

Making AEDs Work for Golf & Country Clubs

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OVERVIEW

In the film, *The Legend of Bagger Vance*, Jack Lemmon plays an 80-year-old golfer who suffers five heart attacks in 10 years, all on the golf course. “My wife used to ask me,” he says in the film, “Why do I continue to play a game that seems destined to kill me?” Though Lemmon’s character paints a romantic picture of golf and mortality, it also illustrates an important fact – the average member of a golf and country club is in the age group most at risk for sudden cardiac arrest (SCA).

Though it can strike people of any age, lifestyle or ethnic background, the American Heart Association (AHA) has determined that our risk for SCA increases as we age and occurs more frequently in adults with coronary artery disease. With more than 50 percent of golf and country club patrons older than 56, and 29 percent over age 66, club members and guests fit the profile of those at highest risk.

SCA remains the leading cause of death in the U.S., causing an estimated 325,000 deaths each year according to the AHA. In addition, SCA is the number one cause of death on the golf course, according to the Vascular Noninvasive Screening and Diagnostic Center in London.

But there is good news. The portable defibrillators that emergency squads have used for years are now accessible in public locations like golf and country clubs. Automated external defibrillators (AED)—the portable automatic device used to restore normal heart rhythm to patients in cardiac arrest—are becoming as commonplace as fire extinguishers, and chances a person will survive cardiac arrest increase from less than 5 percent to more than 90 percent if an AED is used within 3-5 minutes of collapse.

However, with the proliferation of these portable devices comes concern about proper installation, maintenance and use of AEDs. When AEDs are placed in the community, the AHA strongly encourages that they be part of a defibrillation program in which users are trained in CPR and how to use the AED, as well as medical oversight to ensure quality control.

For example, *The Preferred Club Program*® – a leading insurance and risk management program for the club industry – offers the CardioReady® Certified Cardiac Emergency Readiness Program (CERP) to the clubs it insures. CardioReady gives clubs guidance on proper placement of AEDs in conjunction with training, maintenance, and communication with local emergency response providers.

Given the demographics of their members and the facts on SCA, it is imperative that golf and country clubs make cardiac emergency readiness – with a certified AED program – a priority.



SUDDEN CARDIAC ARREST: FROM THE AMERICAN HEART ASSOCIATION

Sudden cardiac arrest claims more lives each year than stroke, lung cancer, breast cancer and AIDS combined. It remains the leading cause of death in the U.S., causing an estimated 325,000 deaths each year according to the American Heart Association (AHA). On average in the U.S., only 6% of SCA victims survive. Though it can strike without warning to people of any age, lifestyle or ethnic background, the AHA has determined that our risk increases as we age. Experts predict it will only become more prevalent with a sizeable population of baby boomers inching closer to their late 60s.

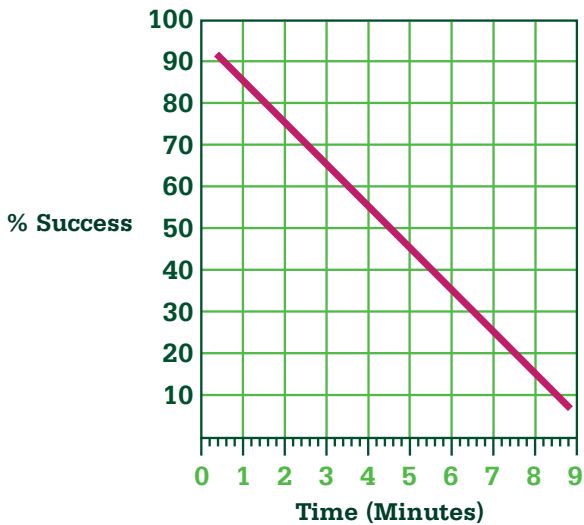
Sudden cardiac arrest is not a heart attack. Heart attacks occur when there is a blockage in one or more of the arteries to the heart, preventing the flow of oxygen-rich blood and damaging the heart muscle. Sudden cardiac arrest—a more life threatening condition—occurs when the electrical system to the heart malfunctions and suddenly becomes very irregular causing abnormal heart rhythms called arrhythmias. The heart beats dangerously fast. The ventricles may flutter or quiver (called ventricular fibrillation), and blood is not delivered to the body. In the first few minutes, the greatest concern is that blood flow to the brain will be reduced so drastically that a person will lose consciousness. Cessation of normal breathing, loss of pulse and blood pressure and death follow—unless emergency treatment is begun immediately.

