

# Using Drone Technology to Minimize Socioeconomic and Ethnic Cardiac Arrest Survival Disparities Within North Carolina

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**To the Editor**—It was with great interest that we read the July article “The Case for Drone-Assisted Emergency Response to Cardiac Arrest: An Optimized Statewide Deployment Approach” [1]. We commend the authors on an innovative solution to improving cardiac arrest survivability within North Carolina via efficient AED delivery.

As mentioned in the original article, out-of-hospital cardiac arrest (OHCA) survival has remained the same for the past 30 years [2, 3]. The stagnation in survival persists despite changes in management of cardiac arrests, the introduction of different medications, early defibrillation, and changes in emergency service practice. Survival remains around 7% [3]. Doubling survival to 15.5% within the year may require targeted interventions. However, cardiac arrest survival rates are not the same across all ethnic and socioeconomic groups.

When examining both the incidence of cardiac arrest as well as survival within North Carolina, most striking are the differences in survival among different races and socioeconomic groups. North Carolina has a population of approximately 10 million; 22.1% are Black, 9.1% are Hispanic, 2.8% are Asian, and 1.6% are American Indian [4]. Unfortunately, it is well documented that not only is the incidence of cardiac arrest higher but survival of cardiac arrest is lower among racial minorities and patients from lower socioeconomic backgrounds [5, 6, 7]. Incidence of cardiac arrest in African Americans is over 10/10,000, in Hispanics it is 6.5/10,000, and in Whites it is 5.8/10,000 [8]. African Americans are nearly twice as likely to suffer a cardiac arrest compared to their white counterparts. Given all minorities’ increased incidence yet lower survival rates from cardiac arrest, we envision technology such as drone-assisted AED delivery proposed by the authors being strategically used to eliminate some of these unfortunate and unfair survival differences in our state.

Examination of the survival disparities for ethnic minorities within North Carolina shows that lower rates of bystander CPR as well as lower rates of return of spontaneous circulation (ROSC) have been reported among neighborhoods with a predominantly Black population [9], which may be partially due to the fact that racial minorities were found to be less informed on the use of AEDs in cardiac

arrest [10]. Rather than placing drones evenly throughout the state or concentrating them within urban areas as the original article suggested, we propose that targeted drone placement in counties or neighborhoods with predominantly minority populations could make an even larger difference in North Carolina’s cardiac arrest survival. Race and ethnicity are currently unfair and unfortunate predictors of cardiac arrest survival within North Carolina, so any intervention targeted at improving survival should seek to minimize those disparities in order to ensure optimal health and survival of all of North Carolina’s population. **NCMJ**

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