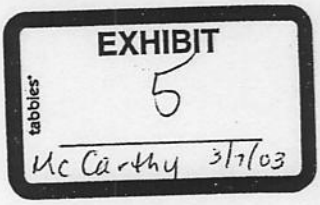
DEFIBRILLATORS (AEDs) IN HEALTH CLUBS

An IHRSA Briefing Paper



❖ IHRSA's Position

IHRSA does not discourage health club operators from installing automated external defibrillators (AEDs), but the association's position is that there is not yet a standard of care that requires that AEDs be in all fitness centers. Only 50% of ambulances and a smaller percentage of fire department vehicles that have emergency "first-response" duties are equipped with AEDs. If most emergency response vehicles don't have AEDs, it seems unreasonable to expect that all fitness centers should have them.

Also, recommendations issued in 1998 by the American Heart Association and the American College of Sports Medicine (ACSM) urged fitness clubs to screen the cardiac health of their clients, but did not include an advisory to heath clubs to install AEDs. According to Gary J. Balady, MD, a cardiologist and professor of medicine at Boston University School of Medicine and the lead author of the recommendations, this is because the rate of heart attack emergencies at health clubs is not known, and most clubs have access to emergency services. [The ACSM recommendations separated facilities into five categories, ranging from level one ("unsupervised") up to level five ("supervised cardiac rehabilitation"). It was recommended that level five facilities have an AED on site.]

Clubs with cardiac rehabilitation programs are arguably more likely to need -- and therefore more likely to be found negligent for not having -- an AED, than clubs that don't cater to the older, deconditioned, or cardiac rehabilitation markets.

❖ What is an AED?

An AED is a battery-driven device used to administer an electric shock through the chest wall to the heart of a person who has gone into cardiac arrest. An AED analyzes the heart's rhythm through adhesive electrodes and, if necessary, tells the user to deliver a shock to the victim. The shock, called defibrillation, may help the heart to reestablish an effective rhythm of its own. An AED is about the size of a laptop computer and weighs 4 to 7 pounds. They currently sell for around $3,000 each, but prices are going down as demand increases and technology improves.

Two IHRSA associate members supply AEDs: Agilent Technologies and Medtronic Physio-Control (see "Additional Resources" for contact information).

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❖ What is cardiac arrest and how prevalent is it?

One of the leading causes of death among American adults, sudden cardiac arrest (SCA) strikes nearly 1,000 people in the U.S. every day and kills more than 95% of them. SCA is unpredictable and can happen to anyone, anywhere. Risk increases with age, and the average age of a victim is 65. Although pre-existing heart disease is a common cause of cardiac arrest, many victims have never had any heart problems.

The most common cause of SCA is ventricular fibrillation -- an ineffective quivering of the heart muscle that makes it unable to pump blood through the body. Once the blood stops circulating, a person quickly loses consciousness and the ability to breathe, and will die without prompt, effective treatment.

SCA is *not* the same thing as a heart attack, although a person suffering a heart attack is more likely to develop abnormal heart rhythms and SCA. A heart attack is caused by blocked blood flow to the heart muscle so the muscle begins to die. SCA is caused by an abnormal heart rhythm. A heart attack is often preceded by chest, arm, upper abdomen, or jaw pain. Nausea and sweating are common. There is rarely a warning before SCA. Heart attack patients usually remain conscious. SCA victims always lose consciousness.

Nearly three-quarters of cardiac arrests occur at home. About 10% occur in hospitals. That leaves 15%, or 150 cardiac arrests per day, that occur in places other than the home or hospital. Data is not available on the number of cardiac arrests that occur in health clubs. Based on a study conducted in the state of Washington, the public places with the highest incidence of cardiac arrests include airports, jails, sports stadiums, shopping malls and golf courses.

❖ How effective are AEDs in treating cardiac arrest?

"Survival can be as high as 90 percent if defibrillation is provided during the first minute following collapse," according to Mary Fran Hazinski, R.N., M.S.N., chairperson of the American Heart Association's Emergency Cardiovascular Care Programs. For every minute that defibrillation is delayed, survival falls about 10%.

People who survive a sudden cardiac arrest have a good long-term outlook. About 80% are alive after one year and as many as 57% are alive at five years.

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❖ Are AEDs safe to use?

According to the American Heart Association, an AED is safe to use by anyone who has been trained to operate it, and using one is easier than administering CPR. Studies have shown the devices to be 90% sensitive (able 90% of the time to detect a rhythm that should be defibrillated) and 99% specific (able 99% of the time to recommend not shocking when defibrillation is not indicated). Because of the wide variety of situations in which it will typically be used, the AED is designed with multiple safeguards and warnings before any energy is released. The AED is programmed to deliver a shock only when it has detected ventricular fibrillation.

