

AED Programs:

Issues and Risks for Clubs to Consider

by Cindy DeLano



If a member or guest suffered sudden cardiac arrest while at your club, would he or she live long enough for the EMTs to arrive and begin treatment? A victim of cardiac arrest has a greater chance of survival if he or she is defibrillated immediately. But if defibrillation does not occur within 5–7 minutes, survival rates drop dramatically.

Even the best of local emergency response systems (EMS) may take longer than 5–7 minutes to arrive at a victim's side. As a result, a number of clubs—particularly those located in areas where EMS response times may be longer—have installed or are considering the purchase of devices called AEDs—automated external defibrillators. For many clubs, the decision is a natural extension of a growing trend toward AEDs being more widely installed in public places.

AEDs are easy to use and can save lives, but there are issues to consider. What do such devices cost and how do clubs go about purchasing them? What kind of training is required? Who should be authorized to use them in an emergency? What are the liability risks involved with having an AED? Do clubs need separate insurance to cover the club and its staff against claims that may arise through use of an AED?

The issues surrounding AEDs and programs for administering them continue to evolve. According to the National Conference of State Legislatures, all 50 states had passed some type of Good Samaritan law regulating AEDs and their use as of December 2001. A number of federal laws that were recently passed may also have an effect on the rate at which AED programs are adopted.

The Need for AEDs

According to an Occupational Safety and Health Administration (OSHA) Technical Information Bulletin released December 17, 2001 (which encourages employers to use AEDs), there are 300,000 to 400,000 deaths per year in the U.S. from cardiac arrest. Most cardiac arrest deaths occur outside the hospital with a survival rate of 1 to 5 percent. The National Center for Early Defibrillation names cardiac arrest as one of the leading causes of death in North America. Furthermore, the American Heart Association has cited the golf course as the fifth most likely public location for cardiac arrest. Despite these statistics, most sudden cardiac arrests (SCAs) are treatable with early defibrillation.

Most victims of SCA are middle-aged or elderly. Though the average victim is about 65 years old, some victims are in their 30s or 40s. Because of these alarming statistics, the American Heart Association advocates establishing public access to defibrillation (PAD) programs in businesses and public facilities to reduce the time to defibrillation and to improve survival rates. Having AEDs immediately available for use by trained lay personnel is the goal of a PAD program.

Cardiac Arrest and Defibrillation

SCA usually results from some type of underlying heart disease. The majority of cardiac arrests are caused by an abnormal heart rhythm known as arrhythmia. The most common arrhythmia causing cardiac arrest is ventricular fibrillation (VF). VF occurs when the heart's electrical impulses suddenly become chaotic, often without any warning. These chaotic impulses cause the heart's pumping action to stop abruptly. A victim of SCA loses consciousness, has no pulse, and stops breathing normally. Death follows within minutes.

However, using a defibrillator to send an electric shock through the chest wall to the heart can restore the heart's normal rhythm. For every minute that passes without defibrillation, a victim's chance of survival decreases by 7–10 percent. After as little as 10 minutes, very few resuscitation attempts are successful. Early defibrillation is the only known treatment for VF.

Traditionally, emergency medical personnel were the only people with the ability and training to defibrillate victims of SCA. They were trained to interpret arrhythmia and determine when defibrillation was needed. Survival was dependent on quick notification of the local emergency system and timely arrival of emergency medical personnel.

Unfortunately, quick arrival isn't always possible. Factors such as congested city traffic, gated communities, large building complexes, and rural areas can delay even the best of emergency

Glossary of AED Terms



Automated External Defibrillator (AED)

An automated external defibrillator is a device used to identify ventricular fibrillation in a victim of sudden cardiac arrest. An AED analyzes and identifies an abnormal heart rhythm and automatically delivers an electric shock to the heart. The shock disrupts a lethal heart rhythm (fibrillation) and allows the heart to restart naturally with a normal, healthy rhythm. The acronym AED can refer to either an automated external defibrillator or to automated external defibrillation.

Cardiopulmonary Resuscitation (CPR)

Cardiopulmonary resuscitation uses chest compression and mouth-to-mouth resuscitation to restore lung and cardiac function. CPR does not stop ventricular fibrillation but it does extend the window of time in which defibrillation can be effective.

Defibrillation

An electrical shock to the heart that returns the heart's rhythm to its normal state.

Heart Attack

A heart attack occurs when the blood supply to part of the heart muscle itself is severely reduced or stopped because of an obstruction in an artery. A heart attack can trigger sudden cardiac arrest, but heart attack and sudden cardiac arrest are not the same thing.

