endoneuclease analysis (REA) strain typing was performed on the recovered CD isolates.

**Results.** Toxicity testing was positive in 19/50 (38%) cases. Compared to stool toxinx-negative cases, toxin-positive cases were older (95% vs. 71% were age ≥65, χ² p = 0.06), more likely to have a history of CDI (37% vs. 23%, χ² p = 0.34), and have ≥ 2 CDI episodes within 6 months (37% vs. 19%, p = 0.26). Treatment for CDI was more common in patients who had a positive toxin test. (95% vs 61%, χ² p = 0.009). Among the 38 patients that received treatment, 33 received vancomycin (87%) and 8 patients (21%) had rCDI at 30 days. Of the 8 patients with rCDI, 2 were re-admitted to the hospital for CDI. The average PCR cycle threshold was lower in the toxin-positive stools compared to toxin-negative stools (24.46 and 29.96, p< 0.001; Fig 1) The endemic REA group Y was the most common CD strain recovered (30%) and the previously epidemic and virulent REA group BI strain was recovered in 11% of the cases.

**Conclusion.** C. difficile cases diagnosed by positive stool PCR and positive toxin tests had more typical risk factors for CDI, a lower PCR cycle threshold and were more likely to have been treated for CDI. Outcomes were similar in this setting where infection with the virulent BI strain was uncommon.

**Disclosures.** Stuart Johnson, MD, Acura Pharmaceuticals (Advisor or Review Panel member) Bio-K+ (Advisor or Review Panel member) Ferring Pharmaceutical (Advisor or Review Panel member)

### 747. Association of Clostridioides difficile Infection Incidence With Renewed Vigor in Infection Prevention Practices With the Onset of the COVID-19 Pandemic

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**Session:** P-36. HAI. C. difficile

**Background.** *Clostridioides difficile* is the leading cause of hospital associated infections. In 2017 it lead to an estimated 232,900 cases, 12,800 deaths and 1 billion in attributable healthcare costs. Judicious use of antibiotics and good hand hygiene practices form the cornerstone of prevention. During the COVID-19 pandemic there has been a focus on infection control practices such as hand hygiene, which would also lead to the decreased incidence of other contagious infections such as *C. difficile* diarrhea.

**Methods.** We looked at the incidence of *C. difficile* infection in a tertiary care hospital, 1 year before and 1 year after the start of the COVID-19 pandemic. We looked at the absolute number of hospital associated *C. difficile* infections and the rate per 1000 patient days. The testing methodology changed during the time of the study. Initially it included NAAT for *C. difficile*, however in March of 2020 the testing strategy included testing for GDH antigen and toxin A/B to differentiate between infection and asymptomatic colonization.

**Results.** From January 1st and December 31st 2019 there were a total of 182 C. difficile infections with a rate of 1.29% per 1000 patient days. Between January 1st and December 31st 2020 there were a total of 51 C. difficile infections with a rate of 0.39% per 1000 patient days. There was an absolute risk reduction of 0.9% and relative risk reduction of 69.7%. Hand hygiene audits did not show a difference in adherence between the two periods, with a compliance rate of 98% for both.

**Conclusion.** Our data suggests that there was a substantial reduction in *C. difficile* infection rate after widespread knowledge of COVID-19 and implementation of enhanced infection prevention strategies. These included frequent reminders of hand washing, gowning and social distancing to name some. This information was conveyed in the form of widely disseminated signs in highly visible areas, frequent reminders electronically and in person between staff and providers. There are limitations in our study which include difficulty in longitudinal extending the extent to which patient care providers adhered to infection prevention strategies and a change in testing strategy for *C. difficile* diagnosis during this time.

