Disparities in Hospital Length of Stay and Morbidity in Pediatric Acute Care Cardiology Patients

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Pediatric Acute Care Cardiology Collaborative

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Disclosures

- No relevant disclosures

Background

- Studies have identified gaps in the care of patients with pediatric heart disease[1-3]
- Children of color and with low SES have been shown to have higher morbidity, mortality, and poorer post-transplant outcomes[1-4]

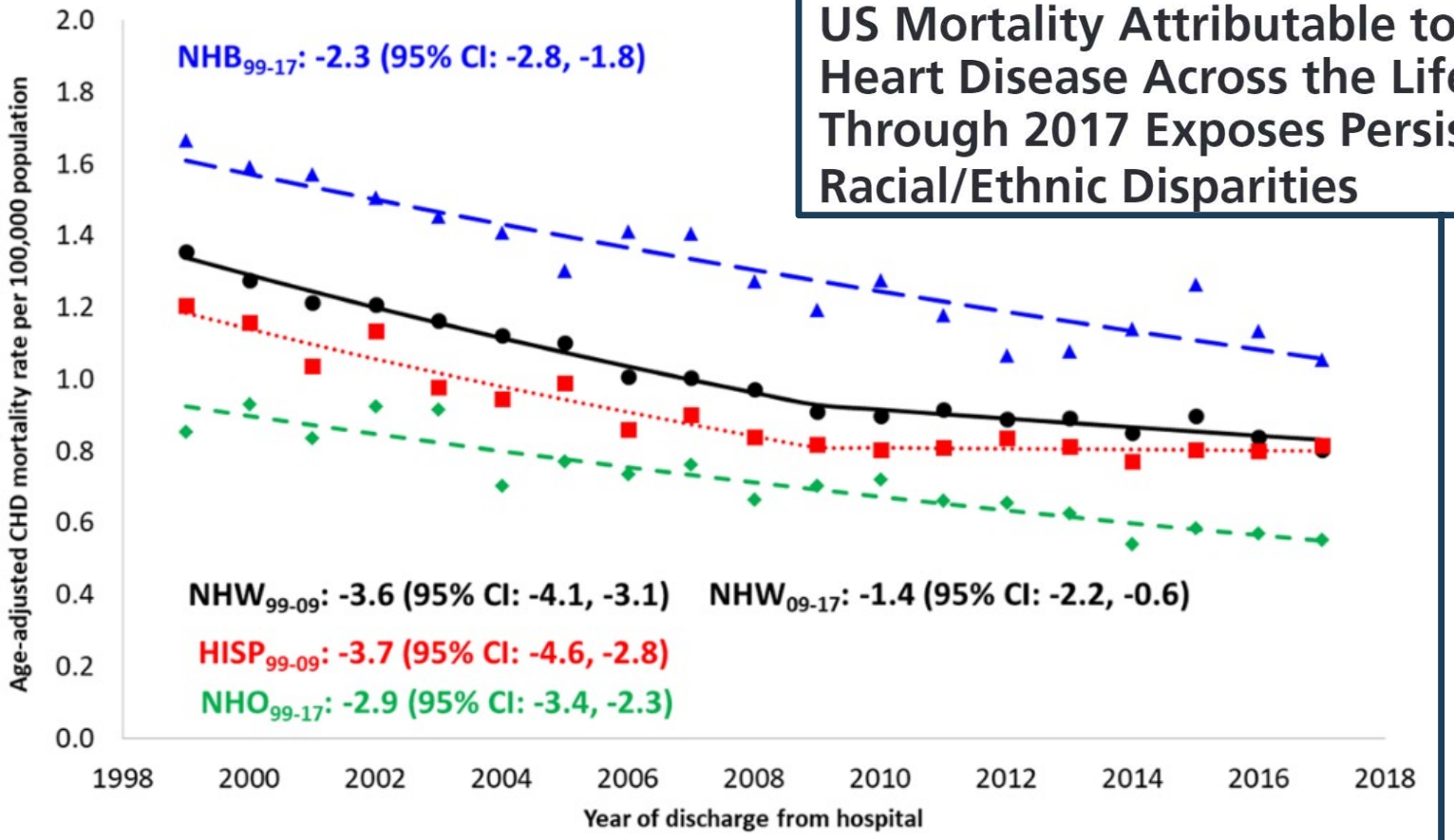
1. Anderson et al 2018
2. Chan et al 2015
3. Lopez et al 2020
4. Olsen et al 2021

Background

Circulation

ORIGINAL RESEARCH ARTICLE

US Mortality Attributable to Congenital Heart Disease Across the Lifespan From 1999 Through 2017 Exposes Persistent Racial/Ethnic Disparities



1. Lopez et al 2020

Hypothesis

We hypothesized that:

1. Black patients admitted to pediatric acute care cardiology units have increased hospital length of stay and number of complications compared to White patients

2. Hispanic patients admitted to pediatric acute care cardiology units have increased hospital length of stay and number of complications compared to non-Hispanic patients

Methods

- Examined all pediatric acute care cardiology hospitalizations in the PAC^3 data registry from February 2019 to July 2021
- Included all medical and surgical hospitalizations ending in discharge to home or death
- Excluded patients discharged to other hospitals or skilled facilities

Methods

Race and Ethnicity

Region

Methods

- Primary outcomes
  - Hospital length of stay (LOS)
  - Total number of complications

- In-hospital complications included healthcare acquired infections, pneumonia, sepsis, seizures, stroke, diaphragm or vocal cord dysfunction, venous or arterial thrombus and cardiac arrest

