infection prevention to continue isolation of infected and colonized cases to reduce the spread of *C. difficile* spores.

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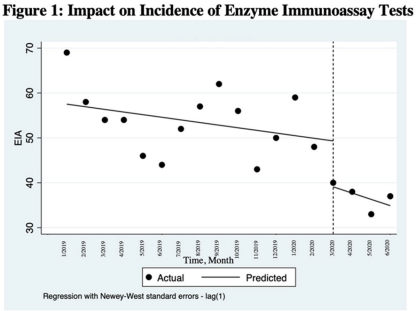
Presentation Type:
Poster Presentation
Subject Category: *C. difficile*

Did *Clostridioides difficile* Testing and Infection Rates Change During the COVID-19 Pandemic?

Armani Hawes; Payal Patel and Angel Desai

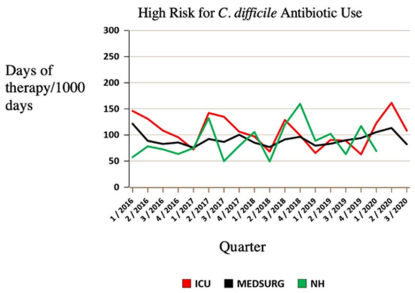
Background: The COVID-19 pandemic has underscored the importance of ongoing infection prevention efforts. Increased adherence to infection prevention recommendations, increased antibiotic use, improved hand hygiene, and correct donning and doffing of personal protective equipment may have influenced healthcare-associated infections (HAIs) in the United States during the pandemic. In this study, we investigated testing for *Clostridioides difficile* infection (CDI) and incidence during the initial surge of the pandemic. We hypothesized that strict adherence to contact precautions may have resulted in a decreased incidence of CDI in hospitalized patients during the first peak of the COVID-19 pandemic and that CDI testing may have increased even in the absence of directed diagnostic stewardship efforts. **Methods:** We conducted a single-center, retrospective, observational study at the Veterans' Affairs (VA) Hospital in Ann Arbor, Michigan, between January 2019 and June 2020. We compared data on CDI tests from January 2019 through February 2020 to data from March 2020 (the admission of the first patient with COVID-19 at our institution) through June 2020. Pre-peak and peak periods were defined by confirmed cases in Washtenaw County. No novel diagnostic or CDI-focused stewardship interventions were introduced by the antimicrobial stewardship program during the study period. An interrupted time series analysis was performed using STATA version 16.1 software (StataCorp LLC, College Station, TX). **Results:** There were 6,525 admissions and 34,533 bed days between January 1, 2019, and June 30, 2020. Also, 900 enzyme immunoassay (EIA) tests were obtained and 104 positive cases of CDI were detected between January 2019 and June 2020. A statistically significant decrease in EIA tests occurred after March 1, 2020 (the COVID-19 peak in our region) compared to January 1, 2019–March 1, 2020 (Figure 1). After March 1, 2020, the number of EIA tests obtained decreased by 10.2 each month (95% CI, −18.7 to −1.7; $P = .02$). No statistically significant change in the incidence of CDI occurred. The use of antibiotics that were defined as high risk for CDI increased in the months of April–June 2020 (Figure 2). **Conclusions:** In this single-center study, we observed a stable incidence of CDI but decreased testing during the first peak of the COVID-19 pandemic. Understanding local HAI reporting is critical because changes in HAI reporting structures and exemptions during this period may have affected national reporting. Further research should be undertaken to investigate the effect of COVID-19 on other HAI reporting within the US healthcare system.

Figure 1: Impact on Incidence of Enzyme Immunoassay Tests Obtained for *Clostridioides difficile*



EIA: enzyme immunoassay
CDI: *Clostridioides difficile*

Figure 2: High Risk for *Clostridioides difficile* Antibiotic Use



High risk for *Clostridioides difficile* Antibiotics: clindamycin, cefotaxime, ceftriaxone, ceftazidime, cefepime, cefdinir, cefpodoxime, cefixime, ciprofloxacin, gemifloxacin, levofloxacin and moxifloxacin

ICU: intensive care unit
Medsurg: medical and surgical floors
NH: nursing home

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Disclosures: None

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Poster Presentation
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Inequities in CLABSI Rates in a Children's Hospital by Race, Ethnicity, and Language Preference

