

PEOPLE ARE DYING FROM SUDDEN CARDIAC ARREST IN PUBLIC PLACES WITH AEDS! Find out how this can be stopped.

ATRUS, INC.

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**COMPELLING INFORMATION REGARDING THE GROWTH OF PUBLIC
ACCESS DEFIBRILLATION WITHOUT THE CORRESPONDING BENEFIT OF
SIGNIFICANT DECREASES IN SUDDEN CARDIAC ARREST SURVIVAL**

DISCOVER HOW YOUR COMMUNITY CAN:

- **INCREASE THE USE OF PUBLIC ACCESS DEFIBRILLATORS WITHOUT
A CORRESPONDING INCREASE IN THE NUMBER OF AEDS**
- **USE TECHNOLOGY TO BRIDGE THE GAP BETWEEN THE INTENT OF
INTEGRATING PUBLIC ACCESS DEFIBRILLATION NOTIFICATION
REQUIREMENTS AND LAWS AND REALITY**
- **ASSURE QUALITY CONTROL OF DEVICE LOCATIONS AND
OPERATIONAL READINESS**
- **CREATE A VOLUNTEER CITIZEN RESPONDER CORE TO SUPPORT
PRE-ARRIVAL OF EMS**



BACKGROUND

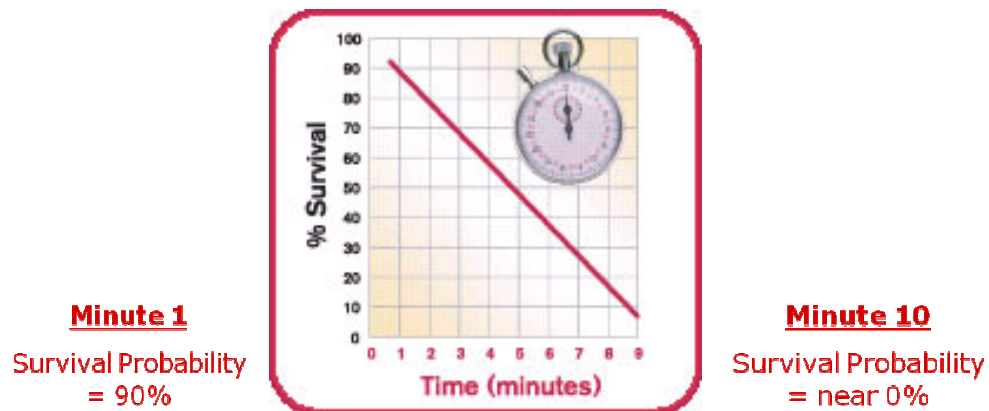
Sudden Cardiac Arrest (SCA – or Sudden Cardiac Death) is a leading cause of death in the U.S., striking as many as 350,000 victims annually. Survival rates nationally are around 5%.

The most important variable impacting SCA survival rates is the time it takes to deliver a first shock with an Automated External Defibrillator – or AED.

Quality of life survival decreases 10% per minute that response is delayed.

Brain death begins in 4-6 minutes.

Even the best of EMS response systems can't be there that quick.



To meet this public health objective, AEDs have been and are still continually being placed in many public settings.

But it's not working!

Despite the escalation of AED placements in the last 20 years, the national survival rate has barely changed from just fewer than 5% to just over 5%.

According to the Cardiac Arrest Registry to Enhance Survival (C.A.R.E.S) Registry*, AEDs are used less than 5% of the time in a resuscitation attempt.

*The Cardiac Arrest Registry to Enhance Survival is a cooperative agreement between the Center for Disease Control and Prevention (CDC) and the Department of Emergency Medicine at Emory University School of Medicine to identify incidents of prehospital cardiac arrest.

The Headlines – People are dying in buildings where there are AEDs

<p>NBC newsman Tim Russert dies with an unused AED by his side. No one knew where it was until too late. Source: New York Times; June 20, 2008</p>
<p>John Hopkins scientist dies from heart condition in front of AED. Source: ABC2/www.insidebaltimore.com, August 1, 2006</p>
<p>City of San Jose sued over youth hockey player's death in arena equipped with AED. Source: San Jose Mercury News, March 24, 2005</p>
<p>14 year old boy dies on baseball field with unused AED nearby. Source: CBS2Chicago.com/April 4, 2006</p>
<p>Man dies while nearby AED goes unused. Source: DelmarvaNow, May 10, 2004</p>
<p>Student dies because lack of knowledge of AED's whereabouts keeps it from use. Source: www.journalstar.com; Oct. 20, 2005</p>
<p>Unused defibrillator nearby when student died Source: Houston Chronicle - Oct. 11, 2006</p>
<p>Man dies in front of his children while nearby AEDs remain unused. Source: www.naplesnews.com; Feb. 3, 2009</p>
<p>Family Files Lawsuit After Student Athlete Dies - Lawsuit Alleges Nearby Defibrillator Wasn't Used. Source: cbs2chicago.com April 12, 2006</p>
<p>San Juan Airport death: A case of what ifs: Wife collapses, husband cries out "Get me an AED!" No one could immediately find a defibrillator. Source: Chicago Tribune: March 16, 2009</p>
<p>Tragic Defibrillator Flub: 6-year-old collapsed in school, turned white and began losing consciousness. While staff called 911, no one ever touched the defibrillator mounted on the wall in a lobby. Source: New York Post: December 12, 2005</p>