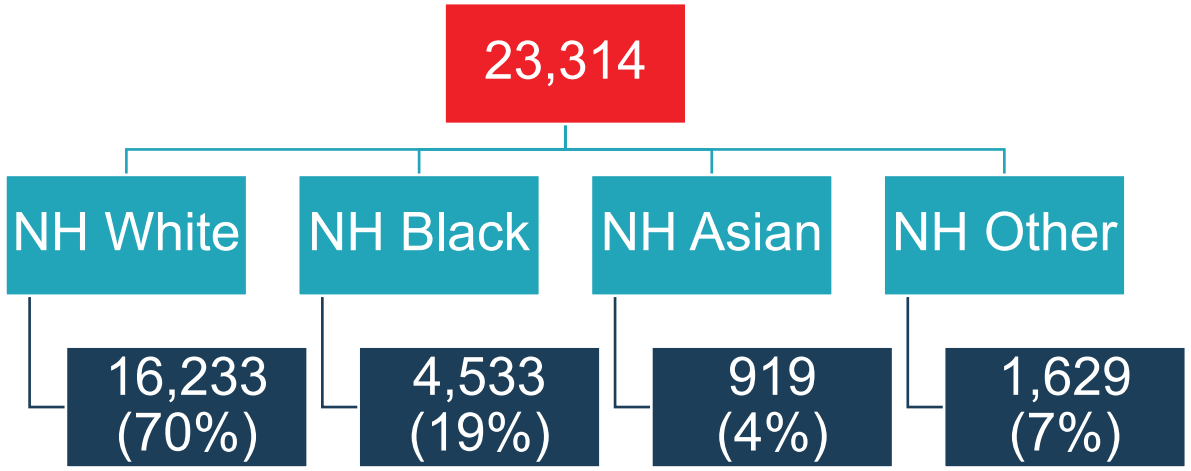
Methods

- Comparative statistics were used to assess differences in hospital LOS and total complications
- Generalized linear models evaluated LOS, total complications by race/ethnicity and region
- Bonferroni correction significance threshold of 0.001

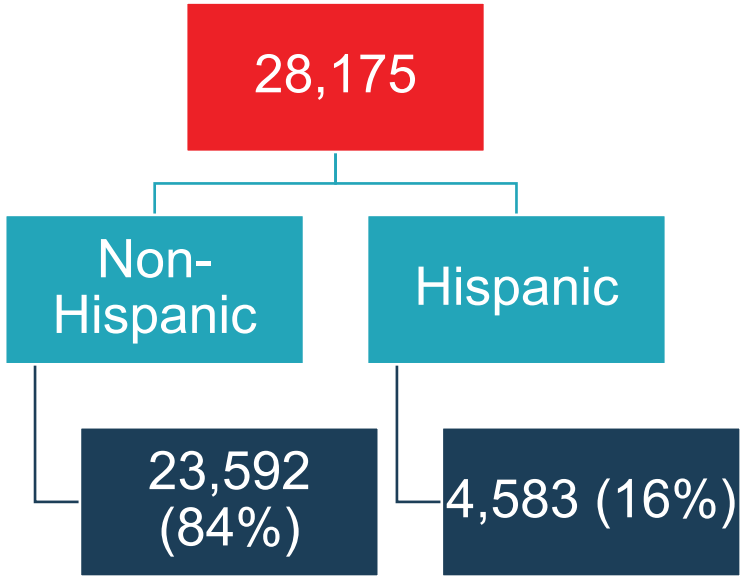
Results: Hospitalizations

Total Hospitalizations: 30,404

Race



Ethnicity



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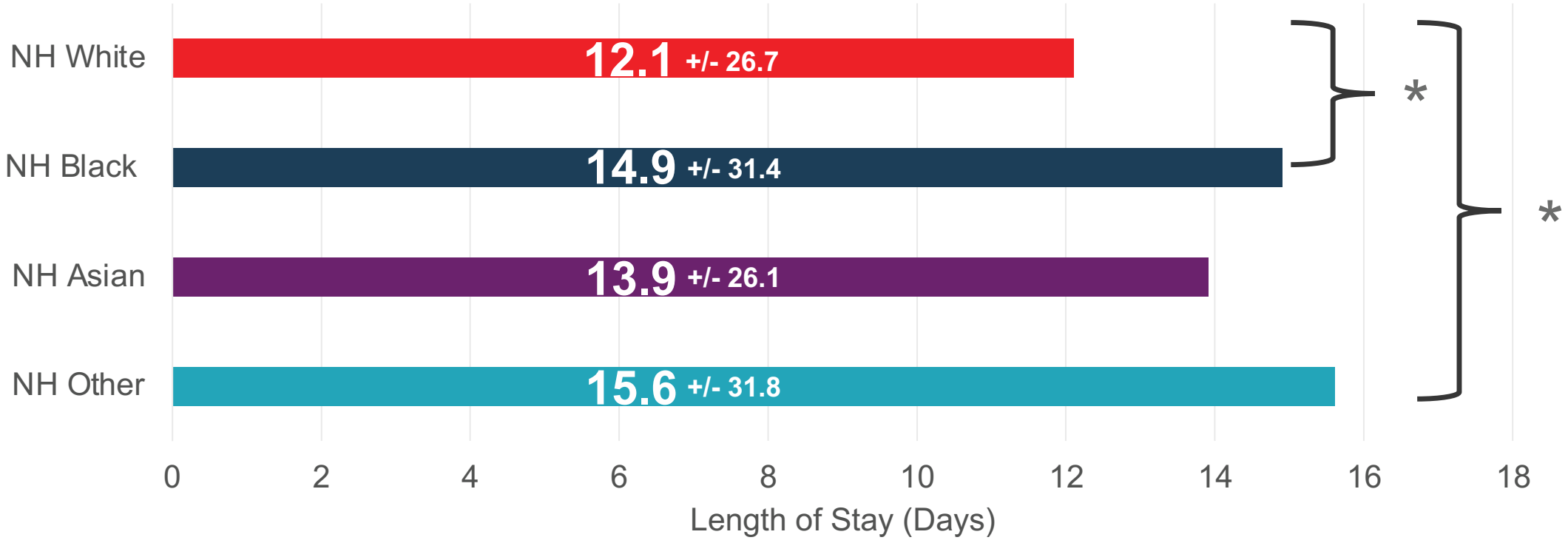
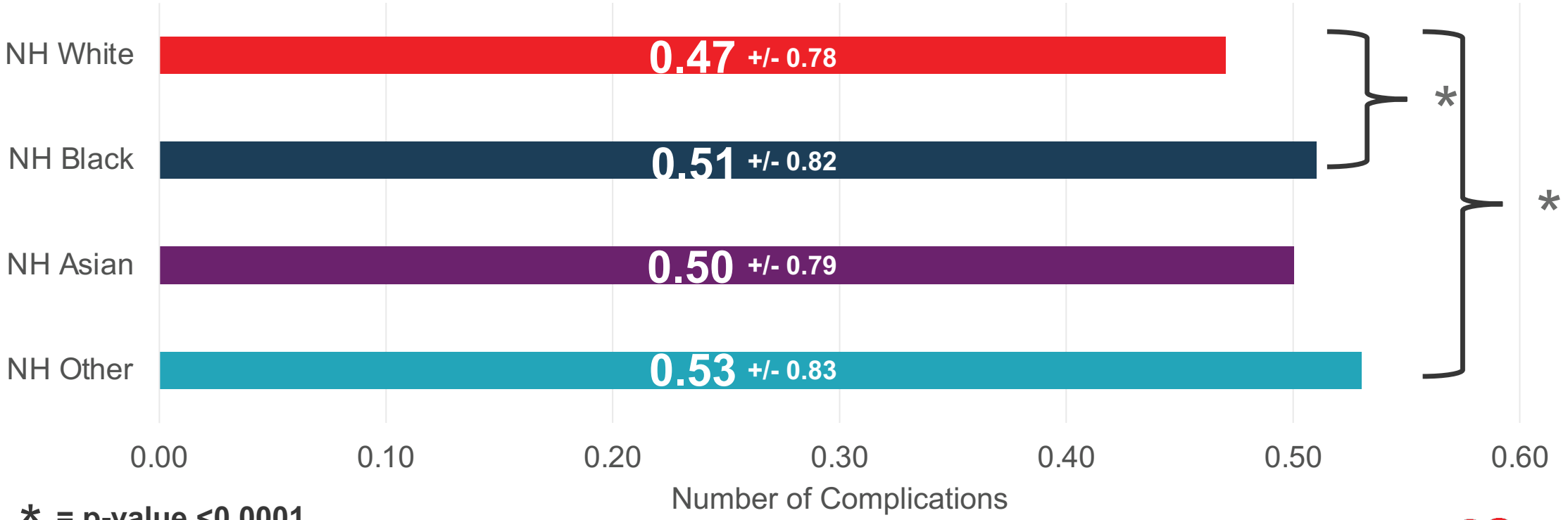
Results: Length of Stay by Race