Ventricular Fibrillation (VF)

Ventricular fibrillation is a condition in which the heart's electrical impulses suddenly become chaotic.

Sudden Cardiac Arrest (SCA)

Sudden cardiac arrest is usually caused by an electrical malfunction that makes the heart quiver ineffectively in an abnormal rhythm called ventricular fibrillation.

Public Access to Defibrillation (PAD)

Public access to defibrillation programs are established to increase the chance of surviving sudden cardiac arrest. The goal of a PAD program is to reduce response time by making automated external defibrillators easily accessible to trained lay users.

medical systems. Today's AEDs make it possible for trained lay rescuers to deliver defibrillation quickly—the greatest determinant of survival.

Planning and Implementing an AED Program

Planning and implementing an AED program takes time and effort, but if even one life could be saved by your club having an AED on site, the cost, time, and planning of the program could be well worth the effort. Following are some steps to explore in planning and implementing an AED program. The steps covered here are not exhaustive, but are intended to provide an outline of what is required in establishing an AED program.

Gain consensus among AED stakeholders. Meet with all interested parties of the AED program. Meet with the board, members, management and staff to gain consensus for the need and importance of an AED program.

Review laws and regulations. Get to know the specific laws regarding AEDs in your state. Most state AED laws require training to operate an AED, coordination with the emergency medical services in your community, medical

direction, and recordkeeping for each use of an AED. However, laws vary from state to state. It's relatively easy to find state law information on the Internet. (See AED Resources, Training and Vendors, below.)

Consult your local EMS. Notify your local emergency medical services so that they are aware of your program and know where AEDs are located on your property. Some state AED laws require you to notify your local EMS when starting an AED program. EMS may also be able to give you guidance on equipment choice and placement, training and medical direction. (See below.)

Identify a response team. Determining who is likely to respond in an emergency will affect how and where AEDs are placed at your club. Include people who might already be expected to know and provide CPR, such as lifeguards, fitness trainers, golf pros, and wait staff. Also think about volunteer responders who may be able to help, including club members with AED or CPR training associated with their professions.

Arrange for medical direction. Although AEDs are designed for use by lay people with minimal training, they are classified as medical

devices by the Food and Drug Administration (FDA). Therefore, they require a prescription from a physician to purchase. This physician may also act as the "medical director" who oversees the program and issues the standards of care for the program. Although the medical director is not required to be on site when AEDs are used, he or she does provide oversight of the AED program. The physician/medical director might be a member of your club, be affiliated with local EMS, or be found through the AED's manufacturer.

Choose AED equipment and vendor. Seek the advice of your local EMS and your medical director regarding the type of AEDs to buy. Ask about the reputation of the vendor for reliability, durability, and after-sales support. Selecting a single brand of AED will simplify training and maintenance. Also consider compatibility with the equipment of local EMS and easy operation with clear voice prompts.

Develop policies and procedures. Design AED policies and procedures and keep improving on them. If your club already has an emergency response plan, incorporate your AED plan into it. Policies may need to be updated as laws and regulations change, as AED technology changes, and as you learn from your own experience using AEDs. AED policies and procedures should include:

- Who manages the program.
- Who the medical director is.
- Standing orders outlining who can use the AED and under what circumstances.
- How EMS and internal responders will be notified.
- Locations of AEDs on property.
- Training and refresher training policy.
- Procedures for and schedule of AED maintenance.
- Policy for reviewing and updating AED program and policies.
- Records that must be kept each time the AED is used.

Train response team. Trainees need to learn more than simply how to use the AED. They also need to know how to quickly recognize signs of sudden cardiac arrest, notify EMS and other responders as needed, start CPR, locate and use the defibrillator, and care for the victim who has been resuscitated until the EMS team arrives. Training should also include specifics of your facility's emergency response plan. Plan for renewal training at least every one to two years, and expect to train new personnel as needed.

Determine AED placement in your club. The American Heart Association recommends defibrillation in less than 4 to 5 minutes. To achieve a good response time, you'll want enough AEDs in the right places, a clear com-

AED Resources, Training and Vendors

The following Web sites provide detailed information on planning and implementing an AED program, on where and how to find AED training, on state law and legislative information regarding AED programs, and on AED vendors.

