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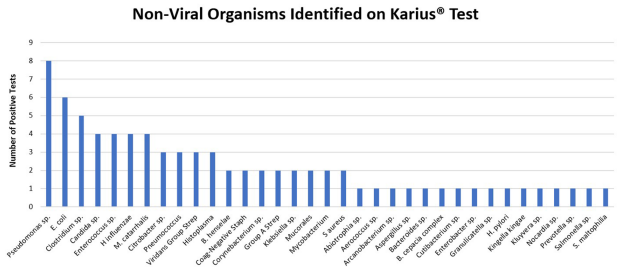

Presentation Type:
Poster Presentation
Subject Category: CLABSI
Opportunities to Reduce Peripherally Inserted Central Catheter (PICC) Utilization
Rija Alvi[1], Anita Shallal[2] and Geehan Suleyman[3]
[1]Henry Ford Hospital; [2]Henry Ford Hospital and [3]Henry Ford Health

Background: Central line-associated bloodstream infections (CLABSIs) remain an important, preventable healthcare-associated infection. Prolonged catheterization is a major risk factor, and avoidance and prompt removal of unnecessary central lines (CL), including peripherally inserted central catheter (PICC), can reduce CLABSIs. We aimed to evaluate potential opportunities to reduce PICC utilization and associated harm. **Methods:** This was a cross-sectional observational study of hospitalized patients with PICCs from June 1 to June 30, 2024 at an 877-bed tertiary care hospital in Detroit. CL indications using evidence-based and institutional guidelines, duration of catheterization, and complications of line were evaluated. **Results:** 145 patients had PICCs (Table 1). Of these, 114 (78.6%) were placed at bedside in the general practice unit, 31 (21.3%) in the ICU and the majority (57.5%) were double lumen. Common indications included total parental nutrition (TPN) (59, 40.7%) and outpatient parenteral antimicrobial therapy (OPAT) (58, 40%). 22 (15%) patients did not have an established indication for PICC placement. Among patients receiving PICC for TPN, 9 (15%) did not meet criteria, and 9 (15%) were on TPN for < 5 days. Amongst those discharged on OPAT, 14 (24%) had opportunity for oral sequential therapy; 11 (19%) patients only received treatment for < 28 days. Although 26 (18%) patients had CL placed for difficult access, half of them had a concurrent or subsequent PIV or midline. Median duration of CL was 25 days (range: 2-499), and a third had CL placed for < 1 4 days. Overall, 22 (15.7%) patients were identified to not meet any indication for PICC and of those who received double or triple lumen catheter, 62 (73%) qualified for single lumen catheter only. Complications occurred in 13 (9%) patients, including CLABSI (6, 4.1%) and thrombotic events (4, 3%). Eight (5.5%) patients had line-related readmission. **Conclusion:** Upon review, PICC lines were commonly overutilized, and contributed to increased CLABSI rates. Several opportunities to reduce CLABSIs were identified, including reinforcement of appropriate CL indications, increase midline utilization for shorter duration of therapy and difficult access. These findings also encourage use of oral sequential therapy instead of OPAT, and placement of single lumen catheters where indicated.

Table 1: Central line characteristics

Characteristic	Frequency, n (%) N=145
Number of lumens	
Single lumen	60 (41.4)
Double lumen	83 (57.2)
Triple lumen	2 (1.3)
Indication for PICC placement	
Vasopressors	14 (9.7)
Non-cytotoxic vesicant chemotherapy	2 (1.3)
TPN/Lipids	59 (40.7)
Chemotherapy with vesicant	11 (7.6)
Dialysis	1 (0.7)
Difficult access	26 (17.9)
Concurrent or subsequent PIV or midline?	14 (9.6)
Outpatient IV medications	58 (40)
Qualified for oral sequential therapy	14 (24.1)
PICC had no established indication	22 (15.7)
Central Line duration, median (range)	25 (2-499)
<14 days	44 (30.3)
2-6 weeks	61 (42.1)
> 6 weeks	40 (27.6)
Central line complications	
Bacteremia / fungemia	6 (4.1)
DVT	4 (2.8)
Phlebitis/infiltration	1 (0.7)
Malfunction	2 (1.4)
Central line-related readmission	8 (5.5)
Prior history of CL complication	12 (8.3)
Bacteremia / fungemia	8 (5.5)
DVT	2 (1.4)
Pseudoaneurysm	1 (0.7)
Mortality	
30-day mortality	10 (6.9)
Infection-related mortality	0 (0)

