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Black cardiac arrest victims less apt to receive CPR and shocks to the heart from bystanders

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Black cardiac arrest victims who are stricken outside hospitals are less likely to receive bystander CPR and defibrillation on the scene than white patients, according to research that will be presented by a research team from the Perelman School of Medicine at the University of Pennsylvania today at the annual meeting of Society for Academic Emergency Medicine. The researchers also found that black patients' hearts were much less likely to have been restarted by the time they arrived at the hospital – a key indicator for whether cardiac arrest victims ultimately survive.

"Cardiac arrest is a time-sensitive illness that requires immediate action to keep blood flowing to the brain – every minute without CPR and the application of shocks from an automated external defibrillator robs patients of a chance to fully recover," said senior author Roger Band, MD, an assistant professor of Emergency Medicine. "Our findings show troubling racial disparities in the use of these lifesaving measures, and they point to the need to do more to ensure that every patient has the best chance of surviving."

The researchers studied 4,909 adult out-of-hospital cardiac arrest (OHCA) cases that occurred between January 2008 and February 2012 in the city of Philadelphia using data from the Philadelphia Fire Department. Analysis revealed that despite resuscitation measures by paramedics and, in some cases, lay bystanders, black patients were less

likely to have regained their pulse before arrival at the hospital than white patients (14.7 percent experienced a return of spontaneous circulation, compared to 17.1 percent of white patients). They were also less likely to have received important pre-hospital care measures that are a proven part of the cardiac arrest "chain of survival." Thirty four percent of white patients received a shock from an automated external defibrillator (AED) placed by a bystander or medical first-responder on the scene of their arrest, compared with 27 percent of black patients. Bystanders performed CPR on 5.6 percent of black patients, compared with 7.5 percent of white patients.

The investigators plan to look more closely at the possible role of neighborhood factors and socioeconomic status on their findings, perhaps to develop more targeted CPR training programs and place AEDs more strategically in the community.

In a separate study using the same database that will also be presented during the conference, Band's team also found that patients who suffered cardiac arrests at night versus during the day were less likely to have regained their pulse before arrival at the hospital (14.1 percent experienced a return of spontaneous circulation at night, compared to 16.5 percent during the day).

Those who arrested at night (between 8 p.m. and 8 a.m.) were also significantly less likely to receive bystander CPR, and took longer to be transported to the hospital than those who were stricken during the day. Though these differences may be explained partly by location of victims at the time of their arrest (in the home versus in public places), Band says the differences underscore the need to improve public awareness of the importance of CPR and AED use.

"It is imperative for the public to know that these two interventions that have the greatest impact on survival, and they can be performed by

anyone. If CPR and AEDs were employed for every cardiac arrest, hundreds of thousands of lives would be saved annually, in the U.S. alone," Band says. "Our studies reiterate the fact that use of these basic lifesaving tools is far too low across all patient populations, and even small increases in their use would translate into very significant increases in survival."

Provided by University of Pennsylvania School of Medicine

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