First On The Scene

A Toolkit For EMS & First Responder Agencies

For An Electronic Version Of This Toolkit
Visit Us At www.suddencardiacarrest.org
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Introduction

By the end of the year, the number of deaths due to sudden cardiac arrest (SCA) will reach approximately 300,000. Based on this number, one might expect that SCA is some newly identified condition that researchers are just now beginning to understand. As a first responder, you know that the opposite is true.

For the past three decades the national survival rate of sudden cardiac arrest (SCA) has remained a low five percent. A number of efforts taken place in recent years to increase public education of SCA have been met with mixed results. Several state laws are requiring AEDs to be located in public areas, yet federal legislation that would expand access to these lifesaving devices continues to be defeated. CPR guidelines have been revised to focus on chest compressions and thereby encourage more bystander assistance. Still, most people who witness a heart attack or cardiac arrest do not know how to perform CPR. What we are left with is a country unfamiliar with SCA until it’s too late: when media reports inform us of a young student dying unexpectedly at school.

The Sudden Cardiac Arrest Association (SCAA) - the nation’s leading nonprofit advocacy organization exclusively dedicated to SCA – is working to establish a national approach to SCA, where prevention, response and treatment are universal and each resident has the same fighting chance of surviving. Our 5,000+ members are SCA survivors, patient advocates, medical professionals, emergency responders and educational administrators all dedicated to increasing awareness of SCA and expanding access to AEDs and other life-saving treatments and therapies within their local communities.

This is a worthy challenge that we cannot go alone. First responders play a vital role in the chain of survival, and it is our hope that you will join our efforts to increase awareness of the public health crisis of SCA. I encourage you to read through this booklet and see how you can make positive change within your local community, and I hope the resources and materials enclosed will serve as powerful tools in your public outreach efforts. As emergency responders, you serve on the front lines of critical care, often making first contact with patients in a time of most need, and we welcome and value your participation.

Government health officials tout the fact that more people are surviving cancer as a result of increased awareness, early detection and other preventive measures. With your help, the same could be said of SCA.

We look forward to working with you on this mutually beneficial goal and in doing so, increase public understanding of the invaluable role of first responders.

Yours in prevention,

Lisa A. Levine, CAE
President,
SCAA

www.suddencardiacarrest.org
This toolkit is aimed specifically at EMS and First Responder agencies and providers because SCAA believes you are in one of the most advantageous positions to take actions that will lead to improved survival from out of hospital cardiac arrest. EMS and First Responders sit at the crossroads between health care and the community. You are respected and trusted in your community. You have the medical understanding and expertise to know what needs to be done and the positioning and capabilities to accomplish much.

Many resuscitation experts believe that the most effective way to improve the currently dismal survival of about five percent is to increase the frequency of bystander CPR and AED use—that is, immediate bystander care is crucial to survival. This toolkit will provide you with ideas, methods and resources to help you reach out to your community and improve the rate of immediate bystander action.

Prompt delivery of high-quality care by public safety is critical as well, from rapid first responder defibrillation to good, uninterrupted chest compressions to state-of-the-art post-resuscitation care including initiation of cooling. This toolkit walks you through each link in the Chain of Survival providing you with practical efforts that your agency can take to assure the delivery of the best possible care.

Finally, SCAA recognizes that EMS personnel and First Responders toil daily in challenging and difficult situations and that EMS and FR agencies are often constrained by limited financial and personnel resources. We applaud your efforts and appreciate your challenges, which are often under-appreciated and unrecognized. This toolkit also includes information about the SCAA Hero and Survivor recognition program, which includes uniform-standard ribbons for public safety personnel and pins for lay rescuers and survivors. We hope this will provide an avenue for increased public recognition of the efforts of EMS providers, First Responders and lay bystanders who take action while also increasing awareness about SCA in the community.

Vincent N Mosesso, Jr, MD
SCAA Medical Director
Professor of Emergency Medicine
University of Pittsburgh School of Medicine
Medical Director, UPMC Prehospital Care

www.suddencardiacarrest.org
FACT SHEET: SUDDEN CARDIAC ARREST

1 What is sudden cardiac arrest?

Sudden cardiac arrest (SCA) is a leading cause of death in the U.S., killing more than 325,000 people each year. That's more than the total death rate for breast cancer, lung cancer, and HIV/AIDS combined. During SCA, heart function ceases abruptly and without warning. When this occurs, the heart is no longer able to pump blood to the rest of the body, and in over 90% of victims, death occurs. This is usually caused when the electrical impulses in the affected heart become rapid (ventricular tachycardia, or “VT”) or chaotic (ventricular fibrillation, or “VF”), or both. These irregular heart rhythms are arrhythmias. The general public and media often mistakenly refer to SCA as a “massive heart attack.”

SCA is an electrical problem, whereby the arrhythmia prevents the heart from pumping blood to the brain and vital organs. There is an immediate cessation of the heart. In most cases, there are no warning signs or symptoms. A heart attack is a “plumbing” problem caused by one or more blockages in the heart’s blood vessels, preventing proper flow, and the heart muscle dies. Symptoms include chest pain, radiating pain in left arm, between shoulder blades, and/or jaw, difficulty breathing, dizziness, nausea and vomiting, and sweating. In some cases, a heart attack may lead to a sudden cardiac arrest event.

2 Resuscitation from SCA

When someone collapses from SCA, immediate cardiopulmonary resuscitation (CPR) and use of an automated external defibrillator (AED) are essential for any chance of recovery. The AED analyzes the heart rhythm of the victim, and if necessary, a computerized command will instruct the user to press a button to deliver an appropriate shock to restore the normal operation of the heart. These devices are failsafe and will not cause injury to the user, nor will they deliver a shock if none is needed. For patients in “VF”, studies show that if early defibrillation is provided within the first minute, the odds are 90 percent that the victim’s life can be saved. After that, the rate of survival drops ten percent with every minute. As many as 30 to 50 percent would likely survive if CPR and AEDs were used within five minutes of collapse.

Many heart failure patients who have either suffered an SCA or are at risk, have surgery to implant a small device called an implantable cardioverter defibrillator, or ICD. ICDs are designed to recognize certain types of arrhythmias and correct them with a shock. Ninety five percent of lethal ventricular arrhythmias were shown to be effectively terminated by ICDs.
Who is at risk for SCA?

SCA can strike persons of any age, gender, race, and even those who seem in good health, as evidenced by world class professional athletes at the peak of fitness. Many patients who may be at risk are not being identified, screened and given options for medical treatment. If someone has any of the following risk factors or symptoms, he/she should discuss with a doctor whether further heart testing and/or evaluation by an electrophysiologist (EP) or cardiologist is necessary:

- History of early heart disease, heart attack or cardiac death in the family
- Unexplained fainting or near fainting or palpitations
- Chest pain, shortness of breath or fainting with exertion (such as during sports)
- Heart failure or heart attack
- Weak heart muscle or a cardiac ejection fraction (EF) of less than 40% (EF refers to the percentage of blood that is pumped out of the heart’s main pumping chamber during each heartbeat)
- Cardiac risk factors such as high blood pressure, diabetes, obesity, smoking, or high cholesterol

Prevention

About 80 percent of SCA victims have signs of coronary heart disease. Leading a heart healthy lifestyle is important in preventing coronary artery disease and other heart conditions.

- Learn CPR and the use of an AED
- Activate 911 immediately in an emergency
- Help your community by advocating placement of AEDs in public places
- Know your personal and family health history that may identify risk factors
FACT SHEET: Sudden Cardiac Arrest vs. Heart Attack

Same or Different?

SUDEN CARDIAC ARREST

- Sudden Cardiac Arrest (SCA) is a condition that occurs when the heart stops pumping blood. Usually, this is caused by an electrical problem in the heart.
- Occasionally, there is a mechanical problem where there may be a normal electrical signal; in turn the heart muscle fails to pump.
- Sometimes SCA is caused by severe hemorrhage and other issues.

