# Survival rates improve in out-of-hospital cardiac arrests, thanks to community efforts

November 19 2014, by Janet Christenbury



Researchers have determined that survival rates from out-of-hospital cardiac arrests (OHCA) improved in communities across the U.S. between 2005 and 2012. Improvements that impacted survival rates were noted in both pre-hospital and in-hospital care. Bystander CPR (cardiopulmonary resuscitation) and on-site automated external defibrillator (AED) use improved during the interval as well.

The results were published online in the journal *Circulation* on Sat., Nov. 15.

The study started in Atlanta in 2005, under the direction of co-author Bryan McNally, MD, MPH, associate professor of emergency medicine at Emory University School of Medicine and in the Rollins School of Public Health. Since then, more than 600 EMS agencies and 1,000

hospitals in 29 states representing a population footprint of 85 million people have been included in its findings.

"This study is about getting back to the basics, and teaching community members to start CPR if someone is in need, rather than waiting on emergency personnel to arrive," says McNally. "We have found that once communities see the data that pre-hospital care saves lives, that data is the driver to make changes and improvements for their community members."

Based on data from a large prospective clinical registry called the Cardiac Arrest Registry to Enhance Survival (CARES), 70,027 U.S. patients who experienced OHCA were analyzed. During that time, the researchers found improved rates of survival in both shockable and non–shockable cardiac arrest rhythms, accompanied by lower rates of neurological disability among survivors.

The study found overall OHCA survival increased from 5.7 percent at the start of the analysis in 2005-2006 to 7.2 percent in 2008 to 8.3 percent in 2012. For patients found in ventricular fibrillation or tachycardia, the survival increased from 16.1 to 27.9 percent during the same time period. Improved survival was due to higher rates of pre-hospital survival, where risk adjusted rates increased from 14.3 percent in 2005-2006 to 20.8 percent in 2012. Rates of bystander CPR and AED use also increased during the study period and partly accounted for pre-hospital survival trends.

"As we approach the 10-year anniversary of the CARES program, study data suggests survival rates from OHCA are trending in the right direction," says McNally. "With many states on board, we hope this message continues to get out in the communities to benefit even more cardiac arrest patients."

With the help of organizations such as the American Red Cross, American Heart Association and others, more focus has been placed on promoting bystander CPR, use of AEDs and other performance efforts.

"In conclusion, improvements were seen in both pre-hospital and in-hospital survival rates, which were accompanied by lower rates of neurological disability over time among survivors, " says Paul S. Chan, MD, MSc, associate professor of medicine at Mid America Heart Institute in Kansas City, MO, and first author of the study. "These findings show the importance of this study and the existing work that needs to continue in communities that recognize the value of measuring outcomes and benchmarking care to improve survival from this condition."

**More information:** "Recent Trends in Survival from Out-of-Hospital Cardiac Arrest in the United States." *Circulation*. 2014;CIRCULATIONAHA.114.009711published online before print November 15 2014, DOI: 10.1161/CIRCULATIONAHA.114.009711

Provided by Emory University

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