

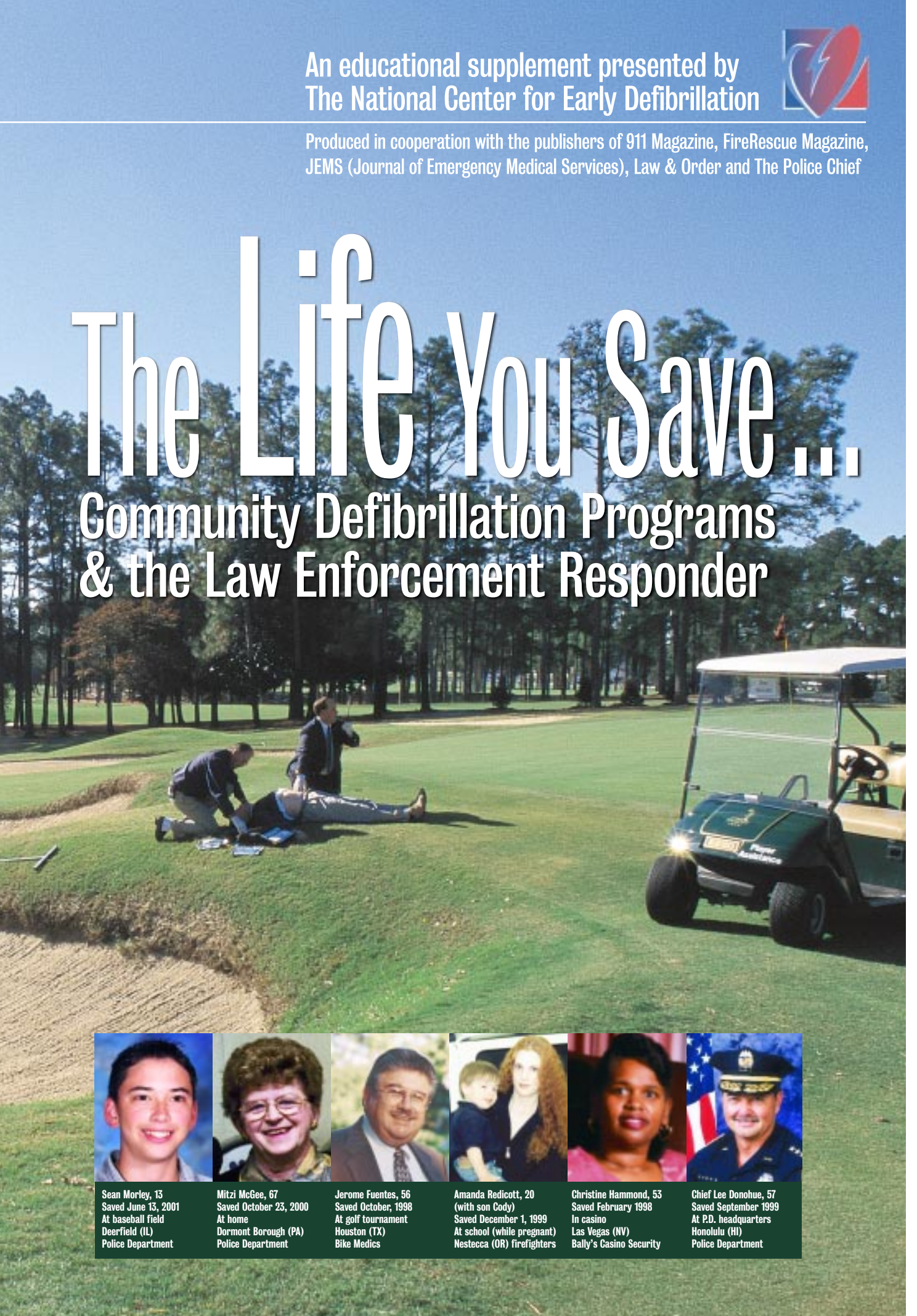
An educational supplement presented by  
The National Center for Early Defibrillation



Produced in cooperation with the publishers of 911 Magazine, FireRescue Magazine, JEMS (Journal of Emergency Medical Services), Law & Order and The Police Chief

# The Life You Save...

## Community Defibrillation Programs & the Law Enforcement Responder



Sean Morley, 13  
Saved June 13, 2001  
At baseball field  
Deerfield (IL)  
Police Department



Mitzi McGee, 67  
Saved October 23, 2000  
At home  
Dormont Borough (PA)  
Police Department



Jerome Fuentes, 56  
Saved October, 1998  
At golf tournament  
Houston (TX)  
Bike Medics



Amanda Redicott, 20  
(with son Cody)  
Saved December 1, 1999  
At school (while pregnant)  
Nestecca (OR) firefighters



Christine Hammond, 53  
Saved February 1998  
In casino  
Las Vegas (NV)  
Bally's Casino Security



Chief Lee Donohue, 57  
Saved September 1999  
At P.D. headquarters  
Honolulu (HI)  
Police Department



# Law Enforcement Agencies Can Be Catalyst

## Transforming community defibrillation programs

**Bystander:** One present at an event who does not participate in it.

**Responder:** One who reacts.

**Catalyst:** A substance that increases the rate of a chemical reaction; a person who precipitates an event

More than 250,000 people die each year in the United States from sudden cardiac arrest (SCA), despite the efforts of the finest cardiologists and coronary care units. More than 650 people die every day of SCA despite the finest emergency departments, physicians and nurses. More than 25 people die every hour from SCA, despite the finest prehospital care systems and personnel. (And these numbers are probably conservative—a new report from the Centers for Disease Control suggests that the incidence of SCA may actually be twice as high, affecting as many as 450,000 each year.)

We know how to significantly reduce these deaths, as symbolized by the Chain of Survival: 1) early notification of 9-1-1; 2) early CPR (which can double the chance of survival if started within the first few minutes); 3) early defibrillation (survival rate decreases about 10% every minute until the shock is delivered); and 4) early advanced care.

But what we need to understand is that in most instances emergency care providers can't get there fast enough to make a difference—by themselves. We often talk about the importance of "bystander CPR." But look at the above definition of bystander: someone who "does not participate." The purpose of this supplement is to challenge all public safety responders to encourage would-be bystanders in their communities to react appropriately—to become citizen responders. We must help everyone in the community understand how the steps taken in the first few minutes after someone's collapse usually determine whether the victim lives or dies. EMS, law enforcement, and other public safety personnel should champion the adoption of systems in the community that ensure immediate care by lay citizens and those public safety personnel most likely to be first on the scene.

*This supplement provides you the tools to become the catalyst in your community and your organization. It offers information you*

can use to convince your organization, local leaders and the general public about the importance of being prepared and willing to respond when SCA strikes. It includes stories of model AED programs and resources for developing successful programs. It was created by the National Center for Early Defibrillation (NCED), a new resource center based at the University of Pittsburgh. NCED was established in January 2000 as an academically-based, manufacturer-neutral clearinghouse of information on the subject of early defibrillation. Our mission statement says it best: To foster optimal immediate care for victims of sudden cardiac arrest by providing leadership, expertise and information related to early defibrillation.

NCED's website ([www.early-defib.org](http://www.early-defib.org)) is a comprehensive repository of all things related to early defibrillation, including state and federal laws, funding suggestions, best practices, and the latest research and news related to SCA management. NCED also provides consultation to assist with local program development.

### Needed: Community Champions

Be the champion of AED programs to government and to private organizations alike. Be the innovator who stimulates citi-



zens to move from being mere bystanders to being effective responders. The life you save may be a neighbor, a father or a grandfather, a brother or a sister, a mother or a grandmother. Or as Mary Newman reports on page 14, it could very well be a colleague. We know the solution—now we must act.

*Vincent N. Mosesso, Jr., M.D., is medical director of NCED. He is assistant professor of emergency medicine at the University of Pittsburgh School of Medicine and medical director of prehospital care for UPMC Health System. He has focused much of his research on prehospital care including the role of police and first responders in the use of AEDs.*

### Forum to Honor Community Champions

NCED in cooperation with the Citizen CPR Foundation is sponsoring a special forum highlighting the work of AED community champions. It will be held Sept. 5, 2002 in Washington D.C. prior to the Emergency Cardiovascular Care Update (ECCU) conference. It will feature selected model programs and NCED will present awards for "Achieving Excellence in AED Response." For info on attending, presenting and on award nominations see [www.early-defib.org](http://www.early-defib.org) or call 1-866-AED-INFO. For info on ECCU Conference (Sept. 5-8, 2002) go to [www.citizencpr.org](http://www.citizencpr.org).