It is no exaggeration that “every minute counts” when a person is hit by sudden cardiac arrest. In fact, the AHA has learned that for every minute that passes without cardiopulmonary resuscitation (CPR) and defibrillation, the chances of survival decrease by 7-10 percent. CPR and early defibrillation with an automated external defibrillator (AED) is the only way to restore the SCA victim’s heart rhythm to normal. In fact, this lifesaving combination more than doubles a victim’s chance of survival.

The symptoms of SCA differ but may include a racing heartbeat or dizziness, alerting a person that a potentially dangerous heart rhythm problem has started. In over half of the cases, however, sudden cardiac arrest occurs without prior symptoms.

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SCA Resuscitation Success Versus Time



**Chance of Success Reduces
7-10% Each Minute**

Source:
Cummins RO. Annals Emerg Med.
1989, 1269-1275



Because of its size, often remote location and poor accessibility, a golf course can be one of the worst places to be when your heart stops.

CLUB MEMBERS FIT THE PROFILE

Sudden cardiac arrest is the number one cause of death on the golf course, according to the Vascular Noninvasive Screening and Diagnostic Center in London. It's no wonder, since more than half of golf and country club patrons in the U.S. are over the age of 56, according to the McMahon Group Database, and 29 percent of members are over 66—the group most at risk for potential heart problems.

In addition to the average age of club members, Dr. Edward A. Palank, a Florida cardiologist, has cited other reasons golfers are at high risk (in the October 1999 issue of *Golf Digest*):

- *Sudden cardiac arrest is most likely to occur between 6 and 11 a.m., precisely when most golfers are out on the course.*
- *Golfers spend from four to six hours a day on the course, often several times a week.*

There is nothing inherently dangerous about golf, but when someone's heart stops a quarter mile out on the fairway, it is very difficult to deliver emergency medical care in time to save a life. Because of its size, often remote location and poor accessibility, a golf course can be one of the worst places to be when your heart stops.

According to the *Golf Digest* article cited above, "There have been a consistent and troubling number of cardiac-arrest victims coming from the golf course in my 21 years here," says Dr. Robert Tober, medical director of emergency and ambulatory services for Collier County in Florida. "The logistics of getting to these people means that by the time they arrive at the hospital, there's nothing much left to be done." Palank is working with EMT units statewide to document the incidence of cardiac arrest on the golf course. But to illustrate the magnitude of the problem, Florida EMTs report that there were four fatalities in one year at one multi-course golf resort alone.

In addition to age, there are other factors listed by the AHA that can increase a person's risk of sudden cardiac arrest and sudden cardiac death (SCD) that may apply to club members and guests, including:

- *Previous heart attack with a large area of the heart damaged (75 percent of SCD cases are linked to a previous heart attack)*
- *Coronary artery disease (80 percent of SCD cases are linked with this disease)*
- *Risk factors for coronary artery disease include smoking, family history of cardiovascular disease and high cholesterol*
- *Prior episode of sudden cardiac arrest*
- *Family history of sudden cardiac arrest*
- *Personal or family history of certain abnormal heart rhythms*
- *Ventricular tachycardia or ventricular fibrillation after a heart attack*
- *History of congenital heart defects or blood vessel abnormalities*
- *Heart failure: six to nine times more likely than the general population to experience ventricular arrhythmias that can lead to sudden cardiac arrest*
- *Dilated cardiomyopathy (cause of SCD in about 10 percent of the cases): a decrease in the heart's ability to pump*
- *Hypertrophic cardiomyopathy: a thickened heart muscle*
- *Significant changes in blood levels of potassium and magnesium*
- *Obesity*
- *Diabetes*

Florida EMTs report that there were four fatalities in one year at one multi-course golf resort alone.



AEDS: THE FACTS

Jack Lemmon's character in *The Legend of Bagger Vance* was fortunate the golf courses he frequented were prepared with a cardiac emergency plan in place. Trained responders were able to locate an automated external defibrillator (AED) and, with the push of a button, jolt his heart to start beating again. This bought the paramedics some time to transport him to the hospital for full recovery.

