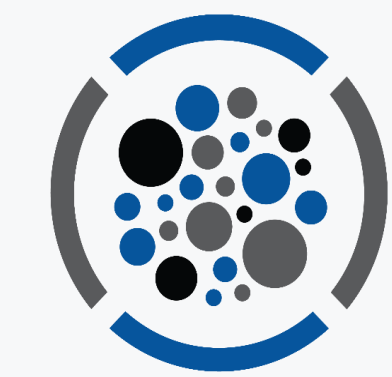


Impact of the COVID-19 Pandemic on Healthcare-Associated Infections (HAIs) by Race and Ethnicity in a Large Network of Community Hospitals: A Call to Action



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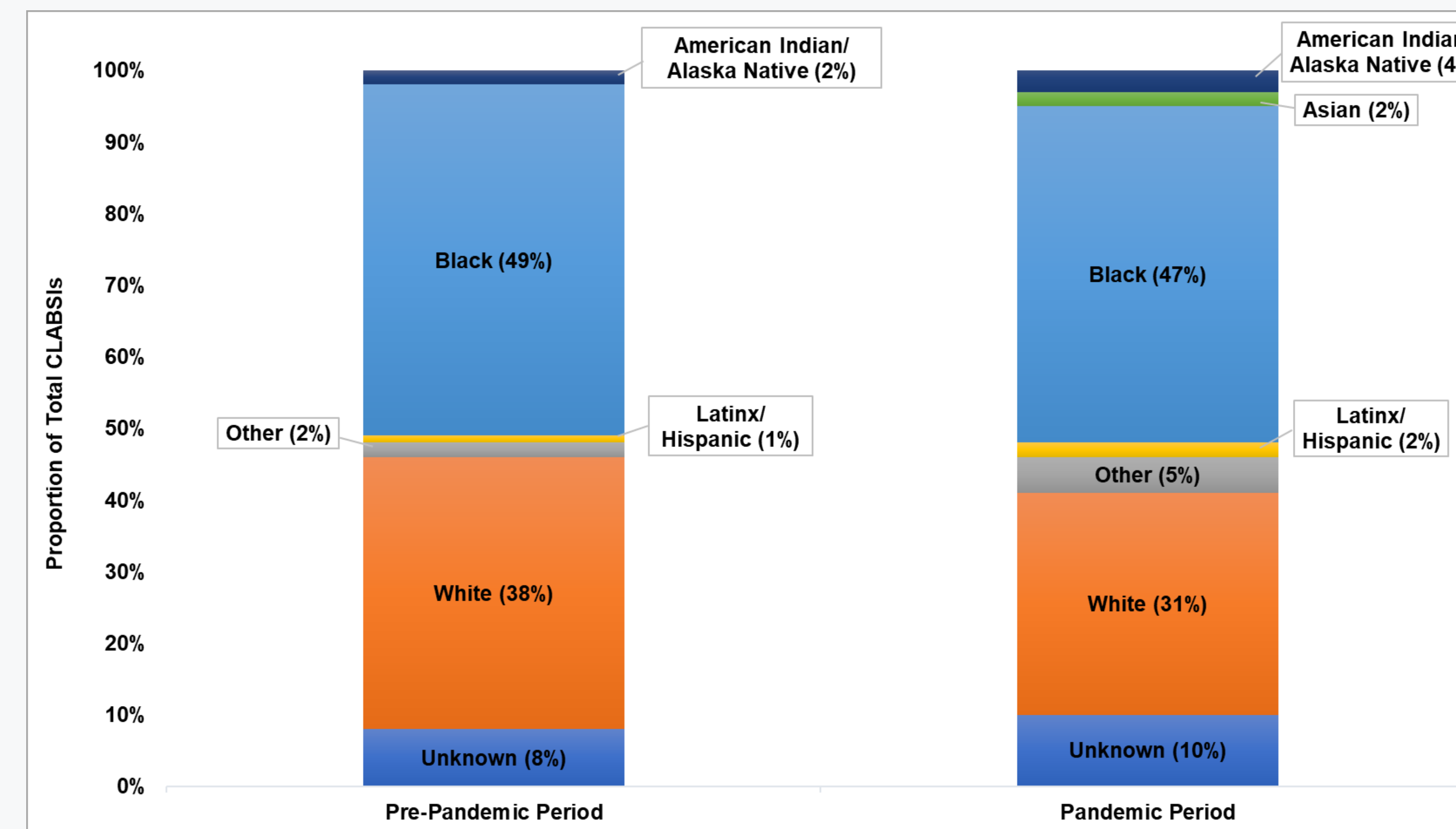
Background