**Disclosures.** All Authors: No reported disclosures

### 748. The Changing Epidemiology of *Clostridioides difficile* Infection and the NAP1/027 Strain in Two Quebec Hospitals

Sandrine Couture, M.D., M.C.M.1; Charles Frenette, MD, FRCP.C1; Rowin Alfaro, B. Sc.1; Lorene Schweitzer, MD1; Ian Schiller, MSc1; Nancy Deberty, College Diploma1; Rahul Nanda, M.D., M.C.M.1; Yves Longtin, MD1; Daniel Thirion, PharmD1; Vivian Loo, MD, M.Sc.1; McGill University Health Centre, Montreal, Quebec, Canada; Jewish General Hospital, Montreal, Montreal, QC, Canada; McGill University, Montreal, QC, Canada

**Session:** P-36. HAI. C. difficile

**Background.** *Clostridioides difficile* infections (CDI) are a significant cause of hospital acquired infections, resulting in significant morbidity and mortality. Early detection of CDI has been shown to reduce the spread of CDI within the hospital. As nurses are frequently at the patient’s bedside, we proposed to empower the nursing staff to assess, collect stool samples, and order C. difficile testing.

**Methods.** Rates of CDI were measured by our Infection Control Department. Hospital-onset CDI (HO-CDI) was defined as a positive *C. difficile* PCR assay after 3 days of admission, defined as a stay of at least 3 midnights. Community-onset CDI (CO-CDI) was defined as any case identified in the emergency department or inpatient ward ≤ 3 days of hospitalization based on stool testing as above. Nursing was instructed and empowered to assess, collect stool specimens, and place an order for *C. difficile* testing, based on the criteria of ≥ 3 loose or watery stools for 24 hours.

**Results.** Rates of HO-CDI were measured by our Infection Control Department. Hospital-onset CDI (HO-CDI) was defined as a positive *C. difficile* PCR assay after 3 days of admission, defined as a stay of at least 3 midnights. Community-onset CDI (CO-CDI) was defined as any case identified in the emergency department or inpatient ward ≤ 3 days of hospitalization based on stool testing as above. Nursing was instructed and empowered to assess, collect stool specimens, and place an order for *C. difficile* testing, based on the criteria of ≥ 3 loose or watery stools for 24 hours.

**Conclusion.** An important change in HA-CDI epidemiology was observed in two Canadian tertiary care hospitals in Montreal between 2003 and 2019. There was a significant decrease in incidence of HA-CDI and a genotype shift from a predominance of NAP1 strains to non-NAP1 strains. Utilization of fluoroquinolones, to which the NAP1 strain is resistant, concurrently decreased. Infection control interventions targeting isolation, diagnosis, disinfection, and antibiotic stewardship have contributed to the major observed reduction in HA-CDI incidence.

**Disclosures.** All Authors: No reported disclosures

### 749. A Nurse-Driven Protocol for Early Detection of *Clostridioides difficile* Infections

Shannon Beckman, RN, BSN; Jonathan Chia, DO; Bethany Stubbe, MASC; Monica Rybka, MPH, CHES; Michael S. Wang, MD; Spectrum Health, Saint Joseph, Michigan; Spectrum Health Lakeland, St Joseph, Michigan

**Session:** P-36. HAI. C. difficile

**Background.** *Clostridioides difficile* infections (CDI) are a significant cause of hospital acquired infections, resulting in significant morbidity and mortality. Early detection of CDI has been shown to reduce the spread of CDI within the hospital. As nurses are frequently at the patient’s bedside, we proposed to empower the nursing staff to assess, collect stool samples, and order C. difficile testing.

**Methods.** Rates of CDI were measured by our Infection Control Department. Hospital-onset CDI (HO-CDI) was defined as a positive *C. difficile* PCR assay after 3 days of admission, defined as a stay of at least 3 midnights. Community-onset CDI (CO-CDI) was defined as any case identified in the emergency department or inpatient ward ≤ 3 days of hospitalization based on stool testing as above. Nursing was instructed and empowered to assess, collect stool specimens, and place an order for *C. difficile* testing, based on the criteria of ≥ 3 loose or watery stools for 24 hours.