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ABOUT THE COVER: An AED save is demonstrated at Pinehurst Country Club in North Carolina. Photo by Ken Kerr. Pictured are actual survivors of sudden cardiac arrest. Go to [www.early-defib.com](http://www.early-defib.com) to read about their stories.

# Making THE CASE for Early Defibrillation

Answers to your  
frequently asked  
questions

The National Center for Early Defibrillation has answered hundreds of questions about community AED programs, from researchers, the media and especially from public safety champions who are seeking the facts as they explore ways to create a program of their own. Here are some common examples.

## What is sudden cardiac arrest?

Sudden cardiac arrest (SCA) is a condition in which the heart stops abruptly, without warning. This is usually caused by ventricular fibrillation (VF), an abnormality in the heart's electrical system. SCA results in death if not treated immediately.

## How common is sudden cardiac arrest?

SCA is one of the leading causes of death among adults in the U.S. More than 250,000 people suffer SCA each year and new statistics from the Centers for Disease Control indicate this number may be vastly higher, with as many as 450,000 people affected in a year. The median age for SCA victims is 65, but it commonly affects people in their 30s and 40s—even teenagers—who may be otherwise fit and healthy.

## How is sudden cardiac arrest treated?

The ideal treatment for most cases of SCA is immediate delivery of electrical shocks with a defibrillator. If a device is not immediately available, prompt provision of CPR can help keep the heart viable until the defibrillator arrives.

## Why is early defibrillation so important?

On average, only seven percent of SCA victims survive. However, research indicates that 45 percent or more could survive if they were treated quickly enough with defibrillators. If even 20 percent could survive, at least 50,000

lives could be saved each year.

For every minute that elapses after SCA, the chances of survival diminish seven to ten percent. If a victim can be treated with a defibrillator immediately, the chances for survival are close to 90 percent. If the victim is not treated until ten minutes after collapse, the chances for survival approach zero.

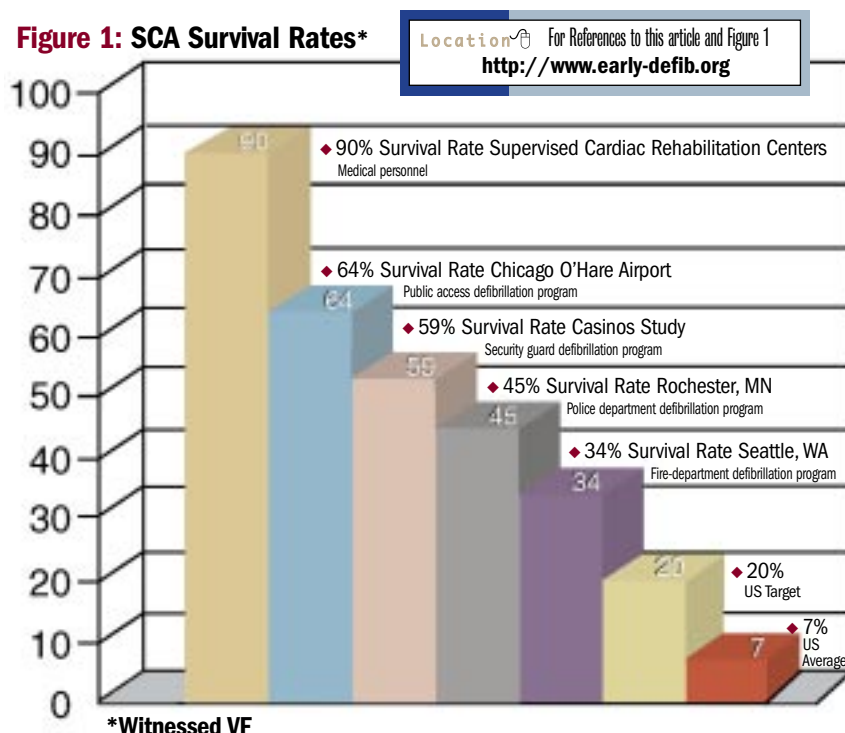
Numerous studies demonstrate that it does not matter who carries the defibrillator as long as it gets to the victim's side

quickly. Figure 1 compares survival rates in several settings using different early defibrillation strategies. These rates are compared with the national average and a moderate target survival rate of 20 percent.

## Do you have to be medically trained?

Not anymore. While manual defibrillators, the kind used in hospitals and by paramedics, require extensive training, automated external defibrillators (AEDs) do not. AEDs are simple, safe and easy to use. If likely responders (e.g., police officers, security guards, hotel staff, athletic trainers, airline attendants) can be identified, a brief CPR-AED training course (about three to four hours) is recommended. However, AEDs are so simple and intuitive they have been used successfully by untrained bystanders when

**Figure 1: SCA Survival Rates\***




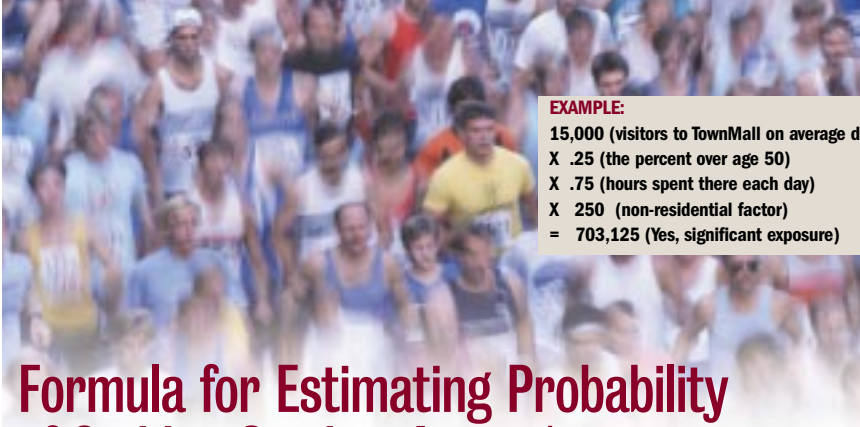
placed in readily accessible locations.

### Who supports AED programs?

The idea of widespread access to defibrillation within organized community response systems is supported by numerous national health organizations and governmental bodies. State and federal laws now provide legal liability protection for individuals who use AEDs in good faith to help save lives. In fact, legal experts now say that the standard of care is such that lawsuits are more likely if AEDs are *not* available when they should be.

### Are AED programs cost-effective?

Research suggests that the cost of a first responder AED program over five years ranges from \$4,407 to \$8,000 per year of life saved. This compares favorably with the cost per year of life saved by other medical interventions. 



#### EXAMPLE:

15,000 (visitors to TownMall on average day)  
X .25 (the percent over age 50)  
X .75 (hours spent there each day)  
X 250 (non-residential factor)  
= 703,125 (Yes, significant exposure)

## Formula for Estimating Probability of Sudden Cardiac Arrest\*

1. Take the number of individuals at a particular location on an average day and multiply this number by the percentage of people age 50 or over.
2. Multiply this number by the average number of hours spent at location each day.
3. Multiply this number by 350 if the location is residential or 250 if the location is non-residential. (*This equals the number of exposure hours. Locations with 1.4 million exposure hours may experience .48 SCA per year.*)
4. If your answer is 600,000 or higher, this location has a high probability of SCA (*likelihood of one case per five years*).

\* Based on calculation used in the Public Access Defibrillation Clinical Trial.

## When and Where Should AEDs be Deployed?

### A Practical Guide for On-Site AED Placement

**E**arly defibrillation is the key to survival from sudden cardiac arrest (SCA). To achieve optimal success rates, AEDs must be placed at locations that are readily accessible by designated trained responders, the general public or both. But with a limited supply of AEDs available to any given program, when and where should they be placed in a community for optimal impact? The following guide to on-site placement was prepared by the NCEM and is consistent with the Guidelines 2000 for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care. Visit [www.early-defib.org](http://www.early-defib.org) for the references.

#### Are some locations at higher risk?

The jury is still out on the ideal placement of AEDs in community settings, one of the fundamental issues being addressed by a multi-site clinical trial called the Public Access to Defibrillation Study, based at the University of Washington. Nevertheless, there is a growing body of research on the location of cardiac arrest. This research supports the fact that SCA occurs most often in the home (57%-75%). (For this reason, there is increasing interest in AED placement in the homes of high-risk individuals.)

When SCA does occur in nonresidential or public places, it often occurs as a singular, isolated event. This makes it difficult to predict types of high-risk locations. and lends support to the concept of focusing on first responder defibrillation. Despite this,

some studies have shown a higher incidence in certain locations, listed below.

