only a 1.24 increase in CCs (pre-RBB median, 29 and post-RBB median, 36; χ² = 0.553; P = .229) (Fig. 1). **Conclusions:** After RBB implementation, the monthly incidence rate of pathogen-containing sets increased. Additionally, the increase in these sets as well as overall positive blood cultures was statistically significant. Current literature on RBBs does not suggest preferential increased isolation of pathogens. Further study is needed to determine whether our findings are related to blood-culturing practices or the RBBs themselves.

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Presentation Type: Poster Presentation

Increased Return Clinic Visits for Adults with Group A Streptococcal Pharyngitis Treated with a Macrolide

Suzette Rovelsky, Veterans’ Affairs; Benjamin Pontefract, Ferris State University; McKenna Nevers, University of Utah; Adam Hersh, University of Utah; Matthew Samore, University of Utah School of Medicine; Karl Madaras-Kelly, Idaho State Univ, Coll of Pharm

Background: A multicenter audit-and-feedback intervention was conducted to improve management of acute respiratory infections (ARIs) including group A streptococcal (GAS) pharyngitis within 6 VA medical centers (VAMCs). A relative reduction (24.8%) in azithromycin prescribing after the intervention was observed. Within these facilities during 2015–2018, 2,266 cases of GAS occurred, and susceptibility to erythromycin ranged from 55% to 70%. We evaluated whether prescribing a macrolide for GAS pharyngitis was associated with an increase in outpatient return visits. **Methods:** A cohort of ambulatory adults treated for GAS pharyngitis (years 2014–2019) at 6 VAMCs was created. Demographic, diagnostic, treatment, and revisit data were extracted from the Corporate Data Warehouse. GAS pharyngitis was defined by an acute pharyngitis diagnostic code combined with a GAS-positive rapid strep test or throat culture ≤3 days of index date. Antibiotic prescriptions were included if filled ≤3 days of index date and were classified as first line (penicillin/amoxicillin), second line (cephalexin/clindamycin), macrolides (azithromycin, clarithromycin), and third line (amoxicillin/clavulinate). **Results:** The rate of amoxicillin/clavulinate prescribing after the intervention was observed.

**Funding:** None **Disclosures:** None

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