

Racial Disparities on the identification of emergency department diagnosed stroke in the Florida EMS system

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Introduction: Every year more than 795,000 people in the United States have a stroke and it kills nearly 130,000 Americans. Stroke is the fourth leading cause of death and a leading cause of disability in Florida. Moreover, the risk of having a stroke varies with race and ethnicity. Risk of having a first stroke is nearly twice as high for blacks than for whites, and blacks are more likely to die following a stroke than are whites. Hispanics' risk for stroke falls between that of whites and blacks. As stroke is an acute and severe medical condition which requires urgent intervention, a quick and accurate diagnosis/ recognition plays a crucial role in the treatment of stroke, especially among the minority population.

Objective: To investigate the racial/ethnic disparities on the identification of stroke during emergency medical services.

Method: Emergency Department diagnosed stroke (ICD-9: 434.91- Cerebral infarction due to unspecified occlusion or stenosis of unspecified cerebral artery) data from 2011 to 2015 in the AHCA database was selected and linked to the EMS dataset. EMS personnel's primary and secondary impression, as well as whether or not a stroke alert was activated (from both the procedure and the alert field) was used to verify a stroke diagnosis. Multivariate regression was performed to establish the association between race/ethnicity and stroke identification. Demographic variables: age and sex were added as potential confounders.

Result: Among the 53,029 cases, 37,546 were Non-Hispanic Whites, 8,937 were Non-Hispanic Blacks, 4,484 Hispanics and 2,062 other races. Non-Hispanic Whites was used as reference. After controlling sex and age for confounding effects, all other races and ethnicities had a lower odd of being diagnosed as stroke during the emergency medical services. The adjusted odd ratio (aOR) for Non-Hispanic Blacks was 0.730 (CI: 0.694-0.768), for Hispanic was 0.678 (CI: 0.634-0.725) and 0.789 (CI: 0.719-0.867) for other races.

Conclusion: Racial/ethnic disparities existed in the EMS stroke case diagnosis. Even though Non-Hispanic Blacks and Hispanic often have poor outcomes from stroke when compared to Whites, quick recognition during emergency medical service are lower than the Non-Hispanic White. Interventions are needed to diminish disparities and increase health equity.