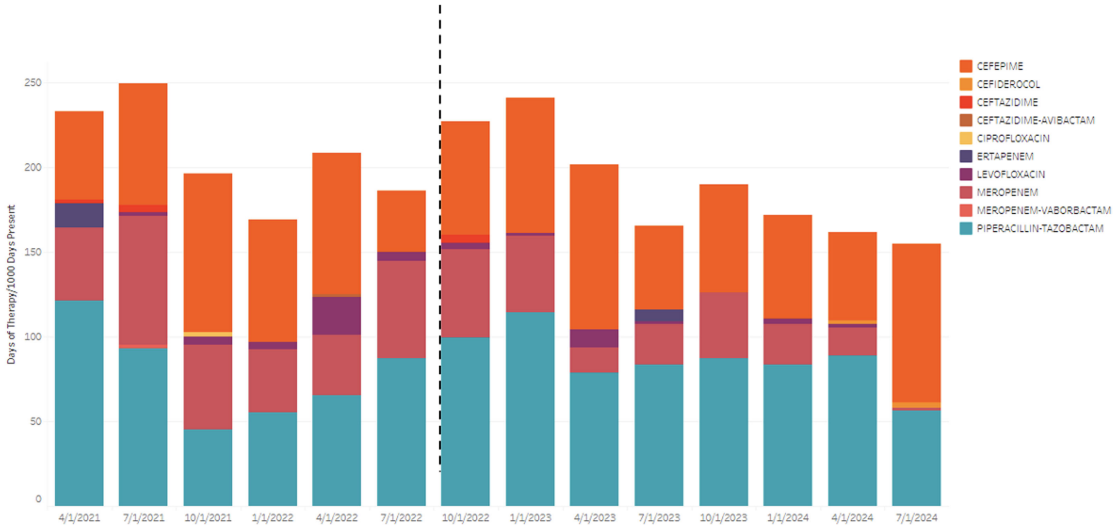
Figure 2. Antibiotic type and longitudinal trend.



post-intervention group (p=0.004). Unique antibiotic order per 1000 DP of all antipseudomonal antibiotics remained constant (62 vs. 56, p=0.1), while unique antibiotic order per 1000 DP for meropenem decreased (16 vs. 8, p =0.01). Of the 317 antibiotics reviewed, 130/169 (77%) were guideline compliant in the pre-intervention group and 113/148 (76%) in the post-intervention group. **Conclusion:** Changes in FN guidelines at the UMMC cancer center led to decreased meropenem use with a nonsignificant decline in all antipseudomonal antibiotics. Additional work is needed to identify barriers to guideline adherence.

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Presentation Type:
Oral Presentation - Top Poster Abstract
Subject Category: C. difficile

Impact of Clostridioides difficile Admission Screening in the Hematology-Oncology Unit on Infection Rates and Symptomatic Testing

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Background: Clostridioides difficile infection (CDI) disproportionately impacts hematology-oncology patients. In June 2022, our hospital implemented screening of asymptomatic patients admitted to the hematology-oncology unit to reduce CDI rates by early identification and isolation of C. difficile carriers. We evaluated the impact of admission screening on rates of CDI and compared incidence of diarrhea and subsequent symptomatic testing stratified by asymptomatic admission testing result. **Method:** During the intervention period (July 2022 – July 2024), asymptomatic patients admitted to the hematology-oncology unit were tested for C. difficile (perirectal swab, Cepheid GeneXpert®, Sunnyvale, CA). Guidelines for C. difficile symptomatic testing (unformed stool, Cepheid GeneXpert®) and treatment did not change between the baseline (May 2020 – May 2022) and intervention periods. Monthly CDI rates were calculated using CDC definitions based on clinical symptoms and positive C. difficile testing (community onset [CO] if positive in the first three hospital days, hospital-onset [HO] if day 4 or later). We performed an interrupted time-series analysis adjusted for repeated measures to compare CO-CDI and HO-CDI rates per 10,000 patient-days between baseline and intervention periods. The risk of developing diarrhea through hospital day 14 or being tested for symptomatic CDI during the intervention's first year (July 2022 – June 2023) was analyzed using a cohort of asymptomatic C. difficile carriers and non-carriers in a 1:2 ratio, matched on hospital length of stay and date of admission. **Result:** The incidence rate ratio was 0.45 (P=0.10) for HO-CDI (Figure 1) and 0.15 (P=0.049) for CO-CDI (Figure 2) after screening implementation. During the first year of the intervention, 25 individuals were identified as asymptomatic C. difficile carriers by positive admission screen and were matched to a cohort of 50 asymptomatic non-carriers. There were no significant differences in development of diarrhea during hospital days 1-3 or days 4-14 between carriers and non-carriers (Table). None of the carriers received symptomatic C. difficile testing during hospitalization, compared to 20% of matched non-carriers (P=0.03). **Conclusion:** There was no significant change in HO-CDI rates and a statistically significant reduction in CO-CDI rates after implementation of C. difficile admission screening. Patients identified as carriers at time of admission were less likely to be tested for CDI during hospitalization than non-carriers, despite similar rates of diarrhea. Admission screening for C. difficile may reduce CDI rates through a variety of mechanisms; changes in provider testing behavior for patients previously screened for C. difficile may play a role.

