

## **Racial and Ethnic Disparities in Treatment and Survival Outcomes in Out-of-Hospital Cardiac Arrests Witnessed by 9-1-1 Responders**

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This project received funding from the American Heart Association Health Equity Research Network Grant (23HERNPRH1150361) with Dr. Monique Starks as the PI of the grant.

**Introduction:** In the U.S., patients of Black race and Hispanic ethnicity have lower survival from out-of-hospital cardiac arrest (OHCA) when they are not witnessed by 9-1-1 responders than White patients. Whether these racial and ethnic differences also exist for OHCA's witnessed by 9-1-1 responders (first responders and EMS) is unknown.

**Methods:** Using the Cardiac Arrest Registry for Enhanced Survival, we performed a national retrospective analysis of 9-1-1 responder-witnessed OHCA from 2013-2022. Descriptive differences by race and ethnicity were assessed by estimates by absolute standardized difference (%), with  $\geq 10\%$  indicating a meaningful difference. Multivariable logistic regression models with generalized estimating equations were used to quantify the association between race or ethnicity and survival outcomes.

**Results:** A total of 75,356 adult patients with OHCA witnessed by first responders or EMS identified as Black (31.6%), Hispanic (8.7%), or White (59.6%) were included. Black and Hispanic patients were younger, less likely to have a shockable rhythm, and more likely to be in lower income census tracts compared with White patients. There were no important treatment differences observed with CPR or AED use, but Black and Hispanic patients were less likely to receive defibrillation than White patients (26.0% and 26.0% vs. 31.3%, Std Diff 11.6% and 11.7%). Black patients had lower survival to hospital discharge than White patients (14.7% vs. 18.7%; aOR 0.86, 95% CI 0.81-0.91), whereas survival was similar for Hispanic vs. White patients (15.2% vs. 18.7%; aOR 0.92, 95% CI 0.84-1.00). However, both patients of Black race (aOR 0.71, 95% CI 0.66-0.76) or Hispanic ethnicity (aOR 0.85, 95% CI 0.78-0.93) had lower survival rates to discharge with good neurologic function than White patients.

**Conclusion:** Patients of Black race and Hispanic ethnicity have lower survival outcomes for 9-1-1 witnessed OHCA's, as compared to White patients. Whether this is due to unmeasured confounding from comorbidities or differences in care deserves further study.