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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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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Subject Category: Diagnostic Stewardship
Clostridioides difficile Testing Strategies: Insights into Positivity Rates, Systemic Signs, and Treatment Patterns
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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

	Arm 1: Antigen/Toxin EIA with Reflex to NAAT		Arm 2: NAAT with Reflex to Toxin EIA		Arm 3: Antigen/Toxin EIA with NAAT at Provider Request				
	Ag+/ Toxin+/ /NAAT N/A (n=646)	Ag+/ Toxin- /NAAT+ (n=475)	NAAT+/ Toxin+ (n=333)	NAAT+/ Toxin – (n=1013)	Ag+/ Toxin+/ NAAT N/A (n=129)	Ag+/ Toxin - /NAAT + (n=5)	Any Toxin EIA + (n=1108)	Any NAAT + (n=1493)	Relative Risk Comparing Toxin EIA + to NAAT+ (p value)
Fever	144 (22%)	96 (20%)	59 (17%)	148 (15%)	35 (27%)	1 (20%)	238 (21%)	245 (16%)	1.3 (p = 0.003)
Abnormal WBC	356 (55%)	219 (46%)	156 (47%)	401 (40%)	67 (52%)	4 (80%)	579 (52%)	624 (42%)	1.3 (p<0.001)
Either fevers OR abnormal WBC	395 (61%)	249 (52%)	178 (53%)	466 (46%)	77(60%)	4 (80%)	650 (59%)	719 (48%)	1.2 (p<0.001)
Laxatives in 24 hours prior to order	51 (8%)	55 (11%)	47 (14%)	136 (10.1%)	19 (15%)	1 (20%)	117 (11%)	192 (13%)	0.8 (p=0.11)
Treated*	578 (89%)	385 (80%)	296 (89%)	463 (46%)	112(87%)	3 (60%)	986 (89%)	851 (57%)	1.6 (p<0.001)

Ag: Antigen; NAAT: Nucleic acid amplification test; N/A: Not applicable; WBC: White blood cell count >12,000 or <1,000 in 48 hours prior to test order; Fever: Temperature >38.0 C in 48 hours prior to test order
*Treated: During the hospital encounter the patient received oral vancomycin or oral fidaxomicin for >5 days OR received treatment on the day of or day prior to discharge

Presentation Type:
Oral Presentation - Top Poster Abstract
Subject Category: Infection Prevention in Low and Middle-Income Countries
Carbapenem Resistance in Three Hospitals in India: A Need for Strengthening Infection Prevention and Control Practices
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Background: Carbapenem-resistant (CR) organisms (CROs) pose a serious public health threat. We examined the burden of CRO colonization, the proportion of CROs among clinical isolates, and infection prevention and control (IPC) practices in three hospitals in India. **Methods:** This study was conducted December 2023 to December 2024 in medical intensive care units (ICUs) at three hospitals in western India. CRO colonization was assessed by direct MacConkey method in rectal/stool specimens collected ≤24 hours after admission and weekly until colonization detection or ICU discharge, colonies < 25mm from carbapenem disks were processed for bacterial identification and carbapenem susceptibility. Proportion of CROs in clinical isolates was assessed by screening Gram-negative bacilli (GNB) identified for carbapenem susceptibility. CRO was defined as GNB resistant to any carbapenem. Carbapenemase production among Enterobacterales was detected by modified carbapenem inactivation method (mCIM). Fifty day shift hand hygiene (HH) observations were collected weekly to measure adherence. Fluorescent gel markers (FGM) were placed on high-touch surfaces (HTS) to assess environmental cleaning (EC); effectiveness was assessed by proportion of FGM removed the following day. Nine key EC indicators were observed weekly to monitor cleaning technique. HH and EC data included were from June 2024 to November 2024.
The epidemiological triad model (Population-Environment-Agent) is used to describe results. **Results:** Population: Over half (476 [55%]) of 869 patients screened at ICU admission were colonized with CROs. An equal proportion of colonization was observed among patients without prior healthcare exposure in last 90 days (55% [217/396]). Of the 660 GNBs isolated from clinical specimens, 60% were CROs. **Environment:** CRO colonization was acquired by 65% (20/31) of the patients who remained in ICU for ≥ 7 days. Average HH adherence was 50% (30%-69%). HTS cleaning effectiveness averaged 65% (50%-77%). Adherence with correct EC technique was 77% (53%-86%). **Agent:** Among clinical isolates, 92% Acinetobacter-baumannii-complex, 70% Klebsiella pneumoniae, and 47% Escherichia coli were CRO. K. pneumoniae (35%) was the most frequently isolated CRO followed by A.baumannii-complex (33%) and E.coli (16%). Among colonization screening swabs, E.coli (57%) was the most frequently isolated CRO followed by K. pneumoniae (23%) and A.baumannii-complex (10%). 96% of CR Enterobacterales among clinical isolates and colonization screening were carbapenemase producers. **Conclusions:** The high prevalence of CRO colonization, acquisition rate, and carbapenem resistance indicate a high level of CRO threat in these Indian ICU settings with suboptimal IPC measures. There is an urgent need to strengthen IPC practices to interrupt transmission in healthcare settings.

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Oral Presentation - Top Poster Abstract
Subject Category: Long Term Care
Public Health Infection Prevention Mentorship Program for Philadelphia Skilled Nursing Facilities Utilizing a Health Equity Framework
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Background: Skilled nursing facilities (SNFs) face many challenges implementing robust infection prevention and control (IPC) programs. The Philadelphia Department of Public Health (PDPH) partnered with APIC Consulting Services, a wholly owned subsidiary of The Association for Professionals in Infection Control and Epidemiology (APIC), to provide IPC mentoring to Philadelphia SNFs. The objective of the program was to strengthen IPC capacities by providing an in-depth IPC assessment followed by an action plan and longitudinal infection preventionist (IP) support to mitigate identified gaps. **Methods:** A health equity framework based on area deprivation index (ADI), percent of residents on Medicaid, and Centers for Medicare & Medicaid (CMS) star rating was developed to identify priority SNFs for recruitment into the voluntary program. Participating SNFs received a three-day onsite IPC assessment with an expert IP consultant using an expanded version of the Centers for Disease Control Infection Control Assessment and Response (ICAR) tool. Assigned consultants provided mentorship and education for the SNF IP for up to six months. Each facility identified 4-5 focus areas and co-developed an action plan with the consultant. SNF assessment data collected July 2023 -May 2024 were analyzed to assess IPC gaps across facilities. **Results:** Participants included 11/46 (24%) Philadelphia SNFs, including 8/18 (44%) priority facilities. Median facility size was 189 beds and median census was 164 residents. Program completion rate was 73%. Consultants performed 66 onsite visits and 26 remote visits, totaling over 1,752 hours of support. Median number of IPC gaps identified was 79 (IQR: 57-84), most frequently within the domains of environmental cleaning and disinfection (13%); water management (10%); and training, auditing, and feedback (9%). Common facility-chosen action plan focus areas included disease surveillance (24%), antibiotic stewardship (16%), and hand hygiene (13%). Main barriers to program completion included lack of leadership support (18%) and staff turnover (9%). **Conclusions:** Expert-driven longitudinal support can be an effective strategy for enhancing IPC capacity within low resourced SNFs and a data-based health equity framework can be used to prioritize facilities for support. Through targeted mentorship, this program identified and addressed gaps in IPC practices and fostered a culture of safety. Most common action plan focus areas selected by the facilities did not align with IPC topic areas where most recommendations were given, highlighting potential SNF IPC program areas that may be challenging for facilities to address and where further education and resources are needed.

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