

Frequently Asked US Lacrosse Community Questions and Answers Regarding AEDs (Automated External Defibrillators)

Why do we need AEDs? Can't we just call 911?

Sudden cardiac arrest (SCA) is the #1 cause of death in the U.S., taking more than 400,000 lives each year. The American Heart Association (AHA) recommends a specific four-step "Chain-of-Survival" for SCA. The hallmarks of this sequence which are well documented as dramatically increasing survival rates are:

- 1) Early 911 Access
- 2) Cardio-Pulmonary Resuscitation (CPR)
- 3) Early Defibrillation with an Automated External Defibrillator (AED) and
- 4) Early Advanced Life Support (ALS).¹

Survival is directly linked to the time interval between the SCA and the first AED shock delivered to the victim. Statistics validate that when shock is delivered within one minutes, survival rates can increase eighteen fold from 5% (by relying on EMS only to respond) to levels as high as 90% in some cases.²

Time is THE most important element in saving an SCA victim. Even the best EMS systems have difficulty arriving "in time." They average 9-12 minutes which is often "too late." Lacrosse activity – on a field, in a gym or in transit by car/bus – is rarely within five minutes of EMS response, so AEDs offer a practical way to save more lives. Because they can be used by nearly anyone, widespread deployment in public places, including recreation fields and sporting events, gives SCA victims the best chance of survival.

Who can operate an AED?

Trained clinicians use manual defibrillators. The relatively untrained can use an AED. Today's AED analyzes the victim's condition and (only if warranted) delivers an electric shock to the heart to restore patient's heart rhythm.

It's worth repeating: AEDs ONLY provide a shock if the victim's heart rhythm meets SCA characteristics (no pulse, the inability to breathe and unconscious). So AEDs help those in that unique situation – and only provide therapy (or "shock") if the patient requires it.

A Powerheart® AED G3 Plus by Cardiac Science™, in particular, is popular for its fully automatic operation. There are no buttons to push to deliver therapy. There are clear vocal instructions for CPR and AED use.

The unit is remarkably effective. A 2007 University of Pennsylvania study showed that adult volunteers with no prior CPR training were able to deliver CPR of a quality often similar to trained professionals when using the G3 Plus AED, with its appropriate, real-time CPR voice prompts.

¹ <http://www.americanheart.org/presenter.jhtml?identifier=3012016>

² <http://www.sdprojectheartbeat.com/pages/aboutus.htm>

Who can help my lacrosse program implement an AED program?

We've entered a strategic alliance with [Cardiac Science](#), a leading provider of defibrillation products. They are expecting your call 1-866-469-3800. Ask them for help with:

- Purchasing your devices
- Arranging training
- Determining the optimal number and placement of your AEDs and
- Developing an ongoing quality assurance program.

What is the cost to purchase and maintain an AED?

A Powerheart AED costs about the same as a well-equipped laptop computer. With its seven-year device warranty and four-year unconditional replacement guarantee on its standard industrial-grade battery, the Powerheart AED offers a very low cost of ownership throughout the life of the AED.

AEDs can be leased, and US Lacrosse members have [special discounts](#) as part of the organization's strategic alliance with Cardiac Science. Your Cardiac Science representative has details about replacement and maintenance costs over the useful life of your purchase.

What is the "useful life" of an AED?

An AED is "useful" and appropriate as long as the device parts are replaced as necessary. Electrodes (pads) need to be replaced every two years and are purchased in pairs (one for the unit and one for back up). The battery needs to be replaced every four years and comes with a full unconditional replacement guarantee, as above.

Powerheart G3 AED products have software upgrade capability (via CD) for simple improvements that may occur occasionally as a result of evolving protocols in the areas of CPR, technology, algorithms, etc.

For these reasons (device warranty and upgrade-ability), we expect a useful life of five to seven years.

Are AEDs easy to use?