A June 1998 *Golf Course Management* article addressed safety fears this way. "If someone is in cardiac arrest, nothing you can do will make the situation any worse. The heart will not spontaneously regain a normal rhythm, and without defibrillation an SCA victim will die."

❖ If AEDs are easy to use, why is formal training needed to use them?

Emergency equipment alone doesn't save lives. Its presence in a club can give a false sense of security if the staff is not trained and prepared to use it.

AEDs are considered so user-friendly that untrained rescuers can generally succeed in attaching the pads, pressing "analyze" (if required), and delivering shocks. However, untrained rescuers may not know how to recognize the signs of SCA, and they may not use an AED safely, posing some danger of electric shock to themselves and others. Also, untrained rescuers probably would not know how to respond to the victim if the AED prompts "no shock indicated."

An AED operator must also know when to activate the EMS system and how to perform CPR. Early CPR is an integral part of providing lifesaving aid to people suffering from SCA. The ventilation and compression skills learned in a CPR class help to circulate oxygen-rich blood to the brain. After delivering a series of three shocks, the typical AED will prompt the operator to continue CPR while the device continues to analyze the patient.

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❖ How much training is required to use an AED?

AED training requirements vary by state. (See the attached chart for your state's requirements.) Many states' AED laws list the American Red Cross and the American Heart Association as providers of courses that satisfy the states' training requirements.

The American Red Cross offers many AED courses including a 4 hour course designed for individuals with a job-related duty to act in an emergency. The American Heart Association offers a 3.5 – 4 hour BLS (Basic Life Support) Heartsaver AED Course. AED certification must be renewed after two years.

Some club operators offer more frequent "refresher" courses than is required by law. This can help make staff more comfortable with the idea of using an AED in an emergency. For example, managers at Little Rock Athletic Club in Arkansas undergo one-hour training and practice sessions every three months. The club's health director has even been trained to teach new staff members on the AED.

IHRSA members that have AEDs report having trained varying segments of their staff. Some have trained "all staff", others "just full-time staff", others "just managers." Other trained groups include lifeguards, tennis pros, front desk staff, personal trainers and fitness instructors.

If a club has an AED, it is strongly advised that at least one person who is trained in its use be on duty at all times. If a cardiac arrest occurs at a club that has an AED but no one is on duty who is trained to use it, the club could be found liable for negligence. The argument could be made that members had a false sense of security due to the presence of an AED, when in fact no one on duty at that time was qualified to use it.

❖ Who is legally allowed to use an AED?

Under current Food and Drug Administration (FDA) regulations and the law in most states, only doctors or people authorized by doctors (via a prescription) may buy and operate AEDs. This is a quality control mechanism. The licensed physician or medical authority will ensure that all designated responders are properly trained and that the AED is properly maintained. A club operator wishing to purchase an AED would need to work with a physician (or in some states a nurse or other medically trained individual) both before and after the purchase. Some clubs that already have AEDs have a physician member of their club who was willing to provide this service. Also, some AED suppliers offer programs that match clubs with physicians in their state that will, for a fee, act as that club's medical authority for a designated period of time.

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Emergency Medical Technicians (EMTs) are allowed to use AEDs in all states. Most states allow first responders, such as police, fire fighters and other law enforcement personnel to use AEDs. More and more states are allowing lay rescuers with proper training and medical supervision to use them.

❖ Will obtaining an AED increase our responsibility and therefore our liability risk?

According to IHRSA's survey of its members, concerns about potential liability have held back many clubs from looking into obtaining an AED.

"In most settings the medical benefits of AEDs far outweigh any legal risks," says Richard A. Lazar, an attorney and AED industry consultant. "As these devices become more widely used, there will potentially be greater liability risk for not adopting AED programs."

According to Medtronic Physio-Control Corporation, as of October 1999 there had been no lawsuits involving the use of an AED in a business setting, and most firms carry liability insurance as protection should such a lawsuit arise.

Check your state's law on the attached chart to determine if lay rescuers are given limited liability immunity. If not, they may not be protected from litigation. Use of AEDs by the public is generally not covered by state "good samaritan" laws, which protect amateur rescuers from liability.

At the federal level, the "Cardiac Arrest Survival Act of 1999" (H.R. 2498 and S. 1488) is pending in Congress. It would establish protections from civil liability for any personal injury or wrongful death resulting from the emergency use of AEDs. Not only would it protect the AED *user* from liability, but it would also protect any person who maintained the device, provided training in the device, tested the device, or acquired the device (in most cases) as well as the physician who provided medical oversight regarding the device.

