Presentation Type:
Poster Presentation - Poster Presentation
Subject Category: CLABSI
End-of-life care and hospital-acquired bloodstream infection
Melanie Zarnoski; Patrick Burke; Steven Gordon; Joanne Sitaras and Thomas Fraser

Background: All critically ill patients are at risk for hospital-acquired bloodstream infection (HABSI). At any time, however, there is heterogeneity among patients in the ICU; some patients have the added complexity of end-of-life discussions. We sought to better understand the patients in our medical intensive care unit (MICU) with HABSIs that do and do not meet the NHSN definition for a central-line–associated bloodstream infection (CLABSI) event by evaluating for the presence of a do-not-resuscitate (DNR) order. **Methods:** The study was conducted at our 66-bed MICU at the Cleveland Clinic Main Campus between January 2021 and September 2022. Surveillance for HABSI to include determination of CLABSI is performed prospectively according to the NSHN definition. The electronic health record was queried for each patient with a HABSI for the presence of a DNR order. DNR orders were categorized as follows: prevalent (DNR orders present at the time of admission to the MICU), incident (orders entered after admission to the MICU), or no DNR (for patients without an order at any time during their MICU stay). For incident orders, time from order to HABSI was recorded. Time to event was calculated as days between ICU admission to HABSI. **Results:** During the observation period there were 36,477 MICU patient days and 4,815 admissions. There were 112 HABSIs, of which 48 (43%) were CLABSIs. Overall, 65 patients were categorized as incident DNR, 7 were categorized as prevalent DNR, and 40 were categorized as no DNR. For patients with an incident DNR order, 50 HABSIs occurred on the date of or before the order and 15 occurred after the order. In patients in whom HABSI occurred after the incident DNR order, the median number of days between DNR order and HABSI was 11 days (range, 1–69). **Discussion:** In our MICU, >50% of HABSIs and 60% of CLABSIs occurred in patients with a DNR order incident to their MICU stay. Interventions to prevent hospital-acquired bloodstream infection and the analysis of the events are inextricably linked to issues of end-of-life care for critically ill patients. Further exploration of patient characteristics easily obtainable from the EHR, such as DNR orders, is necessary to inform best practices for prevention and risk adjustment of bloodstream infection rates.
Disclosures: None

Antimicrobial Stewardship & Healthcare Epidemiology 2023;3(Suppl. S2):s50
doi:10.1017/ash.2023.290

Table 1 - Number and time to infection in patients with any hospital-acquired bloodstream infection (HABSI) and in those who met the definition for central line-associated bloodstream infection (CLABSI) by code status

	HABSI		CLABSI	
	N	Median days from ICU admit to infection (range)	N	Median days from ICU admit to CLABSI (range)
Incident	65	9 (2-72)	29	9 (2 – 72)
prevalent	7	5 (2 – 9)	3	6.5 (7 – 9)
No DNR	40	6 (2 – 19)	16	6 (2- 21)

Table 2 - Frequency of death and top three most common pathogens in patients with hospital-acquired bloodstream infection by code status

	Never DNR	Prevalent DNR	Incident DNR
# Died (%)	3 (7.5)	4 (57.1)	49 (75.4)
Top 3 pathogens (n)	Enterococcus (9) Staphylococcus aureus (9) Enterobacteriales (8)	Enterococcus (4) Staphylococcus aureus (2) Enterobacteriales (1)	Enterobacteriales (22) Enterococcus (14) Yeast (14)

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Poster Presentation - Poster Presentation
Subject Category: CLABSI
Novel strategies to reduce central-line–associated blood stream infection (CLABSI) events in the neonatal intensive care unit
Ingrid Camelo; Srilatha Neshangi and Amy Thompson