HEART ATTACK

- A heart attack is caused by a circulation or plumbing problem of the heart, when one (or more) of the arteries delivering blood to the heart is blocked. Oxygen in the blood cannot reach the heart muscle, and the heart muscle becomes damaged.
- This damage to the heart muscle can lead to disturbances of the heart’s electrical system. A malfunction of the heart’s electrical system may cause dangerously fast or slow heart rhythms that can cause SCA.
- Many SCAs occur in patients with coronary heart disease. If the patient suffers a heart attack, there is a higher risk for SCA.
Why Should First Responders Work To Increase Awareness Of SCA?

First responders are uniquely positioned in local communities to improve the links of the “chain of survival,” and raising awareness of SCA is an all-around win for first responders. Too often, first responders go unnoticed by the public, even during medical emergencies during which they are the first line of defense.

This program will enhance the image of first responders as leaders in emergency care. It puts a face on the profession of emergency responders and shines light on the invaluable role of responders in maintaining public health and safety. Ultimately, this program’s goal is to increase survival rates of SCA, yet that alone is not the only positive result. Relationships with first responder agencies and various community groups will become stronger and greater recognition will be paid to the importance of bystander intervention and first responders through public events honoring their lifesaving and heroic acts.
What’s Your Community’s IQ When It Comes To SCA?

Most people do not know what SCA is, how it differs from a “heart attack,” and how to respond to it. It’s not surprising then that most people aren’t aware the threat of SCA exists within their own homes and communities.

Before reaching out to educate residents about the public health crisis of SCA, it’s helpful to identify and measure data within your community. In other words, find out how informed or equipped your community is about SCA. Addressing the following questions can provide you with a solid starting point to develop productive and effective community outreach efforts:

- Are there AEDs located throughout your community? Identify the number of AEDs and where they are located.
- How many cases of out-of-hospital cardiac arrest have occurred in your community? Of those, how many resulted in survivors?
- Do schools and athletic organizations have emergency action plans addressing SCA?
- Is SCA a focus of health classes?
- How many local residents are trained in CPR/AED use?
- Are there other local organizations that educate residents about SCA?
About SCAA
ABOUT THE SUDDEN CARDIAC ARREST ASSOCIATION (SCAA)

The Sudden Cardiac Arrest Association (SCAA) is the nation’s largest nonprofit advocacy organization exclusively focused on sudden cardiac arrest awareness and prevention. SCAA was founded and incorporated in 2005, an outgrowth of the pioneering work done by the National Center for Early Defibrillation (NCED), a unit of the Department of Emergency Medicine at the University of Pittsburgh.

Our members are SCA survivors, patients at risk, medical professionals, emergency responders and others touched by SCA. In addition to our platform of national programs and initiatives, SCAA’s growing network of nearly 50 chapters and affiliates from across the country coordinate a number of educational campaigns throughout the year – from ceremonies honoring emergency responders to public speaking engagements, fundraisers and local and state policy development, such as Public Access Defibrillation (PAD) programs, Good Samaritan liability protection and CPR requirements for high school graduation.

To further increase awareness of SCA and cardiovascular health issues among policymakers, SCA is a member organization of several “like minded” patient advocacy groups, including the Partnership to Improve Patient Care (PIPC), Partnership to Fight (PFCD) Chronic Disease, SCA Coalition and the Patient Advocate Foundation and has developed relationships with more than two dozen leading medical centers.

While SCA is a significant public health crisis, it is often misunderstood. SCA is not a heart attack. A heart attack occurs when a blood vessel becomes blocked and interrupts blood flow to the heart, causing heart muscle to die. Sudden cardiac arrest occurs when the heart’s electrical system malfunctions and the heart stops beating. Most of these deaths occur with little or no warning, from a syndrome called sudden cardiac arrest. The most common cause of sudden cardiac arrest is a disturbance in the heart rhythm called ventricular fibrillation.

Simply put, we want people to know what SCA is and improve emergency response and resuscitation methods to increase survivability of SCA. We seek to educate Americans on the risk factors that relate to their personal health, the benefits of seeking preventive care and leading heart-healthy lifestyles.

SCAA is a 501(c)3 nonprofit tax exempt organization recognized under the Internal Revenue Code. SCAA has 52 chapters nationwide.
MEMBERSHIP APPLICATION

Our strength is in our numbers and we need your support and involvement to make a difference with our efforts. Membership in SCAA is FREE.

[ ] YES, I would like to join the Sudden Cardiac Arrest Association

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Chapter/Affiliate who referred you to SCAA:

Preferred method of contact:

[ ] Email [ ] Phone [ ] Mail [ ] Fax

Tell us about yourself:

[ ] I am a SURVIVOR of SCA (please complete fields at right)

Age at SCA: Date of SCA: 

Location of SCA: Method of save:

[ ] I have an ICD (please complete fields at right)

Age at Implantation: Date of Implantation: 

Location/Hospital: Name of ICD Manufacturer

I am a:

[ ] Family member/friend of SCA survivor
[ ] Family member/friend of ICD patient
[ ] Patient with a heart condition
[ ] Rescuer
[ ] CPR/AED Instructor
[ ] Other (specify): 

I would like more information on (Check all that apply):

[ ] Submitting my survivor/ICD story for the website
[ ] Joining SCAA’s Speakers Bureau
[ ] Joining SCAA’s interactive, web-based community
[ ] Forming a local SCAA Chapter

I would like to volunteer for (Check all that apply):

[ ] Advocacy Team: Works on SCA-related legislative and regulatory issues
[ ] AED Implementation Team: Works on initiatives designed to increase access to defibrillation in schools, workplaces, fitness centers, places of worship, hotels and other locations
[ ] Awareness Team: Works on initiatives to increase awareness about SCA and optimal care, including a speakers bureau
[ ] Fundraising Team: Assists with fundraising and major campaign efforts to achieve organizational goals
[ ] Membership Team: Recruits SCA Survivors, ICD recipients, families, friends, and others to join SCAA
[ ] Support Team: Provides peer-to-peer support to SCA survivors and their families, ICD patients and their families, families of victims who did not survive, and others personally affected by SCA

I am interested in:

[ ] Joining a local SCAA Chapter (no charge)
Jeff Micklos, SCAA Chairman

Jeffrey G. Micklos is the Executive Vice President, Management, Compliance and General Counsel for the Federation of American Hospitals (FAH), a national trade association representing over 1,000 investor-owned and managed community-based hospitals and health systems. In his current position, Micklos serves as the lead policy counsel and strategist for many federal legal and regulatory issues, is the chief legal officer for the association and is responsible for the organization's business operations. Prior to his current position, Micklos served as Senior Vice President, Business Operations and General Counsel for the FAH. Before joining the FAH, Micklos was a partner in the law firm Foley & Lardner LLP and previously held positions with the U.S. Department of Health and Human Services Office of General Counsel divisions of Health Care Financing and Social Security. He is a member of the American Health Lawyers Association (AHLA), American Bar Association (Health Law and Administrative and Regulatory Practice Sections) and the Healthcare Financial Management Association (HFMA). He is a frequent speaker on health care topics and has been cited in numerous industry publications including the AHLA Rap Sheet, Health Lawyers Weekly, Journal of Healthcare Compliance, Group Practice Journal of the American Medical Association, Physician Practice Compliance Report and the Administrative Law Review.

Sue Rusche, Vice Chair

Sue Rusche is co-founder, president, and chief executive officer of National Families in Action (NFIA). Under her direction, NFIA has helped parents form drug-prevention groups throughout the United States, including the Parent Corps program, which recruits and pays salaries to Parent Leaders to mobilize parents into drug prevention. Her work and relationships with parent groups, educators, and policymakers will provide SCAA with strategic guidance as we expand our programs of SCA awareness and education to schools and families.
In the course of her work, Rusche has testified before many Congressional committees, given speeches throughout the world, and made numerous appearances on national television, including "NewsHour with Jim Lehrer," "The Today Show," "Good Morning America," "CNN Newsroom," "CNN and Company," "CNN News Stand," FOX News Channel, MSNBC, and various network evening news shows, as well as on numerous local television and radio shows across the nation.