Caitlin McGrath; Matthew Kronman; Danielle Zerr; Brendan Bettinger; Tumaini Coker and Shaquita Bell

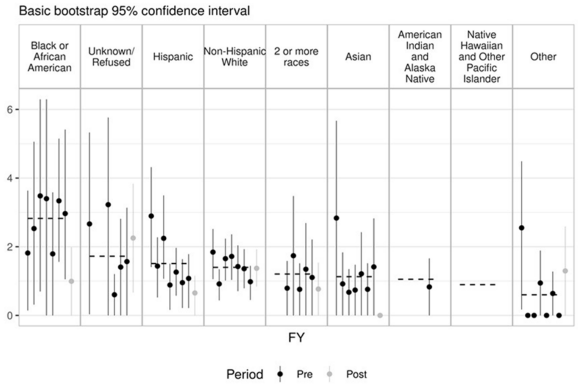
Background: Systemic racism results in health inequities based on patient race, ethnicity, and language preference. Whether these inequities exist in pediatric central-line–associated bloodstream infections (CLABSIs) is unknown. **Methods:** This retrospective cohort study included patients with central lines hospitalized from October 2012 to June 2019 at our tertiary-care children's hospital. Self-reported race, ethnicity, language preference, demographic, and clinical factors were extracted from the electronic health record. The primary outcome was non–mucosal barrier injury (non-MBI) CLABSI episodes as defined by the NHSN. CLABSI rates between groups were compared using χ^2 tests and Cox proportional hazard regression. We adjusted for care unit, age, immunosuppressed status, diapered status, central-line type, line insertion within 7 days, daily CLABSI maintenance bundle compliance, number of blood draws and IV medication doses, and need for total parental nutrition, extracorporeal membrane oxygenation, and renal replacement therapy. In mid-2019, we engaged stakeholders in each care unit to describe preliminary findings and to identify and address potential drivers of observed inequities. **Results:** We included 337 non-MBI CLABSI events over 230,699 central-line days (CLDs). The overall non-MBI CLABSI rate during the study period was 1.46 per 1,000 CLDs. Unadjusted CLABSI rates for black or African American (henceforth, "black"), Hispanic, non-Hispanic white, and Asian (the 4 largest race or ethnicity groups by CLDs) patients were 2.74, 1.53, 1.42, 1.24 per 1,000 CLDs, respectively ($P < .001$) (Table 1). Unadjusted CLABSI rates for patients with limited-English proficiency (LEP) and English-language preference were 1.98 and 1.38 per 1,000 CLDs, respectively ($P = .014$). After adjusting for covariates, the hazard ratio (HR) point estimate for CLABSI rate remained higher for black patients (HR, 1.50; 95% CI, 0.99–2.28) and patients with LEP (HR, 1.33; 95% CI, 0.87–2.05), compared to the reference group based on largest CLD. The differences in CLABSI rate by race or ethnicity and language were more pronounced in 2 of

Table 1.

Table 1. Non-MBI CLABSI rate per 1000 central line days from October 2012 to June 2019 by race/ethnicity group

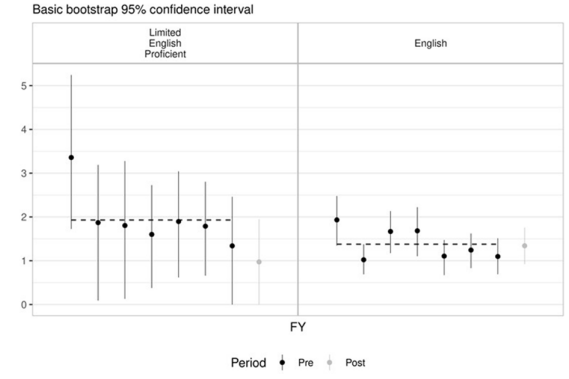
Race/Ethnicity	Non MBI CLABSI Rate	Non MBI CLABSI Count	Central Line Days
Non-Hispanic White	1.42	156	110,142
Hispanic	1.53	77	50,464
Black or African American	2.74	40	14,598
Asian	1.24	16	12,955
2 or more races	1.27	14	11,015
Unknown/Refused	1.64	17	10,350
Other	0.59	6	10,160
American Indian and Alaska Native	1.09	7	6,443
Native Hawaiian and Other Pacific Islander	0.93	4	4,285

Figure 1. Non-MBI CLABSI rate per 1000 central line days from October 2012 to September 2020 by race/ethnicity group by fiscal year



[1]Race/ethnicity groups with <1000 central line days in a particular fiscal year not included in this figure.

