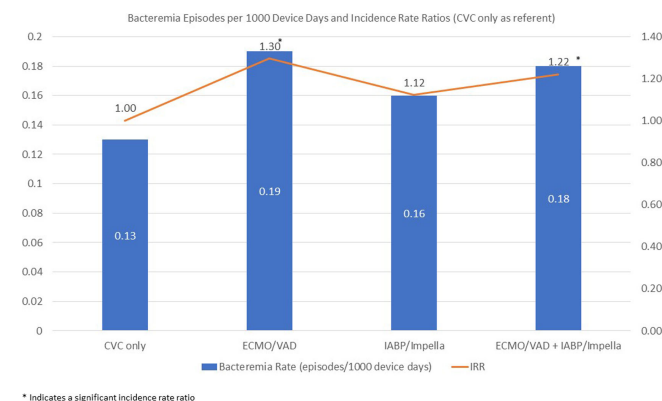




Presentation Type:

Poster Presentation

Subject Category: CLABSI

Development of a CLABSI Preventability Index to Target Improvement Efforts

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Background: Central Line-Associated Bloodstream Infections (CLABSI) are multifactorial, making trends difficult to identify. CLABSI can occur from the time of insertion to delayed removals beyond the time central access was indicated. The objective of creating a CLABSI Preventability Index tool was to enable strategic quality improvement work. **Methods:** A preventability index tool was created with stakeholder input and was categorized into four categories (see Table 1): Indication for Line, Care and Maintenance and Line Access, Diagnostic Stewardship, and Specimen Collection. Each category had one or more questions prompting users to assign points for each preventable action. Scores range from 0 through 15, with the higher score indicating more prevention opportunities. (See table 2). **Results:** During the 2024 calendar year, there were 25 Adult CMS CLABSIs. The preventability index was applied to each case. There was 1 'extremely preventable' case, 2 'very preventable' cases, 6 'preventable' cases and 16 'not preventable' cases. In the 3 cases scoring very preventable or extremely preventable, the category "indication for line" was consistently scored high. Two of the 3 cases had preventable actions from a care and maintenance standpoint, 2 cases scored for diagnostic stewardship category and all 3 cases scored in the specimen collection category. In the 22 cases scoring 6 or lower, 0 scored in the indication for line category, 16 scored in the care and maintenance category, 11 scored in diagnostic stewardship and 4 scored in specimen collection. **Conclusion:** The preventability index objectively identifies the highly preventable CLABSIs in order to target high-priority actions to prevent future cases. Based on this tool, the use of central lines when not indicated causes the highest preventability scores, but care and maintenance activities score the most frequently.

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Table 1: Preventability Index Scoring Criteria

Category	Question	Point Attribution
Indication for Line	Was the line appropriate at the time of the CLABSI? If no, was the line high risk?	0 pts - (Yes, line needed) 5 pts - (No, line not needed) 7 pts - (No, high risk line not needed)
	CHG Treatment: Was this completed every day for the last 3 days prior to the event?	0 pts - (Yes, completed 3/3 days) 1 pt - (No, not completed 3/3 days)
Care and Maintenance and Line Access	Tubing Changes: Was the tubing change overdue?	0 pts - (No, tubing changes up to date) 1 pt - (Yes, tubing changes needed)
	Dressing Changes: Was the dressing change overdue?	0 pts - (No, dressing changes up to date) 1 pt - (Yes, dressing changes needed)
	Line Access: Was there concern that the line was accessed too frequently based on post-CLABSI survey?	0 pts - (No concerns with line access) 1 pt - (Yes, line was accessed too frequently)
	Were cultures drawn for low-risk bacteremia?	0 pts - (No) 2 pts - (Yes)
Diagnostic Stewardship	Were blood cultures repeated without indication?	0 pts - (No) 2 pts - (Yes)
	Does the blood culture order match blood culture collection technique?	0 pts - (Yes, blood culture order and collection technique match) 1 pt - (No, blood culture order and collection technique do not match)
Specimen Collection	Are there concerns related to collection technique? (i.e. potential contaminant, one site used for multiple cultures, etc)	0 pts - (No collection technique concerns) 1 pt - (Yes, there was collection technique concerns)
Total Score		15

