

ACC NEWS

President's Page: The Neighborhood Heart Watch Program: Save A Victim Everywhere (SAVE)

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In the past half-century, we have witnessed extraordinary advances in the field of electrophysiology. No other cardiovascular subspecialty has undergone a more radical transformation than the study and treatment of cardiac arrhythmias. In fact, thanks to advances in radiofrequency catheter ablation, it is the only cardiac subspecialty that can claim the ability to actually *cure* a patient of disease.

There is more work to be done, however.

Sudden cardiac death continues to be a too-common cause of death throughout the world. In the U.S. alone, 220,000 deaths each year are attributed to sudden cardiac death; in 50% of men and 63% of women, sudden death is the victims' first evidence of coronary artery disease (CAD). Unfortunately, these numbers will most likely rise as several worldwide societal trends play out. The escalating incidence of heart failure, an aging population in industrialized nations, and the growing prevalence of CAD in developing countries will most certainly contribute to even more sudden cardiac deaths.

Despite a great deal of important work in recognizing risk factors for sudden cardiac death, we still cannot identify with certainty most victims of fatal cardiac arrest with a degree of precision that would warrant therapy before the event. Possessing the skills and technology to terminate many cardiac arrhythmias is not a total victory. We still lack the crucial knowledge to prevent sudden death in people having no previously apparent life-threatening condition.

So, in the absence of the ability to prevent many of these sudden deaths, we must arm ourselves with the tools to treat cardiac arrest *immediately*. Time—literally, seconds—is crucial. For victims of cardiac arrest, each lost minute lowers the odds of survival by 10%.

The irony of this situation is that we have a remarkable tool that could reduce those crucial minutes before help arrives for many victims of sudden cardiac arrest. Automated external defibrillators (AEDs) are lightweight, portable, and easy to use. Like fire extinguishers, they could save lives. The American Heart Association (AHA) estimates that 50,000 lives would be spared every year *if AEDs were readily available to the cardiac arrest victim*. And that is where the analogy between AEDs and fire extinguishers breaks down. Unlike fire extinguishers, which are required in public places and are found in one-half to two-thirds of homes, AEDs have, until recently, been considerably more

difficult to locate in public places, and they're almost unheard of in private residences—ironically, where two-thirds of cardiac arrests occur.

Thanks to the hard work of many advocates for cardiovascular care, such as the American College of Cardiology (ACC) and the AHA, the situation is improving, and more victims of cardiac arrest now have access to immediate treatment with an AED. For example, last year, the 106th U.S. Congress passed into law the "Cardiac Arrest Survival Act" and the "Rural Access to Emergency Devices Act." The former law instructs the secretary of the Department of Health and Human Services to recommend ways to promote public access to defibrillation programs in federal and other public buildings. The latter act authorized \$25 million over three years to help rural communities purchase AEDs. The "Cardiac Arrest Survival Act," for which the ACC advocated aggressively, also expanded "good Samaritan" protection to AED users and purchasers in states lacking such provisions. Thus, between this law and various state laws, good Samaritan protections are now in place for all purchasers of AEDs and rescuers. Because of efforts like these, today, AEDs are available in many public places where they are desperately needed—airports and airplanes, for example, and more recently, in federal buildings.

This is terrific progress. But now it's time to consider expanding our focus to the sites and times when far too many sudden cardiac deaths occur—private homes, neighborhoods, the early morning hours when victims rise from their beds. In these places—away from the public locations where AEDs are now required—too many minutes pass before emergency personnel arrive to shock the victim back to life. Historically, we have relied on our fire and police personnel to bring life-saving tools to the victim; but, when it comes to AEDs, across town is too far away. Even if only 5 min elapse as the paramedics race through traffic, the victim's chance of survival has been cut in half. In short, when the emergency is a cardiac arrest, the AED must be on hand across the street or next door or in the victim's own linen closet.

Consider two public programs:

For many years, communities, particularly small and rural ones, have relied on Volunteer Firemen to respond to fire alarms. The volunteers who comprise these programs are summoned to a wide array of emergencies across the country

every day, including fires, emergency medical incidents, natural disasters, hazardous materials incidents, and other general public service calls. The public relies on these volunteers to be their first line of defense in these emergencies. Volunteers spend an enormous amount of time training to prepare for these emergencies, and the National Volunteer Fire Council estimates that they save localities across the U.S. \$36.8 million every year. In more recent years, the now-famous "Neighborhood Watch" programs have been adopted by many communities to protect their residents from crime. Geared at helping the residents of individual neighborhoods and communities to help each other, Neighborhood Watch programs across the U.S. have enrolled more than 30 million people and cite a wide range of success rates. For example, a program in Lakewood, Colorado, has documented a 77% drop in burglaries since the implementation of its Neighborhood Watch program. In Boston, a 1997 survey revealed that 76% of residents felt safe at night in their neighborhoods—up from 55% two years earlier. These are just a few of the many examples suggesting that a simple concept can make a real difference, even when the problem is large.

These two programs also illustrate how effective the public can be when it mobilizes to tackle a problem. Volunteer Firemen programs represent the lengths that citizens are willing to go to protect their neighbors and friends from harm. Neighborhood Watch programs tend to be instituted when residents realize that too many of their family, friends, and neighbors are being victimized. Similar to crime, cardiac arrest claims too many lives in neighborhoods throughout the U.S. With models such as the Volunteer Firemen and the Neighborhood Watch program, the public could mobilize to protect those very same people from sudden death.

I envision teams of neighbors trained to administer cardiopulmonary resuscitation and to deliver a shock with an AED. (Ideally, high school students could learn these skills in a public safety or health class.) Automated external

defibrillators would be placed strategically in selected homes throughout the neighborhood. Depending on the community's configuration and density, an AED might be centralized in the middle of several blocks or streets, distributed on floors of high-rise apartments or otherwise dispensed in concentrated areas of population. Then, when a cardiac distress call comes in to the "911" dispatch center, it would immediately be shunted to both the paramedics and the nearest AED-equipped and -trained neighbor. The neighbor could run across the street, down the block, or up several floors to the victim's side in seconds, instead of the many minutes it might take the paramedics to arrive from the station. In those precious minutes, the victim's neighbor could have used the AED to save a life. The ongoing Public Access Defibrillation trial, supported by the AHA, the National Heart, Lung, and Blood Institute, and industry, may provide information on how best to deploy AEDs.

At present, <5% of people across the U.S. who suffer cardiac arrest leave the hospital alive. Certain cities, such as Seattle, Miami, and Detroit, and even some Las Vegas gambling establishments, have higher success rates because of intense civilian rescue training and strategic deployment of AEDs. But consider the chances of survival from ventricular fibrillation in a high-rise apartment building across town in a densely populated area, such as New York City, or in a rural area many miles from the fire or police department. And also consider the survival chances if each of these areas had a SAVE (Save a Victim Everywhere) response team. Doubling the 5% survival rate would account for an additional 30,000 to 40,000 lives saved each year. Save a Victim Everywhere is a truly good-neighbor policy that could have a major impact on a scourge of modern civilization.

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