

**Presentation Type:**

Poster Presentation

**CDC Consultations for Outbreaks and Infection Control Breaches Occurring in Dental Settings, 2010–2019**

Kiran Perkins, Centers for Disease Control and Prevention; Ieisha Brown, Centers for Disease Control and Prevention; Lorena Espinoza, Centers for Disease Control and Prevention; Joseph Perz, Centers for Disease Control & Prevention; Michele Neuburger, Centers for Disease Control and Prevention

**Background:** Documented transmission of infectious agents involving dental care is uncommon. However, increasing attention to dental infection control, along with several recent outbreaks, have identified infection control gaps in dental settings. We describe CDC consultations involving outbreaks or infection control lapses occurring in dental settings to identify areas for prevention efforts. **Methods:** We reviewed internal CDC records from January 1, 2010, through October 1, 2019, to identify consultations involving investigations of potential or confirmed disease transmission and infection control lapses in dental settings. We determined yearly number of consultations, number of patients infected, how disease transmission or infection control breaches were identified, suspected mode of transmission, type of infection control breaches identified, and whether at-risk patients were notified. **Results:** We identified 41 consultations, among 27 states, involving investigation of possible disease transmission or infection control lapses in dental facilities. The number of consultations increased from 11 to 30 between the first half (2010–2014) and the second half (2015–2019) of the period and involved at least 113 infections confirmed or suspected to be associated with dental procedures. Most investigations (n = 29, 71%) began with identification of infection control breaches absent known patient infections; 8 (20%) investigations were initiated after identification of a single patient infection raised concerns for possible transmission associated with dental care (eg, single case of acute hepatitis B infection absent other risk factors). Moreover, 4 investigations involved >1 patient infection; 3 were outbreaks confirmed to be due to poor infection control practices. The most common infection control breaches were lapses in dental instrument reprocessing (n = 28, 78%), for example, failure to sterilize dental handpieces or failure to use biologic indicators. Of the 23 consultations where patient notification activities were discussed, 17 (74%) resulted in notification; >20,000 patients received information about their potential exposure, usually accompanied by advice on seeking screening tests. **Conclusions:** Dental-related consultations have increased in recent years, and they highlight the need for improved infection control training of dental healthcare personnel, especially related to dental instrument reprocessing. The CDC Division of Oral Health and the Organization for Safety, Asepsis, and Prevention offers tools, training, and other resources to help dental facilities improve infection control practices. Not all investigations resulted in notifying at-risk patients, but notification should be strongly considered, especially when serious breaches are identified, to promote transparency and help identify disease transmission that could otherwise go undetected.

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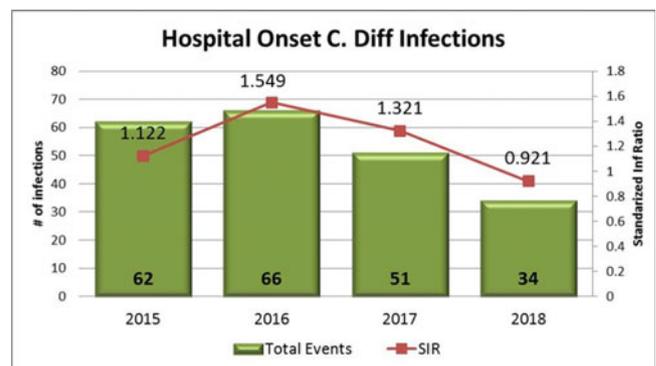
Poster Presentation

**CDIFFerently: A Bundled Approach to *Clostridium difficile* Reduction**

Sarah Deming, Mohawk Valley Health System

**Background:** Since 2015 the rate of healthcare facility-onset *Clostridium difficile* infections (HO CDI) at Faxton-St Luke's Healthcare (FSLH) has remained higher than both New York state and federal benchmarks, despite the use of traditional prevention efforts. **Methods:** We used the define-measure-analyze-improve-control (DMAIC) process improvement model to better understand the reasons that our rates remained high and to develop a comprehensive reduction strategy.

- **Define:** High HO CDI rates. NHSN SIR consistently above 1.0
- **Measure**
- Diagnostic stewardship. Are patients being tested appropriately?
- Antibiotic stewardship: Do prescribing practices follow best-practice recommendations?
- Environmental cleanliness: Are staff following standard and transmission based precautions? How effective are current cleaning practices? What is being done to limit contamination of the environment of care?
- Perform a gap analysis of CDI prevention strategies at FSLH vs current best practice recommendations, emerging strategies in scientific literature and successful approaches at other health-care facilities.
- **Analyze**
- Staff do not have a clear understanding of symptoms and risk factors of CDI and often initiate testing inappropriately.
- Overuse of broad spectrum antimicrobial agents. No antibiotic time outs. Limited Pharmacy staff available for auditing and feedback regarding prescribing practices.
- UV disinfection system under-utilized. Shared patient care equipment not cleaned between uses. Delay in implementation of contact precautions. Lack of opportunities for patient hand hygiene.
- **Improve**
- Algorithms for screening and testing built into Electronic Medical Record Orders for testing coupled with orders for contact precautions
- Align antimicrobial prescribing with best practice



- Audit and reward compliance with UV light utilization, environmental cleaning Reduce shared patient care equipment, replace with disposable items
- Provide products for patient hand hygiene
- Implement marketing campaign to tie elements together
- **Control**
- Audit compliance with testing and isolation policies
- Laboratory rejection of formed stools
- Audit cleaning processes with adenosine triphosphate (ATP) monitor
- Track ultraviolet light usage

Collaborate with the antibiotic stewardship committee to audit and adjust prescribing practices as needed. **Results:** HO CDI cases decreased by 48% from 2017 to 2018. The NHSN SIR decreased below 1.0. **Conclusions:** The CDIFFerently initiative was successful as a bundled approach to CDI reduction. Incorporating program elements aimed at addressing diagnostic stewardship, antimicrobial stewardship, environmental contamination, transmission prevention and ongoing education, and tying them together with a successful marketing campaign, allowed staff to connect individual actions with a “big picture” approach to HAI reduction.