The Challenge –

Despite the rapidly growing number of publicly placed AEDs, and the need for AEDs to be retrieved and used rapidly:

- 911 call takers and dispatchers generally lack critical information about the presence and location of these life saving devices.
- They also generally lack the ability to communicate with citizen AED responders who may be willing to retrieve and use AEDs when needed.

What the experts say we should do:

In October, 2007, the Board of Directors of the **National Association of EMS Physicians** approved a position paper on “Early Defibrillation”. It states:

National Association of EMS Physicians[®] believes that:

1. Early defibrillation, as part of an emergency response including high-quality bystander CPR, is essential to maximizing survival from cardiac arrest.
2. While there has been increasing attention to the importance of the quality of CPR, early defibrillation is still important. If the arrest is not witnessed and a defibrillator is not immediately available, defibrillation should be preceded by good quality chest compressions.
3. All EMS responders (including police, fire/rescue, and other types of rescuers when serving in a designated first responder role) should be equipped with a defibrillator.
4. Public access defibrillation programs in which non-traditional first responders provide CPR and defibrillation in the first few minutes of cardiac arrest appear to improve survival. **Such programs should be integrated with local EMS systems.**
5. Good Samaritan laws or similar legislation should hold harmless any person who uses an AED in good faith.

On September 5th, 2006: the **NENA (National Emergency Number Association) Executive Board** issued the following position statement:

“We believe it is in the public interest for states and/or localities to establish a registration program for AEDs, and consider it a best practice for PSAPs* to maintain a readily accessible list of AED’s in their jurisdiction to facilitate rapid deployment of these life-saving devices.”

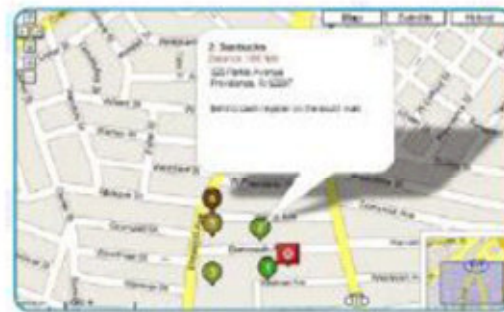
* PSAPs are Public Service Answering Points, commonly called “dispatch” or “9-1-1 centers”

The **American Red Cross, American Heart Association, and Heart and Stroke Foundation of Canada** state that a key element in a successful Public Access Defibrillation Program is “linking them with the local emergency medical services (EMS) system”.

How to do it: The Solution AED LINK™, where technology allows intent to become a reality

AED Link™ is lifesaving technology that quickly links automated external defibrillators (AEDs), citizen AED users, and sudden cardiac arrest victims.

Atrus, Inc. developed the AED Link™ data management system to fill the AED information gap now faced by State and local public safety agencies. Very few 9-1-1 dispatch agencies are able to include any information about the location of public access AEDs in their computer aided dispatch systems. Where such information is included, the location of AEDs is generally address-specific and not easily or automatically visible. AEDs located next door, across the street or on another floor remain invisible to 9-1-1 systems. In addition there is no quality assurance to the location or operational readiness of these machines.



Sample AED Link GIS Layer

To address this challenge, the Atrus AED Link™ information management system offers mission-critical AED location data to 9-1-1 dispatchers. This information, easily added to existing mapping systems, enables dispatchers to see the location of nearby AEDs and help those on-scene get these lifesaving devices to sudden cardiac arrest (SCA) victims faster and more frequently, thereby increasing the chances that lives will be saved. The system also has the capability of making a reverse 9-1-1 call to trained volunteer citizen responders who are affiliated with an AED in need. This call asks them to bring their AED on-scene, thereby possibly decreasing the ever-important “time to shock”.

