

Continuous chest compression-CPR improved cardiac arrest survival in Arizona

16 November 2009

The chance of surviving a cardiac arrest outside a hospital was found to be twice as high when bystanders performed continuous chest compressions without mouth-to-mouth breathing than when bystanders performed standard CPR. These are the latest findings reported by the Resuscitation Research Group at the University of Arizona Sarver Heart Center and the SHARE Program (Save Hearts in Arizona Research and Education) at the Arizona Department of Health Services.

Only 5 percent of cardiac arrest victims survived if nobody performed CPR. In those receiving standard CPR (alternating between 30 compressions and 2 breaths), survival was marginally higher at 6 percent. In contrast, 11 percent survived if bystanders kept pumping on their chest and did not stop for mouth-to-mouth breaths until emergency medical services arrived.

These trends were even more pronounced in those patients facing the highest survival chance to begin with due to the specific nature of their cardiac arrest, namely those whose collapse was witnessed and whose heart was in a rhythm that is most likely to respond to a shock from a [defibrillator](#). In those, the survival rate was 17 percent without bystander CPR, 19 percent with standard CPR and 32 percent with continuous [chest compressions](#).

The analysis also showed that while the percentage of bystanders administering CPR increased only slightly over the past four years, of those that did choose to help, 77 percent opted for chest compressions without mouth-to-mouth breathing instead of standard CPR. Before, that number was only 16 percent.

The results of the analysis, which included 4,850 out-of-hospital cardiac arrests in Arizona that occurred from 2005 and 2009, will be presented by Gordon A. Ewy, MD, director of the UA Sarver

Heart Center at the "Best of the Best" abstract session of the American [Heart Association's](#) Resuscitation Symposium in Orlando, Fla., on Sunday, Nov. 15.

"Over the course of three days, out-of-hospital cardiac arrest claims as many lives in the U.S. as the September 11 attacks," Dr. Ewy said. "This study is the first to show that bystanders can raise the odds of survival by giving continuous chest compressions rather than the type of CPR they are being taught in most certification classes. If we can get more people to act, more patients who were on the brink of death will be walking out of the hospital neurologically intact."

Bentley J. Bobrow, MD, medical director of the Bureau of Emergency Medical Services & Trauma System at the Arizona Department of Health Services, said: "All previously published reports only showed that bystander CPR was better than not doing any CPR until the paramedics arrive, and that early CPR resulted in better survival than late CPR. Our statewide efforts promoting Compression-Only CPR have resulted in significantly improved [survival rates](#) for patients in out-of-hospital [cardiac arrest](#)."

Source: University of Arizona Health Sciences Center

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