AED Information and Planning

American College of Occupation and Environmental Medicine—www.acoem.com

American Heart Association—www.cpr-ecc.org

American Red Cross—www.redcross.org

Center for Devices and Radiological Health—www.fda.gov/cdrh

National Center for Early Defibrillation—www.early-defib.org

Occupational and Safety Health Administration—www.osha.gov

Training

American Heart Association—www.cpr-ecc.org

American Red Cross—www.redcross.org

The American Safety and Health Institute—www.ashinstitute.com

State AED Law Information

National Conference of State Legislatures—www.ncsl.org

Public Access Defibrillation League—www.padl.org

National EMS Info Exchange, National Immunity/Good Samaritan Law Database—
<http://naemt.org/nemsie/immunity.htm>

AED Vendors

Cardiac Science—www.cardiacscience.com

Laerdal Medical Corporation—www.laerdal.com

Medical Research Laboratories, Inc.—www.mrlinc.com

Medtronic Physio-Control Corporation—www.aedhelp.com

Softspikes—www.softspikes.com

Survivalink Corporation (now owned by Cardiac Science)—www.survivalink.com

Zoll Medical Corporation—www.zoll.com



munication pipeline, and enough people trained to respond quickly. Consider placing AEDs in locations where large numbers of people gather, where the local EMS team might be delayed in reaching a victim, where people are engaging in strenuous activity, where older people—who are at higher risk for SCA—are gathered, and near hazards such as high voltage electricity. Also, make AED locations highly visible and tamper proof.

Develop a budget. Include the cost of the AED, as well as costs for training and refresher training, extra defibrillation electrodes, supplies, storage units, and replacement of batteries and electrodes.

Promote your program. Internally promote your AED program so that everyone in your club is aware of it. Instruct staff members on how to alert trained responders if they witness a cardiac emergency. Also, let your members know that you have started an AED program.

Legislation and Liability

Although AEDs are safe, effective, easy to use, and relatively inexpensive (about \$3,000 to \$4,000 each), potential buyers are still wary of liability risks. The legal picture is not always clear and is changing rapidly. According to the American Heart Association, there have been no known lawsuits against lay rescuers providing CPR as Good Samaritans, nor any against AED users.

Since 1999, two lawsuits have been brought against clubs for not having an AED on the premises during an emergency. To date, both clubs have prevailed in court, although one case,

Atcovitz v. Gulph Mills Tennis Club, Inc. has been remanded back to trial court for hearing.

On the federal level, The Cardiac Arrest Survival Act (CASA), part of the Public Health Improvement Act, was signed into law in November 2000. The law directs the placement of AEDs in federal buildings and provides nationwide Good Samaritan protection that exempts from liability anyone who renders emergency treatment with a defibrillator to save someone's life. CASA provides limited immunity to persons using an AED and the acquirer of an AED. It does not include limited immunity for the prescribing physician and the trainer.

Currently, all 50 U.S. states have passed laws regulating AEDs and their use; most include Good Samaritan provisions that waive liability of a layperson using an AED. Typically, AED laws and regulations require training to operate an AED; coordination with EMS in your community; medical direction; and recordkeeping for each use of an AED.

The Food and Drug Administration has federal oversight over the manufacture and use of AEDs. All AEDs on the market are evaluated and cleared by the FDA. However, the FDA does not stipulate the degree of training or scope of medical direction needed to use an AED. According to Richard Lazar, Esq., advisor to the National Center for Early Defibrillation, it appears that the FDA may be leaving training and medical oversight to individual state discretion.

It is recommended you check the AED and Good Samaritan laws in your state to determine any specific elements that may apply to your situation, and have club counsel review your plan. Your state's EMS department may also be able to provide information.

Some private insurance companies and AED vendors offer employer liability coverage to purchasers of AEDs. These insurance plans are indemnification plans that protect AED purchasers from liability claims, except in cases of gross negligence, as long as certain conditions are met. For example, AED manufacturer Cardiac Science offers an indemnification policy free-of-charge to protect customers from any potential product liability. Their policy is in addition to the Good Samaritan protection from civil liability that is provided to all trained AED users and purchasers through state laws and through CASA. Plans vary, so be sure to evaluate them carefully.

The American Heart Association suggests that a club's best defense against liability is to

implement a PAD program that is well-planned and structured. A club's plan should include training lay rescuers in CPR and AED use; physician oversight; integration with local EMS; and maintaining AEDs according to the manufacturer's specifications, thereby establishing an intent to provide a safe and effective response to cardiac emergency.

Conclusions

Death from sudden cardiac arrest may be preventable when AEDs are available and used by trained rescuers. Because of the size and location of many clubs, an AED may be a particularly valuable life-saving measure to take until EMS arrives.

At the time this article was written, there were no lawsuits against lay rescuers using AEDs. However, clubs that are considering the purchase of an AED will want to work with local EMS to develop a sound plan for administering the program and involve knowledgeable legal counsel before implementing it. With proper planning, training and medical oversight, an AED could be one of the soundest equipment purchases any club makes.

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