Linda Campbell, Secretary

Linda Campbell, R.N., spent 25 years as an occupational health nurse specialist at American Airlines and was the Aeromedical Lead Nurse/Manager for American Airlines' Medical Department from 1984-2004. There, she developed the first training protocol for AED instruction which has since become the industry standard. As American Airlines became the first to install AEDs aboard aircraft, Campbell solely trained the airline's initial 2,300 flight attendant pursers and created American's "SkyCAAre" program for passengers who required special medical escort assistance.

Campbell is a member of the Medical Reserve Corps of Dallas/Tarrant County in Texas, a local disaster preparedness and bioterrorism training organization. A member of several airline accident teams, Campbell participated in 9-11 investigations in both New York and Washington, D.C. She is a founding member of the International Association of Airline Nurses in 1997. She continues to work as a CPR/AED instructor for American Airlines and is a staff member at ASIL Occupational Health Services in Fort Worth, Texas.

Mike Greenwell, Treasurer

Mike Greenwell is the vice president of health marketing and communications for Danya International, a global health care consultancy. Greenwell brings more than 25 years of health communications, public relations, and community relations experience to SCAA, including extensive work at the Centers for Disease Control and Prevention (CDC), where he launched several CDC-sponsored initiatives on cardiac health and childhood obesity, among others.
Greenwell has strong relationships with public health experts and also serves on several other health care committees and partnership initiatives. His health care expertise is supplemented with being personally impacted by SCA through the loss of friends and family. He joins the SCAA Board of Directors with a strong interest in helping the organization raise the profile of SCA with policymakers and industry groups that can support SCAA's growth and expansion.

Steven Johnston

Steven Johnston is the director of the Rochester Police Department Early Defibrillation Program. This program, implemented in 1990 by Dr. Roger White of the Mayo Clinic, is recognized as the first and most effective of its type in the world. The survival rate for this program has reached 52% for out-of-hospital witnessed VF arrests. The program has been recognized for excellence by the American Heart Association in 1999 and 2005 as well as by the former National Center for Early Defibrillation in 2002 and the Sudden Cardiac Arrest Association in 2008.

Steve's public safety experience began in 1973 in rural southwestern Minnesota where he served in several communities as a dispatcher, police officer and as a member of a volunteer ambulance service. He attended Minnesota State University - Mankato where he graduated magna cum laude with BS degrees in law enforcement and corrections. He enrolled in graduate school at Mankato but withdrew in 1977 in order to accept a position as a police officer in Rochester. He is a graduate of the 148th Session of the FBI National Academy at Quantico, VA. He has served in nearly every operational and supervisory capacity within the Police Department and retired as Deputy Chief of Police in 2009. He now continues to serve his community as a volunteer directing the Defibrillation Program.

Steve collaborated with the National Center for Early Defibrillation beginning in 2002 and participated as a presenter in the 2003 NCED Survivor Summit in Washington, DC. That experience motivated him to form a SCA survivor's group in Rochester, MN. This group has joined forces with the Minnesota Sudden Cardiac Arrest Survivors' Network, an affiliate of SCAA. Steve serves as co-chair of that organization. He was one of the two original ambassadors for NCED, the other being the Rochester Police Medical Director, Dr. Roger White.
Steve is an active advocate for the American Heart Association, supporting AHA issues on Capitol Hill. He was recognized as a Heart and Stroke Hero by the AHA in 2005. He has also testified before the Minnesota legislature for efforts to improve funding for law enforcement defibrillation in Minnesota.

Steve believes that automatic defibrillators should be much more common in our communities. His primary concerns are that every law enforcement officer that responds to emergency service calls should be trained and equipped with automatic external defibrillators and that implementation of early defibrillations programs needs to be publicly studied in every community.

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**Craig Hulse**

Craig Hulse is the director of government affairs for the Washoe County School District in Reno, Nevada serving over 64,000 students. He handles the district's lobbying efforts with the state legislature and federal government in addition to handling all inter-governmental relations within the state. He most recently worked as a lobbyist in Washington, DC, and has previously worked in the U.S. House of Representatives, office of former governor Jim Gibbons and in a state government budget office.

He is a graduate of the University of Nevada and is completing a Master's Degree at Johns Hopkins University.

As a sudden cardiac survivor, he brings real life experience to the Association and has a passion for helping survivors, family members and loved ones touched by SCA and looks forward to creating safer communities better able to prevent and respond to cardiac emergencies.

Craig is an avid runner, who loves sports and still plays soccer.
Thomas W. Jeffers

Thomas Jeffers, OnStar’s vice president of public policy, is responsible for the development and advocacy of OnStar’s positions on telematics and related issues with the federal, state and provincial governments.

Thomas came to OnStar from General Motors, where he led the company’s Municipal Government Relations efforts across the country. He has held numerous positions within General Motors in Washington, DC, New York and Detroit across various functional areas, including Government Relations, Future Product Development, Field Marketing, Corporate Finance and Purchasing.

Prior to joining General Motors, Thomas taught history and English and coached tennis in Washington, DC and the Middle East. A competitive triathlete and Sudden Cardiac Arrest survivor, he holds a liberal arts degree from Duke University and an MBA degree from Indiana University.

Stacey Rampy

Stacey Rampy is a renowned health care expert with over twelve years of experience on Capitol Hill and in the private sector. Stacey combines substantive knowledge of a broad range of health care issues with considerable lobbying experience.

Stacey began her lobbying career as a senior lobbyist with pharmaceutical industry leader Merck & Co., Inc. As Senior Director and Counsel at Merck, Stacey was the company's lead Democratic lobbyist. She developed Merck's policy and lobbying strategy on numerous issues, including Medicare, drug safety, pharmaceutical marketing and intellectual property protections. Her strategies helped Merck and the pharmaceutical industry achieve reauthorization of the Prescription Drug User Fee Act (PDUFA) and the pediatric exclusivity law. She also led Merck's efforts to defeat legislation that would have allowed Medicare to institute price controls on medicines.

A lawyer by training, Stacey held several senior positions on both sides of the Capitol. As legislative director to Congresswoman Anna Eshoo (D-CA), a senior Member of the Energy and Commerce Committee, Stacey shepherded the Congresswoman's health care priorities through the Committee process while supervising their legislative staff.
Prior to her work with Congresswoman Eshoo, Stacey spent several years as a legislative assistant in the Senate. She advised Senator Robert Torricelli (D-NJ) on health care and education issues. Previously, she served as a legislative assistant for Senator Barbara Boxer (D-CA) where she staffed the Senator on the Appropriations Committee.

A Michigan native, Stacey now resides in McLean, VA with her husband and two children.

Steven B. Tannenbaum

Steven B. Tannenbaum is the senior partner in Horowitz, Tannenbaum & Silver, P.C., a civil litigation law firm in Lake Success, New York. The practice provides trial counsel to more than 25 firms in the New York metropolitan area. He is a member of the American Bar Association, the American Association for Justice, the New York State Trial Lawyers Association and the Nassau County Bar Association. He is admitted to practice law in all of the Courts in New York State, the United States District Courts for the Southern and Eastern Districts of New York, the United States Court of Appeals for the 2nd Circuit, the United States Court of Claims and the Supreme Court of the United States.

Mr. Tannenbaum has spoken and authored on psychiatric litigation. He has additionally spoken on compliance with the Americans with Disabilities Act.

He has previously served on the Board of Directors of the American Association for People with Disabilities, a not for profit advocacy group for the disabled. He is a 2010 recipient of the American Heart Association’s Heartsaver Award presented by the Louis J. Acompora Foundation, and he is very active in his community in raising money and awareness for CPR and AED training and placement.

Steve lives in Merrick, New York with his wife Sandy and their three children. He is a very grateful survivor of a Sudden Cardiac Arrest which occurred on May 6, 2009.
Robert J. Schriever, Past Chair, Honorary Board Member

Bob Schriever is a survivor of sudden cardiac arrest, which he suffered while officiating a high school football game. He serves as the Chairman for the Board of Directors of the Sudden Cardiac Arrest Association.

Previously, he was Vice President of the SCA Survivor Network of the National Center for Early Defibrillation.