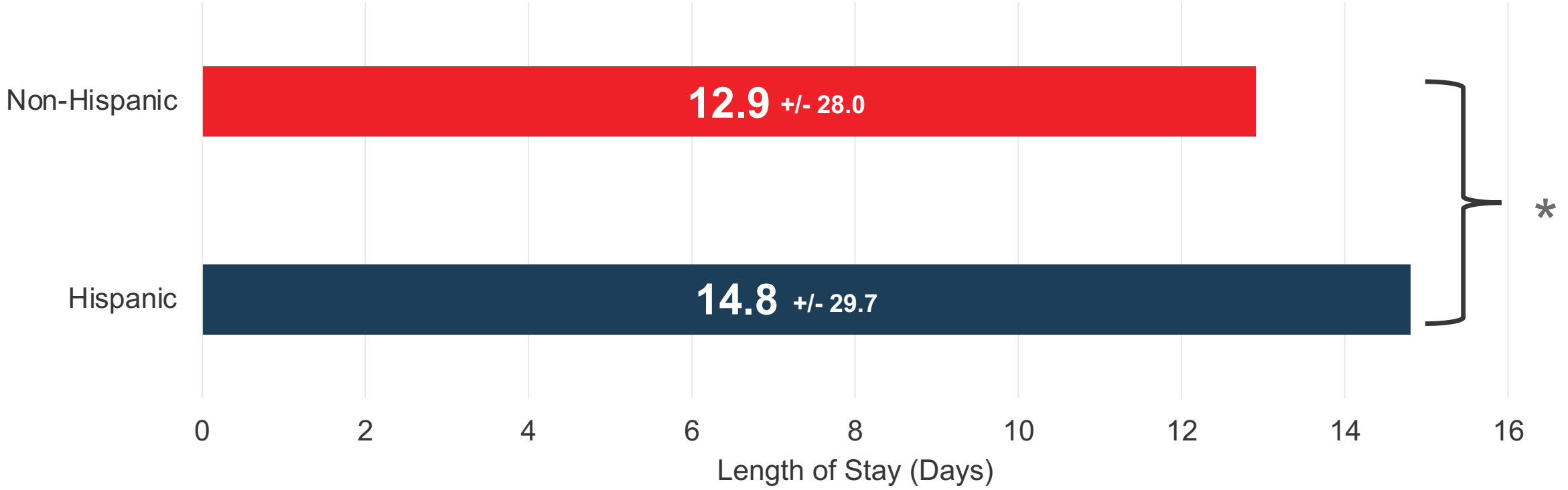
* = p-value <0.0001

Results: Complications per Hospitalization by Race



* = p-value <0.0001

Results: Length of Stay by Ethnicity