**Results.** Rates of HO-CDI were measured by our Infection Control Department. Hospital-onset CDI (HO-CDI) was defined as a positive *C. difficile* PCR assay after 3 days of admission, defined as a stay of at least 3 midnights. Community-onset CDI (CO-CDI) was defined as any case identified in the emergency department or inpatient ward ≤ 3 days of hospitalization based on stool testing as above. Nursing was instructed and empowered to assess, collect stool specimens, and place an order for *C. difficile* testing, based on the criteria of ≥ 3 loose or watery stools for 24 hours.

**Conclusion.** An important change in HA-CDI epidemiology was observed in two Canadian tertiary care hospitals in Montreal between 2003 and 2019. There was a significant decrease in incidence of HA-CDI and a genotype shift from a predominance of NAP1 strains to non-NAP1 strains. Utilization of fluoroquinolones, to which the NAP1 strain is resistant, concurrently decreased. Infection control interventions targeting isolation, diagnosis, disinfection, and antibiotic stewardship have contributed to the major observed reduction in HA-CDI incidence.

**Disclosures.** All Authors: No reported disclosures

### Figure 1 - Clostridioides difficile rates

![Clostridioides difficile rates](image)

**Abstracts • OFID 2021:8 (Suppl 1) • 5471**
Figure 2 - CDI testing rates

Conclusion. A nursing driven protocol resulted in increased HO-CDI and overall CDI rates suggesting that the intervention may have been a factor in increasing the frequency of HO CDI diagnoses, although the possibility of misdiagnosis of colonization for true CDI cannot be excluded. Further education of nursing staff may be a potential intervention in improving appropriate CDI testing.

Disclosures. All Authors: No reported disclosures

750. Retrospective Evaluation of the Three-Step EIA/PCR Algorithm as a Cost-Effective Method for Detection and Treatment of Clostridium Difficile Infection Bakki Kulla, MD; Patrick Haggerty, MD; EVMS, Norfolk, Virginia

Session: P-36. HAI: C. difficile

Background. Clostridium difficile infection (CDI) is the primary cause of infectious diarrhea in the United States. With an estimated 433,000-500,000 burden cases that are associated with 15,000-30,000 deaths annually in the United States. Because of its prevalence, there is a projected 3.2-4.8 billion dollar annual cost for inpatient care related to CDI. For these reasons, accurate and timely detection of CDI is crucial to reduce the morbidity, mortality, and medical costs.

Methods. This is a retrospective cohort study. Adult patients, aged 18 through 80 years, admitted between 9/1/2016 and 9/30/2017, who presented with diarrhea and received a CDI algorithm test. To assess bivariate associations between true positive and indeterminate positive groups, categorical variables were compared using Chi-Square or Fisher's exact tests when appropriate, and continuous variables were analyzed using independent samples t-tests.

Results. The study included 1031 stool samples, of which 853 (82.7%) were CDI negative and 178 (17.3%) were CDI positive. Of the full sample, 265 (25.7%) were GDH (+), 94 (9.1%) were toxin (+), and 84 (8.1%) were PCR (+).

In order to examine patient-level variables, the first positive from each patient was included to ensure independence of data points, resulting in 830 unique tests and patients. The true positive rate of this sub-sample was 9.4% (n = 78) and indeterminate positive rate was 8.7% (n = 72).

An important finding of the study is that of the patients who were GDH (+)/toxin (-), 87 (50.9%) were PCR (-) and 84 (49.1%) were PCR (+).

Table 1

Conclusion. The study found that of the patients who were GDH (+) and Toxin (-), the PCR test serves as a proxy for the CDI test. In addition, we demonstrated that whether the patient was true positive by the GDH/Toxin test or indeterminate positive, the outcomes were the same. The only difference was the antibiotic selections for treatment. Performing PCR tests as a part of three-step algorithm prevented nearly half of discrepant patients from being unnecessarily treated with antibiotics and placed on enteric precaution, thereby extending their hospital stay. Finally, by preventing unnecessary antibiotic use, isolation and hospital length of stay, it is proposed that the three-step algorithm effectively reduces hospital cost.

Disclosures. All Authors: No reported disclosures