The American Heart Association has promoted a "Chain of Survival" concept, describing a sequence of interventions that when implemented result in improved survival following cardiac arrest. In their studies, early defibrillation with an automated external defibrillator (AED) emerged as the single most important intervention.

Developed in the 1970s and first introduced for clinical use in 1979, an AED is a lightweight portable device smaller than a laptop. Its circuitry is designed to check a person's heart rhythm, recognize a rhythm that requires a shock, and advise the rescuer when a shock is needed. Information is transmitted to the device by electrode pads used for both monitoring and shock therapy. The AED uses voice prompts, lights and text messages to tell the rescuer the steps to take.

In addition to advocating AEDs for EMS first-response vehicles and ambulances, the AHA supports placing AEDs in targeted public areas such as sports arenas, airports, office complexes, shopping malls and country clubs—some of the most common places SCA strikes. This concept of public access to defibrillation (PAD) promotes the expansion of the role of defibrillation to both minimally trained first responders such as police officers and firefighters and to trained laypersons. AEDs are very accurate and easy to use. With a few hours of training, anyone can learn to operate an AED safely.

Early use of external defibrillation by emergency medical technicians (EMTs) with rapid response times has been shown to improve survival rates according to studies over the years. However, many communities, both rural and urban, continue to have poor survival rates, due to longer response times of emergency personnel. In fact, SCA studies conducted in New York City and Chicago, where EMS response times are prolonged by heavy traffic, have demonstrated survival rates of 2 percent or less.

Communities with comprehensive AED programs that include training of lay rescuers have achieved survival rates of 40 percent or higher, according to the AHA. Congress created the *Rural and Community Access to Emergency Devices Program*, which helped communities to buy AEDs and train lay responders in their use outside the hospital (Go to <http://www.americanheart.org/presenter.jhtml?identifier=3049019> for more studies on community access to emergency devices). In the past two years, the commercial market has expanded substantially, with AED machines that once sold for \$3,000 and up now advertised at under \$1,000 for small office, personal or home use.

{The AHA has found that} early defibrillation with an automated external defibrillator (AED) {is} the single most important intervention.



AEDS: THE FACTS (CONT.)

State Legislators also have become actively involved with this issue in the past six years. Most commonly, the recent state laws encourage broader availability, rather than creating new regulatory restrictions. Most of the bills enacted from 1997 to 2001 included one or more provisions to:

- *Establish legislative intent that an AED may be used by any person for the purpose of saving the life of another person in cardiac arrest.*
- *Encourage or require training in the use of AED devices by potential users.*
- *Require AED devices to be maintained and tested to manufacturer's standards.*
- *Create a registry of the location of all such defibrillators, or notification of a local emergency medical authority.*
- *Allow a "Good Samaritan" exemption from liability for any individual who renders emergency treatment with a defibrillator.*
- *Authorize a state agency to establish more detailed requirements for training and registration.*

In April 1997, Florida became the first state to enact such a broad public access law (Chapter 34 of 1997). As of 2001, all 50 states had enacted defibrillator laws or adopted regulations. More than 40 states (and counting) have passed Good Samaritan laws written specifically with AEDs in mind. Federal legislation, titled the Cardiac Arrest Survival Act, is pending.

However, awareness is still lacking according to the AHA. Tragically, 64 percent of Americans have never seen an AED. Making AEDs more available to lay responders trained in their use could save more lives.



BEING PREPARED TO ACT

Since advances in technology over the past two decades have made AEDs more accessible for use by non-medical personnel, clubs have seen a marked improvement in addressing this preventable tragedy. In fact, some experts suggest that as AEDs become more widely adopted at golf facilities, the question of liability will focus not on the deployment of AEDs, but on their absence at a course. Because of their proven effectiveness, AEDs are likely to raise the accepted standard of care.

However, with the widespread use of AEDs in clubs comes concern about their proper installation, maintenance and use. Your club may have an AED or two on premises, and you may have responders trained to use them. But in the event of a cardiac emergency, would they be prepared to act on the spot?

The problem is, AED-trained club employees may go months or years without witnessing SCA or operating an AED. That's why experts recommend formal AED training at least once a year. It can help to address this learning gap and help responders become familiar with the device so that they are able to successfully operate it in an emergency. Regular training also teaches the operator how to avoid potentially hazardous situations.