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Figure 1. Modeled Hospital-Onset *Clostridioides difficile* Infection (HO-CDI) Incidence per 10,000 Patient-days

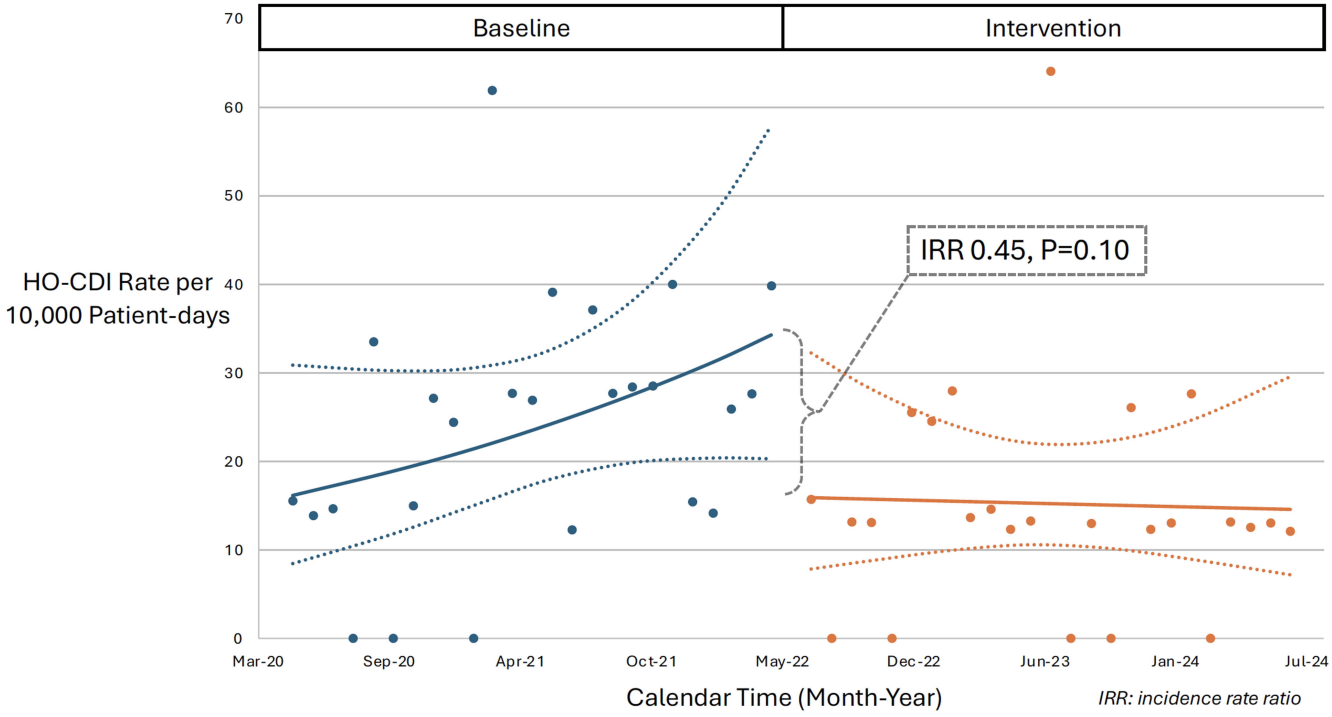

Figure 2. Modeled Community-Onset *Clostridioides difficile* Infection (CO-CDI) Incidence per 10,000 Patient-days