Table 2: Preventability Index Total Score Ranking

Category	PI Total Score
Not preventable	0-3
Preventable	4-6
Very preventable	7-10
Extremely preventable	11-15

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Poster Presentation

Subject Category: CLABSI

The Impact of CHG Bathing on Healthcare Associated Infections Across a Rural Hospital System

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Background: We aimed to examine the impact of daily bathing with chlorhexidine gluconate (CHG) on central line associated bloodstream infections (CLABSIs), catheter associated urinary tract infections (CAUTIs), and bloodstream infections with methicillin-resistant *Staphylococcus aureus* (LabID MRSA) across a large, rural healthcare system. This healthcare system encompasses 8 large community hospitals, one academic hospital, and 11 hospitals with 50 or fewer beds. Starting in August 2023, all facilities were required to adopt daily CHG bathing for patients with central lines and/or in intensive care units. Some facilities also chose to adopt CHG daily bathing for patients with foley catheters. **Methods:** We analyzed the hospital-wide monthly incidence of select healthcare associated infections (HAIs) in the year before and after implementation of CHG bathing across a large, decentralized, rural healthcare system. We conducted negative binomial regressions to examine the difference in HAIs before/after implementation of CHG bathing, and we used the National Healthcare Safety Network's (NHSN) predicted numbers of HAIs to adjust for confounding among hospitals. **Results:** After adjusting for each hospital's predicted number of infections, we saw a 40.1% decrease

in CLABSIs ($p=0.008$) and a 33.2% reduction in CAUTIs ($p=0.018$, Table 1); we also observed a 34.3% reduction in LabID MRSA, although this was not statistically significant ($p=0.105$). **Conclusion:** System-wide implementation of CHG daily bathing in a large, decentralized, rural healthcare system was associated with a significant reduction in CLABSIs and CAUTIs.

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Observed vs predicted HAI rates over time

Black line solid is the predicted number of infections from NHSN

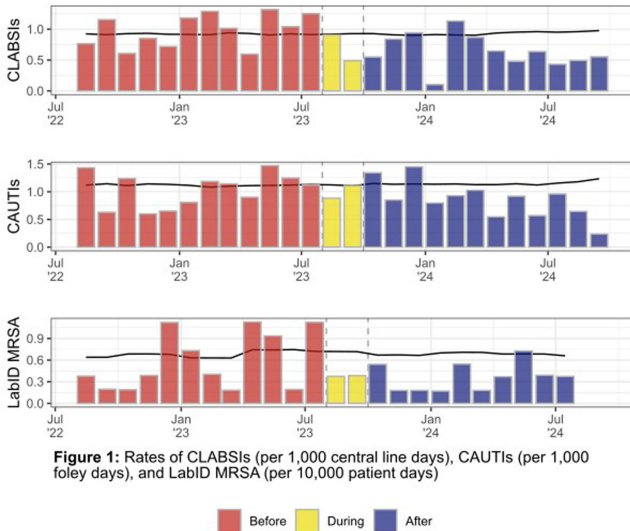


Figure 1: Rates of CLABSIs (per 1,000 central line days), CAUTIs (per 1,000 foley days), and LabID MRSA (per 10,000 patient days)

Before During After

Table 1: Rates of Select HAIs After CHG Implementation

	Incident Rate Ratio	95% CI	P value
CLABSI	0.599	0.410–0.869	0.008
CAUTI	0.668	0.476–0.933	0.018
LabID MRSA	0.657	0.391–1.09	0.105

Presentation Type:

Poster Presentation

Subject Category: CLABSI

Demographic and Socioeconomic Factors as Predictors of Device-Associated Healthcare Infections Before and During the COVID-19 Pandemic