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#### Cerebrospinal Fluid Shunt-Associated Surgical Site Infection With Three- Versus Twelve-Month Follow-Up in Canadian Hospitals

Kelly Baekyung Choi, Public Health Agency of Canada; John Conly, Foothills Medical Centre; Blanda Chow, Infection Prevention & Control, Alberta Health Services; Joanne Embree; Bonita Lee; Marie-Astrid Lefebvre, Montreal Childrens' Hospital, McGill University Health Centre; Robyn Mitchell, Public Health Agency of Canada; Linda Pelude, Public Health Agency of Canada; Allyson Shephard, Children's Hospital of Eastern Ontario Joanne Langley, Dalhousie University; CNISP PHAC, Public Health Agency of Canada; Jeannette Comeau, Dalhousie University

**Background:** Surgical site infection (SSI) after cerebrospinal fluids (CSF) shunt surgery is thought to be acquired intraoperatively. Biomaterial-associated infection can present up to 1 year after surgery, but many national systems have shortened follow-up to 90 days. We compared 3- versus 12-month follow-up periods to determine the nature of case ascertainment in the 2 periods. **Methods:** Participants of any age with placement of an internal CSF shunt or revision surgical manipulation of an existing internal shunt identified in the Canadian Nosocomial Infection Surveillance Program (CNISP) participating hospitals between 2006 and 2018 were eligible. We excluded patients with external shunting devices or culture-positive CSF at the time of surgery. Patients were followed for 12 months after surgery for the primary outcome of a CSF infection with a positive CSF culture by review of laboratory and health records. Patients were categorized as adult (aged  $\geq 18$  years) or pediatric (aged  $< 18$  years). The infection rate was expressed as the number of CSF shunt-associated infections divided by the number of shunt surgeries per 100 procedures. **Results:** In total, 325 patients (53% female) met inclusion criteria

Figure: Number and percentage of CSF-SSI identified by week post shunt surgery

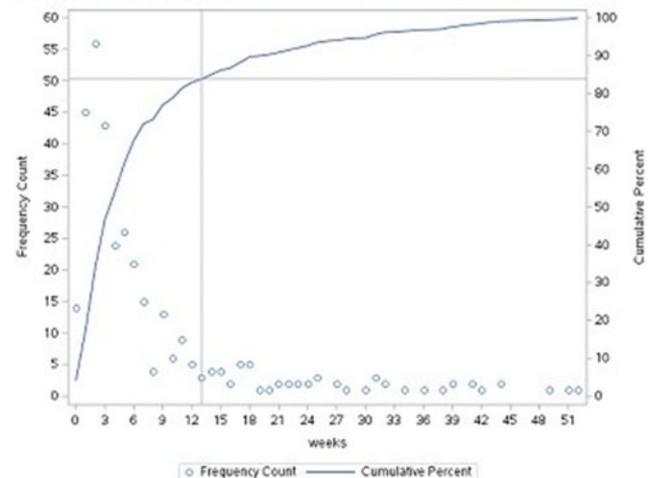


Fig. 1.

in 14 hospitals from 7 provinces were identified. Overall, 46.1% of surgeries were shunt revisions and 90.3% of shunts were ventriculo-peritoneal. For pediatric patients, the median age was 0.7 years (IQR, 0.2–7.0). For adult patients, the median age was 47.9 years (IQR, 29.6–64.6). The SSI rates per 100 procedures were 3.69 for adults and 3.65 for pediatrics. The overall SSI rates per 100 procedures at 3 and 12 months were 2.74 ( $n = 265$ ) and 3.48 ( $n = 323$ ), respectively. By 3 months (90 days), 82% of infection cases were identified (Fig. 1). The median time from procedure to SSI detection was 30 days (IQR, 10–65). No difference was found in the microbiology of the shunt infections at 3- and 12-month follow-ups. The most common pathogens were coagulase-negative *Staphylococcus* (43.6%), followed by *S. aureus* (24.8%) and *Propionibacterium* spp (6.5%). No differences in age distribution, gender, surgery type (new or revision), shunt type, or infecting organisms were observed when 3- and 12-month periods were compared. **Conclusions:** CSF-SSI surveillance for 3 versus 12 months would capture 82.0% (95% CI, 77.5–86.0) of cases, with no significant differences in the patient characteristics, surgery types, or pathogens. A 3-month follow-up can reduce resources and allow for more timely reporting of infection rates.

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#### Challenges and Facilitators to Effective Infection Prevention in Home Health Care: Results From Qualitative Interviews of Home Health Care Services

Monika Pogorzelska-Maziarz, Thomas Jefferson University; Jingjing Shang, Columbia University School of Nursing; Ashley Chastain, Columbia University School of Nursing; Sabrina L. Mangal, Columbia University School of Nursing; Patricia Stone, Columbia School of Nursing

**Background:** As the population of older Americans with chronic conditions continues to grow, the role of home health care (HHC) services in improving care transitions between acute care and independent living has become a national priority. Infection prevention and control (IPC) is often a focus of quality improvement initiatives