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## Armed With AEDs, Police Save Lives by Cutting Response Time

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DALLAS, Aug. 13 – In communities where police are equipped with automated external defibrillators (AEDs), people who have a sudden cardiac arrest have a better chance at survival, according to new research reported in *Circulation*, Journal of the American Heart Association.

Police in Miami-Dade County, Fla., equipped with AEDs cut response time to sudden cardiac arrest victims by almost three minutes, the study shows. During the first 10 minutes after someone has a cardiac arrest, every minute saved means about a 10 percent increase in relative survival, says Robert J. Myerburg, M.D., director of the cardiovascular division and American Heart Association chair of cardiovascular research at the University of Miami School of Medicine.

Over the last several decades, community cardiac arrest survival efforts have been concentrated on the fire-rescue model, in which teams train in cardiac resuscitation skills that include using AEDs. However, data from large metropolitan areas with heavy traffic congestion and from rural areas showed low overall survival rates – as low as 1 to 2 percent.

The results led Myerburg and his colleagues to consider expanding the use of AEDs to include police. “The theory is that police are already on the road when a call comes in, so there is a potential for faster response,” he says.

The 9-1-1 emergency dispatch system in Miami-Dade was re-configured so that both police and fire/rescue were dispatched to certain medical emergency calls. Using this dual-dispatch mode, the time from the call to first responder arrival was 4.88 minutes compared to the historical response time of 7.64 minutes. With the dual-responder system, help arrived on the scene of a cardiac arrest in less than five minutes for 41 percent of calls, compared to 14 percent for the standard fire-rescue calls.

From February 1, 1999 to April 30, 2001, Miami-Dade 9-1-1 dispatchers received almost 2.25 million calls, 56,321 of which were medical emergency calls that triggered the dual deployment system. Cardiac arrest was the reason for 420 of these calls – with police arriving first 56 percent of the time. Survival was 17.2 percent for 163 victims with ventricular fibrillation or pulseless ventricular tachycardia (irregular heart rhythms that require an electric shock to correct). The survival rate had been only 9 percent during the one-and-a-half years just prior to establishing the police responder program.

Unfortunately, 61 percent of the victims had non-shockable rhythms, which reduced the absolute survival benefit to 1.6 percent. Myerburg says it’s likely that the high rate of non-shockable rhythms represents time lost from onset of symptoms to placement of the 9-1-1 calls. “With longer time from onset of cardiac arrest to treatment, the likelihood of survival declines,” he says.

Initially 1,900 AEDs were assigned to 1,900 police officers.<sup>\*</sup> “The AEDs were assigned to individual officers, who took the units home with them when they were off-duty, which enabled further community use of the devices,” Myerburg says. The AEDs stay with officers even when they are assigned to other duties.

“For example, one patrolman, who was transferred to a different position in the police force, kept his AED and used it at a Little League game. One of the coaches had an arrest and the officer was there to provide fast resuscitation,” says Myerburg. Since the study was implemented, Miami-Dade County has added 400 more AEDs for its police.

In an accompanying editorial, José A. Joglar, M.D., and Richard L. Page, M.D., both from the University of Texas Southwestern Medical School in Dallas write: “The Miami-Dade experience represents one important step in a long journey toward optimizing care for the victim of sudden cardiac arrest.”

Sudden cardiac arrest is associated with more than 250,000 deaths in United States each year.

“The study demonstrates how training police and other lay responders to use AEDs can dramatically improve the outcome of sudden cardiac arrest,” says Vinay Nadkarni, M.D., chairman of the American Heart Association’s Committee on Emergency Cardiovascular Care. “Because sudden cardiac arrest victims have only a 10- to 12- minute window to be successfully resuscitated, more people must learn to recognize a cardiac emergency and call 9-1-1 immediately so an appropriately equipped first responder can treat them in time.”

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