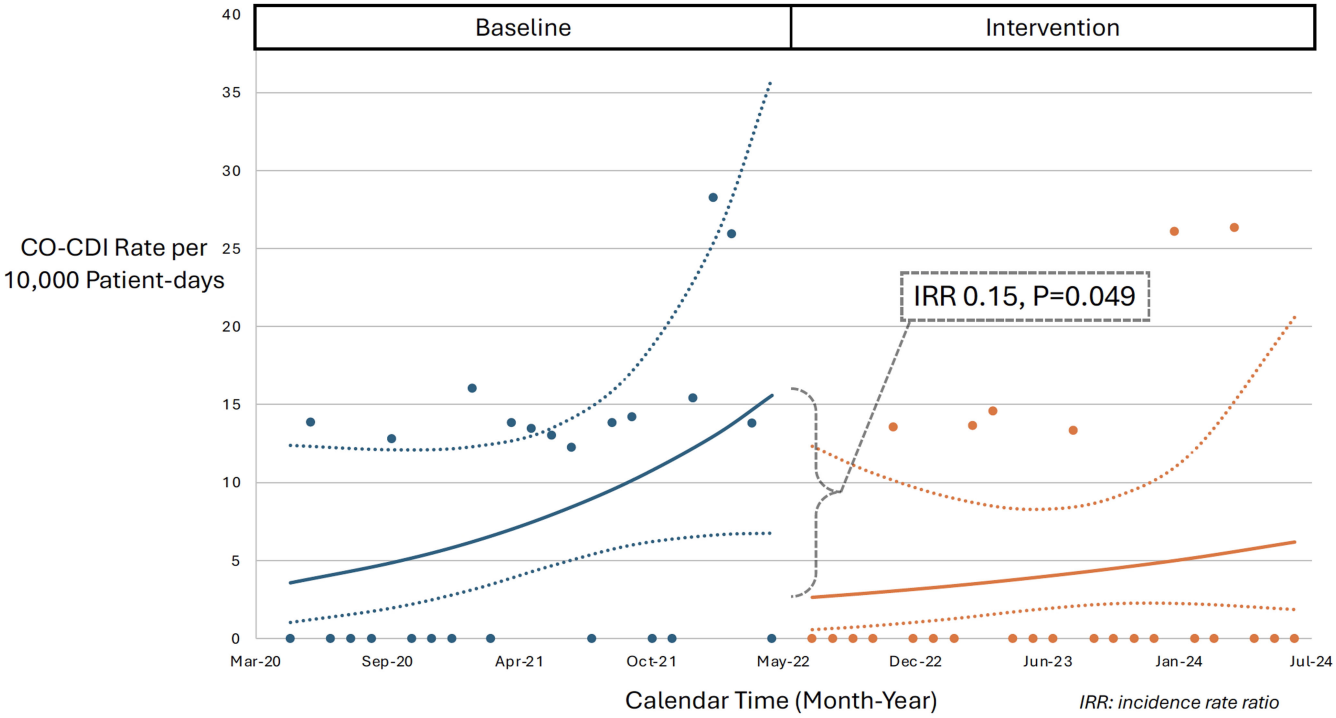

Table. Development of Diarrhea and Receipt of Subsequent Symptomatic *C. difficile* Testing, Stratified by *C. difficile* Admission Testing Result Being Positive (Carriers) or Negative (Non-carriers)

	Carriers (*n*=25)	Non-carriers (*n*=50)	Relative Risk (95% CI*)	*P* value
Developed clinically significant diarrhea**				
During hospital days 1-3, n (%)	2 (8)	3 (6)	1.33 (0.24, 7.47)	0.99
During hospital days 4-14, n (%)	5 (20)	10 (20)	1.00 (0.38, 2.61)	0.99
Underwent symptomatic *C. difficile* testing during hospitalization				
Any time after admission, n (%)	0 (0)	10 (20)	0***	0.03

*CI = confidence interval **Defined as documentation of ≥3 loose or liquid stools within 24 hours ***Unable to calculate 95% CI

Presentation Type:
Oral Presentation - Top Poster Abstract
Subject Category: CAUTI
Challenges in Implementing CAUTI Surveillance in Resource-Constrained Settings: Lessons from a Kenyan Referral Hospital
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[1]University of Arizona; [2]University of Arizona, College of Public Health; [3]Centres for Disease Control- CDC and [4]Coast General Teaching and Referral Hospital