- Race is a social construct, yet race and ethnicity remain significant predictors of health and treatment outcomes.
- Inequities in healthcare access, treatment, and outcomes among minoritized racial and ethnic groups are globally recognized.
- There has been relatively little investigation into potential racial and ethnic disparities in the incidence of healthcare-associated infections (HAIs).
- Our objective was to evaluate the impact of the COVID-19 pandemic on HAIs in different racial and ethnic groups.

Methods

- We performed a retrospective cohort analysis of central line-associated bloodstream infection (CLABSI), catheter-associated urinary tract infection (CAUTI), and laboratory-identified *Clostridioides difficile* infection (CDI) prospectively-collected by a network of community hospitals in the southeastern US.
- Inclusion criteria required that institutions had 1) complete data for the full surveillance period, and 2) race/ethnicity reported for at least 75% of HAIs.
- We defined the COVID-19 pre-pandemic period from 1/1/2019 to 2/29/2020 and the COVID-19 pandemic period from 3/1/2020 to 6/30/2021.
- Outcomes were stratified by race/ethnicity, as captured in the electronic medical record, and reported as proportions. Ratios of HAIs between minority races & White patients were compared using Poisson regression.

Figure 1a. Proportion of CLABSI by Race and Ethnicity, Pre-Pandemic Period vs Pandemic Period



Results

- Overall, 21 (<40%) facilities consistently collect race and ethnicity information in surveillance databases within this hospital network.
- The highest number of CLABSI occurred in Black patients in both study periods (**Figure 1a, Table 1**).
- Higher proportions of CAUTI and CDI occurred in White patients (**Supplemental Figures 1b-c**).
- The ratio of CLABSI counts among Black patients compared to White patients was 1.3 in the pre-COVID period, which was not a significant finding. However, this ratio significantly increased to 1.51 after the start of the pandemic (**Table 1**). Similar trends were not observed in other HAIs (**Supplemental Tables 2-3**).

Table 1. Relative Ratios of CLABSI by Race and Ethnicity, Pre-Pandemic Period vs Pandemic Period

Race/Ethnicity	Pre-Pandemic Period (Central Line Days: 127,443)		Pandemic Period (Central Line Days: 167,384)	
	N	Relative Ratio (95% CI)	N	Relative Ratio (95% CI)
White	33	Reference	41	Reference
American Indian/Alaska Native	2	0.06 (0.01-0.25)	5	0.12 (0.05-0.31)
Asian	0	0	3	0.07 (0.02-0.24)
Black	43	1.3 (0.83-2.05)	62	1.51 (1.02-2.24)
Latinx/Hispanic	1	0.03 (0-0.22)	2	0.05 (0.01-0.2)
Other	2	0.06 (0.01-0.25)	7	0.17 (0.08-0.38)
Unknown	7	0.21 (0.09-0.48)	13	0.32 (0.17-0.59)

Conclusions

- Race and ethnicity are variably reported in surveillance databases.
- We found differences in HAI occurrences by race and ethnicity in a network of community hospitals. Black patients had higher number of CLABSI, and this proportion increased during the pandemic.
- Patient safety events may differ across racial and ethnic groups and negatively impact health outcomes. Further investigation is needed.