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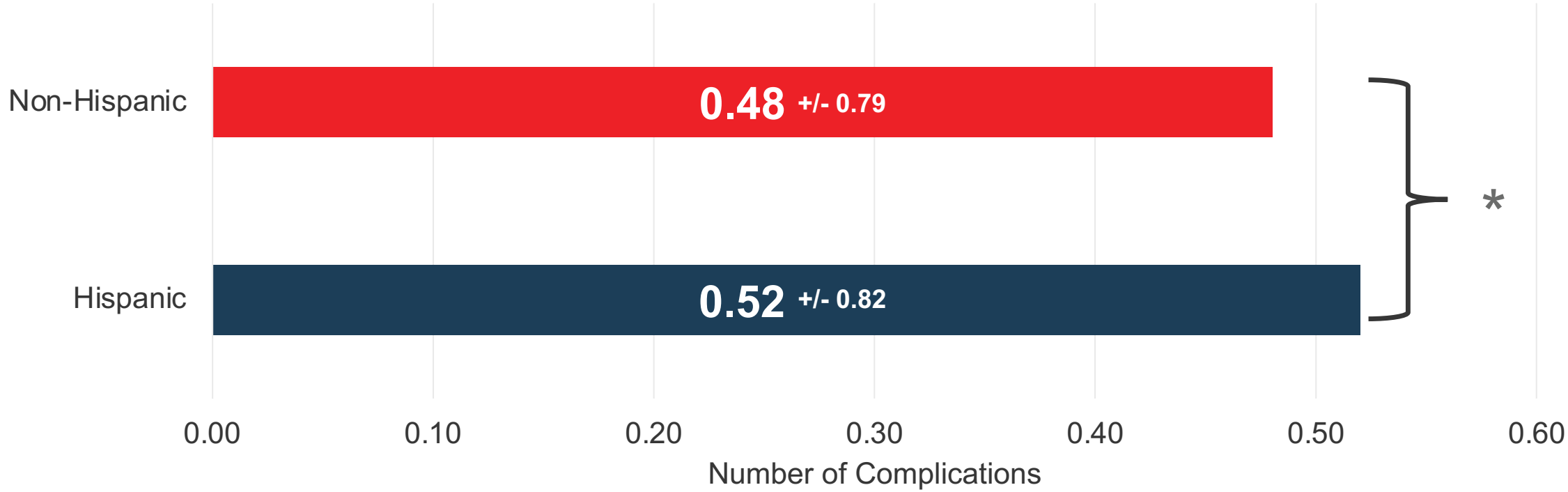
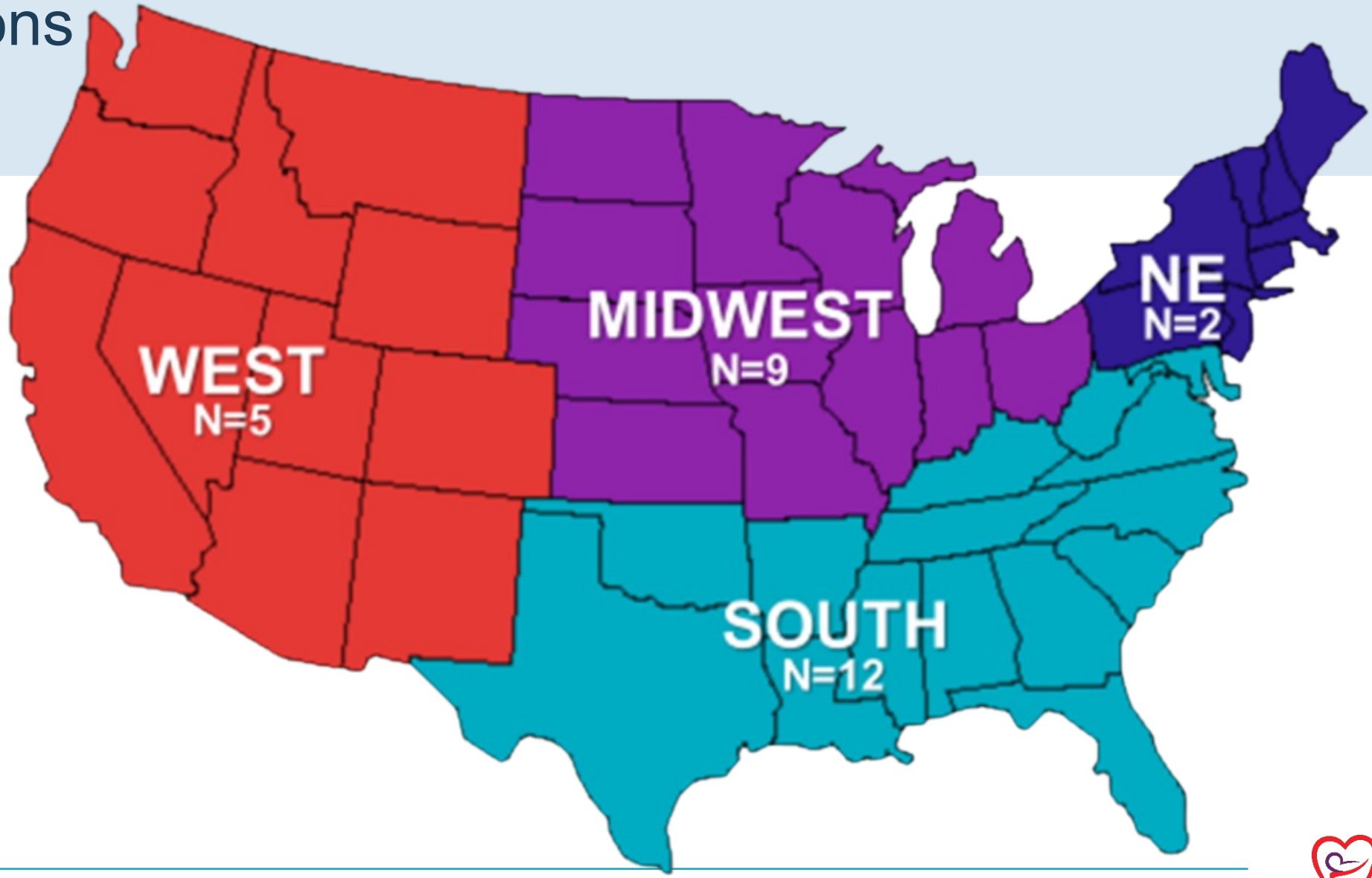
Results: Complications per Hospitalization by Ethnicity