- ✓ Airports
- ✓ Community/senior citizen centers
- ✓ Dialysis centers
- ✓ Ferries/train terminals
- ✓ Golf courses
- ✓ Health centers/gyms
- ✓ Cardiology, internal and family medicine practices, and urgent care centers
- ✓ Jails
- ✓ Large industrial sites
- ✓ Large shopping malls
- ✓ Nursing homes
- ✓ Private businesses
- ✓ Sports/events complexes

#### Should AEDs be placed at this site?

If you can answer "yes" to one or more of the questions below, an on-site AED program should be strongly considered.

- ◆ Is it unlikely that the existing EMS system would be able to reliably achieve a "call-to-shock" interval of five minutes or less at this site?
- ◆ Has an SCA incident occurred at this site in the past five years and have the demographics of the population served by this site remained relatively constant?
- ◆ Do 10,000 or more persons regularly gather at this location?
- ◆ Does this site have a large concentration of persons over 50 years old?
- ◆ Is there a high probability of SCA at this site? (See formula above.)

#### If it is determined that an on-site AED program is desirable, where should AEDs be placed?

AEDs should be placed in easily accessible, well-marked locations, ideally near telephones. For example, they can be mounted on the wall in the front lobby (if applicable), by exits, near elevators and near fire extinguishers. In settings with mobile units (e.g., golf carts), placement on the mobile units should be considered.

#### How many AEDs should be placed at this site?

Ideally, AEDs should be placed in such a way that the response interval (time from collapse to arrival of the responder with the AED) is no more than three minutes and the call-to-shock interval is no more than five minutes. Keep in mind that the components of the call-to-shock interval include the time it takes designated responders to be notified, access the device, reach the victim's side, apply the electrodes and deliver the first shock.

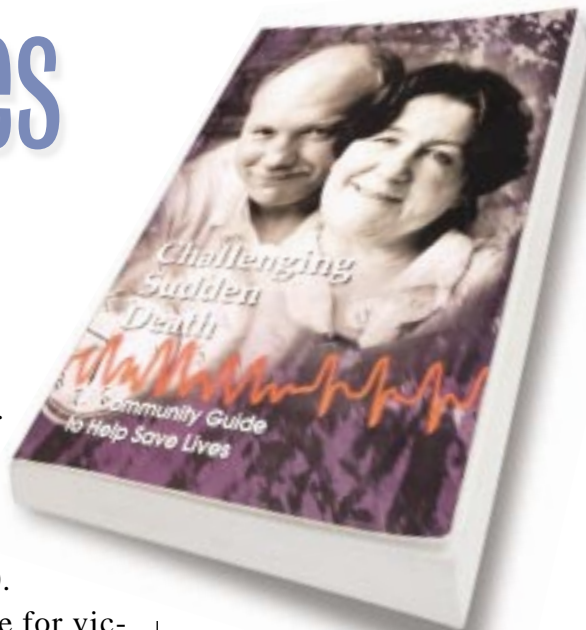
#### Is AED placement enough?

No. Simply placing devices in various locations is not enough. It is important to identify a medical director, coordinate with local EMS, develop an on-site AED response plan, train designated responders and conduct periodic AED response drills.



# Leading the CHARGE to Help Save Lives

## The National Center for Early Defibrillation



**E**mergency physicians Vince N. Mosesso, Jr. and Paul M. Paris established the National Center for Early Defibrillation (NCED), a not-for-profit information resource center based at the University of Pittsburgh, in January 2000. NCED's mission is to foster optimal immediate care for victims of sudden cardiac arrest by providing leadership, expertise and information related to early defibrillation.

NCED advisors include noted experts Lance Becker, MD, Allan Braslow, PhD, Jim Christenson, MD, Mickey Eisenberg, MD, Keith Griffiths, Richard Lazar, Esq., Joan Mellor, Joseph Ornato, MD, and Roger White, MD. Mary Newman serves as executive director.

NCED was initiated with a major grant from The Medtronic Foundation. It has since secured funding from the Asmund S. Laerdal Foundation and five AED companies, including Medtronic Physio-Control, Laerdal Companies Worldwide, Philips Medical Systems, Zoll Medical Corporation and Cardiac Science. NCED also has received funding from several AED training organizations including the American Heart Association, the American Safety & Health Institute and EMP International/Medic First Aid. NCED is neutral with regard to defibrillation products, training and services, working collaboratively with all interested organizations having a common interest in improving survival from sudden cardiac arrest.

NCED's primary resource is its website, [www.early-defib.org](http://www.early-defib.org), which offers com-

### NCED Issues Forum The LEAD Recommendations

NCED regularly hosts forums to address specific topics. In January 2001 it convened a diverse group of public safety and medical experts to review the research and experience related to the use of AEDs by law enforcement personnel. The results are a manuscript on the proceedings and a position statement in press. A practical implementation guide is in development. Included in the Guide will be detailed checklists and practical recommendations to help agencies create effective programs. For more information about these documents go to [www.early-defib.org](http://www.early-defib.org).

prehensive information on sudden cardiac arrest and early defibrillation. Sections address such topics as

news and events, conducting community assessments, program implementation, scientific literature, state and federal AED laws, legal liability issues, funding, medical direction, training, device options and demonstrations, model AED programs and survivor stories.

NCED also provides consultation services by phone or by e-mail and provides AED medical direction services in Western Pennsylvania.

One of NCED's key interests is to identify and address obstacles to defibrillation access. Toward that goal it regularly hosts special issue forums. Topics have included: Police AED Issues Forum (Jan. 2001); AEDs on the Golf Course: A Roundtable Discussion (May 2001); Risk Management, Insurance and AED Issues Forum (Jan. 2002). Each of these forums reflect the latest research and experience by experts in the field and are designed to stimulate dialogue, resolution and community action. Written summaries of each Forum will be available on the NCED website. 

*If you are interested in promoting access to defibrillation in your community, contact the National Center for Early Defibrillation, 200 Lothrop St., Pittsburgh, PA 15213; (toll free) 1-866-AED-INFO; [info@early-defib.org](mailto:info@early-defib.org).*



**National Center for  
Early Defibrillation**

*Community Resources to Help Save Lives*

For a free copy of the "Challenging Sudden Death" guidebook or "Championing Early Defibrillation in Your Community" video visit

**[www.early-defib.org](http://www.early-defib.org)**  
(One per person, while supplies last.)



# The Value of Medical Oversight

Successful community AED programs come in all shapes and sizes but they generally have one thing in common: an active hands-on medical director who serves as the program's champion, planner, teacher and guardian of quality. The physician medical director is an ideal community advocate who can appeal to local decision-makers to enlist support for the AED program, emphasizing its potential life-saving impact. He or she also ensures that medical information provided to team members is accurate and up-to-date and that the response plan yields rapid, effective treatment in the case of actual emergencies. The role of the oversight physician is to:

1. Provide overall medical leadership including coordination with local public safety and EMS.
2. Develop a response plan and guidelines for responder actions.
3. Provide guidance in equipment selection and deployment.
4. Provide guidance in training and re-training of program responders.
5. Review responses to all medical emergencies and provide feedback to the responders.
6. Assume overall responsibility for all patient care activities.

## Finding a Medical Director

The Medical Director often is an emergency physician or someone who has formal training in or previous experience with emergency medical services. However, physicians from other specialties, including family medicine, internal medicine, cardiology and occupational health, also can serve in this role. To find a medical director for an AED program, contact your local EMS system for recommendations. In well-designed programs, serving as a Medical Director requires a limited time commitment, but yields tremendous professional and personal benefits.

## COURT REVIEW

By Richard A. Lazar, Esq.

# Liability No Barrier

## AED Programs Can Reduce Legal Risk

Perceptions and fear of legal liability continue to serve unnecessarily as barriers to large-scale adoption of public access defibrillation (PAD) programs in out-of-hospital settings. I've written elsewhere about general legal standards applicable to early defibrillation. Following are some of the few early defibrillation lawsuits that have arisen in recent years. One clear lesson emerges from a review of these cases: Businesses that adopt early defibrillation programs using automated external defibrillators (AEDs) appear to reduce their risk of legal liability resulting from sudden cardiac death when compared to businesses that do not.

One important point deserves mention at the outset. In the year 2000, nearly 40,000 AEDs were sold, and the market for them appears to double about every 18 months. Notwithstanding the widespread distribution of AEDs, there are no reported instances of lay users or their employers being sued for the use of an AED. Rather, all PAD cases revolve around the failure to have or use an AED. Here are some examples.