Background: We describe the components of an improved and easy-to-implement strategy to reduce CLABSI events in the NICU implemented during July–September 2021 in a tertiary-care healthcare center. These strategies were added to an existing institutional protocol created following CDC guidelines. **Methods:** During the previous timeframe of the implementation of new strategies, CDC insertion-related prevention measures [ie, hand hygiene, use of personal protective equipment (PPE), catheter size selection, standard chlorhexidine gluconate (CHG) antisepsis, maintenance related Curos disinfecting caps, and scrubbing the hub] were part of an existing protocol at our institution. We introduced the following key elements along with the previous ones: decrease length of umbilical vein catheter (UVC) utilization from 14 days to 5–7 days, change of dressing materials from BIOPATCH to 3M Tegaderm CHG chlorhexidine gluconate IV securement transparent dressing, enhanced compliance of an existing artificial nail policy, and restricted blood draw from central lines. **Results:** After optimization of the previous protocol through these additional strategies, we achieved a significant reduction in the NICU CLABSI rates from 12 CLABSI events between July 2020 and June 2021 to only 3 CLABSI events between July 2021 and June 2022. **Conclusions:** Revision of CLABSI bundle prevention protocols should be performed frequently to allow improvement opportunities to be added to diminish infection rates. The addition of simple and easy-to-implement key elements interventions to the existing CLABSI bundle had an important impact on the CLABSI rate at our institution.
Disclosures: None

Antimicrobial Stewardship & Healthcare Epidemiology 2023;3(Suppl. S2):s50
doi:10.1017/ash.2023.291

Presentation Type:
Poster Presentation - Poster Presentation
Subject Category: CLABSI
Estimating racial differences in risk for CLABSI in a large urban healthcare system
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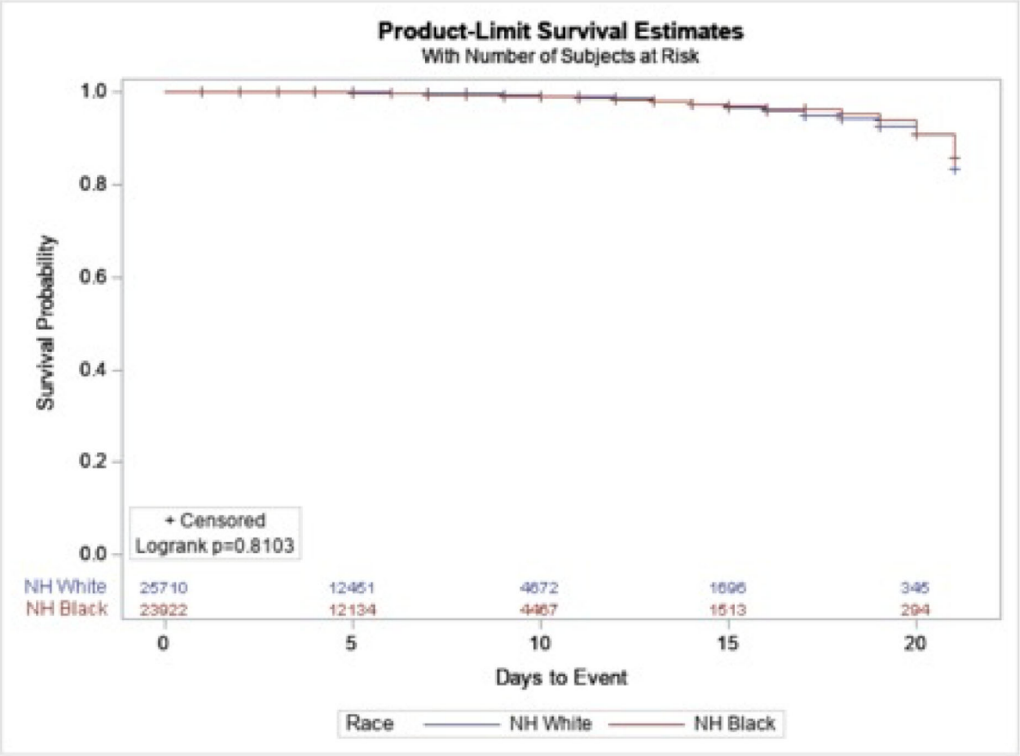
Background: Socioeconomic barriers or divergent implementation of prevention measures may impact risk of healthcare-associated infections by racial groups. We utilized a previously studied cohort of patients to quantify disparities in central-line–associated bloodstream infection (CLABSI) risk by race accounting for inherent differences in risk related to device utilization. **Methods:** In a retrospective cohort of adult patients at 4 hospitals (range, 110–733 beds) from 2012 to 2017, we linked central-line data to patient encounter data: race, age, comorbidities, total parenteral nutrition (TPN), chemotherapy, CLABSI. Analysis was limited to patients with >2 central-line days and <3 concurrent central lines. Patient exposures were calculated for each central-line episode (defined by insertion and removal dates); analysis of central-line episode-specific risk of CLABSI among Black versus White patients adjusted for clinical factors, duration of central-line episode, and central-line risk category (ie, low: single port, dialysis or PICC; medium: single temporary or nontunneled; or high: any concurrent central-lines) in Cox proportional hazards regression of time to CLABSI. **Results:** In total, 526 CLABSIs occurred a median of 14 days after insertion among 57,642 central-line episodes in 32,925 patients. CLABSIs occurred in similar frequency across racial groups: 217 (1.7%) among Black patients, 256 (1.6%) among White patients, and 11 (1.6%) among Hispanic