Agilent Technologies offers an indemnification program for users of its ForeRunner® AED. It protects users from claims or actions arising from "the mechanical or electrical failure or malfunction of the ForeRunner." There are exceptions in cases of negligence, gross negligence, or improper acts, and in cases of AEDs that are not properly maintained or operated.

Medtronic Physio-Control Corporation offers an indemnity program to users of its LIFEPAK® 500 AED. The only exceptions are if the user is grossly negligent or

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intentionally misuses the device. Participants must agree to periodic inspection of the devices and ensure that the operator has received training from an American Heart Association Basic Life Support level trainer (or equivalent). For an additional charge, club operators can purchase a policy protecting themselves and AED users from liability for improper actions or even failure to act.

❖ Will obtaining an AED mean that my club is "getting into the medical field?"

Not necessarily. An AED is only used if a cardiac arrest incident occurs. Given that an event occurs, a club employee either uses an AED, if the club has one, or someone performs CPR until an ambulance or other response vehicle arrives. Either way, the club is providing medical attention. However, in the case of a cardiac arrest, CPR is generally ineffective without another link in the American Heart Association's "chain of survival": early defibrillation.

❖ If I decide to install an AED, is one per facility enough?

That depends on the size of the facility and how long it would take from the furthest point from the AED to reach it. The statistics to keep in mind are those from the American Heart Association. According to the AHA, every minute that passes before returning the heart to a normal rhythm after a cardiac arrest causes the chance of survival to fall by 10 percent.

Jim Debrick, sales representative for Agilent Technologies, recommends that AEDs be located so that no more than four minutes pass between the time of a victim's collapse and defibrillation.

Officials at Chicago's Midway and O'Hare Airports recently installed thirty-three AEDs into their corridor walls. The devices are no more than a minute apart at walking speed. The *Boston Herald* recently reported that between June 1 and November 1 of 1999, eight people were treated at these two airports with AEDs and seven survived to be discharged from the hospital.

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❖ Why are health clubs often mentioned as possible locations for AEDs?

Physical stress, such as that caused by intense exercise, can cause the heart rhythm in some people to become chaotic, which can lead to ventricular fibrillation.

In addition, the fastest-growing segment of health club members is people over age 34, an age when the risk of heart disease begins to rise, says Gary J. Balady, MD, the previously mentioned cardiologist and professor of medicine at Boston University School of Medicine. "Many Americans are surviving their heart attacks and are being told by their doctors to exercise more. So there may be more individuals showing up at health clubs who have heart disease."

Nearly one in four adult Americans has some form of cardiovascular disease. During exercise, people with heart disease are at 10 times higher risk of having a cardiac event than people who are disease free.

❖ How many health clubs have AEDs?

IHRSA surveyed its members about AEDs in October 1999. Of the 273 clubs responding, 16% (45) already have at least one installed, 26% (71) are planning to purchase one, and 58% (157) currently have no plans to obtain an AED.

A handful of health club chains, including Club Sports International and Australian Body Works, indicated that they plan to install an AED in each of their fitness facilities in the near future.

Common reasons cited by IHRSA clubs for having AEDs include:

- High number of older and/or deconditioned members;
- Belief that an AED is as essential as CPR training;
- Response time for local rescue squad is too long;
- Response to previous medical emergency at club;
- Prices have gone down in recent years;
- Media coverage of lives saved;
- Marketing value;
- State's "good samaritan" law protects facility from liability;
- Requests of members, including those in medical fields;
- The fact that AEDs are now virtually fool-proof;
- Concern that it is becoming an industry standard.

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Common reasons cited by IHRSA clubs for *not* having AEDs include:

- Liability concerns if it's used improperly or ineffectively, or not used at all;
- High cost;
- Hospital/fire station/ambulance service located close to club;
- High staff turnover causes training problems;
- Difficulty in ensuring that someone who is trained is always on duty;
- Certification is too involved and time-consuming;
- Desire to keep club out of medical field;
- Concerns about insurance coverage.

❖ Have any lives been saved in clubs with AEDs?

Yes, according to news stories, AED suppliers, and surveys of IHRSA members.

A few examples:

- Health First Pro-Health and Fitness Center, a hospital-based health club in Florida, recently added AEDs to its facility. In January 1998, an elderly woman attending a physical therapy class collapsed, a victim of cardiac arrest. A Pro-Health employee was able to revive her with one shock, paving the way for full recovery from what might have otherwise been a fatal event.

- In March 1998, a 49-year-old man who went into cardiac arrest while playing basketball at Little Rock Athletic Club in Arkansas was saved with an AED which had been installed just three months earlier. Weeks after the incident, the man was back playing basketball at the club.

- Several clubs report that members have been successfully defibrillated with AEDs brought in by ambulances and other first-response services.

❖ Has anyone died at a club that might have been saved by an AED?