### Airlines/Theme Parks/Health Clubs

The airlines faced AED related lawsuits before any other industry. In one case, United Airlines got sued by the widow of a man who suffered sudden cardiac death on a 1995 domestic flight. The widow alleged that United was liable "because it failed to equip its aircraft with certain medical equipment, *including an automatic external defibrillator*, and because her husband would have survived if the in-flight emergency medical kit had contained such equipment." (Our italics.) The case recently settled after United unsuccessfully attempted to have the case dismissed on technical grounds.

In another case, Northwest Airlines got sued by a woman alleging her husband had died from sudden cardiac arrest because the airline failed to have a defibrillator onboard a 1995 flight. The case got dismissed because the woman could not produce an expert who would testify that the airline had a duty to carry a defibrillator at the time of




the incident, an outcome not likely to occur again.

In another early case, a Florida jury found the Busch Gardens theme park company liable for the death of 13-year-old girl who had collapsed and suffered sudden cardiac death after a roller coaster ride. The jury awarded \$500,000 in damages, in large part because the park failed to have an AED.

A recent target of AED litigation has been the health and fitness club industry. In one case, a tennis club got sued for failing to have an AED on-site to treat a victim of sudden cardiac arrest. Interestingly, the court held that Pennsylvania's emergency medical services laws contain "no prohibition or limitation on first-aid efforts performed by lay persons" and sent the case back to a lower court for trial. Most importantly, the court noted that the state's AED Good Samaritan immunity law makes clear "the legislature anticipated the use of AEDs by lay persons and accorded these persons immunity." Good Samaritan immunity will likely play a role if the case goes to trial.

In another recent case, Florida's "The Q Sports Club" got sued for damages resulting from failure to have an AED on-site to treat a victim of sudden cardiac arrest. The 42-year-old engineer plaintiff remains in a coma with virtually no brain function. The case settled for \$2.25 million.

All of these cases support my long-held view that certain types of businesses can reduce their negligence liability exposure by adopting AED programs. The notion held by many companies that buying and deploying AEDs increases risk is not borne out in the courts. Moreover, liability risks impacting businesses that implement AED programs can be further reduced by Good Samaritan immunity laws, insurance and indemnification contracts with manufacturers. To sum up, early defibrillation programs are the right thing to do for many business and may offer lower legal risk than going without. 

Lazar is a Portland, OR attorney and authority on legal, regulatory and public policy issues of public safety and the law. For references and a copy of Lazar's "Understanding AED Legal Issues" visit [www.early-defib.org](http://www.early-defib.org).

# Starting an AED Program

## Ten Steps To Success

**1 Establish an AED task force:** Gather all potential stakeholders up front and form a task force. At a community level, this means the EMS director, fire chief or training officer, police chief or training officer, corporate leaders, elected officials, and representatives of training organizations, civic groups, senior citizens organizations and the media.

**2 Review laws, regulations and advisories:** Federal laws and advisories, state laws and sometimes local ordinances all address AED use. All states now have AED laws. They provide immunity from legal liability, but the details vary. Some states require training by nationally recognized organizations, coordination with EMS, medical direction and record keeping; others do not. (See [www.early-defib.org](http://www.early-defib.org) for your state law.) The federal Cardiac Arrest Survival Act (addressing AED placement in federal building) provides additional immunity. Other federal actions supporting AEDs include an FAA ruling requiring AEDs on airlines, an OSHA advisory recommending AEDs at the workplace and a GAO report regarding cardiac arrest data collection. Every device on the market has been cleared by the Federal Drug Administration (FDA) as safe and effective. The FDA requires a prescription for anyone who purchases an AED.

**3 Conduct a needs assessment:** Do you have a weak link in your Chain of Survival? No matter how strong your early defibrillation program is, its overall effectiveness can be undermined if early access, early CPR or early advanced care are not optimal. (For a complete assessment checklist, go to [early-defib.org](http://early-defib.org).)

**4 Cultivate public awareness:** Develop a public awareness campaign, particularly if funding will be needed to support the program. This involves framing the issues, developing a statement of need, promoting media coverage, lobbying local political leaders and identifying and addressing potential obstacles.

**5 Estimate program costs:** To establish an effective program, plan not only for the cost of the devices but the initial and refresher training, medical direction, program management and quality assurance, maintenance, documentation, media coverage and community-wide CPR training.

**6 Seek funding:** Sometimes the costs of programs are incorporated into agency budgets. Often, outside funding is needed. There are many sources for AED program funding. Organizations and individuals will be more likely to contribute if your task force either forms a non-profit 501(c3) organization or aligns with one, so that contributions are tax deductible.

**7 Establish medical direction:** Leadership here is essential. See story opposite page.

**8 Select device:** There are a variety of AED models on the market with additional products expected soon.

**9 Develop a response plan:** To reach the victim as quickly as possible with optimum care it's essential to develop a response plan that integrates community AED programs with the local EMS system. The plan, reviewed with the medical director, should include written policies and procedures for:

- ✓ Identification/training of the response team
- ✓ Specific roles of team members
- ✓ AED placement
- ✓ Internal/external (9-1-1) notification systems
- ✓ Response system function during operational hours
- ✓ Periodic AED drills
- ✓ Post-event review and feedback.

**10 Conduct training:** AED training takes two to four hours, including CPR instruction. Initial courses cost about \$50/person. Refresher training, available through on-line programs, should be conducted every three to six months. See the AED Training Network at [www.early-defib.org](http://www.early-defib.org) for a trainer near you.

## AED Funding

Funds are readily available through many sources. Sometimes a simple letter or phone call does the job; other times it's helpful to use the Common Grant Application, a single proposal that can be sent to multiple grantmakers. It's wise to seek funding from multiple sources. Be patient, persistent and positive. As you develop your application, keep in mind the questions that grantmakers will be asking:

- ✓ Does the program fit the scope of the foundation?
- ✓ Is there a need in the community?
- ✓ Is the program unique and creative?
- ✓ Is there a realistic budget?
- ✓ Can program concepts be applied elsewhere?
- ✓ Will the program continue at the end of the grant period?
- ✓ Is the organization committed to the program?
- ✓ Is there evidence of collaboration?
- ✓ Will the organization report on progress?
- ✓ Will the program make a difference in the community?

### Sources for AED Program Funding

**1. Local corporations and corporate foundations.** The Medtronic Heart Rescue Program ([www.medtronic.com/foundation](http://www.medtronic.com/foundation)) provides AED training grants and the Prudential Helping Hearts Program ([www.prudential.com/community/hearts](http://www.prudential.com/community/hearts)) awards grants of \$1,000 for AEDs for volunteer EMS squads.

**2. Local civic organizations.** They include: Elks Clubs ([www.elks.org](http://www.elks.org)); Kiwanis Clubs ([www.kiwanis.org](http://www.kiwanis.org)); Lions Clubs ([www.lions.org](http://www.lions.org)); Rotary Clubs ([www.rotary.org](http://www.rotary.org)).

**3. Hospital foundations:** Contact area hospital for funding opportunities and/or search the internet using "hospital AND foundations" as key words.

**4. Public charities.** See the National Directory of Grantmaking Public Charities at [www.foundationcenter.org](http://www.foundationcenter.org).

**5. Federal government grants.** Federal Rural AED Act (Authorized \$25 million for rural AED programs; \$12.5 million appropriated for FY 02; for info, call 301/443-0835.); S 1275 would authorize \$55 million/year for five years for AED programs; HR 630/S727 would provide funding for CPR training in schools and AED training in schools with existing CPR training programs.

**6. State government grants.** Pennsylvania grants available for AED placement in schools; Texas grants available through tobacco settlement funds. Additional bills proposing AED funding have been introduced in IL, NJ, OK, PA, RI and VT. Contact your state EMS agency for opportunities in your state.



# How an AED Saves a Life

## Delivering a Shock to the Heart

The AED's internal computer can tell if the heart is in ventricular fibrillation, a treatable condition in which the heart quivers rapidly but does not pump effectively. If the heart is in a treatable rhythm, a shock is delivered. Current models deliver shocks of 150 to 360 joules of energy and can be monophasic, low-dose biphasic or escalating energy biphasic. In monophasic devices, which generally use higher energy levels, the electrical current passes through the heart once. In biphasic devices, which generally use lower energy levels, the current passes through the heart twice.

Heart resumes  
normal rhythm



Presented by:  
**National Center for  
Early Defibrillation** • [www.early-defib.org](http://www.early-defib.org)

Every day an average of 685 people in the U.S. die from sudden cardiac arrest (SCA), according to current statistics gathered by the American Heart Association. Many of those deaths could be prevented if the heart could be shocked and returned to a normal heartbeat. The key is to quickly get a device that can deliver the shock to the patient—every minute that passes reduces the chance for survival. The AED was developed to expand the potential pool of rescuers beyond medical professionals, to include public safety providers and lay citizens, so that victims are more likely to receive timely treatment.