Bob has spoken before many groups and organizations, such as the U.S. Government and its various legislative committees, the National Institute of Health, many state legislatures and their committees, major American Heart Association functions, state and local organizations, as well as being a keynote and motivational speaker for numerous businesses and organizations.

He recently designed and implemented a training program for high school students on the proper techniques for CPR and AED use which will soon be applied nationwide. He has also influenced sponsorship of a bill before the Commonwealth of Massachusetts legislature that will make training mandatory for high school graduation.

In 1971, Bob was Founder and President of R. J. Schriever Co. Inc, a jewelry manufacturing firm operating under the trade name of Najarda Pearl, whose product was sold in more than 4,000 stores nationally and internationally. The firm also operated local jewelry and gift store outlets.

He is a football official, having officiated at all levels of the game including the National Football League and the New England Patriots, as well as being a college and high school lacrosse official.

Bob and his wife, Claire, have two children and six grandchildren and spend their time between their homes in Massachusetts and Maine.

Bob is a military veteran, having served in the United States Air Force during the Vietnam War.
Richard Brown, Founder, Past Chair and Honorary Board Member

Richard Brown, a survivor of SCA, is a founder and the former Chair of the Board of Directors of the Sudden Cardiac Arrest Association. Previously, he was President of the SCA Network of the National Center for Early Defibrillation.

He has testified for SCA issues before a Food and Drug Administration panel. He testified before the Washington, DC City Council regarding extending mandatory presence of AEDs in public and private office buildings. Richard also has discussed SCA issues on radio and television programs around the nation. He also acted on behalf of SCAA as Co-Chair of the Sudden Cardiac Arrest Alliance - a coalition of about twenty heart related organizations.

Richard has been active in public service since 1976 when he became President of the Early Childhood Education Board in Columbia, MD. Beginning in the late 90s until 2003, he served as Chairman of the Finance Committee and then Chairman of the Board of Trustees of the Rock Creek International School of Washington, DC. He is currently a member of the Board of Directors of National Families in Action (NFIA). From 1975 until 2006, he was Senior and Managing Partner of Brown, Nietert & Kaufman, Chartered, a law firm specializing in communications law. Up until 2009 he was also President of American Capital Partners Co. Richard also founded and was President of the Alaskan Cable TV network, which owned and operated cable systems in Alaska.

Richard graduated from Emory University and New York University School of Law. He is admitted to the Bars of New York, Washington, DC, U.S. Court of Appeals for the DC Circuit, U.S. Court of Claims and the United States Supreme Court. He is married to Katherine Brown and has five children.

Vincent N. Mosesso, Jr., MD, FACEP, SCAA Medical Director, Honorary Board Member

Vincent N. Mosesso, Jr., MD, is an associate professor in the Department of Emergency Medicine at the University of Pittsburgh School of Medicine and medical director of prehospital care services for the University of Pittsburgh Medical Center. He is a co-founder and Medical Director of the National Center for Early Defibrillation, now called Sudden Cardiac Arrest Association.
He serves on the national Basic Life Support subcommittee and as advanced cardiac life support regional faculty for the American Heart Association.

Dr. Mosesso is assistant medical director of the City of Pittsburgh Emergency Medical Services (EMS), director of the prehospital care rotation of the University of Pittsburgh's Affiliated Residency in Emergency Medicine, and a medical command physician for the Center for Emergency Medicine's EMS/Airmedical/Commercial Airline/World Travel emergency medical consultation and command center.

After graduating from Duquesne University in 1979, he became a paramedic, serving 10 years as a volunteer then working as a full-time medic for four years. He received his medical degree from the University of Pittsburgh School of Medicine in 1988, completing his residency in emergency medicine there in 1991 followed by a teaching fellowship at the Emergency Medicine Foundation/American College of Emergency Physicians in Dallas.

Dr. Mosesso has focused his research in prehospital care, including the role of police and first responders on the use of AEDs for the treatment of out-of-hospital cardiac arrest, prehospital administration of the clot-busting drug Retavase by paramedics, and examining multidisciplinary approaches to emergency care. He was the principal investigator (PI) for the Pittsburgh site of the NIH-funded Public Access Defibrillation (PAD) trial and is currently PI for the Pittsburgh site of the Auto-Pulse Prehospital International Resuscitation Trial which is evaluating a mechanical CPR device.

He has co-authored more than 40 referred scientific manuscripts and textbook chapters related to emergency medicine. His published articles have appeared in the Annals of Emergency Medicine, New England Journal of Medicine, Journal of Emergency Medical Services, Prehospital Emergency Care, Prehospital and Disaster Medicine, and Resuscitation.

Among his professional memberships is the Society for Academic Emergency Medicine and the American College of Emergency Physicians where he was named a fellow in 1994. Dr. Mosesso served on the board of the National Association of EMS Physicians and is currently national medical director for the National Association of EMT's Advanced Medical Life Support course.

In 1998, Dr. Mosesso was awarded physician of the year by the Pennsylvania Emergency Health Services Council. Other honors include the Faculty Appreciation Award by the residents of the University of Pittsburgh in Emergency Medicine; the Jean Hollister Award for Excellence in Prehospital Care, the Ronald Stewart Teaching Awards, American Heart Association Volunteer of the Year, and the Physician Recognition Award by the Emergency Medical Services Institute of Western Pennsylvania.
Dr. Mosesso is married to Janet, a registered nurse, and they are parents to two children, Chad and Jennifer.

Jack Grogan, In Memoriam

John (Jack) Grogan, who co-founded the Sudden Cardiac Arrest Association (SCAA) and served on its Board of Directors, died February 28. He was 73.

His clear vision and relentless work for SCAA grew the organization from the SCA Survivor Network of the National Center for Early Defibrillation into the nation's largest non-profit advocacy organization singularly focused on SCA.

An AED/EMS volunteer with the San Jose California Fire Department, Jack was passionate about preventing unnecessary death from SCA in his local community. He educated students, business owners and community leaders about SCA prevention, teaching CPR/AED classes to thousands of resident
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Staff

Lisa A. Levine, CAE is the President of the Sudden Cardiac Arrest Association in which she brings together a diverse community of policymakers, national thought leaders and advocates to advance initiatives in the prevention and treatment of SCA.

Ms. Levine brings nearly 25 years of non-profit leadership skills with a proven success record in driving growth, increasing revenues, developing successful coalitions and increasing volunteer involvement. Prior to SCAA, Levine served as the President of the Equipment Leasing and Finance Foundation for 10 years, where she oversaw increases in both membership and revenue growth, developed strategic coalition relationships and expanded the organization’s volunteer presence.

Prior to that, she spent 15 years in leadership positions with the Community Association Institute and American Heart Association, Nation’s Capital Affiliate. She received a B.A. from the State University of New York (SUNY) at Oswego and is a Certified Association Executive (CAE). An active member of the American Society of Association Executives (ASAE) and the Association Foundation Group, she also serves as a mentor to other executives and foundation leaders new to the field of non-profit management.

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Resources and Recognition for EMS & First Responders
For three decades, the national survival rate of sudden cardiac arrest (SCA) has remained a low five percent. As SCAA establishes a nationwide response to cardiac arrest to increase survival and patient outcomes and create safer communities, it’s crucial that we recognize the lifesaving actions of emergency responders and civilian bystanders who come to aid of those stricken by SCA in a time of most need. Too often, they are unsung heroes, but in reality, they are vital in the Chain of Survival.

Why Conduct Hero Recognition Events?
Many chapters find that these events are successful tools in generating awareness of SCA within their own communities, more specifically among local Fire, Police and EMS entities. Promoting these events to local media outlets also frequently translates into positive media coverage which spreads SCAA’s message to the larger general public.

How to Setup a Hero Recognition Event
Coordinating recognition events does not have to be complicated by following these simple steps.

1. Learning about Local Cases: first things first, you need to become aware of SCA cases in your area. Since survival from SCA is so rare, it quickly attracts attention from media.
   - Monitoring local media coverage
   - Pay attention to local media reports: articles in newspapers, segments on TV news often will identify survivors and their rescuers.