Yes. News stories as well as surveys of IHRSA clubs indicated that there have been some recent fatal cardiac arrests at fitness centers. Here are a few examples:

- An Army colonel was exercising in a Washington, DC club early one morning in 1998 when he experienced a sudden cardiac arrest. Paramedics were called and bystanders performed CPR. Medics arrived more than 20 minutes after his

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collapse and defibrillated him. They started his heart, but by that time he had suffered irreversible brain damage. He died two weeks later.

- A Miami, Florida club didn't have an AED on site in the fall of 1997 when a 35-year-old man collapsed and died from cardiac arrest after a basketball game.

- EMTs couldn't save the life of the 55-year-old man whose heart stopped while he worked out in a New York City gym in 1996 since it took their ambulance 16 minutes to wind its way through the traffic-clogged streets. Theoretically, his odds of survival were high, since a doctor who was exercising nearby and a club employee who was a trained paramedic began working on him immediately, and the hospital was only 10 blocks away.

  This is not an uncommon scenario. In New York City it takes an average of 11.4 minutes for an ambulance to arrive at the scene of a cardiac arrest and another minute before emergency personnel can administer the needed shock. Coupled with the average two-minute delay in calling 911 after a person collapses, it's no wonder that fewer than 1% of New York City SCA victims survive.

❖ Have any facilities been sued for not having an AED?

Yes, including one health club. In 1991, an experienced racquetball player was playing in a tournament at a New York health club when he collapsed. CPR was performed by a bystander and a doctor who was in the tournament. An ambulance took him to a hospital, but attempts to revive him were unsuccessful. The cause of death was cardiac arrest, a consequence of atherosclerotic heart disease. His estate sued the club for wrongful death, claiming among other things that it failed to have proper procedures, personnel and equipment (*i.e.* an AED) ready to respond to medical emergencies.

The New York Supreme Court of Appeals upheld a lower court's ruling that the participant assumed the risk of playing in the tournament. The court noted that the entire staff of the club was trained in CPR, 911 was called shortly after his collapse, and a rescue squad arrived within five minutes. The court wrote, "Plaintiff's contention that defendants were negligent in failing to have a defibrillator present during the tournament for immediate use lacks merit." *[Note: The incident in this case occurred in 1991, when AEDs were more expensive and less user-friendly than today. In 1998, New York enacted AED legislation that allows entities such as clubs to possess and operate AEDs and releases users from liability for negligence. The ruling in this case should be considered with these facts in mind.]*

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A Philadelphia tennis club was recently sued by a man who went into cardiac arrest at the facility and incurred brain damage because he was in ventricular fibrillation and too much time passed before he was resuscitated. The club's legal counsel persuaded the judge that the club did not have an obligation to have an AED with a person trained to use it on the premises. (The case will likely be appealed.) Helping the case was the fact that in Pennsylvania, at the time of the incident in question, tennis personnel were not permitted to use an AED without having certain certifications from the Department of Health.

Not all facilities fared so well in court. In June 1996, a Florida jury found Busch Gardens negligent for not properly training its employees to provide emergency care – and for failing to have essential medical equipment, including an AED, on the premises. The plaintiff was awarded $500,000 in damages for the death of her teenage daughter.

In another recent case, a federal judge found Lufthansa Airlines negligent for failing to provide timely treatment to a passenger who suffered a cardiac emergency. The damage award in that case was $2.7 million.

❖ Will having an AED affect my liability insurance coverage?

It may. According to Fitness Pak – InterWest Insurance Services, Inc., "the standard commercial liability policy provides protection for the insured club against bodily injury caused by negligence with employees included as additional insureds. Employees are generally not covered for their performance of 'health care professional services;' however the exclusion does not apply to an employee providing first aid." Fitness Pak recognizes the use of an AED as first aid response, so non-physician club employees are covered.

If you are considering obtaining an AED, contact your insurance agent to determine if there are any potential coverage issues specific to your insurance policy.

DISCLAIMER: The information in this paper is intended for the education of IHRSA members and should not be considered legal advice. Individuals needing legal advice should consult an attorney who is competent in this area. Laws on AEDs are constantly changing. Visit www.medicalconsulting.net/docs/PADLaws.html for updates to the attached chart.

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ADDITIONAL RESOURCES

Agilent Technologies
(800) 263-3342
http://www.heartstream.com

American Heart Association
(800) AHA-USA1
http://www.americanheart.org

American Red Cross
(703) 248-4222
http://www.redcross.org

Medtronic Physio-Control Corporation
(800) 442-1142
attn: Doug Hakala, Business Development Manager for Commercial Accounts
http://www.aedhelp.com

Public Access Defibrillation League (PADL)
http://www.padl.org

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