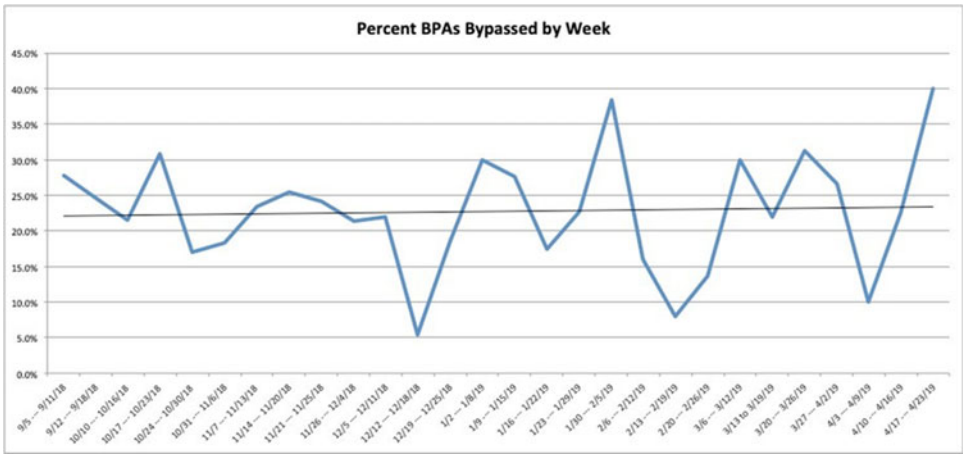

Fig. 1.

Presentation Type:
Poster Presentation
Clostridioides difficile: Best Practice Alerts & Education to Reduce Unnecessary Testing
Cynthia Murillo, University of Chicago Medicine; Rachel Marrs, University of Chicago Medicine; Allison Bartlett, University of Chicago Comer Children's Hospital; Emily Landon; Jessica Ridgway, University of Chicago

Background: Unnecessary testing for *Clostridioides difficile* can lead facilities to overreport laboratory-identified (LabID) events. Because false-positive LabID tests could dilute infection control resources, we developed best practice alerts (BPAs) in the electronic health record, educational materials as well as a follow-up system to help reduce unnecessary testing and, therefore, reduce false-positive results. **Methods:** Three BPAs were initiated in late August, 2018. Alerts fired when clinicians tried to order repeat *C. difficile* testing after a positive result, testing within 24 hours of laxative administration and to order a multiplex PCR panel for GI pathogens >48 hours after admission. The GI multiplex PCR test consists of 21 targets, including *C. difficile*, but it allows for testing solid stool. All alerts gave suggestions for how to proceed (ie, not test for cure from previous positive, wait until laxatives wear off, or call for approval before GI panel) but could be bypassed by clinicians. Educational emails and signage were distributed to all house staff and clinicians in all clinical areas at the start of the program. For each bypassed BPA, infection control physicians contacted the ordering clinician by email or phone to explain why testing was not advised. **Results:** Between September 5, 2018, and April 23, 2019, 1,217 BPAs were issued: 634 in first half and 583 in the second half. Of these, 268 (22%) were bypassed by clinicians (Fig. 1). There was no significant decrease in bypassing BPAs. In the first half of the intervention, 22% of BPAs were bypassed (141 of 634). In the second 4 months, 22% of BPAS were still bypassed (127 of 583; $P = .85$). Of the 40 ordering services, 8 had no bypassed BPAs in the first half and 9 had no bypassed BPAs in the second half. **Conclusions:** Educating providers and following up after bypassed BPAs did not decrease the number of bypassed BPAs. Although fewer BPAs were issued in the second half of the intervention, more analysis is needed to understand whether this decrease is significant. In this study, 268 unnecessary *C. difficile* tests were ordered over 8 months.
Funding: None