AED Link™ works! A testimonial from Regina, Saskatchewan, Canada

Our regional communications centre received a 9-1-1 call on July 2, 2008 at 14:25:56 hrs from an employee of an anchor store of a shopping mall that witnessed a lady collapse in the parking lot of the mall. Approximately one minute into the 9-1-1 call, the information the caller was giving the call taker led them to believe the patient was in cardiac arrest and began giving the caller pre-arrival instructions on how to do CPR.

When asked if an AED was available, the caller said no. However, using the AED Link application the 9-1-1 dispatcher immediately identified the shopping mall had an AED, called the contact number and instructed the mall employee to respond to the area of the mall where the patient was located at 14:27:55 hrs.

When EMS paramedics arrived it was determined that the patient was not in cardiac arrest and did not require the AED.

However, this is a classic example of how AED Link was able to locate and activate the closest AED in an emergency that may have otherwise sat idle when needed most.

Dale Backlin, EMT - Paramedic
Public Access Defibrillation (PAD) Coordinator
Regina Qu'Appelle Health Region - PAD Program

Solution Benefits

LESS RISK ASSOCIATED WITH HAVING A PUBLIC ACCESS DEFIBRILLATION PROGRAM OR BEING A “HEART SAFE COMMUNITY” AND HAVING IT FAIL BECAUSE A NEARBY AED PUT SOMEWHERE SPECIFICALLY TO PREVENT SCA DEATH WASN’T USED.

THE UTILITARIAN VALUE OF THE AED INCREASES: Communities that provide the AED Link System can benefit from increased usage of publicly placed and other available AEDs. Since currently available AEDs are used less than 5% of the time, knowing where one is and being able to direct someone to its location, or having a volunteer citizen responder alerted to bring one to a SCA victim, will decrease the time to shock and therefore increase survival rates.

INCREASED SURVIVAL RATES: In a defined environment where the AEDs are available AND retrieved in a timely manner, survival rates skyrocket. In Las Vegas casinos the survival rate is 70%. In O’Hare airport, one of the first to

place AEDs, the survival rate is over 60%. These are in comparison to the national average that is around 5%.

SURVIVORS CONTINUE TO BE PRODUCTIVE CITIZENS: Survivors, especially the younger ones, will continue to be productive, tax-paying, consumers who will benefit the economics of their community.

LESS RISK THAT AEDS WILL BE NON-FUNCTIONAL WHEN NEEDED: Unless there is a well defined continuous quality control management system in place, there is a chance that a publicly placed AED might not have up to date electrodes or a functioning battery. In addition, occasional upgrades must be made to AEDs to satisfy international guidelines or FDA actions. Without the aforementioned control system these actions might not be taken, thus rendering the AED less effective or, worse, not effective at all.

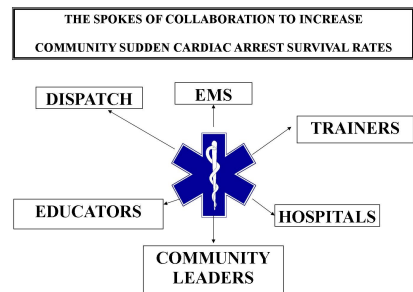
Stakeholders – who should be concerned about this?

Sudden Cardiac Death (or Sudden Cardiac Arrest) is a public health issue. It can strike anybody, anywhere at any time. The cure is pretty straightforward.

Early defibrillation is the intervention that is most likely to improve survival rates. The time between the onset of cardiac arrest and the performance of defibrillation is the major determinant for success of the resuscitation attempt. While cardiopulmonary resuscitation (CPR) can support circulation and ventilation in a victim of cardiac arrest for a short period of time, it is unlikely to convert ventricular fibrillation to a normal heart rhythm. Restoration of the rhythm requires defibrillation to be administered within a few minutes of the arrest.

Community stakeholders who can affect a positive outcome in a project to increase utilization of AEDs and positively impact cardiac arrest survival rates include, but are not limited to:

- Elected Community Officials
- Community Medical Directors
- EMS Fire/Rescue Chiefs
- Police/Public Safety
- Public Access Defibrillation Coordinators
- 9-1-1 Directors
- Hospital Officials – especially cardiac-centric ones
- Community CPR/AED Training officials



Summary

The “Chain of Survival” says: Call 9-1-1, early CPR, early defibrillation using an AED, and advanced life support.

But AEDs do not save lives. People quickly using an AED save lives. But a person cannot quickly use an AED if they don’t know where one is in the time of need. AED Link™ is designed to close that missing link in the “Chain of Survival”.

We invite you to find out how your community can provide this missing link to enhance survival of its citizens in the case of Sudden Cardiac Death via a brief web-based demonstration of the system.

Contact Us

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