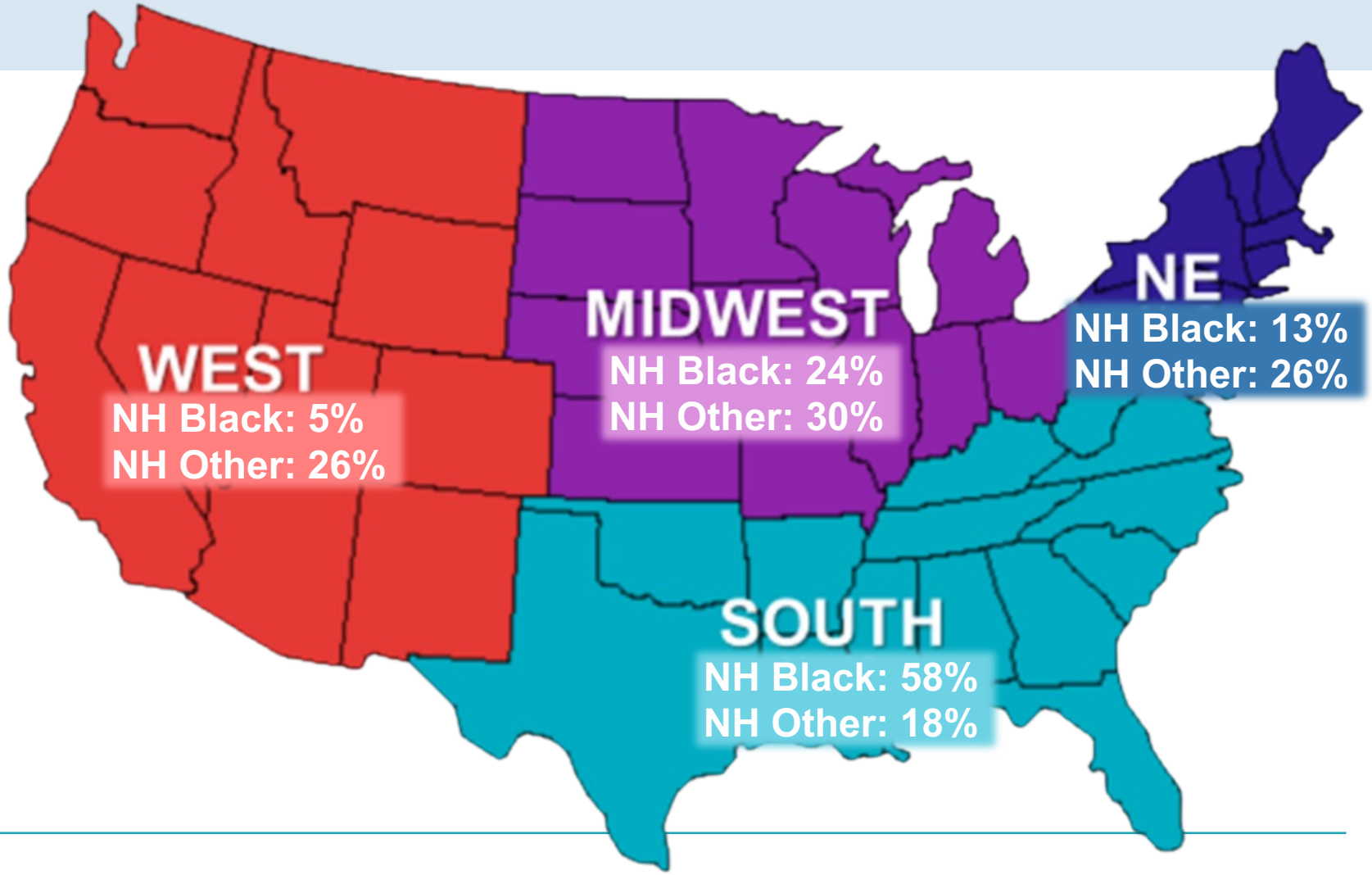
*= p-value = 0.001

Regions

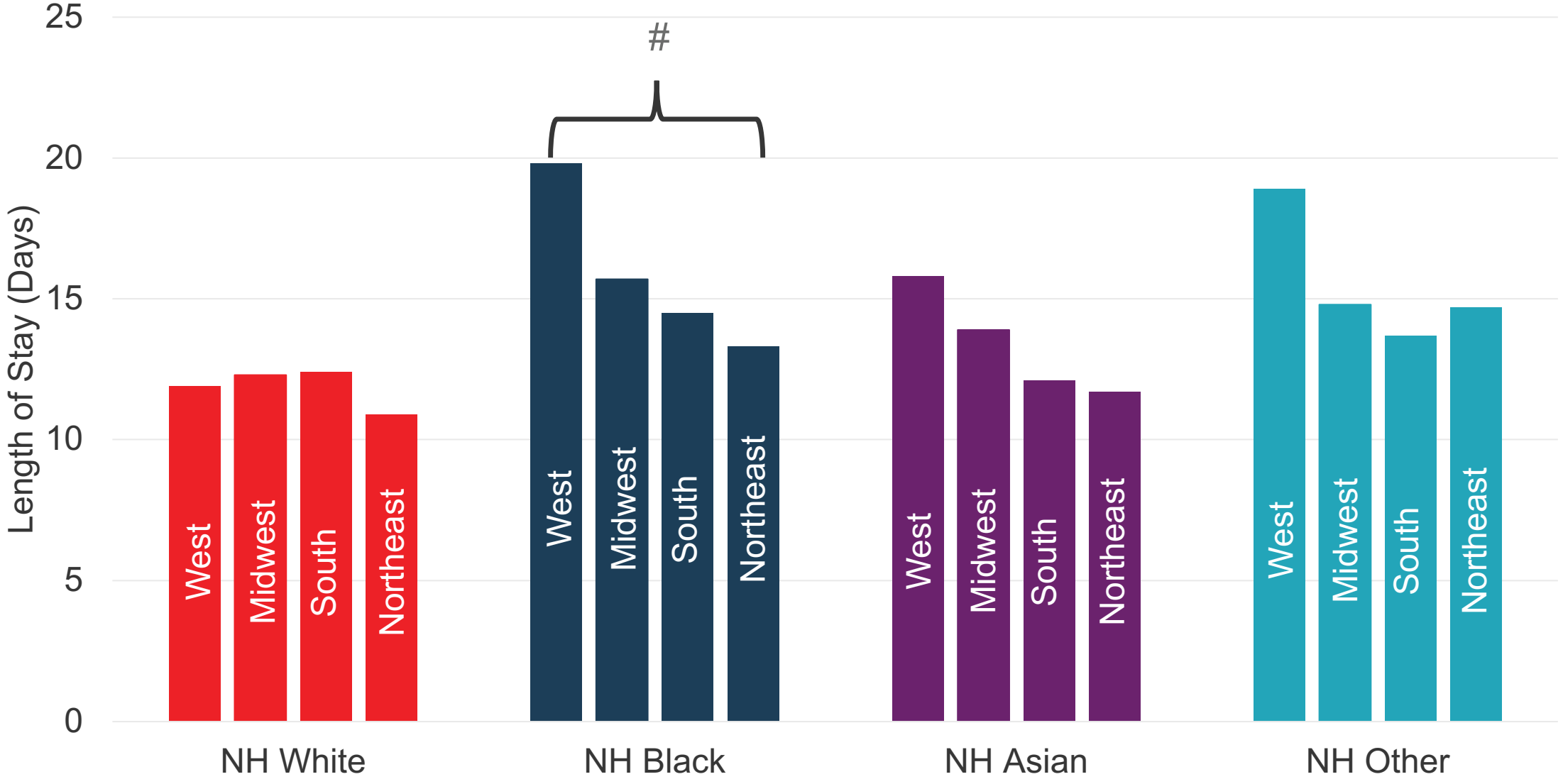


N=28

Regions: NH Black and Other

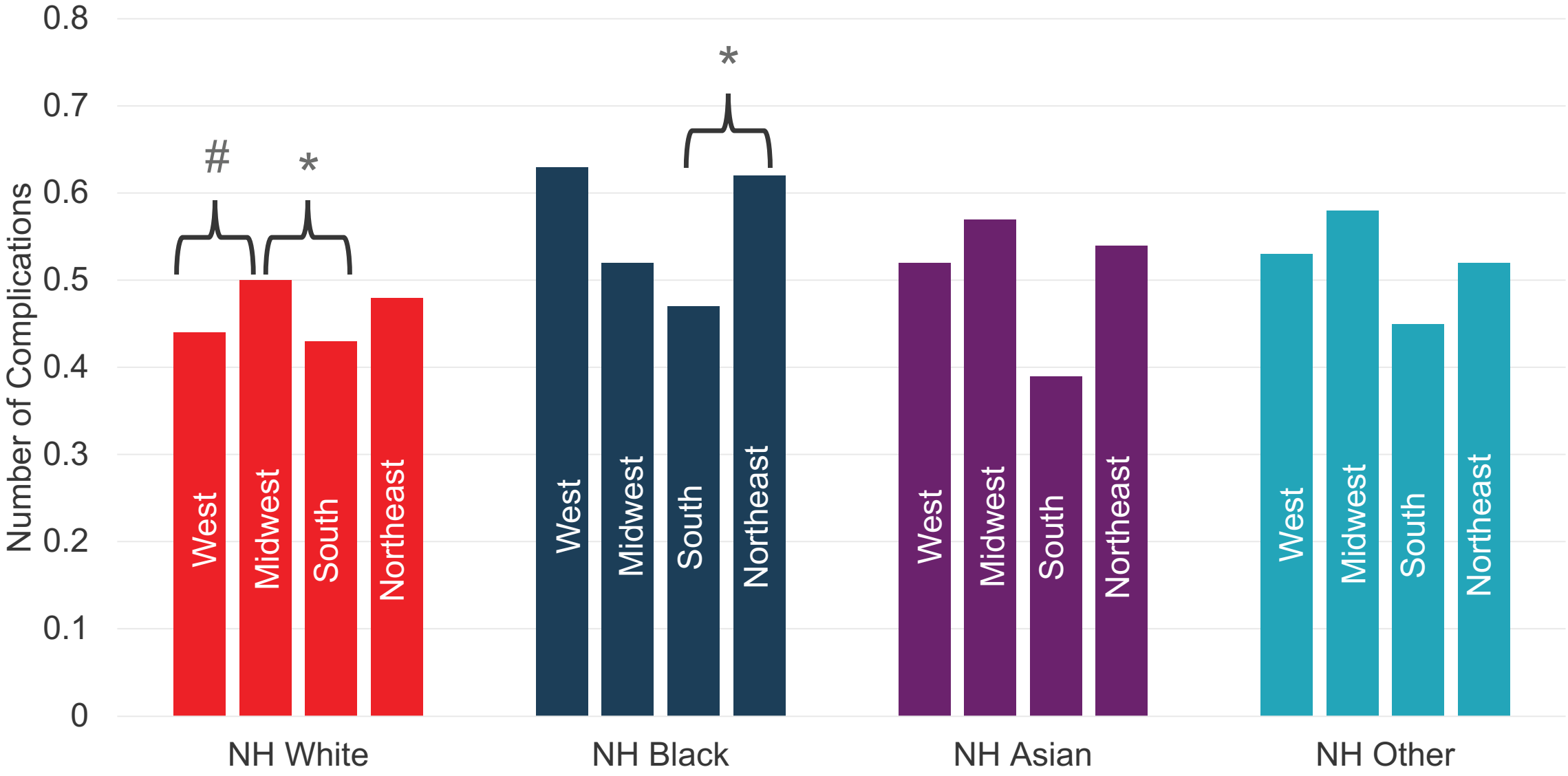


Hospital Length of Stay by Race and Program Region



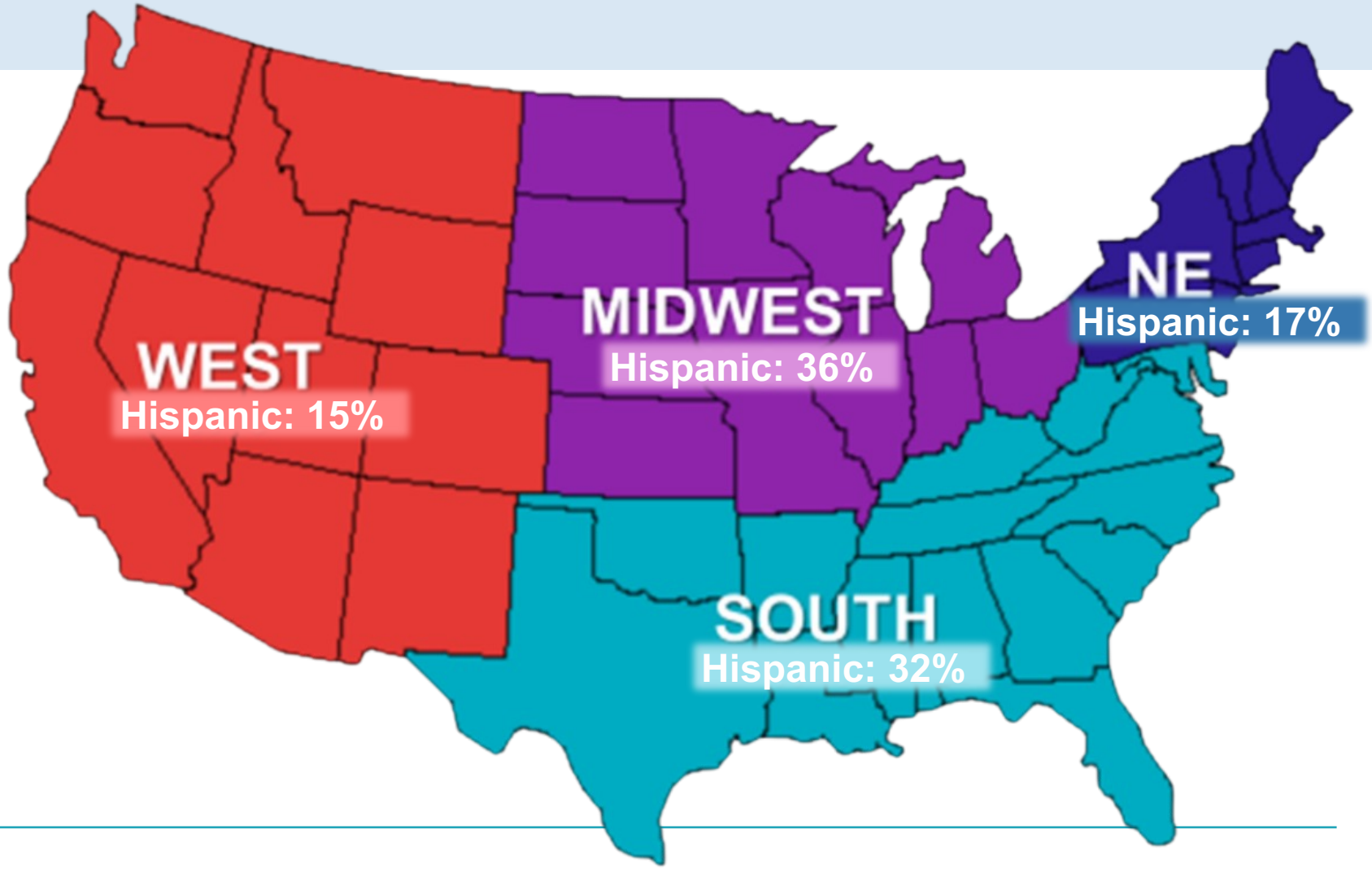
 # = p-value =0.0009

Number of Complications by Race and Program Region

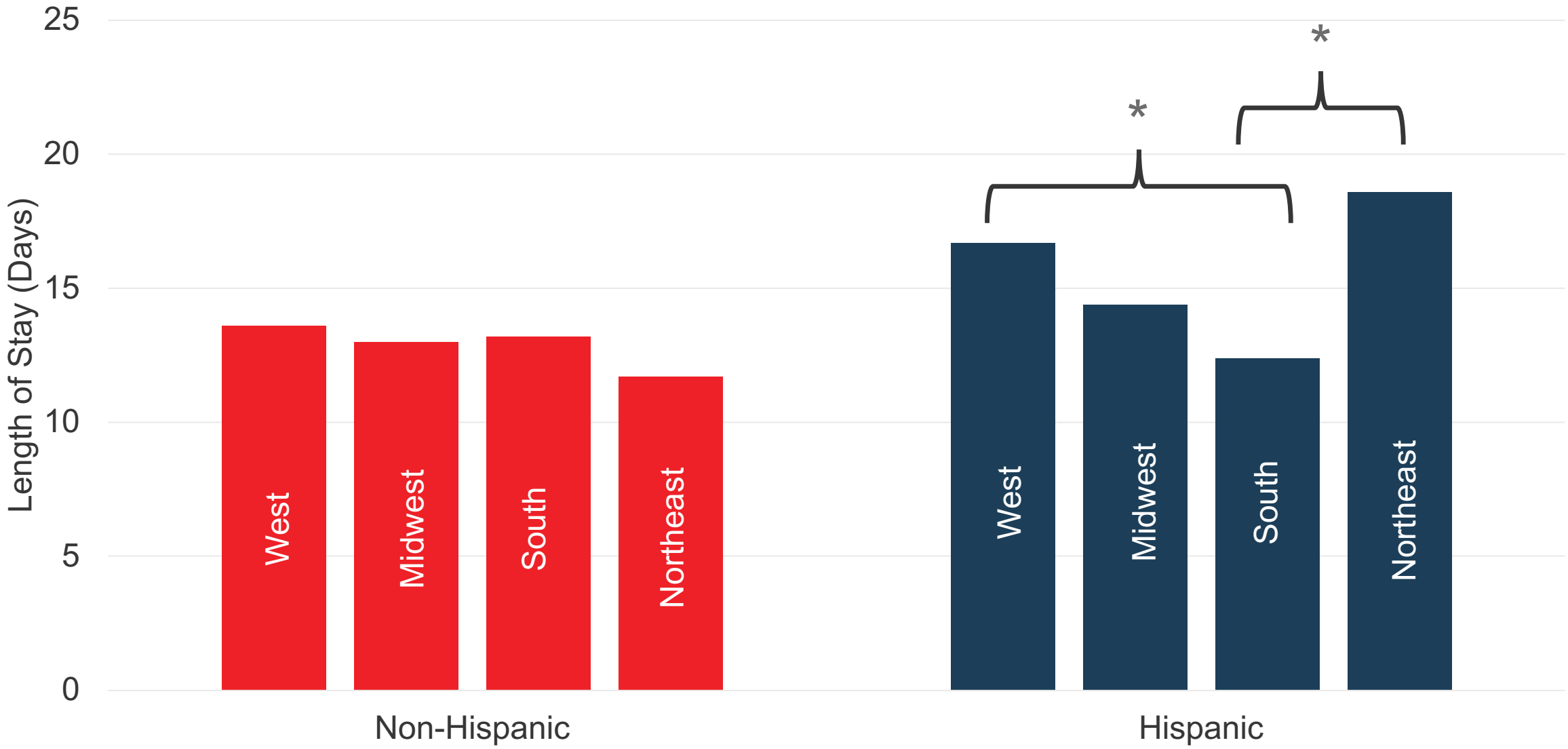


 # = p-value = 0.0009 *** = p-value <0.0001**

Regions: Hispanic