Disclosures: None
Doi:10.1017/ice.2020.697

Presentation Type:
Poster Presentation
***Clostridium difficile* Infection Prevention Bundle Implementation**
Moi Lin Ling, Singapore General Hospital; Pinhong Jin, Singapore General Hospital; Kwee Yuen Tan, Singapore General Hospital

Background: The optimal prevention of healthcare onset *Clostridium difficile* infection (CDI) has been a challenging one in an acute tertiary-care hospital with limited number of single rooms. Asymptomatic patients with CDI are nursed in open wards but tagged with a green sticker to alert staff of their status. This signal prompts cleaning staff to use 5,000 ppm sodium hypochlorite to clean environmental surfaces in the multibed room and to continue with modified contact precautions. **Methods:** We conducted a survey on infection prevention measures used in the management of CDI patients over 2 weeks among senior nurse managers, clinicians, and registered nurses in 38 inpatient wards. We categorized the survey results into 4 types of practices: established practices, nonestablished practices (easy implementation), nonestablished practices (lack of resources), and nonestablished practices (staff resistance). We then identified barriers to determine reasons for resistance to nonestablished practices before the implementation of the CDI bundle in May 2019. The bundle comprised the following components: contact precautions, antimicrobial stewardship, isolation of CDI patient with diarrhea in single room, environment, and equipment hygiene. Following the survey, we enhanced the signage for CDI patients to be more obvious. Monthly, we monitored the incidence of HO-*Clostridium difficile* to assess effectiveness of implementation measures. **Results:** Nonestablished practices (easy implementation) included uncertainty of diarrhea definition and the recommended environmental hygiene disinfectant, lack of understanding of the importance of complying to personal protective equipment (PPE), and inconsistency in conveying CDI status. Among nonestablished practices (lack of resources), shortage of isolation beds for CDI patients with diarrhea and unavailability of electronic alert system for CDI patients within the institution are the major issues faced by clinical staff. Unavailability of CDI indicator stickers, contact precaution posters, and sporicidal wipes were noted in 6 medical and surgical

wards. Nonestablished practices (staff resistance) were related to the time taken to don full PPE and reluctance to arrange for an isolation bed due to increased workload and unavailability of isolation beds. A shift was noted in the control chart for HO-*Clostridium difficile* after the implementation of the CDI bundle in May 2019. **Conclusions:** The categorization of practices into established and nonestablished practices can help to identify barriers that may interfere with successful implementation of an infection prevention bundle.

Funding: None
Disclosures: None
Doi:10.1017/ice.2020.698

Presentation Type:
Poster Presentation

Cluster of Infections Associated With Contaminated Stem-Cell Products

Kelsey OYong, Los Angeles County Department of Public Health

Background: The unapproved and unregulated use of umbilical stem-cell products has been identified as a possible source of adverse events and infection. In 2018, a national outbreak of multiple bacterial infections was associated with use of umbilical stem cells products. From December 2018 through March 2019, the Los Angeles County Department of Public Health (LACDPH) identified 4 cases of bacterial infection in patients that had received therapies using umbilical stem-cell products. Although 2 cases were associated with the national outbreak of a single company's product, 2 additional cases of *Enterobacter cloacae* were instead associated with a second stem-cell distributer. **Methods:** In December 2018, LACDPH staff received notification from a hospital infectious disease physician of 2 cases of *E. cloacae* infection in patients of a freestanding ambulatory surgery center following allogenic umbilical cord stem-cell injections on the same day in August 2018. LACDPH reviewed the medical records of these patients and conducted an on-site visit to the ambulatory surgery center, which included observation of infection prevention practices, interview of staff, and review of logs. The 2 isolates from each patient were sent to the CDC laboratory for relatedness testing. **Results:** The 2 case patients received products via intra-articular injection from different lot and donor numbers for lumbar spine pain. In addition to the stem-cell product, both patients also received antibiotics and pain medications during their procedures, though from different vials. Both patients were seen by the same surgeon, anesthesiologist, and nurse during their procedures. No additional cases occurred. The case patients were hospitalized for 12 and 27 days, respectively. Whole-genome sequencing indicated that the isolates from the 2 patients were related. No major gaps in infection prevention practices were identified at the surgery center. **Conclusion:** This report describes a cluster of 2 *E. cloacae* infections in patients who had received unapproved-use stem-cell products via spinal injection. Given molecular laboratory results and infection prevention observations, we hypothesize that the stem-cell products used on these 2 cases were likely contaminated before distribution. This cluster demonstrates that contamination of stem-cell products extends beyond the single outbreak previously described and points to the systematic inability to ensure the safety of unapproved use of umbilical stem- cell products.