Hazard Ratios *at* ≤ 21 days using Cox Proportional Hazards Regression:

Crude Hazard Ratios		Adjusted Hazard Ratios*	
HR	95% CI	HR	95% CI
1.03	0.84, 1.25	1.08	0.88, 1.32

**Adjusted for CVC risk (low risk as reference, med risk, high risk) and any TPN use*

patients (also 42 among unknown or other race). Duration of central-line episode was similar between racial groups (median, 5 days). Black patients were less likely to have medium-risk central lines (34%) compared to white patients (RR, 0.82; 95% CI, 0.79–0.84), but they had a similar frequency of high-risk central lines (21%; RR, 1.0; 95% CI, 1.0–1.1). Compared with low-risk central lines, risk of CLABSI was increased among medium-risk central lines (RR, 1.3; 95% CI, 1.0–1.7) and high-risk central lines (RR, 2.2; 95% CI, 1.8–2.7). CLABSIs were more likely in TPN central lines (RR, 2.3; 95% CI, 1.9–2.7) than others, but they were not more likely among Black patients than White patients (RR, 0.9; 95% CI, 0.1–1.1). In survival analysis, there were 24,700 central-line episodes among Black patients compared to 26,648 episodes among White patients; adjusting for central-line risk and TPN, the risk of CLABSI was similar during the first 21 days of central-line use (adjusted hazard ratio, 1.08; 95% CI, 0.88–01.32) (Fig. 1). **Conclusions:** After accounting for central-line configuration, Black patients did not have a higher risk of CLABSI within 21 central-line days. Further evaluation is warranted to assess racial disparities in risks of other healthcare-associated infections and to determine whether a lack of CLABSI-specific racial disparities can be replicated in other regions and healthcare systems.

Disclosures: None

Antimicrobial Stewardship & Healthcare Epidemiology 2023;3(Suppl. S2):s50–s51
doi:10.1017/ash.2023.292

Presentation Type:
Poster Presentation - Poster Presentation
Subject Category: COVID-19

Multidrug-resistant ventilator-associated pneumonia (VAP) before and during the COVID-19 pandemic among hospitalized patients in a tertiary-care private hospital

Alec Ann Alissa Aligui and Cybele Lara Abad

Background: Data on the incidence and outcome of ventilator-associated pneumonia (VAP) and multidrug-resistant VAP (MDR-VAP) among COVID-19 patients are limited. We compared the incidence and incidence density (ie, number of VAP per 1,000 ventilatory days) of MDR-VAP prior to and during the COVID-19 period in an urban, tertiary-care hospital. **Methods:** A retrospective study was conducted to compare the incidence, profile, and outcomes of patients with MDR-VAP during the pre–COVID-19 period (2018–2019) and during the COVID-19 pandemic (2020–2021). **Results:** In total, 80 (22%) of 362 patients developed VAP and were included in the cohort: 27 (33.75%) from the pre–COVID-19 period and 53 (66.25%) from the COVID-19 period, respectively. Most were male [20 (74%) of 27 vs 34 (64%) of 53], with median ages of 66 years (range, 35–90) and 67 years (range, 32–92) in the pre–COVID-19 and COVID-19 periods, respectively. Comorbidities were similar between the 2 periods, except for cardiovascular disease (14 vs 11; $P = .005$) and chronic lung