## A Race Against Time

When someone collapses from sudden cardiac arrest (SCA), damage to the brain and vital organs occurs in as little as four minutes if untreated. SCA occurs when a person's heart unexpectedly stops pumping blood. The heart can stop for a variety of reasons but most commonly it is due to a blockage in one of the blood vessels that supplies the heart itself. Often the heart does not stop completely but goes into ventricular fibrillation, in which the heart quivers rapidly but does not pump blood effectively. A shock from an AED can reverse this condition and prevent permanent damage and death if it is delivered in the first few minutes after collapse.



## The Chain of Survival

To increase the chances of resuscitation, a system of care called the Chain of Survival must be in place, so that the following actions occur as quickly as possible:

- early access (call 911)
- early CPR
- early defibrillation
- early advanced care

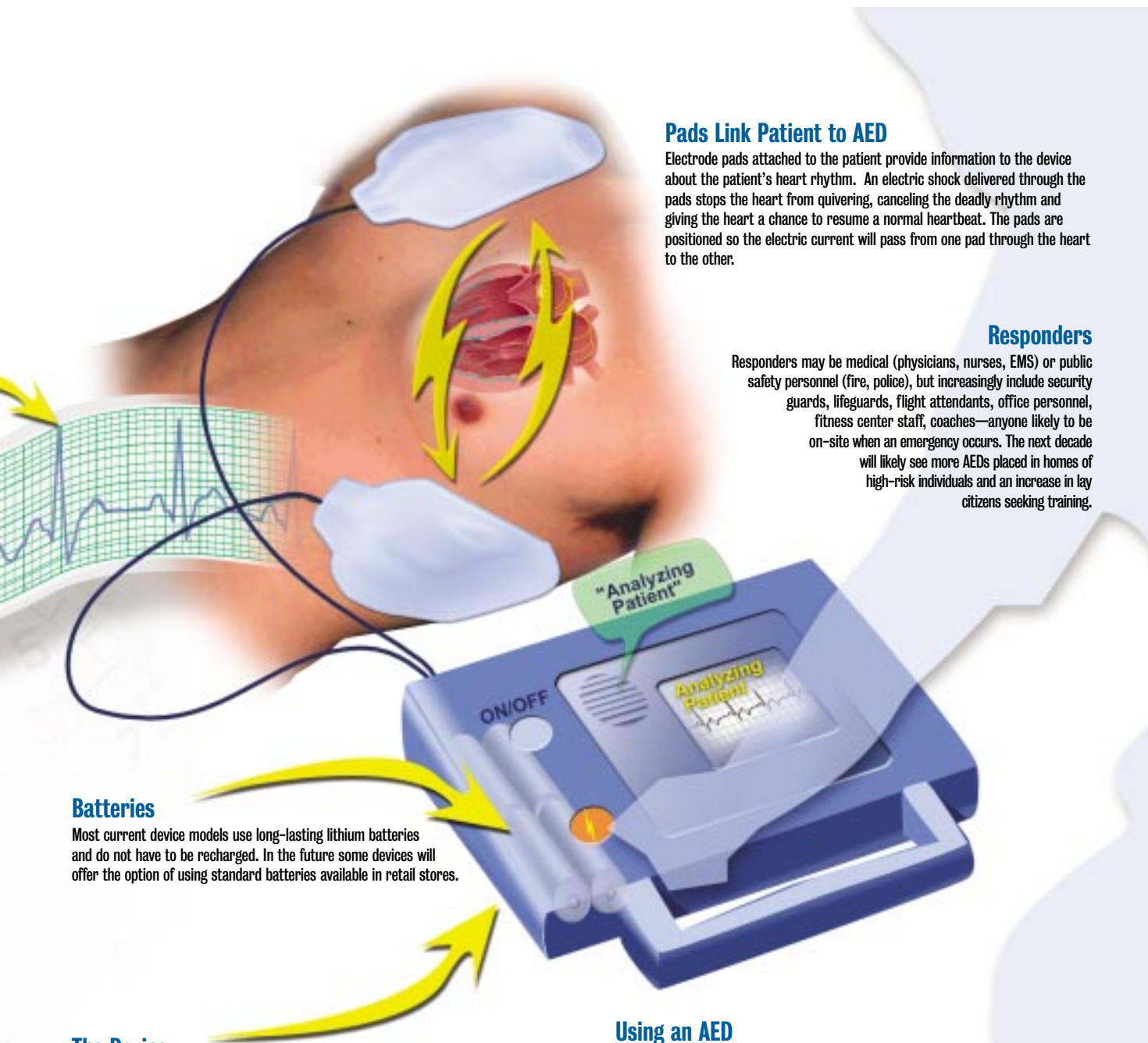
Early defibrillation is the key factor associated with increased survival rates. AEDs were created to strengthen this link in the chain and have been shown to be remarkably effective, with survival rates as high as 45 percent. Currently, the American Heart Association estimates 250,000 people suffer SCA each year in the United States. Only seven percent survive. If communities could achieve a 20 percent survival rate, as many as 50,000 lives could be saved each year.

Early Access

Early CPR







## Pads Link Patient to AED

Electrode pads attached to the patient provide information to the device about the patient's heart rhythm. An electric shock delivered through the pads stops the heart from quivering, canceling the deadly rhythm and giving the heart a chance to resume a normal heartbeat. The pads are positioned so the electric current will pass from one pad through the heart to the other.

## Responders

Responders may be medical (physicians, nurses, EMS) or public safety personnel (fire, police), but increasingly include security guards, lifeguards, flight attendants, office personnel, fitness center staff, coaches—anyone likely to be on-site when an emergency occurs. The next decade will likely see more AEDs placed in homes of high-risk individuals and an increase in lay citizens seeking training.

## Batteries

Most current device models use long-lasting lithium batteries and do not have to be recharged. In the future some devices will offer the option of using standard batteries available in retail stores.

## The Device

A variety of manufacturers produce devices, all of which must receive FDA clearance before being sold. They are designed to be rugged, portable, reliable and simple to use. About the size a laptop computer, a typical device weighs less than seven pounds. All models have voice prompts that provide step-by-step instructions when the device is turned on. Some devices have visual displays designed to assist in coaching the user. Currently, devices cost about \$3,500 for a single unit. Costs are expected to decrease as the use of AEDs becomes more widespread and expands into the consumer market.

## Using an AED

If the victim is not showing signs of life, the responder:

- 1) Attaches the electrode pads to the victim's chest.
- 2) Presses the analyze button or allows the device to analyze automatically.
- 3) Presses the shock button if advised.

Sometimes victims do not need to be shocked but do need CPR. It's important to undergo AED training to understand when to use the AED and when and how to provide CPR.

## Training

AEDs are simple, safe and effective—and easy to use with a minimum of training. Two to four hour training programs are provided by organizations such as the American Heart Association, the American Safety and Health Institute, the American Red Cross, EMP International/Medic First Aid and the National Safety Council. The programs teach students how to recognize the signs of sudden cardiac arrest, the importance of quickly calling 911 to access the emergency medical system, how to do CPR (cardiopulmonary resuscitation), and how to operate the AED and care for the patient until professional help arrives.

Illustration by Wainwright Media.

For more information about this illustration contact the National Center for Early Defibrillation at 1-866-AED-INFO or [info@early-defib.org](mailto:info@early-defib.org).

## Early Defibrillation

## Early Advanced Care

CPR



## Cardiac Science Inc.

**C**ardiac Science, Inc. (Nasdaq NM:DFIB) is a public US company that develops, manufactures and markets unique life-saving bedside cardiac monitor-defibrillator devices, AEDs, and proprietary disposable defibrillator electrodes that monitor and automatically treat patients who suffer life-threatening heart rhythms in hospitals and public areas. The merger of Cardiac Science and Survivalink Corporation, with its biphasic AEDs, will create innovations across the combined product lines, beginning with the new Powerheart® AED. The Powerheart AED is the first product to come from the merger of Cardiac Science and Survivalink, combining industry-leading AED expertise with advanced cardiac software algorithms.

It is estimated that Survivalink's AEDs have saved more than 3,700 lives. They are installed in police and fire vehicles, companies, buildings, public areas, and airports throughout the world.

The Survivalink® AED

incorporates an escalating, variable energy biphasic waveform, demonstrating 100 percent effectiveness in clinical trials. It is the only AED with patented, one-button operation and pre-connected, interchangeable electrodes, making it the easiest AED to use. Its patented RescueReady® feature also makes the Survivalink AED the most reliable and safest AED on the market today. The RescueReady feature ensures that the battery, circuitry and pre-connected electrodes are in working condition and ready for action. It is the only AED with this capability, ensuring first-time, every-time reliability and confidence when treating someone in cardiac arrest.