2. Contact the Hero:
   - From those published accounts, contact either the Public Information Officer or Chief (Fire, Police or EMS) and express your interest in honoring their employees.
   - Locating civilian bystanders is often more challenging. If the Good Samaritan is identified as a student or an employee of a local company, first try working with the school or business to publicly recognize the individuals’ efforts. Reaching out through these entities provides credibility.

In general, establishing solid and professional relationships with local Fire, Police and EMS groups can result in productive two-way communication, where they inform you of local SCA cases but still maintain privacy protocols of survivors.
3. Identify a time/location for the Recognition Ceremony:
   - Find a time that is available for all parties involved
   - When securing a location, public places, free-of-charge are preferred
   - Examples of locations used by chapters include:
     - hospital community rooms
     - fire or police stations
     - local government buildings

4. In advance of the ceremony:
   - Notify SCAA National
   - SCAA National can help write a press release announcement
   - Post the event on your chapter website
   - Post the event on SCAA social media sites
   - Order supplies from SCAA Operations Office
   - Certificates of Heroism

5. Day of event:
   - Commendation Bar pins (for professional responders) and Civilian Hero pins (for lay bystanders)
   - Membership/promotional material on SCAA
   - Fact sheets/talking points on SCA
   - Take photos, preferably with digital camera
   - Display pop-up banner
   - Display/distribute SCAA membership applications and fact sheets
   - Have a sign-in sheet to collect names, addresses and emails of those in attendance

6. After the event:
   - Send list of attendees to SCAA Operations Office to add to mailing/membership list
   - Send photos and captions to SCAA National for posting on website and publishing in newsletter
   - Send news clips to SCAA National for posting on chapter website

Hero recognition events have proven to be a highly effective vehicle for showing appreciation to professional and civilian responders. In fact, many chapters report positive results from these events, including increases in membership and stronger, productive relationships within the local EMS community.
Press Release:
Community Advocates, Education Officials Honor School Employees for Saving Life of Warren Township Principal

INDIANAPOLIS, May 25, 2010 – Less than seven percent of sudden cardiac arrest victims nationwide survive, but on March 10, Lowell Elementary School Principal Susan Howard did just that thanks to the quick thinking efforts of her colleagues who will be honored for their life-saving actions in an awards ceremony at the school on Wednesday, May 26, 2010, at 8:00 a.m.

The Indianapolis Chapter of the Sudden Cardiac Arrest Association (SCAA) will host the event and present Certificate of Heroism awards to the following faculty and staff members:

- Candace Gauer, Cafeteria Manager
- Dave Stroud, Physical Education Teacher
- Jennifer Perkins, Clinic/Instructional Assistant
- Brooke Austin, Third Grade EXCEL Teacher
- Anne McGrath, Fifth Grade EXCEL Teacher
- Christy Hartman, First Grade Teacher

“Most cardiac arrest events are not witnessed, and of the few that are, often bystanders are not prepared to perform CPR and use an automated external defibrillator (AED),” said Jackie Renfrow, director of the SCAA Indianapolis Chapter. “In this case, school personnel responded immediately to a traumatic situation and without any reservation acted heroically to save the life of one of their own. For their knowledge, quick action and willingness to intervene, we honor them.”

“Because of these individuals, I’m able to walk the halls of school and greet students as they enter the building each day,” said Principal Howard. “Saying ‘thank you’ simply does not seem enough for people who have saved your life. I will forever be indebted to them and am so proud of the example they have set for our young students.”
Sudden cardiac arrest (SCA) is an electrical disruption of the heart’s natural rhythm and is the nation's leading cause of death, killing nearly 300,000 Americans each year. Immediate bystander assistance in the form of CPR and shocks administered from an automated external defibrillator (AED) are the only ways to survive SCA.

Howard now has an implanted cardioverter defibrillator (ICD) which detects and treats dangerous heart rhythms, protecting her from future SCA occurrences.

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**About the Sudden Cardiac Arrest Association**

SCAA is the nation’s leading non-profit public advocacy organization exclusively dedicated to sudden cardiac arrest awareness and prevention. Its Indianapolis Chapter is led by Jackie Renfrow, a longtime heart-health advocate who lost two children to SCA, and consists of SCA survivors, family members, medical professionals, emergency responders and many others touched by SCA - all dedicated to improving bystander and emergency response and wider deployment of publicly-accessible AEDs. For more information, please visit [www.suddencardiacarrest.org](http://www.suddencardiacarrest.org).
Sudden Cardiac Arrest Responder Awards

Public recognition of first responders who successfully revive sudden cardiac arrest victims is an appropriate expression of thanks, and also a way to educate the public about sudden cardiac arrest and encourage public CPR and AED access.

The Sudden Cardiac Arrest Association (SCAA) has developed a special Public Safety Award for agencies to present to employees involved in a sudden cardiac arrest rescue. The multiple versions of the award are designed to recognize heroes who have contributed to one or more sudden cardiac arrest rescues, and their design is consistent with most public safety agency formal uniform requirements. As pictured, the brass award is a red, white, and blue design, 3/8 inch high and 1 3/8 inches wide, with a sudden cardiac arrest hero insignia in the center. There are five designs available to recognize a responder’s first rescue and to commemorate subsequent rescues.

The award pins are available for purchase at a cost of $6.00 each (including shipping and handling). To order, please complete the form below and fax or mail the completed form along with payment to SCAA.

An online order form is also available at SCAA’s website, www.suddencardiacaress.org.

Order Official SCA Recognition Pins (pins below shown actual size)
Please indicate number of pins desired and calculate total amount due below. Pins are $6.00 each.

First SCA Rescue: _______ pins
Second SCA Rescue: _______ pins
Third SCA Rescue: _______ pins
Fourth SCA Rescue: _______ pins
Fifth SCA Rescue: _______ pins

Total number of pins: _______

Contact & Payment Information

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Total Due $_______
Federal Tax ID# 20-2413593

Mail completed form with payment to:
SCAA
P.O. Box 14546
Lenexa, KS 66285-4546

or fax completed form with credit card information to: (913) 895-4652

Contact SCAA at (866) 972-7222 with questions.

The Sudden Cardiac Arrest Association (SCAA) collects credit card information to make it easier for you to register for seminars and events online, as well as paying for services. SCAA does not use or share credit card information for any other purpose. We retain such information as is needed for standard accounting record keeping requirements. Every step is taken to protect the loss, misuse, and alteration of the information under our control. If you prefer, please use a check or money order to make any necessary payments. Thank you.
The Role of Survivor Stories in Expanding SCA Awareness

Like many medical conditions, SCA is most often recognized in numbers. And sadly, the SCA number that resonates all too frequently in the public setting is 300,000: the approximate number of SCA deaths per year.

But the rare five percent who survive cardiac arrest provide compelling evidence for why we need a national approach to SCA response, publicly-accessible AEDs and bystanders willing to intervene during an emergency. For survivors, sharing personal experiences with the rest of the World is often cathartic and a powerful step in the recovery and rehabilitation process. For the public, survivor accounts humanize the deadly condition, transforming cold and hard-to-grasp statistics into lasting physical impressions.

Enclosed in the last section of this toolkit are several examples of survivor experiences that are dynamic educational tools to expanding SCA awareness. We welcome you to share these accounts when you are out in the public – whether giving presentations to students or talking one-on-one with a concerned resident. Each survivor story is unique, yet together they communicate the drastic nature of SCA: it knows no boundaries, afflicting every gender, age, race, socioeconomic status and personal state-of-health.
EMS/First Responder Educational Opportunities
INCLUDED IN THIS CONFERENCE

- Continuing Medical Education Sessions for Physicians, Nurses and EMS Professionals
- Community Education Program on Saturday
- Survivors and Heroes Dinner Celebration
- Exhibit Hall
- Benefit & Awards Dinner
- Chapter Volunteer Education
Navigating a National Approach to SCA Survival

The 2011 Annual Meeting of the Sudden Cardiac Arrest Association (SCAA) brings together survivors, patients, physicians, nurses, emergency professionals, and other community advocates working to broaden public awareness; improve emergency response; and increase access to preventive medical care—all with the goal of saving lives from sudden cardiac arrest (SCA). SCAA has quickly grown to become the largest advocacy organization in the U.S. exclusively dedicated to SCA, and this annual gathering of our charter and affiliate leaders is open to all who want to join our cause, learn more about SCA prevention, and network with other survivors and volunteers.