PICC, Peripherally Inserted Central Catheter; TPN, Total parenteral nutrition; DVT, deep venous thrombosis

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Bundle-Up to Prevent CLABSIs : Analysis of CLABSIs Pre and Post Toolkit Implementation
Chelsea Fauver[1], Nora Colburn[2], Justin Smyer[3] and Shandra Day[4]
[1]The Ohio State University Wexner Medical Center; [2]The Ohio State University; [3]The Ohio State University Wexner Medical Center and [4]Ohio State University

Background: Central line associated bloodstream infections (CLABSIs) are a preventable healthcare-associated infection. Evidence shows implementation of evidence-based bundled infection prevention strategies can reduce CLABSIs. We reviewed the impacts of a CLABSI prevention toolkit on CLABSI rates as well as compliance with key prevention practices. **Methods:** A CLABSI Prevention Bundle Toolkit was implemented in December 2023 at a quaternary care academic medical center. The toolkit delineated the elements of the bundle, including hand hygiene, daily review of line necessity, daily chlorhexidine gluconate (CHG) topical treatment, aseptic technique for insertion and maintenance, along with the responsible party for each task and educational resources for staff and patients. Additionally, the toolkit required weekly audits of CLABSI bundle by individual units and a multidisciplinary meeting to debrief each CLABSI to identify opportunities and successes. Analysis of compliance with key prevention practices, CLABSI rates and clinical details was completed before (December 2022 – November 2023) and after (December 2023 – November 2024) implantation of the toolkit. **Results:** Compliance with key prevention practices pre- and post-toolkit implementation is detailed in Table 1. There was a 37% reduction in CLABSI rate pre- and post-toolkit implementation as shown in Table 2. Clinical details including CLABSI classification as preventable, end-of-life or definition-based (Hsueh, Maurice and Uslan, ICHE 2022), organism, dialysis, transplant status and patient race are detailed in Table 2. **Conclusions:** CLABSI prevention bundles have been shown to reduce CLABSI, but implementation and compliance of the bundle can be challenging. A toolkit which outlines required tasks, responsible parties, regular audits and debriefs after CLABSI can help support healthcare teams in successful implementation of the full CLABSI bundle. Following the bundle toolkit implementation there was improvement in rates of CHG treatment and line necessity review with an overall decrease in CLABSI rates. Not all process measures included in the toolkit are able to be quantified so likely additional factors contributed to the reduction in CLABSI rates. Overall, there did not appear

to be a difference in the types of CLABSIs, organisms or patient demographics in the pre and post-toolkit groups although there were more CLABSIs in transplant patients post-toolkit suggesting a complex patient population. A comprehensive toolkit can aide in implementation of a multi-faceted prevention bundle, provide a structure for accountability and help improve patient outcomes.

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Table 1

	Pre-Toolkit	Post-Toolkit	Change
Daily CHG Treatment (% compliance)	78%	84%	6% increase
Daily Review of Line Necessity	78%	85%	7% increase
Hand Hygiene	80%	81%	1% increase
Device Utilization Ratio	0.19	0.19	No change

Table 2

	Pre-Toolkit	Post-Toolkit
CLABSI Number and (Rate/ 1000 central line days)	97/65876 (1.47)	61/64510 (0.95)
Preventable CLABSI	70 (72%)	42 (69%)
Definition based	16 (16%)	8 (13%)
End-of-life	11 (11%)	11 (18%)
Organism (%)		
Staph spp	30%	21%
Strep spp	2%	0
Enterococcus spp	23%	30%
GNB	11%	16%
Candida spp	23%	26%
Hemodialysis Line Present	36 (37%)	19 (31%)
Transplant Recipient	3 (3%)	9 (15%)
Patient Race		
White	70(72%)	40 (66%)
African American/Black	20 (21%)	17 (28%)
Other	7 (7.5%)	4(8%)

Presentation Type:
Poster Presentation
Subject Category: CLABSI

Hospital-Onset Bloodstream Infection Varies by Hospital Location Type

Pragya Dhaubhadel[1], Prasanthi Limgala[2], Heather Stafford[3] and Mark Shelly[4]
[1]Geisinger; [2]Geisinger; [3]Geisinger Health System and [4]Geisinger