The new Powerheart AED is the only AED designed for people exhibiting symptoms of sudden cardiac arrest. It



**The Survivalink AED and the new Powerheart AED**

provides continuous monitoring of patients both before and after cardiac arrest, making earlier intervention possible. The Powerheart AED and its proprietary and patented RHYTHMx™ analysis algorithm offers advanced features never before available. This algorithm is designed to follow the American Heart Association's guidelines for use of an AED on a victim of cardiac arrest. Its advanced features include medical director programmable detection rates, synchronized cardioversion, and non-committed shock, making RHYTHMx effective, safe and the most robust algorithm on the market today.

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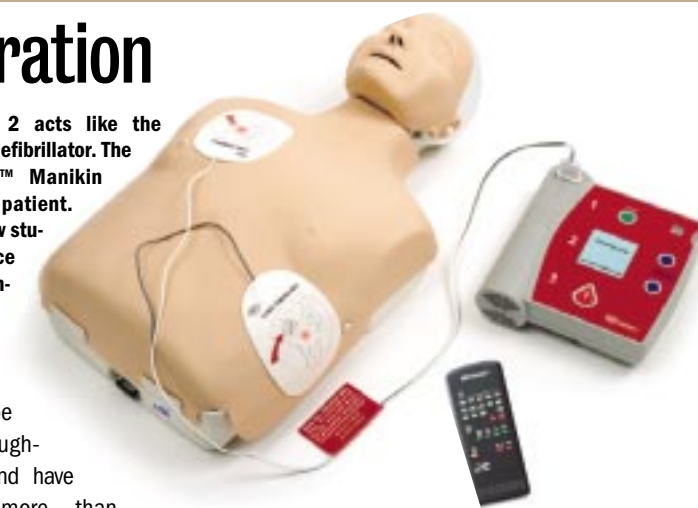
 **Web site:**  
[www.cardiacscience.com](http://www.cardiacscience.com)

## Laerdal Medical Corporation



**The AED Trainer 2 acts like the Heartstart® FR2 defibrillator. The AED Little Anne™ Manikin acts like the patient. Together they allow students to practice AED scenarios without compromise.**

ing manikins have come to be recognized throughout the world and have helped train more than



200,000,000 potential responders in the lifesaving skills of CPR.

As the growth in Public Access Defibrillation creates an increasing need for innovative and effective approaches to train and re-train the many new CPR-D responders, Laerdal continues its legacy as an innovative and high-quality manu-

facturer with the AED Little Anne™ Training System. The Laerdal AED Trainer 2 with remote control, combined with the AED Little Anne manikin, is the perfect link to realistic, cost-effective CPR-AED training. Now first responders, organizations and communities can learn defibrillation in a realistic, scenario-based training environment that allows the student to practice automated external defibrillation without compromise. In this way, Laerdal's commitment to Helping Save Lives and the Chain of Survival grows even stronger.

**R**ecognized as a global leader in the emergency care community, Laerdal Medical has been a leading manufacturer and provider of basic and advanced life support training solutions and emergency medical equipment for more than 40 years. Over that time, Laerdal's Resusci® Anne and her family of train-

**David Johnson**  
VP, Medical Education  
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 **Web site:**  
[www.Laerdal.com](http://www.Laerdal.com)  
[busdev@Laerdal.com](mailto:busdev@Laerdal.com)



# Medical Research Laboratories, Inc.

**B**uffalo Grove, Illinois based MRL, Inc. (Medical Research Laboratories, Inc.) designs, manufactures and markets sophisticated stand-alone defibrillators, multi-parameter defibrillator / monitors and automated external defibrillators (AED) for the treatment of cardiopulmonary emergency events and SCA (sudden cardiac arrest), a leading cause of death worldwide. Since MRL's first defibrillator was released to market more than 30 years ago, MRL defibrillators have been used to save countless lives worldwide. Advanced defibrillation technologies and intuitive designs help make MRL "the first choice in resuscitation solutions." All the features of the LifeQuest AED are essential for emergency resuscitation and in "Leading The Quest For Survival."

When a life is on the line many turn to the MRL LifeQuest™ AED to deliver lifesaving performance -

simply and dependably. The advanced MRL LifeQuest AED takes the guesswork and worry out of the event by providing very simple operation. Simplicity combined with concise voice prompts and a large, easy-to-view display are there to guide you throughout the event.

MRL LifeQuest Automated External Defibrillator features:

- 1) Simple operation for quick response and "no-hesitation" resuscitation;
- 2) Fast charge for immediate response;
- 3) Compact, Lightweight, Design - only 4.5 pounds. LifeQuest is one of the lightest AEDs available;
- 4) Automated self-checks and battery status indicator;
- 5) Direct connect to most commercial printers without the need for dedicated software;
- 6) Field Upgradeable - helping to reduce cost of



**The LifeQuest™ AED**

- ownership;
- 7) Seamless Data Transfer to the MRL PIC, MRL PIC Rescuer or SmartView Data Management System;
- 8) Optional Monitoring and Manual Defibrillation capabilities for advanced users

The LifeQuest AED is part of a complete "MRL AED Solution" which provides all the critical components needed for successful implementation of a PAD (public access defibrillation) program. From medical direction, legal indemnification, site selection, AED maintenance, training from a nationally accredited organization, integration with emergency medical services and the like, the program is designed to take the worry out of implementing the program. With MRL, "You Can Save A Life.™"

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 **Web site:**  
[www.aedsolutions.com](http://www.aedsolutions.com)  
[www.mrlinc.com](http://www.mrlinc.com)

# Medtronic Physio-Control

**N**early 50 years ago Physio-Control pioneered the defibrillation technology that offers hope for the hundreds of thousands of people who experience sudden cardiac arrest each year. Hospitals, emergency medical services, targeted responders, and other trained providers rely on our LIFEPAK® products every day, in the most critical cardiac emergencies and the toughest situations.

Physio-Control joined forces with Medtronic, Inc. in 1998. Medtronic, the world leader in medical technology, provides lifelong solutions for chronic conditions such as heart disease, neurological disorders and vascular illness. One major product, the implantable defibrillator, helps protect patients from future cardiac events, enabling them to return to active and rewarding lives.

Many of our customers want a total, scalable and

customizable solution, not just a device, so we offer a full range of services and complementary products that uphold a tireless commitment to quality, innovation, reliability and service. Because we share one passion with our customers—saving more lives.

The LIFEPAK® 500 automated external defibrillator is designed for use by first responders to cardiac emergencies. Intuitive operation makes it the ideal product for infrequent users. Offering the latest ADAPTIV™ biphasic technology, the 500 provides voice and visual prompts that guide users through operation. Preconnected QUIK-COMBO™ disposable defibrillation electrodes help save valuable time on-scene, and are compatible with the LIFEPAK products used by many U.S. emergency



**LIFEPAK® 500 AED**

medical services. At only seven pounds, the LIFEPAK 500 AED is extremely portable. Automatic self-testing and an always-visible readiness display help ensure the device is ready to go.

**Bob Stanbary, Heart Safe  
Communities  
Bill Pratt, Law Enforcement  
Medtronic Physio-Control  
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Redmond, WA  
98073-9706 USA  
Phone: 800/442-1142  
or 425/867-4000  
Fax: 425/867-4121**

 **Web site:**  
[www.physiocontrol.com](http://www.physiocontrol.com)

# Philips Medical Systems

**P**hilips Medical Systems delivers a robust portfolio of medical systems for faster and more accurate diagnosis and treatment, including best-in-class technologies in general imaging and cardiac ultrasound, X-ray, CT, MR, nuclear medicine, catheterization labs, patient monitoring and resuscitation, as well as information technology solutions that address your needs in a wide variety of clinical domains.

Philips Medical Systems is a customer-centric organization comprised of 17,600 people, 12 manufacturing sites, sales and service operations in 63 countries, and representatives serving more than 100 countries, to meet the product, service, educational and financial needs of its customers world-wide.

Philips resuscitation products, from our multi-function manual defibrillators to our easy-to-use AEDs, are designed and manufactured to enable caregivers to administer the best available treatment easily and effectively.