The SCAA program has some amazing educational opportunities. Included are topics specifically for SCAA volunteers, survivors, supporters, medical health professionals and community advocates. With one full day dedicated to continuing medical education, Friday offers opportunities for everyone interested in learning more about the most recent advances in preventing and treating sudden cardiac arrest.

Saturday’s program has been developed with community volunteers in mind. We invite you to attend our one day program track and learn more about preventing SCA in your community. In addition to the tremendous educational content, SCAA is rolling out some new initiatives for our chapters and affiliates that are great tools for everyone involved in increasing awareness and showcasing their products and services including product demonstrations – new this year!

We haven’t forgotten the social and networking events. As a survivor or family member you will have the opportunity to meet with other individuals with similar experiences. Every year SCAA honors survivors and their heroes and rescuers at a dinner reception on Friday evening. This year SCAA Dinner will honor individuals and companies who exemplify an outstanding commitment to preventing or treating SCA through the work they do in the community.

We look forward to seeing you in Minneapolis and to celebrating life!

Lisa A. Levine, CAE
President
Sudden Cardiac Arrest Association (SCAA)
CME Program

Continuum of Care: Comprehensive Efforts in SCA Prevention, Treatment and Rehabilitation

This year’s one-day continuing medical education program is a collaborative effort with Heart Rhythm Society and SCAA.

Friday, September 23rd

8:00am – 8:15am  Welcome
  Vince Mosesso, MD and Len Ganz, MD

8:15am – 9:00am  State of the Science
  Roger White, MD

Screening for Risk of SCA

9:00am – 9:30am  Genetic Testing Related to SCA Risk

9:30am – 10:00am  Use of Non-Invasive Risk Markers to Predict Sudden Cardiac Arrest
  Dr. David Rosenbaum

10:00am – 10:30am  Break with Exhibitors

10:30am – 11:30am  Pre-participation Evaluation of Athletes and the Pros and Cons of Screening
  Christine Lawless, MD and Barry J. Maron, MD

11:30am – 12:00pm  Questions and Answers

12:00pm – 1:00pm  Lunch with Exhibitors

Recovery and Rehabilitation for SCA Survivors and Their Families

1:00pm – 1:10pm  Recovery and Rehabilitation Program Overview
  Vince Mosesso, MD

1:10 – 1:30 pm  SCA from Survivor’s Point of View
  Dr. Cheri Olson, Survivor

1:30pm – 2:30pm  Current Care and Unmet Needs
  Quality of Life after SCA
  Eva Serber, Ph.D.

2:30pm – 3:00pm  Break with Exhibitors

3:00pm – 3:45pm  Improving Psychosocial Outcomes in Survivors and Their Families
  Kathleen K. Zarling, MS, RN, ACNS-BC, FAAVPR, FPCNA

3:45pm – 4:00pm  Materials and Resources Available for Patients
  Lisa A. Levine, CAE

4:00pm – 4:45pm  Best Practice: Heart Rescue Program Update

4:45pm – 5:00pm  Questions and Closing Remarks

OBJECTIVES:

By the end of program, attendees will be able to:

- Identify the most important aspects of the acute management of sudden cardiac arrest (SCA).
- Understand and apply the new CPR guidelines.
- Describe the rationale behind the use of hypothermia early after resuscitation from sudden cardiac arrest.
- Describe current best practices for identifying patients at risk for sudden death, including diagnostic tests and imaging technologies.
- Understand the use of genetic testing to detect inherited arrhythmia syndromes and other genetic diseases.
- Identify the basics of ICD function, and common issues and problems in the management of patients with ICDs.
- Describe and empower HCPs on the difficult End of Life discussions with patients with ICDs.
- Identify promising therapies and approaches for the future treatment of SCA.
- Evaluate the role of pharmacologic therapy in the management of patients with SCA as well as risk factors, including cardiovascular disease and post-myocardial infarction care.
- Identify how to work with patients and family members to address concerns and anxieties.
- Recognize the importance of community preparedness and the role of immediate bystander action.
- Expand the HCP understanding of psycho-social concerns that impact the overall outcomes in survivors and their family.

Accreditation & Continuing Education

This activity has been planned and implemented in accordance with the Essential Areas and policies of the Accreditation Council for Continuing Medical Education through the joint sponsorship of The Heart Rhythm Society and the Sudden Cardiac Arrest Association. The Heart Rhythm Society is accredited by the ACCME to provide continuing medical education for physicians.

The Heart Rhythm Society designates this live activity for a maximum of 6.5 AMA PRA Category 1 Credits™. Physicians should claim only the credit commensurate with the extent of their participation in the activity. The AMA has determined that physicians not licensed in the USA who participate in this CME activity are eligible for AMA PRA Category 1 Credits™.

Continuing Education (CE) for Nurses — The Heart Rhythm Society is an approved provider of continuing nursing education by the New York State Nurses Association, an accredited approver by the American Nurses Credentialing Center’s Commission on Accreditation. It has been assigned code 7M7R3XPRV-09-7M7R3XPRV-09-27. A maximum of 6.5 credit hours are available for this educational activity.
2011 SCAA Conference Schedule of Events

SCAA Conference Program
Navigating a National Approach to SCA Survival

Friday, September 23, 2011
7:00am – 8:00am  Breakfast with Exhibitors, Networking with Attendees and Equipment Demos
8:00am – 5:00pm  CME Course (see outline, previous page)
10:00am – 10:30am Break and Equipment Demos
10:30am – 12:00pm CPR/AED Train the Trainer Session- (For chapter leaders only)
Noon – 1:00pm    Lunch with Exhibitors and Equipment Demos
1:00pm – 2:30pm  CPR/AED Train the Trainer - Continues
2:30pm – 3:00pm  Break with Exhibitors and Equipment Demos
3:00pm – 4:00pm  (New) Chapter Leader Orientation
5:00pm           All Sessions Adjourn
5:30pm           Buses leave hotel for Survivor/Meal Celebration Dinner
6:00pm – 8:30pm  Survivor and Heroes Dinner Celebration
                 Sponsored by Medtronic
After Hours      Informal Networking ‘round the Bar

Saturday, September 24, 2011
7:00am – 8:00am  Breakfast with Exhibitors, Networking, and Equipment Demos
Discussion topics at each of the breakfast tables with a moderator

General Session:
8:00am – 8:15am  Welcome & Introductions
                 Jeffrey G. Micklos, SCAA Chair
8:15am – 8:30am  State of the Association
                 Lisa A. Levine, CAE, SCAA President
8:30am – 8:45am  Medical Advisory Board Update
                 Vince Mosesso, MD, SCAA Medical Director
8:45am – 9:15am  Advancements in Cardiac Care
                 Charles Lick, MD
9:15am – 9:45am  Morning Networking and Exhibitor Equipment Demonstrations

Concurrent Sessions with Two Tracks:
Chapter Directors and Community Education
Community Education Track Sponsored by Minnesota Resuscitation Consortium

9:45am – 10:30am  Chapter Directors
How to Run an Effective Chapter
Various Chapter Leaders

Community Education
Young athletes - How to keep them safe
Dr. Christine Lawless
Judy Redman, Anyone Can Save a Life Program Representative

Who Attends the SCAA Annual Meeting?
Physicians, healthcare providers, allied organization professionals, SCA survivors and their families, EMS professionals, hospital community outreach providers, athletic directors, sport coaches and community leaders interested in raising awareness of cardiac arrest in hopes of increasing survival rates.
10:40am – 11:30am  **Chapter Directors**  
How to find and mobilize members, volunteers and survivors  
*Mary Tappe, Colorado Affiliate Leader*  
*Gene Johnson, Minnesota Affiliate Leader*

**Community Education**  
Overcoming Barriers to Placing AEDs in Schools and Public Places  
*Charles Lick, MD; Elliot Fisch*