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Background: Social vulnerability factors have been associated with negative health outcomes. However, it remains unclear how they affect device-related infections in different population groups. **Methods:** This retrospective observational cohort study included Central-Line Associated Bloodstream Infections (CLABSI) and Catheter Associated Urinary Tract Infections (CAUTI) in an 850-bed, academic tertiary care facility. Information was collected on patient demographics, the CDC Social Vulnerability Index (SVI), hospitalization, comorbidities, and COVID-19 status. SVI analysis included overall vulnerability comprised of the four themes: socioeconomic status, household characteristics, racial/ethnicity minority status, and housing type/transportation. Chi-square and Wilcoxon rank-sum tests were used for categorical and continuous variable comparisons. GEE models compared pre- and pandemic periods by

interrupted time series analysis. **Results:** Between 1/1/2018 to 5/31/2022 98,791 patients were admitted 151,550 times. Of those, 17,796 patients received 29,483 central lines and 45,180 patients had 65,422 Foleys. 314 patients developed 338 CLABSI and 216 patients had 217 CAUTI. 1,552 patients tested positive for COVID-19 with 22 developing CLABSI and 14 CAUTI. The pre-pandemic downward trend in CLABSI and CAUTI was reversed during COVID-19 (p Throughout the study Black patients had higher device days (p In the SVI analysis the socioeconomic theme was associated with higher risk of device-related CLABSI across the entire study ($p=0.03$). During COVID-19 overall SVI and the household characteristics theme were associated with higher device-related CLABSI rates ($p=0.03$; $p=0.03$). Adjusting for race or ethnicity dissolved those associations. For CAUTI race/ethnicity minority status was linked to an event throughout the study ($p=0.03$). This held true after adjusting for individual race or ethnicity status. No associations were detected in the pre- and pandemic periods for CAUTI. **Conclusions:** Health outcome disparities affected Black (CLABSI and CAUTI) and Hispanic/Latino (CLABSI) patients. Of note, both groups had significantly higher device utilization rates. Per-patient infections increased during the pandemic without altering race/ethnicity differences. Higher race/ethnicity minority status SVI was linked to CAUTI. However, CLABSI were driven by the socioeconomic SVI. The findings can help clarify the relationships between race/ethnicity and other demographic and socioeconomic factors associated with device-related infections on the community and individual level.

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Subject Category: CLABSI

Multi-Center, Randomized Study To Evaluate The Efficacy And Safety of Mino-Lok for the management of CLABSI In Hemodialysis Patients

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Background: Catheter-related or central line-associated bloodstream infection (CRBSI/CLABSI) is a common and serious complication in patients undergoing hemodialysis (HD), often resulting in significant morbidity and mortality. Managing CRBSI/CLABSI often requires removing the central venous catheter (CVC) and placing a new one at a different vascular site. However, this approach is not always feasible for these patients that often have limited vascular access. No adjunct antimicrobial lock therapy has been FDA-approved for managing such infections and is urgently needed to salvage HD vascular access. Our study evaluated a novel triple combination antimicrobial catheter lock solution containing minocycline, EDTA, and ethanol (Mino Lok (MLT)). MLT has shown broad-spectrum in-vitro activity and positive results in a Phase 2 trial. Herein, we report the results of MLT CVC-salvage therapy in the subgroup of HD subjects from a phase 3 trial. **Methods:** This international, multicenter, superiority trial was conducted at 34 sites. HD, cancer, or other patients requiring a long-term CVC (LTCVC), aged ≥ 12 years, with CLABSI/CRBSI, were enrolled and randomized (1:1 ratio) to receive MLT or site-specific standard of care (SOC) antimicrobial lock therapy for 2 hours/day for 7 days. The primary endpoint was median time to catheter failure (i.e., mortality, catheter removal due to inability to administer lock or infectious-related reasons, worsening signs/symptoms, persistent or recurrent bloodstream infection, or deep-seated infection). **Results:** From February 2018 to February 2024, 54 HD patients were enrolled and randomized: 26 to MLT and 28 to SOC. Gram-negative bacteria accounted for 50% of CLABSI/CRBSIs, gram-positive bacteria 43%, and Candida species 7%. Highly virulent organisms (non-commensals) caused 69% of all cases. Patients in SOC had a significantly shorter time to catheter failure compared to MLT ($p=0.03$) with 25% of CVCs failing by day 6 and 50% by day 22 in SOC compared to 25% failing by day 37 in MLT (Figure 1). Similarly, 16 subjects (57%) in SOC had a CVC failure event compared