Background: Catheter-associated urinary tract infections (CAUTIs) are a challenge for hospitalized patients accounting for approximately 40% of all healthcare-associated infections. CAUTI surveillance remains underdeveloped in many Sub-Saharan countries, even though identifying infections is critical to prevention and management. Standardized CAUTI surveillance among 45 LMICs conducted in intensive care units (ICUs) has demonstrated high CAUTI incidence compared to high-income countries. However, few studies have examined CAUTI in non-ICU settings in LMIC, where catheter use is common. We aimed to identify challenges in CAUTI surveillance related to documentation and antibiotic use patterns among adult inpatients in non-ICU wards in a Kenyan public hospital. **Methods:** Using a cross-sectional design, we retrospectively abstracted data on non-ICU adult inpatients from clinical and laboratory records. We identified patients with suspected UTI through urine culture requests from 1/1/2023-12/31/2023, whom we linked to clinical records. We abstracted data on diagnosis on admission, socio-demographics, urinary catheter indication and duration, UTI symptoms, urine culture results, and antibiotic use. This descriptive analysis summarizes characteristics of patients with suspected UTI to identify factors hindering CAUTI surveillance in non-ICU settings. **Results:** 293 non-ICU adult inpatients admitted to Mombasa Regional Referral Hospital had at least one urine culture request in 2023. Of these 193 (65.9%) had indwelling urinary catheters (IUC) inserted. Among those with IUC, 49.7% were female, with an average age of 51.5 years, with majority (64.8%) admitted to the medical wards; 5.2% had no recorded indication for catheterization and 82.9% had no UTI symptoms documented in the 2 days before the urine culture request. There were 124 negative cultures, 4 were determined to be contaminated, 6 did not have results on file, and 59 were positive; pathogens identified in the positive cultures included Escherichia Coli (51.8%), Klebsiella Pneumoniae (28.6%), Pseudomonas aeruginosa (10.7%), and others (8.9%) including Klebsiella Oxytoca, Acinetobacter baumanii, and Protein Mirabilis. 38.3% were prescribed intravenous antibiotics in the 7 days before the urine culture was obtained. 66.3% had no documentation of IUC removal, and 10.9% had incomplete documentation on file with missing pages. **Conclusion:** Myriad challenges to accurate CAUTI surveillance were identified among non-ICU patients at a Kenyan regional referral hospital. Lack of documentation of clinical symptoms makes application of standard case definitions challenging, and non-documentation of catheter removal dates hinders calculation of incidence using a catheter-day denominator. Further, the administration of antibiotics prior to urine culture hinders identification of potential source pathogens. Documentation and antibiotic administration practices are major hurdles for CAUTI surveillance.

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Presentation Type:
Oral Presentation - Top Poster Abstract
Subject Category: Diagnostic Stewardship
Clostridioides difficile Testing Strategies: Insights into Positivity Rates, Systemic Signs, and Treatment Patterns
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[1]Atrium Health Wake Forest; [2]Advocate Health; [3]Atrium Health and [4]Wake Forest University School of Medicine

Background: The diagnostic approach for Clostridioides difficile infection (CDI) significantly influences treatment and resource utilization. This study compares clinical characteristics and treatment choices based on three testing algorithms combining antigen and toxin enzyme immunoassay (EIA) tests and nucleic acid amplification tests (NAAT). **Methods:** We performed a retrospective study of patients tested for CDI between August 2022 and November 2024 in a large health system where multiple CDI testing algorithms are utilized: (arm 1) antigen and toxin EIA with automatic reflex to NAAT if discrepant results; (arm 2) NAAT with automatic reflex to toxin EIA if NAAT positive; and (arm 3) antigen and toxin EIA with NAAT at provider request with approval by Antimicrobial Stewardship. The last step in the testing algorithms determined whether the result was considered positive. We determined positivity rate by algorithm results and compared clinical variables including fever (temperature > 38.0° C) or abnormal white blood cell (WBC) count (12,000) within 48 hours prior to test order, laxative use within 24 hours prior to test order and treatment rates between those who tested toxin positive by EIA and those who tested toxin positive by NAAT only. Treatment was defined as receiving oral vancomycin or fidaxomicin for more than 5 days OR receiving those medications on the day prior to or day of discharge. **Results:** A total of 16,555 patients were tested. Overall algorithm positivity rate was highest in the EIA with reflex to NAAT (arm 1) at 13.7% compared to 5.7% for arm 2 (NAAT with reflex to toxin EIA) and 5.1% for arm 3 (EIA with NAAT at Provider Request). Toxin EIA positive patients were 1.2 times more likely than NAAT positive patients to display fever or abnormal WBC in the 48 hours prior to test order ($p < 0.001$). Toxin EIA positive patients were less likely to receive laxatives compared to NAAT only positive patients. ($p=0.11$). Among toxin EIA positive cases, 89% received treatment compared to 57% in toxin NAAT only positive cases ($p < 0.001$). 46% of patients who tested NAAT positive with a subsequently negative toxin EIA were treated. **Conclusion:** Patients with toxin EIA positive tests were more likely to exhibit systemic signs of infection and were treated at higher rates compared to NAAT-positive cases. While NAAT-based testing identified additional cases, many may reflect colonization. Treatment of toxin NAAT positive/toxin EIA negative patients was common highlighting opportunities for diagnostic stewardship.

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Table 1: Comparison of *Clostridioides difficile* Testing Algorithms

	Arm 1: Antigen/Toxin EIA with Reflex to NAAT (n=8173)	Arm 2: NAAT with Reflex to Toxin EIA (n=5823)	Arm 3: Antigen/Toxin EIA with NAAT at Provider Request (n=2559)
Toxin positive (%)	646 (8.0%)	333 (5.7%)	129 (5.0%)
NAAT positive (%)	475 (5.8%)	1013 (17.4%)	5 (0.1%)
Algorithm positivity* (%)	1121 (13.7%)	333 (5.7%)	134 (5.1%)

EIA Enzyme immunoassay; NAAT Nucleic acid amplification test
*Algorithm is considered positive if the final test in the algorithm is positive