Objectives: To characterize the incidence and contributing factors related to hospital-onset bloodstream infection (HOBsi) in a nine hospital healthcare system. **Background:** Bloodstream infections that develop during hospitalization are critical measures of healthcare quality. Though these events are measured in part through CMS reports of central line-associated bloodstream infections (CLABSIs) and MRSA bloodstream infections. A newer metric has been introduced by National Healthcare Safety Network (NHSN) to measure any case of bloodstream infection with onset on or after hospital day four. There is no established benchmark rate for HOBsi and its clinical understanding remains complex. **Methods:** Positive blood cultures obtained on or after hospital day four from nine hospitals across northeast and central Pennsylvania were included in this study, spanning July 2021 to June 2024. Cases were classified based on NHSN criteria: primary bloodstream infections (BSIs), CLABSIs, mucosal barrier injury-related infections, and secondary bacteremia with identified sources (e.g., pneumonia, urinary tract infections, gastrointestinal infection or surgical site infection). **Results:** A total of 739 HOBsi cases occurred in 1,186,510 patient days over three years, for a rate of 6.13 (95% confidence interval 5.69 to 6.59). The rates varied significantly by hospital unit type (p=0.002) (Figure). Oncology wards had the highest HOB rate (21.1 infections per 10,000 patient days), followed by critical care units at 11.5. Behavioral health and obstetric wards had the lowest HOB rates. When location type was considered, the rates between hospital campuses were not significantly different. In multivariate regression, the central-line device use ratio further influenced the HOBsi rate (p=0.002). Primary BSIs accounted for 49.3% of cases, while 22.1% met the criteria for CLABSI. When NHSN-defined source was found (secondary BSIs), pneumonia was the most common source (6.5%), followed by urinary tract infections (5.5%), gastrointestinal tract infections (3.5%), surgical site infections (3%), and other sources (6%). Mucosal barrier injury-related HOBsi comprised 4.2% of cases. **Conclusion:** This quality measure significantly expands the scope of infection events over CLABSI. HOBsi is closely associated with the hospital location type. Device use may further stratify for severity. This study establishes some initial benchmarks. Understanding the likely source of bacteremia will be important in finding ways to target strategies to reduce HOBsi.

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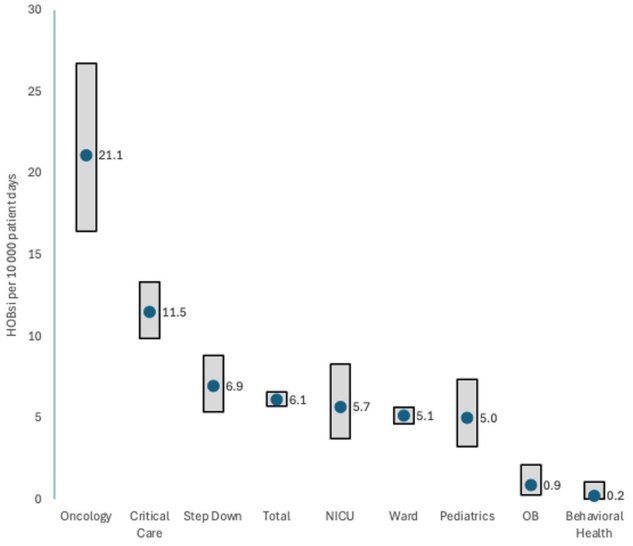

Presentation Type:
Poster Presentation
Subject Category: COVID-19

The Unintended Burden of the Use of Transmission-Based Precautions for Suspected COVID-19 Patients in the Ambulatory Setting

Rebecca Stern[1], Tom Talbot[2] and Katherine Bashaw[3]
[1]Vanderbilt University Medical Center; [2]Vanderbilt University School of Medicine and [3]VUMC

Background: Implementation of transmission-based precautions has predominantly been performed in inpatient acute care settings. Limited guidance is available on applying these precautions in ambulatory clinics, especially for patients with suspected or confirmed COVID-19. This timed analysis of empiric isolation precautions for COVID-19 in walk-in clinics (WIC) aimed to identify unintended impacts that are underappreciated with inpatient use. **Methods:** An observational analysis at four WIC sites in an academic hospital network was conducted in July-October 2024. Patients who screened positive at check-in with cough, sore throat, congestion, or recent COVID-19 positive testing triggered an electronic notification on the need for airborne and contact isolation precautions with eye protection. A timed evaluation of healthcare personnel (HCP) to don and doff personal protective equipment (PPE) upon patient room entry