11:30am – 12:30pm  
Lunch with Exhibitors and equipment demonstrations  
Discussion topics at each of the tables with a moderator

**General Session**  
12:30pm – 1:30pm  
How to Keep your Heart Healthy  
Examples of community programs and how to implement one in your own community  
*Barbara Ducharme, Senior Director Community Health, AHA*  
*Midwest Affiliate*  
Hearts Beat Back, Heart of New Ulm Program Representative  
*Sue How, Active Living La Crescent, Project Manager*

1:30pm – 3:15pm  
Recovery and Rehabilitation from an SCA  
*Eva Serber, PhD and Kathleen K. Zarling, MS, RN, ACNS-BC, FAAVPR, FPCNA*

3:15pm – 3:45pm  
Afternoon Networking and Exhibitor Equipment Demonstrations  
Exhibitors break down

3:30pm – 4:30pm  
Heart Rescue Program and Presentation of Preliminary Data Findings

4:30pm  
Day’s Wrap up

5:00pm – 6:30pm  
Networking round the hotel

6:30pm – 9:30pm  
Cocktail Reception and Benefit Dinner

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### Sunday, September 25, 2011

**Chapter Directors Only**

8:00am – 8:30am  
Breakfast — Discussion topics at each of the breakfast tables with a moderator

8:30am – 9:45am  
New Program Roll outs and Chapter Kits  
1. Recovery and Rehabilitation Program  
2. Work with your EMS – First Responder Toolkit

9:45am – 10:00am  
Break

10:00am – 11:00am  
Creating a Presence in the Community and Media Attention  
*Kim Harkins, Minnesota Resuscitation Consortium, University of Minnesota*  
*Vicki White, East-Valley-Phoenix Chapter*  
*James Weber, Eastern Pennsylvania Chapter*

11:00am – 12:00pm  
Closing Comments  
“You can’t build a reputation on what you are going to do”  
— Henry Ford  
Discussion on turning SCAA programs into action, questions and answers on how to implement what you have learned this weekend when you return to your chapters.

12:00pm  
Meeting Adjourn

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**Disclosure of Faculty’s Commercial Relationship(s)**

It is the policy of the Heart Rhythm Society to ensure balance, independent objectivity, and scientific rigor in all its certified educational activities. Everyone involved in the planning and participation of continuing medical education activities are required to disclose any real or apparent conflict of interest related to the content of their presentations and also disclose discussions of unlabeled/unapproved uses of drugs or devices during their presentations. In accordance with the ACCME’s Standards for Commercial Support of Continuing Medical Education, all faculty and planning partners must disclose any financial relationship(s) or other relationship(s) held within the past 12 months. The Heart Rhythm Society implements a mechanism to identify and resolve all conflicts of interest prior to delivering the educational activity to learners. Detailed disclosure information will be available prior to the activity and in the activity slides.

Invited speakers have agreed that their presentations will be objective, and that they will provide a balanced view of diagnostic and therapeutic options, and that discussion of any off-label or investigational use of a commercial product will be disclosed to the audience.

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**Teaching Methodologies**

Didactic lectures, panel discussions, case studies, and survivor stories (patient experiences before, during and after hospital stay), including information on Screening of athletes, Genetic Testing related to SCA, Cardiac Conduction Parameters and Improving Psychosocial outcomes.
How to Register
The preferred method for registration for this event is the secure online registration form on the SCAA website. Credit card payments are required for online registration. Acceptable methods of payment are check, money order, AMEX, MasterCard, VISA or Discover. Registrations will be accepted on a first-come, first-served basis, and the meeting may sell out at any time. Therefore, we strongly encourage you to confirm your registration before making travel arrangements.

Online registration at www.suddencardiadarrest.org

CME Conference Registration for Continuum of Care: Comprehensive Efforts in SCA Prevention, Treatment and Rehabilitation
Physicians ........................................ $175
Nurses ................................................. $130
EMS and Allied Health Professionals ............... $95
Fees are inclusive of Friday CME, breakfast, lunch and breaks. Attendees may participate in the Friday evening Survivor and Hero Celebration dinner for no fee, but must indicate that they are attending on the registration form. An additional fee is required to attend the Saturday evening Benefit and Awards Dinner.

SCAA 2011 Annual Conference Navigating a National Approach to SCA Survival
Full Conference .................................$175
Fees are inclusive of Friday lunch and breaks, Friday evening Survivors and Heroes Celebration dinner, Saturday breakfast, lunch and breaks as well as the Saturday evening Benefit and Awards Dinner, and Sunday breakfast and sessions.

Community Education Program – Saturday only program .... $15
Sponsored by the Minnesota Resuscitation Consortium
Fees are inclusive of Saturday breakfast, lunch and breaks. An additional fee is required to attend the Saturday evening Benefit and Awards Dinner.

To Register Separately for Social Activities and Events

Survivors & Heroes Celebration
Join us Friday evening at a dinner to celebrate the survivors of SCA and their heroes and rescuers. Buses will leave the Millennium Hotel at approximately 5:30pm for transport to the event location. No one will be admitted to the event that is not registered or does not arrive at the event facility via SCAA provided ground transportation. Tickets are available through the online registration system.

This dinner event is sponsored by Medtronic

Saturday Evening Benefit Dinner & Awards Ceremony
You are cordially invited to attend a Benefit Dinner & Awards Ceremony on Saturday at 6:30 p.m. at the Millennium Hotel. This cocktail attire event will celebrate a few special individuals and companies who are making an impact on improving the SCA survival rate. The benefit dinner is $100 per person or tables of 8 for $1,000. Tickets can be purchased through the online registration system and must be purchased in advance.

Confirmation
Online registrations will receive a confirmation email shortly after completing the registration process.Registrations received in the mail will be sent an email confirmation within 1 week of receipt of registration and payment for the conference.

Cancellation and Refund Policy
A refund will be granted provided notification is in writing and postmarked no later than September 2, 2011. A $50.00 processing fee will not be refunded. Substitutions from the same institution are permitted but must be received in writing at scaa-info@goAMP.com.

Americans with Disabilities Act (ADA)
The SCAA supports the Americans with Disabilities Act (ADA). Should you require specific aids or other services to accommodate your participation at the SCAA Annual Meeting, please notify SCAA in advance. An SCAA staff member will contact those individuals who have requested assistance to determine what special arrangements need to be made. Contact the Sudden Cardiac Arrest Association (SCAA) at 913.895.4624 with questions.

Hotel Information
This year’s conference is being held at the Millennium Hotel in Minneapolis, Minnesota. The hotel is located at:

1313 Nicollet Mall
Minneapolis, MN 55403

Group room rate is $129 plus applicable tax.
You may make your reservations on line at http://tinyurl.com/Millenniumhotel-
SCAA-2011 or call 1-800-522-8856 and be sure to request the SCAA group rate at the time of reservation.

Ground Transportation
SCAA has arranged a discount on SuperShuttle and ExecuCar MSP Airport Transfers.

To receive your group’s discounted rate:
• Make your roundtrip reservation by following this link: https://www.
supershuttle.com/GroupRez/TripDetails.
.aspx?GC=MWDT7
• Use the Online Group Discount Code: B28JB (valid for travel Sept. 19-27, 2011)
• Provide the requested information, to include roundtrip service, if accessible service is required, your name, flight details (from and to the airport), and your local contact phone number.
• Select your hotel/landmark from the drop-down listing of hotels (type 3-5 letters of name in search box e.g. Mill for Millennium Hotel)
• Choose your preferred service and pricing: (additional $1 per person fuel surcharge may apply)
  – SuperShuttle Shared-Ride ($15 one way, $24 round trip using discount code)
  – ExecuCar Sedan Service ($46 per direction for up to 4 passengers)
  – $30 extra charge for ECarrage claim “Meet and Greet”
• Provide a credit card for payment.
• Print your confirmation page (or you can e-mail it to yourself).

Reservations from MSP are not required for SuperShuttle service, but are recommended. ExecuCar must be reserved in advance.
Registration Form

2011 SCAA Annual Meeting
September 23–25, 2011 • Millennium Hotel, Minneapolis, MN

Please keep a copy for your files. Duplicate and share this form as needed.