Figure 2. Non-MBI CLABSI rate per 1000 central line days from October 2012 to September 2020 by language preference by fiscal year



revealed opportunities on those units for improved (1) interpreter utilization and (2) line maintenance observation practices by race/ethnicity and language preference (data not shown). These findings and CLABSI rates over time by race/ethnicity and language preference (Figures 1 and 2) were shared with frontline staff. **Conclusions:** In our children's hospital, CLABSI rates differed based on patients' self-reported race, ethnicity, and language preference, despite controlling for factors commonly associated with CLABSI. Identifying inequities in CLABSI rates and mitigating their determinants are both essential to the goal of achieving equitable care.

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Poster Presentation
Subject Category: COVID-19

Use of COVID-19 Serologic Testing in Healthcare Workers with Acute Respiratory Tract Infection

Amy Ray

Background: Diagnostic tests for COVID-19 are in high demand. Serologic assays are of interest as diagnostic adjuncts to SARS-CoV-2 quantitative polymerase chain reaction (PCR); however, many of the commercially available assays have limited validation data and clinical utility is unknown. We describe the utilization of SARS-CoV-2 IgG enzyme-linked immunosorbent assay (ELISA) for healthcare workers with acute respiratory tract infection (ARTI) who underwent SARS-CoV-2 PCR testing. **Methods:** The MetroHealth System is the largest public hospital system in Ohio, employing ~8,000 staff. COVID-19 detection began in early March 2020. EDI novel coronavirus COVID-19 IgG ELISA (KT-1032) targeting antibody response to viral nucleocapsid was obtained for diagnostic and seroprevalence analyses. Manufacturer reports of sensitivity and specificity of the assay are 100% and 99%, respectively. A 2-part test strategy for employees with symptoms of ARTI was implemented. Qualifying symptoms for SARS-CoV-2 PCR testing included fever and either cough or shortness of breath. Additional symptoms were included to reflect expanding knowledge of COVID-19. Employees who underwent SARS-CoV-2 PCR testing (Luminex ARIES) were offered serologic testing on day 14 following PCR result. Education accompanied the offer for serologic testing as well as the receipt of test result to aide interpretation. **Results:** From April 16, 2020, through July 6, 2020, 588 employees underwent PCR testing. Overall, 70 cases of COVID-19 were detected. Of the 197 employees who opted for serologic testing, IgG positivity was 12.6%. The mean time to IgG collection following PCR result was 30 days (range, 10–79). Using PCR results obtained in the clinical setting of ARTI as the diagnostic gold standard, IgG was 84.6% sensitive and 98.2% specific (Figure 1). **Conclusions:** In a population of symptomatic healthcare workers, SARS-CoV2 IgG testing was specific for COVID-19 diagnosis. Sensitivity was inadequate compared to the positive predictive agreement of 90% or greater required for US Food and Drug Administration emergency use authorization. In a low-prevalence environment for COVID-19 (<5%), a positive SARS-CoV-2 IgG has a low positive predictive value, which may falsely imply immunity and may negatively affect infection prevention practices.

Group Title	# Offered IgG Testing		# IgG tested	IgG Pos.	IgG Neg.
All Tested PCR	588/588 (100%)		197	25/197 (12.7%)	172
PCR COVID-19 +	70/588 (11.9%)		26	22	4
PCR COVID-19 -	518/588 (88.1%)		171	3	168
Parameters	Value	95% CI			
Sensitivity	84.62%	65.13% to 95.64%			
Specificity	98.25%	94.96% to 99.64%			
PPV*	71.74%	44.97% to 88.75%			
NPV*	99.18%	98.01% to 99.67%			

Figure 1.

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Disclosures: None

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