**Grace Day, Director of Community Programs**  
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**Philips Medical Systems**  
**3000 Minuteman Road**  
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 **Web site:**  
[www.medical.philips.com/cms](http://www.medical.philips.com/cms)

As breakthroughs in defibrillator technology, along with heightened public awareness of the prevalence of sudden cardiac arrest, broaden the demand for defibrillators by non-traditional users such as citizen responders, we respond with expert service and support. For example, Philips facilitates the efforts of those individuals and organizations planning and implementing Public Access Defibrillation (PAD) and Community Early Defibrillation programs so that emergency cardiac care is readily available in the places where we work, live and play. Our clinical specialists and consultants have helped launch several community programs, placing AEDs in office buildings, shopping malls, sports and recreation facilities, transportation terminals, and in the vehicles of public safety providers.

Running on a mainte-

## Heartstream FR2 automated external defibrillator



nance-free lithium manganese battery, Heartstream FR2 is designed for long life and high-volume use. This lightweight, rugged and easy-to-use AED enables police officers, firefighters, EMS providers, and trained citizen responders to quickly begin treatment upon reaching an SCA victim. On-screen text prompts and easy to follow voice prompts guide caregivers through Heartstream FR2's intuitive 1-2-3 operation. The FR2 features Philips' patented SMART™ Biphasic waveform and the SMART Analysis™ system, which determines if a shock is required and protects against inappropriate shock delivery. The FR2 is also the first AED to be cleared for use on adults and children of any age. The FR2's pediatric defibrillation pads reduce the AED's delivered shock from 150 to 50 joules, and can be safely applied to infants and children.

# Zoll Medical Corporation

**Z**OLL Medical manufactures automated and manual external defibrillators for all segments of the resuscitation market. Founded in 1982 by the late Paul M. Zoll MD, Professor of Medicine at Harvard University and "father of modern cardiac electrophysiology," the organization has rapidly grown to become one of the leading companies in the area of defibrillation and external cardiac pacing. Its products are used by health care professionals and other emergency care responders throughout the world. Current sales exceed \$100 million dollars and ZOLL employs more than 400 individuals in research, development, production, sales, marketing and support. It was recently named one of America's 100 Fastest Growing Companies by Forbes Magazine.

ZOLL has designed and manufactured automated external defibrillators since 1995 focusing on combined manual and automated

devices for physicians, nurses, paramedics and EMTs. In 1999 the company completed development and began sales of a unique new low energy rectilinear biphasic waveform in its devices. This new waveform is the only biphasic waveform with FDA approved superiority claims over

conventional monophasic waveforms. It has demonstrated superior performance in high impedance patients in ventricular fibrillation, defibrillating some patients at low energies that monophasic devices were unable to convert with outputs as high as 360 joules. Recently the company



## The new Zoll AED Plus (pending FDA clearance)

announced development of a new automated external defibrillator, AED Plus™, specifically designed for the infrequent user, first responder and public access programs. The device provides a graphical interface incorporating all aspects of a rescue, a simplified one piece electrode, feedback on CPR rate and compression depth, and operates from consumer lithium batteries. FDA 510K clearance is expected in early 2002.

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# Manhunt! Improve AED Response

## Helping Police Enrich “The Cardiac Arrest Quotient”

**D**ispatch is an often overlooked but critically important component of a successful AED program. Some law enforcement AED programs find themselves responding to a high number calls for an AED that don't actually require a device. To effectively add early defibrillation to its mission, law enforcement management must be able to reliably commit resources. The solution to this challenge? Learn from the experience of others by collecting and analyzing dispatch call data.

The National Academies of Emergency Dispatch (NAED) was asked to help a prominent metropolitan dispatch center resolve a major discrepancy between their “dispatched as” vs. “scene-findings.” The agency's governing council purchased 1,400 AEDs and deployed them on police squad cars in their jurisdiction. Cardiologists and EMS physicians subjectively selected 33 of the 250 dispatch protocol determinant codes thought most likely to detect an at-scene finding of a cardiac arrest.\* AED-equipped police squads were then assigned a co-response based on these specific codes. To their great frustration,

of sudden cardiac arrest will likely survive. But the 911 call to dispatch is not just important for quickly setting the call into motion. The initial choices made by emergency medical dispatchers (EMDs) as to which patients should be dispatched an AED dramatically, if not profoundly, affect the actual chance of finding a cardiac arrest at-scene. More importantly, such choices determine which arrests, when found, have the chance to be effectively reversed. Arrests are not purely predicted at dispatch by the EMDs identification of a not conscious and not breathing patient. Many complaints initially presented at dispatch masquerade as other types of problems and are found later, at-scene, to be arrests. Not including dispatch into the equation creates the incorrect assumption that all arrests are “born equal,” easily found and that all first responders are equally able to provide defibrillation.

### The Cardiac Arrest Quotient

Communication centers using the NAED's Unified EMD Protocol codes collect comparable data, allowing the Academy to review a vast fund of information. To answer the challenge presented by this department, we studied outcome data from a variety of similarly sized cities. In doing so, we created the Cardiac Arrest Quotient (CAQ). The CAQ is simply the number of arrests found at scene within a particular dispatch determinant code divided by the total number of responses generated by that code.

Figure 1 shows the differences in cardiac arrest “richness” within apparently similar chief complaint determinant levels. It's important to note that the problem type “Falls,” while not usually associated with cardiac arrests, contains a significantly rich CAQ. One special group of determinant codes represents what we refer to as “ethical” responses that are not specifically rich in cardiac arrests but virtually demand an AED response.

To help the agency mentioned earlier, the Academy used the CAQ to help select



at-scene arrests. We modified the initial 33 subjectively selected codes by dropping many weak CAQ codes and adding several new, richer ones. The result: predicted at-scene arrest findings went from under 10% to nearly 27%. This agency can now control its AED response destiny. Any program can do this, if it has

reliable CAQ data, whether from highly protocol-compliant systems or its own compliance-based data. It can then modify its code selections to pick up more arrests for the same number of AED responses made, or keep the number of arrests constant while reducing the number of responses necessary to capture them.

The next step in this process is fine tuning the codes to determine the Cardiac Arrest Resuscitation Survivability (CARS) factor. Essentially, what CARS is to the quality of arrests, CAQ is to their quantity (to get more information on CARS and sub-codes visit [www.early-defib.org](http://www.early-defib.org)).

### Conclusion

The number one employer of EMDs in the United States is not ambulance services, hospitals, or fire departments, but law enforcement-controlled communications centers. It is critical they make intelligent choices in selecting and correctly using standardized dispatch protocol as well as establishing a sound dispatch quality assurance program.

The EMS community and law enforcement-based AED programs can improve their effectiveness by taking greater advantage of the data available from their dispatch centers. Use of the CAQ concept using comparable dispatch data from other systems should be an essential part of any selective defibrillator deployment program. ■■■

*Jeff Clawson, MD, is considered the father of modern emergency medical dispatch and is chief architect of the Medical Priority Dispatch System. He is the founder of the non-profit National Academies of Emergency Dispatch, the largest certifying and standard setting dispatch organization in the world, with 33,000 members in 15 countries.*

**Figure 1: Cardiac Arrest Quotient “Richness” Comparisons**

SUB-CODE	PROBLEM	ARRESTS	RUNS	CAQ
6-D-1	Severe Respiratory Distress	78	1,433	5.44%
6-D-2	Breathing problems/Not alert	53	1,348	8.09%
6-D-3	Sweaty or changing color	59	7,521	0.78%
10-D-1	Severe Respiratory Distress	2	336	0.60%
10-D-2	Chest Pain/Not alert	53	441	12.02%
10-D-3	Sweaty or changing color	56	6,517	0.86%

initial data showed that less than 10% of the responses resulted in at-scene finding of cardiac arrest. How could dispatch better identify those calls that might benefit from the rapid response of an AED-equipped officer?

The Chain of Survival cites early access as the first link in the chain of events that determines whether a patient

\*The program used version 10.3 of the Medical Priority Dispatch System™ as the primary tool for response decisions and is an NAED Accredited Center.

# The Life You Save ...



Law enforcement attitudes change as saves hit close to home

By Mary Newman

## May Be One of Your Own

Law enforcement agencies usually get involved in AED programs with the goal of saving the lives of the citizens they serve in their communities. Ironically, some have found that their first saves are actually fellow officers. Trooper Isaac Lanham, Chief Lee Donohue and Officer Mark Vollmar know this experience first hand. Here are their stories.

### PENNSYLVANIA TROOPER Issac "Zeke" Lanham, 31

Lanham was just an hour into his morning patrol when he began to feel ill. When he returned to the police barracks in Greensburg fellow troopers knew something was wrong and urged Lanham to go the emergency department. Just as he was leaving to go, he collapsed by the back door. Retrieving an AED from the nearby communications room fellow troopers Thomas O'Connor, Rusty Hays, Robert Stauffer and Christopher Karne



provided CPR and operated the AED.