Hospital Length of Stay by Ethnicity and Program Region



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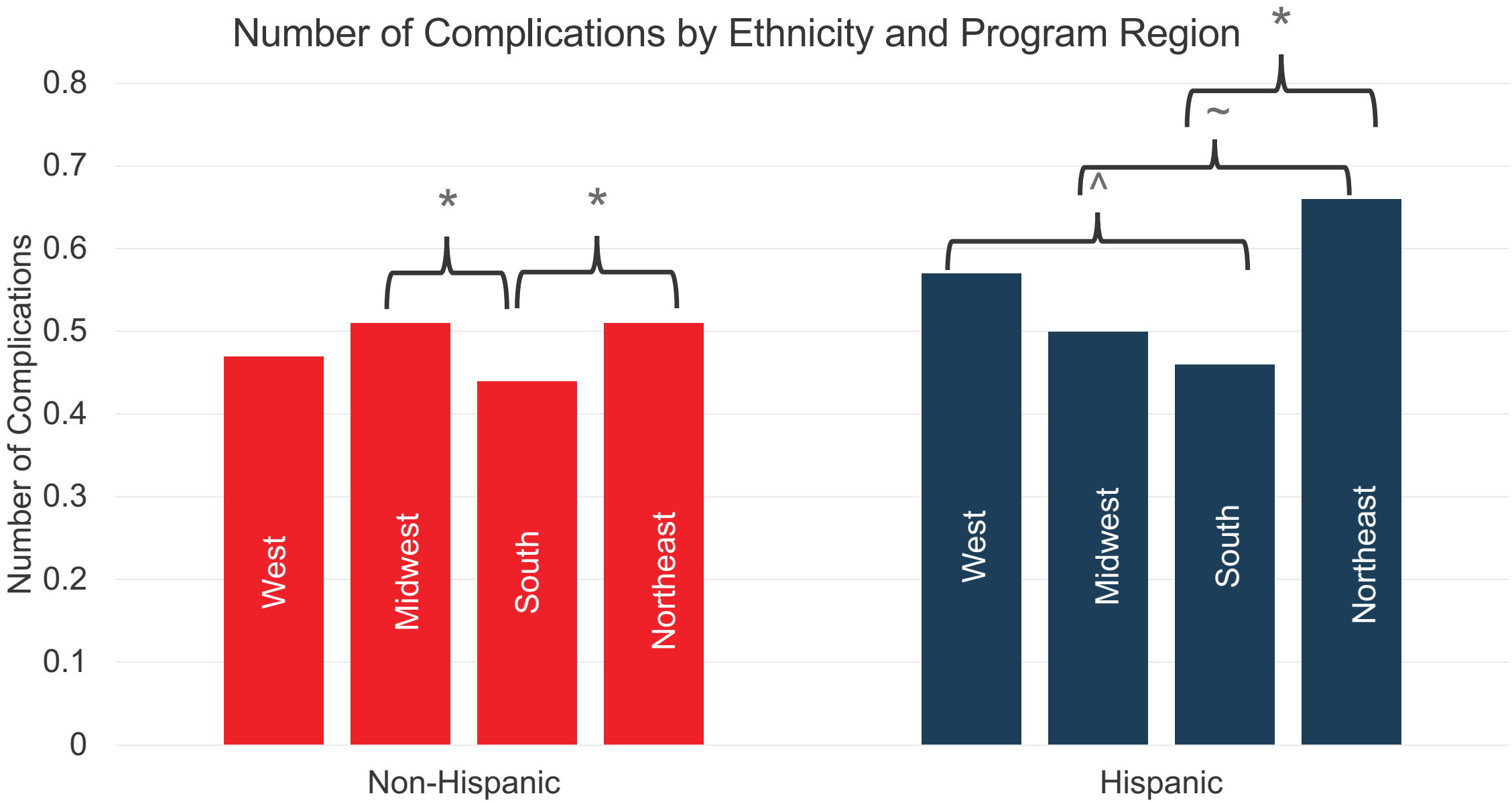
Number of Complications by Ethnicity and Program Region



*** = p-value <0.0001 ^ = p-value=0.0002 ~ = p-value=0.0008**

Limitations

- Race and ethnicity is self-reported field
- Limited number of audited centers in each region
- No individual or area-based social determinants of health data

Conclusions

- Racial and ethnic disparities exist in both hospital length of stay and in-hospital complications
- Surgical center volume, admission type and patient age did not impact degree of disparity
- Regional differences were observed in both LOS and complications
- Further analysis needed to discover if proportion of minority patients in a region influences degree of disparity

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- Children's Hospital of Philadelphia Cardiology 2023 planning committee

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Thank You!

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Pediatric Acute Care Cardiology Collaborative

References

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4. Olsen J, Tjoeng YL, Friedland-Little J, Chan T. Racial Disparities in Hospital Mortality Among Pediatric Cardiomyopathy and Myocarditis Patients. Pediatr Cardiol. Jan 2021;42(1):59-71. doi:10.1007/s00246-020-02454-4