Funding: None
Disclosures: None
Doi:10.1017/ice.2020.699

Presentation Type:
Poster Presentation

Cobweb Chart for Infection Rates, Infectometer, and Outbreak Alert System: Real-Time Systems for Summarizing Nosocomial Data

Braulio Couto, Centro Universitário de Belo Horizonte – UniBH; Carlos Starling, Vera Cruz Hospital

Background: Reporting nosocomial surveillance data can be difficult because the quantity of statistics, graphics, tables, and numeric data may confuse people. Another issue related to feedback regarding healthcare infections rate is that gaps exist between collecting data, the analysis, and implementation of actions based on the information produced. Even when a statistical process control chart (SPC) is used, it is interpreted retrospectively. Here, we present 3 epidemiological tools: (1) a cobweb chart for infection rates, (2) the infectometer, and (3) an outbreak alert system. **Methods:** For the cobweb chart, the first step is to choose how many and which infection rates will be summarized. Thereafter, all infection rates, respective benchmarks, endemic level, and actual values are placed in a spreadsheet. Although each infection rate has different units (eg, %, rates per 100 discharges, and/or rates per 1,000 denominator days), when we compare the respective endemic level and actual rate with the benchmark, dimensionless quantities are generated for each indicator, making it possible to build the cobweb graph. Using the infectometer for calculations, we (1) built an SPC chart for each infection or microorganism; (2) estimated the average month and standard deviation of the infection cases, excluding outlier data, and (3) calculated the monthly expected incidence, assuming that nosocomial infection occurrence follows a normal distribution. If the supposition of normal distribution fails, a percentile method is used. The outbreak alert system predicts outbreaks using the infectometer parameters, the last month's observed infection cases, and a Poisson model for predicting the chance of new cases of each infection above monthly expected incidence. **Results:** With the adapted radar chart, we can report many infection rates in only 1 chart (Fig. 1). The SPC charts for infection rates, stratified by all the types of healthcare infections or by microorganism, can be built, and the infectometer can then be produced, showing weekly and monthly expected cases of an endemic condition. The outbreak alert system is presented as a speedometer that is analyzed at the beginning of each month (Fig. 2). **Conclusions:** The idea behind the cobweb chart for infection rate method is to report all infection rates in only 1 graph. With the infectometer, it is not necessary to wait until the end

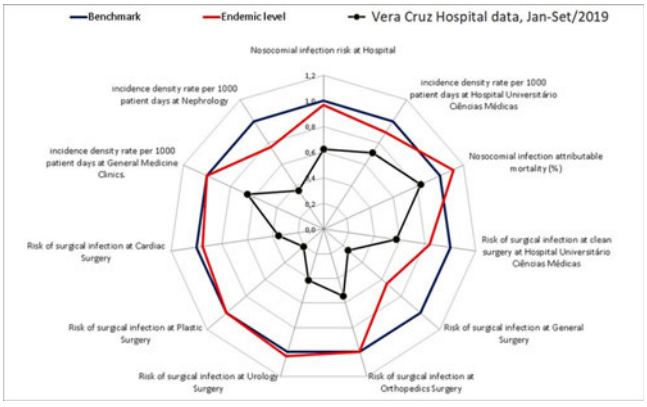

Fig. 1.