Extremely. Designed for use by virtually anyone with minimal training, the Powerheart AED G3 Plus from Cardiac Science has fully automatic operation, pre-connected electrodes and an industry-leading warranty. It self-tests (no user intervention) daily, weekly and monthly to ensure it is ready to save a life every day – without manual testing or extensive maintenance. Among the tests, a "full-energy test" is run monthly and stresses the unit to its maximum energy capacity. This ensures the AED is prepared to withstand the most demanding rescue scenarios.

What training is required?

In most cases, simple CPR and AED training – widely accepted as prudent for lacrosse coaches at all levels – is all that's required.

For example, the American Heart Association offers the Heartsaver™ AED course, which can be completed in less than four hours. Training requirements vary from state to state. Your Cardiac Science representative can provide information on any state-specific training requirements and review all training options to accommodate the specific lacrosse organization requirements (for training coaches, parents, officials, etc. as appropriate).

What liability do we incur by deploying AEDs?

If the Powerheart AED is used in accordance with the directions in the manual, proper training and usage protocols and medical direction, the user is indemnified from liability. Signed by President Clinton in 2000, the [Cardiac Arrest Survival Act](#) provides AED users and acquirers with liability protection. In fact, with AEDs becoming common safety devices, organizations are now at risk for **not** having these devices on site.

Each state has Good Samaritan laws with language about AEDs. These laws typically involve three main elements: medical direction (a licensed physician to oversee your program), training (as described above) and record keeping/tracking (of device serial numbers and locations, battery expiration dates, etc.). It would be good to **ask about Cardiac Science's Program Management Service**. The service assists you with each of these three matters.

How do we implement an AED program for our lacrosse team?

Cardiac Science can assist you with its [Quick Response Program](#). It provides the three primary elements (medical direction, training and record keeping) to minimize extra work, confusion and risk regarding the deployment process. Cardiac Science manages all these steps for your lacrosse program and has a well-documented track record of reliability, quality and delivery in this area.

We recommend you leverage the program since AEDs have unique features, training has to be provided and programs need to conform to state law for liability protection purposes. Cardiac Science will also help determine optimal device placement and develop ongoing quality assurance programs for you.

Where would we place our AEDs?

Your Powerheart AED should be as visible and easily accessible as possible. Some areas you might consider are:

- Near your primary game or practice field
- Centrally located between multiple fields; perhaps a restroom or concession stand
- In the car of a coach or team parent
- In the team's bus or van
- Within a training facility such as a gym or workout area

What if we can only afford one AED but have games on different fields at the same time?

Upon request, Cardiac Science will work with you to best deploy your AEDs based on your athletic facility.

Often, a centrally placed unit with documented communication procedures can facilitate access among coaches and volunteers. That way, the device can be used within the ideal three-minute window after an SCA.

Of course, even one AED is much more prudent than having none or “not enough.” We strongly encourage you to have one or more AEDs on hand.

What if we are renting or playing in an opposing program’s facility?

Before contracting with a private facility, ask the proprietor about the risk management and safety practices. Bring your AED along one way or the other: you can never have enough of them in time of need.

What is Commotio Cordis and why do I hear about it often in the context of the sport of Lacrosse?

Commotio Cordis is a medical term that refers to a rare but potentially catastrophic phenomenon in athletes participating in sporting events that results in an SCA. Commotio Cordis happens when a blunt but often relatively mild blow (normally from a moving object) occurs to the chest directly over the heart during a precise moment of the heart’s normal rhythm cycle and induces SCA in the victim.

US Lacrosse remains diligent in its efforts to pursue greater research on Commotio Cordis along with increasing overall awareness and education around this deadly phenomenon. Tragically, there have been many fatalities in lacrosse due to Commotio Cordis (as have been in baseball and ice/field hockey). Somewhat surprisingly, developments in protective equipment across all sports have proven, to date, to be ineffective in preventing Commotio Cordis. It is clear that the most effective treatment for SCA and, indeed the only effective treatment for Commotio Cordis, is the timely delivery of a life-saving shock from an AED.