"The shocks brought him back to life," said Lieutenant Dale Blasko. A paramedic ambulance arrived six minutes later and the unit provided advanced life support.

Luckily for Lanham, the Pennsylvania State Police had begun to roll out its AED program one year earlier and had placed 150 devices in state police facilities. "The role of the law enforcement officer is ever changing," said State Police Major Robert Einsel. "The Pennsylvania State Police wants to remain a leader in providing protection to the public." Ironically, Greensburg received its device one week before Lanham's collapse and one of the rescuers had just been trained.

"It could have been such a tragic story," said Blasko, "but it turned out to have a happy ending. Zeke is back to full duty and he and his wife are expecting their first child. If we did not have that AED, we feel certain he would have perished."

### HONOLULU POLICE CHIEF Lee Donohue, 57

Chief Donohue was enthusiastic about AEDs from the very first time he learned about placing the devices in squad cars. He appealed to the city council, which appropriated enough funds to purchase 100 AEDs.

Finding police officers equally enthusiastic was not as easy, especially in a department that didn't routinely respond to medical emergencies. Donohue anticipated opposition from some officers who believed that medical care was "not their job," a view supported by the local police union. So he decided to make the program voluntary and asked Assistant Chief Boisse

Correa to lead the initiative.

"I didn't even know what an AED was at that point," said Correa.

He was assisted by Sergeant Mark Ward, who had suffered a heart attack





and knew the value of the program. Only a handful of volunteers were trained when the program had its debut in 1999.

Donohue also introduced a “Fit for Life” competition within the department around the time AEDs were introduced. During the first annual competition, Donohue, a martial arts expert, was competing on arrest tactics that required hand-to-hand combat. His opponent was a young, physically fit officer who provided a strenuous challenge. Donohue finished the match but collapsed immediately afterward as his heart went into sudden cardiac arrest. As luck would have it, both Correa and Detective Mark Boyce, one of the officers who had been trained to use the AED, were at the competition. They ran for the AED in Correa’s car as another officer began CPR.

“At first there was a lot of confusion and chaos,” said Boyce. “Then it seemed everyone was frozen. You could hear a pin drop.”

Boyce attached the AED to Donohue’s bare chest and Correa pressed the shock button as instructed by the device. After two shocks, Donohue had a pulse. Boyce was amazed and found himself thinking, “This stuff really works! It works!” Donohue was transported to the hospital and woke up the next day. He received an implantable cardioverter defibrillator and was back on the job in

## “This stuff really works! It works!”

build a certain esprit de corps among the officers and in the community. AEDs are here to stay. I just know they are going to save more officers’ lives.”

### INDIANA OFFICER Mark Vollmar, 41

On January 31, 1998, Vollmar, an off-duty police officer from the Muncie (Indiana) Police Department, drove into town with his two young sons. Suddenly, he slumped over in cardiac arrest, landing on the younger boy. The older boy tried to get his father’s foot off the pedal, with no luck. Thinking quickly, he turned off the ignition and steered the car safely to the front yard of a church.

Several observers called 9-1-1. A motorist flagged down a car driven by Deputy Daniel Hahn of the Delaware County Sheriff Department, who was on his way to work and had just been notified by the dispatcher about the emergency a few blocks away. As this was happening, two nurses came upon the churchyard scene and saw Mark being lifted from the car to the ground. As they began CPR, a family friend happened on the

thought it was a bad rumor,” Hahn said later. “EMS doesn’t do our work—I didn’t think we should be doing theirs. I had a really bad attitude. I just didn’t think this should be part of my job description.”

Today, there is no stronger advocate of police AED programs than Hahn, who has spoken to numerous law enforcement and EMS groups to champion the idea. “I want to do anything I can to help save lives,” he said.



Mark Vollmar, left, with Deputy Daniel Hahn.

## “Our advice to other police departments is to get involved and do it now.”

a matter of weeks. Donohue has since resumed running and teaching karate.

Donohue’s fellow officers also are thankful, since they consider themselves more like family than colleagues. So far about 400 of the department’s 2,000 officers have been trained and equipped with AEDs and five other lives have been saved, including that of a retired police officer.

The department aims to eventually equip every vehicle, according to Correa. “All the officers want one,” he said. “Our advice to other police departments is to get involved and do it now,” he continued. “It’s one of the very few ways we have to save lives. And it helps

scene and who was able to shelter the boys from the drama.

Split seconds later, Hahn arrived with his new AED and recalling his training followed the voice prompts to deliver the first shock. After two more shocks, Mark’s pulse was restored. It was only then that Hahn realized the person he was treating was a fellow officer and friend. A paramedic ambulance arrived and responders provided advanced life support. One week later, he was discharged from the hospital. He returned to work within a few weeks.

Before this event, Hahn had been a vocal opponent of the program. “When I first heard about these defibrillators, I

### Truly a Blessing

When I lived and worked in Indiana I had the opportunity to meet Mark Vollmar, his family and his rescuers. It was truly a blessing for me to witness first hand the benefits of this remarkable technology and the lives that were changed forever because of it. I was there when the mayor of Muncie gave the keys to the city to Daniel Hahn and Vollmar’s young sons for the roles they played in saving his life. I will never forget the moment during roll call when the chief called his name. “Here,” Vollmar replied. A hundred “tough” cops rose to their feet and started clapping and cheering with tears in their eyes.

How many other police departments will experience similar benefits if they pursue AED programs? History tells us the lives they save could surely include some of their own.

*Mary Newman is the Executive Director of the National Center for Early Defibrillation and is nationally recognized as an advocate, author and educator in public safety for more than 20 years. She created the “Chain of Survival” metaphor which is used worldwide to graphically show the importance of a quick and comprehensive response to victims of sudden cardiac arrest.*

# The Life You Save ...

Supported by educational grants from the following companies



CARDIAC SCIENCE

**SURVIVALINK AED**  
Automated External Defibrillator



**Medtronic**  
 PHYSIO CONTROL



**Laerdal**  
helping save lives



**PHILIPS**  
*Let's make things better.*

**MRI**  
The First Choice in Resuscitation Solutions

**ZOLL**



**Police LT. Mark Vollmar, 45**  
 Saved January 31, 1998  
 On public street  
 Delaware County (IN)  
 Sheriff Department



**Trooper John Lanham, 31**  
 Saved July 3, 2001  
 At police barracks  
 Greensburg (PA)  
 Pennsylvania State Police



**Abdulwahab Mohamad, 48**  
 Saved July 17, 2000  
 At fitness center  
 Bartlesville (OK)  
 Phillips Petroleum AED Team



**Rollin McClanahan, 76**  
 Saved July 8, 1998  
 In restaurant  
 Shelby County (IN)  
 EMS



**Cynthia Morris, 36**  
 Saved January 4, 1999  
 At local home store  
 Austin (TX)  
 EMS



**Donald McQuinn, 71**  
 Saved Labor Day, 1998  
 At swimming pool  
 Maui (HI)  
 Sheriff Department



**Dolores Lamana, 70**  
 Saved April 5, 1993  
 At home  
 Baldwin Borough (PA)  
 Police Department



**Gary Terry, 54**  
 Saved March 19, 2001  
 At Austin (TX) Bergstrom  
 International Airport  
 Airport security



**John Delorso, 67**  
 Saved May 28, 2001  
 On public street  
 Chartiers Township (PA)  
 Police department



**Henry Sibbing, 57**  
 Saved January 24, 2001  
 In student union building  
 University of Wisconsin  
 (Whitewater) Campus Police



**Barbara Tibbitts, 71**  
 Saved November 22, 1999  
 In parking lot  
 Sun City West (AZ)  
 EMS



**Terry Artman, 54**  
 Saved November 6, 2001  
 At school  
 Glenbard High School (IL)  
 AED response team



**Wayne Fleetwood, 56**  
 Saved November 1, 2000  
 At home  
 Batholomew County (IN)  
 Sheriff Department



**James Seder, MD, 51**  
 Saved January 14, 1994  
 At health club  
 Westborough (MA)  
 Fire Department



**Joe Meyer, 72**  
 Saved February 26, 2001  
 In municipal building  
 Adams Township (PA)  
 Police Department



**Julie Lycksell, 52**  
 Saved February 6, 1998  
 At restaurant  
 Suffolk County (NY)  
 Police Department



**Sebastian Hiltzig, 29**  
 Saved October 20, 1996  
 At health club  
 Los Angeles (CA)  
 F.D. Rescue (Venice)



**H. Woodruff Turner, 62**  
 Saved June 1999  
 While fighting house fire  
 (volunteer firefighter)  
 Foxwall (PA) EMS