When AEDs are placed in the community, the AHA strongly encourages that they be part of a defibrillation program in which:

- *Those responsible for using the AED are trained in CPR and how to use an AED.*
- *Persons that acquire an AED notify the local EMS office.*
- *A licensed physician or medical authority provides medical oversight to ensure quality control.*

An AED operator must know how to recognize the signs of a sudden cardiac arrest and how to do CPR. Early CPR is an integral part of providing lifesaving aid to people suffering sudden cardiac arrest, as it helps to circulate oxygen-rich blood to the brain. After the AED is attached and delivers a shock, the typical AED will prompt the operator to continue CPR while the device continues to analyze the victim.

Another crucial issue is placement of AED devices. In an emergency, the AED needs to be within arm's reach so that operators can access them in a timely way. With the size, remote location and poor accessibility of some courses, clubs need guidance in purchasing an appropriate number of devices and finding the right locations for ease of access.

Not only do golf and country clubs have the responsibility to make sure a cardiac emergency readiness plan is in place, they should also insure compliance with applicable statutory and regulatory requirements. The AHA's AED program recommends an annual assessment of the facility, purchase, installation, implementation, training and maintenance of AEDs. The AHA also recommends annual review for re-certification and assurance that facilities remain "rescue ready."

The question of liability will focus not on the deployment of AEDs, but on their absence at a course.



CASE STUDY: THE PREFERRED CLUB PROGRAM® AND CARDIOREADY® CERTIFICATION

The Preferred Club Program (www.preferredclub.com) is a leading provider of insurance and risk management solutions to golf and country clubs across the country. Since the Program was founded in 1994, the program has focused on improving safety at golf and country clubs.

In 2008, the Program continued this commitment by partnering with CR Certification Corporation (CardioReady), the leading provider of independent auditing and certification of cardiac emergency readiness programs. The Preferred Club Program with CardioReady certification assures a best practice cardiac emergency readiness plan is in place at the golf and country clubs it insures.

Available exclusively to the golf and country club market through the Preferred Club Program, CardioReady Certification assures that golf and country clubs meet the guidelines of the American Heart Association to offer the best and quickest response to sudden cardiac arrest.

The recommendations of the American Heart Association's automated external defibrillator (AED) program include:

- Risk assessment and loss control recommendations
- Equipment purchasing, setup, testing, demonstration
- Physician oversight where required by state laws
- Emergency medical services notification
- AED/CPR training
- Loss control inspection and verification
- Cardiac emergency readiness plan documentation
- Ongoing program management and annual review for re-certification to assure that facilities remain "rescue ready"
- Post-incident assessment and reporting

The Preferred Club Program with CardioReady certification assures a best practice cardiac emergency readiness plan is in place at the golf and country club it insures.



CardioReady works with industry-leading entities in the markets it serves to reduce death from SCA through the education, certification, and promotion of the proper implementation and usage of AEDs. Participating golf and country clubs receive CardioReady Certification logo identification, so members know that a facility is ready to respond to cardiac emergencies.

CardioReady certification not only provides clubs with a trusted source for cardiac emergency readiness, it differentiates a club from its competition, improves loss prevention programs, and ensures compliance with applicable statutory and regulatory requirements such as "Good Samaritan" law protection.

By taking the necessary steps to ensure compliance with applicable statutory and regulatory requirements, clubs can reduce their exposure to potential liability for failure to provide an AED program consistent with best practices, guidelines, statutes and regulations.



CONCLUSION

Sudden Cardiac Arrest (SCA) is a significant health risk for golf and country clubs, whose members fall into a higher risk age demographic. When a club member suffers SCA, the chances of survival decrease by 7-10 percent every minute that passes without cardiopulmonary resuscitation (CPR) and defibrillation.

The use of automated external defibrillator (AEDs) can significantly lower that risk and protect the health of club members – as long as these devices are used properly. Certification and safety programs that adhere to the American Heart Association’s AED program can ensure a club is deploying and using AEDs in the most effective way.

Knowing these facts, every golf and country club should make cardiac emergency readiness a priority, invest in AED technology and training, and take simple steps to protect themselves, their members and guests.

ABOUT THE AUTHOR

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The Preferred Club Program is the leading insurance and risk management service provider to the golf and club industry. The program currently serves 1,000 golf and country clubs through independent insurance agents and brokers throughout the U.S.

