

# Racial, Ethnic, and Social Disparities in Emergency Department Outcomes of COVID-19 Patients in New York City

Ryan Carson, Columbia University Vagelos College of Physicians and Surgeons, M.D. Class of 2023  
 Mentor: Dr. Tsion Firew, M.D. M.P.H., Columbia University

Research Question: Do outcomes of patients with COVID-19 in Columbia University Emergency Departments differ as a function of race/ethnicity, insurance status, income level, or primary language spoken?

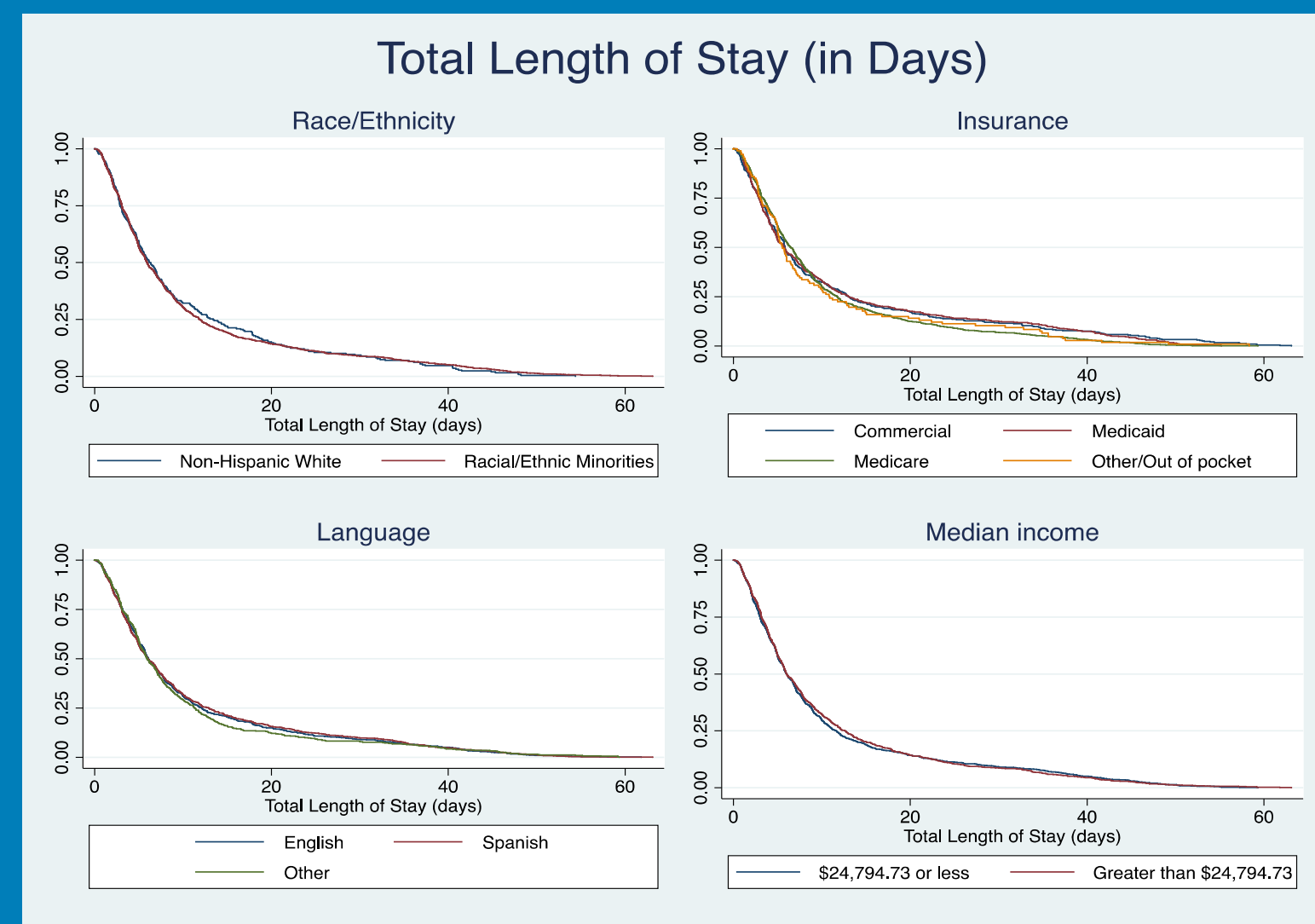
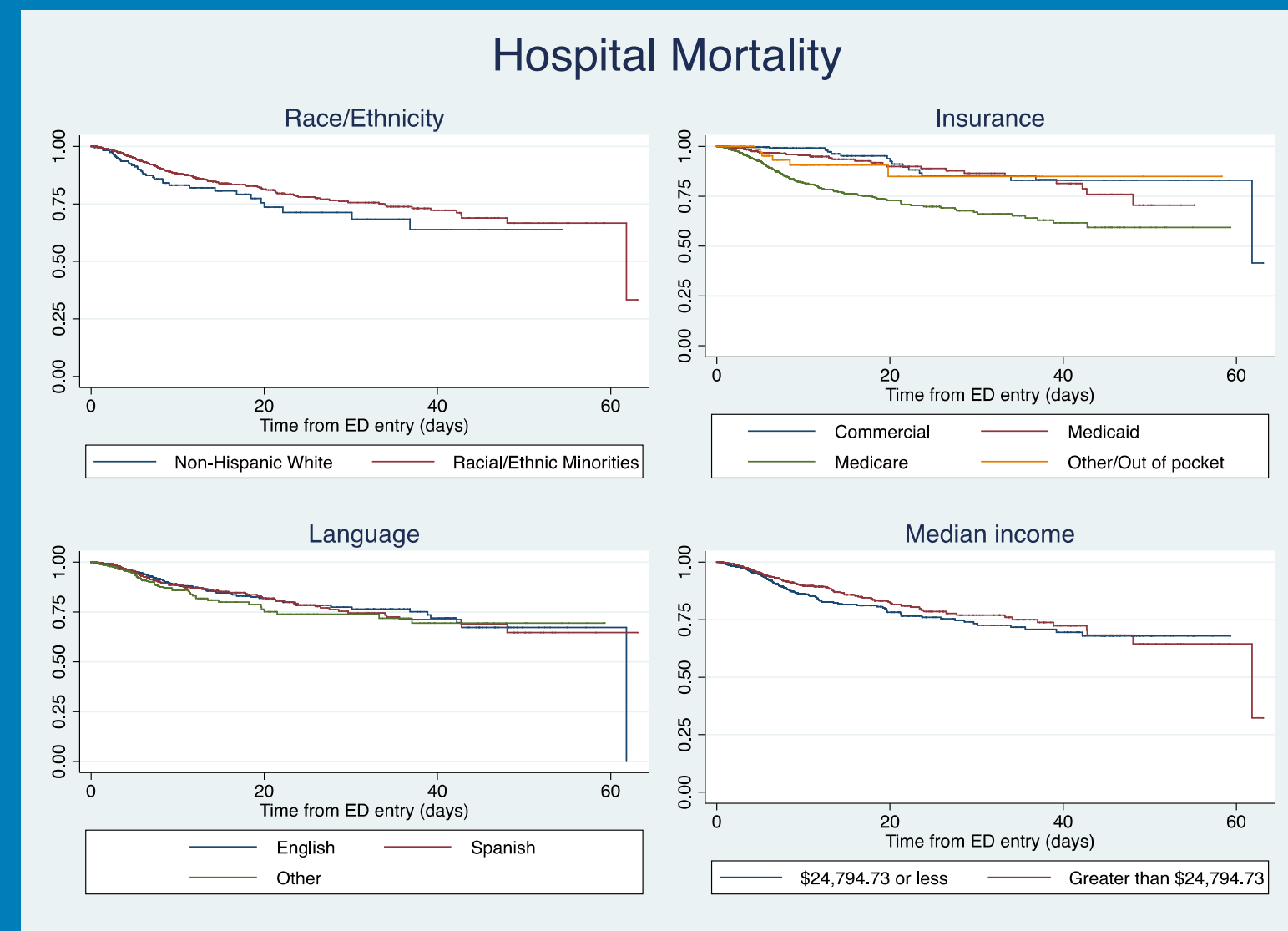
## BACKGROUND

Since the World Health Organization declared COVID-19 a pandemic, the number of cases and deaths has risen at an unprecedented rate. Early reports suggested that rates of hospitalization and deaths were increased among Black and Hispanic Americans with additional geographic disparities across the boroughs of New York City.

## DESCRIPTION OF ORGANIZATION

This study was conducted in three Columbia University Emergency Departments (NY Presbyterian Millstein Hospital, Children's Hospital of New York, and Allen Hospital). As one of the largest academic hospital centers in New York City, the city which had the highest rates of infection in the country during the time of this study, these emergency departments are well-positioned to investigate questions related to potential disparities in the city.

## TABLES



## METHODS

Clinical data and outcomes were extracted from the electronic medical record for 2297 patients who tested positive or were suspected to have COVID-19 in three Columbia University Emergency Departments between March 1<sup>st</sup> and May 1<sup>st</sup> 2020. The primary outcome was in-hospital mortality, and secondary outcomes included hospital and emergency department length of stay as well as emergency department disposition to low acuity (floor) versus high-acuity areas. Statistical analysis was done using log binomial models to evaluate whether outcomes varied by race/ethnicity, insurance status, primary language, or median income.

Preliminary results show that racial/ethnic minorities have a lower risk of mortality in early periods after entering the emergency department, but their risk becomes similar to non-Hispanic whites over time.

## DISCUSSION

These results help illuminate the experience of patients with COVID-19 and suggest that disparities in outcomes may not be entirely driven by their experiences in the hospital but also by broader societal influences. Further research will be needed to understand how these results translate to other settings and populations.

## REFERENCES

- 1) NYC Department of Health. COVID-19 Data. Updated/Accessed August 20, 2020. Retrieved from <https://www1.nyc.gov/site/doh/covid/covid-19-data.page>
- 2) Thebault R, Ba Tran A, Williams V. The coronavirus is infecting and killing black Americans at an alarmingly high rate. Washington Post. Published April 7, 2020
- 3) Gusmano, M. K., Rodwin, V. G. and Weisz, D. (2017), 'Persistent inequalities in health and access to health services: evidence from NYC', World Medical & Health Policy, 9(2): 186–205

Contact Info:

Ryan Carson, [rnc2211@cumc.columbia.edu](mailto:rnc2211@cumc.columbia.edu)