**STEP ONE: Name Badge and Roster Information** (List as you would like name to appear on your badge)

*Full Name* ____________________________  *Nickname* ____________________________

*Credentials* ____________________________  *Title* ____________________________

*Institution* ____________________________

*Mailing Address* ____________________________

*City* ____________________________  *State* ____________________________  *ZIP Code* ____________________________

*E-mail Address* ____________________________

*Daytime Phone* ____________________________  *Fax Number* ____________________________

*Dietary/Special Needs (including food allergies or disabilities requiring special assistance)* ____________________________

*Emergency Contact Name and Phone* ____________________________

**STEP TWO: Registration Fees**

Registration forms must be postmarked, faxed, or submitted online on or before the early registration date to receive the lower fee. After September 1, registration fees increase for the Medical Education Conference and Awards Dinner.

☐ Attendee Full Annual Meeting (includes Survivor/ Hero Dinner on Friday, Saturday and Sunday educational sessions, breakfast lunch on Saturday, Awards Benefit Dinner on Saturday and breakfast on Sunday)  **$175**

☐ Medical Education Conference ($175 for physicians, $130 for nurses, $95 for EMS)  **$**

☐ Saturday One-Day Program  **$15**

☐ Yes, I will be attending the Friday Survivors Celebration sponsored by Medtronic  **$**

☐ Guest fee for Saturday Awards Dinner ($100 per person)  **$**

Total:  **$**

☐ Yes, I want to donate money to support SCAA’s mission to prevent loss of life from SCA.  **$**

SCAA is a 501(c)3 organization and any donation made is tax deductible. The SCAA Federal ID number is 20-2413593.

**Total Amount Enclosed:**  **$**

**STEP THREE: Demographic Information**

☐ I am a survivor of sudden cardiac arrest (SCA).  The date of my SCA was: ____________________________

☐ I am a family member of a survivor.

☐ I am a friend of a survivor.

☐ I am a health care professional.

☐ I am a chapter leader/volunteer.

☐ I am a first-time attendee.

**STEP FOUR: Payment Information**

☐ Check Enclosed (please make checks payable to the Sudden Cardiac Arrest Association [SCAA] in U.S. currency via a U.S. bank)  Check #: ____________________________

☐ MasterCard ☐ VISA ☐ AMEX ☐ Discover

*Credit Card Number* ____________________________  *Expiration Date* ____________________________

*Name as it appears on card:* ____________________________

*Signature* ____________________________  *Date* ____________________________

**STEP FIVE: Send Your Registration**

To register, complete this registration form and return it, along with the appropriate registration fee to:

**Mail:** SCAA Operations Office  **Courier:** 18000 W. 105th Street
P.O. Box 14546  Olathe, KS 66061
Lenexa, KS 66825.4546

**Fax:** 913.895.4652  **Online:** Secured online registration at www.suddencardiaccorrest.org

Contact the SCAA Operations Office for further information: 913.895.4624
Healthcare Professionals — Don’t miss this opportunity to earn 6.5 CME/CE credits.

About SCAA

Founded in 2005, the SCAA now boasts a network of nearly 50 chapters and affiliates across the U.S. whose volunteers have trained tens of thousands of people in CPR, strongly advocated for the placement of AEDs, and educated the public about heart disease, SCA risk factors, and preventive medical therapies. Our growing membership of about 5,000 people includes about 500 SCA survivors whose personal stories provided not only the inspiration for the founding of SCAA, but also ongoing inspiration for the work of our volunteers around the country. The one-day medical education conference is part of a weekend of activities for the SCAA Annual Meeting, which includes education, leadership workshops, celebration, networking, and social events for our existing members and community leaders, as well as others who want to learn more and become involved.

About the Heart Rhythm Society

The Heart Rhythm Society is the international leader in science, education and advocacy for cardiac arrhythmia professionals and patients and the primary information resource on heart rhythm disorders. Its mission is to improve the care of patients by promoting research, education, and optimal health care policies and standards.
Chain of Survival Activities to Implement in Your Own Community
The Chain of Survival: What is it?

As awareness of sudden cardiac arrest continues to be spread, there are several integral factors which contribute to the survival of these events. Taking early action is lifesaving.

1. Prevention & Preparedness
   Witnessing an emergency event, making an immediate assessment of the situation, and deciding to act.

2. Early Recognition & Activation of 9-1-1
   Confirming unresponsiveness and calling 9-1-1 or on-site emergency responders and following the instructions of the emergency dispatcher.

3. Early CPR
   Beginning cardio-pulmonary resuscitation (CPR) immediately.

4. Early Defibrillation
   Immediately retrieving and using an automated external defibrillator (AED) to restore the heart back into normal rhythm.

5. Early Advanced Life Support
   Emergency medical services (EMS) responders begin immediate advanced life support including additional resuscitative measures and/or other therapies.

6. Post Cardiac Arrest Care
   Seeking and receiving effective follow-up care after a sudden cardiac arrest.

7. Rehabilitation and Recovery
   Providing patients with access to care in the form of medical, physical and mental support programs that address recovery challenges associated with surviving cardiac arrest.

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Sudden Cardiac Arrest Facts

Did you know...

- Sudden cardiac arrest (SCA) is the leading cause of death in the United States, claiming approximately 300,000 lives each year (about 1,000 people a day).
- SCA victims usually collapse suddenly, without warning, and become unconscious. SCA leads to death if it is not treated immediately.
- SCA is not the same as a heart attack. Heart attack victims usually experience chest pain and are conscious.
- On average, only six percent of sudden cardiac arrest victims in the United States survive. But in some settings, survival rates of 20 percent have been achieved. If the chain of survival were properly implemented in our communities, more than 68,000 additional lives could be saved each year.
- The rationale for widespread deployment of automated external defibrillators (AEDs) is this: electrical therapy must be delivered immediately (ideally within five minutes of collapse) for it to be effective. Even the best emergency medical services (EMS) systems do not usually get to the scene this quickly.
- Victims of sudden cardiac arrest who collapse in public places are more likely than those who collapse at home to receive CPR and defibrillation, and to survive.
- Learning to use an AED is simple and intuitive. Formal training can take place in less than one hour, and even untrained bystanders have been able to use AEDs successfully in actual emergencies.
- The median age for victims of sudden cardiac arrest is 65; but many victims are much younger. Even children and teens have become victims, with the Heart Rhythm Society estimating that 5,000 – 7,000 youth in the U.S. die from SCA each year.
- Many AEDs now cost less than $1,500.
- Nearly one million Americans now have implantable cardioverter defibrillators (ICDs) which provide 24/7 protection and therapy for patients with high risk of SCA.
5.1 Link 1: Prevention and Preparedness
SCA PREVENTION PROGRAMS  
(listed by increasing complexity)

1. Work with local clinics to distribute pamphlets on differences between heart attack and SCA/ Know Your Ejection Fraction (EF) in waiting rooms of heart hospitals, and cardiology, family practice, ob-gyn clinics.

2. Get hospital permission to enclose SCAA and SCA pamphlets in ICD implantees’ materials when they leave the hospital.

3. Translate ICD, drug therapy, healthy heart, “EF”, heart screening, and other prevention materials into non-English languages as required to reach all citizens in your community. Use local college/university resources and/or native language people to keep costs down.

4. Collaborate with your local Electrophysiologists or talk to cardiologists and primary care physicians/nurses/assistants about the ACC/AHA primary prevention guidelines.

5. Exhibit at community fairs/health fairs to distribute ICD, drug therapy, healthy heart, “EF”, heart screening, and other prevention materials and host an SCAA chapter booth/table to enroll survivors, people living with devices, and others.

6. Sponsor a speaker at Patient Support Groups sponsored by the cardiology clinics about living with a device.

7. Develop a community health fair highlighting safe heart/preventative information, featuring Ejection Fraction (EF) and need for SCA risk assessment. Identify and sponsor a local electrophysiologist or other heart specialist to speak to community groups including Rotary Clubs, places of worship, medical societies, etc.

8. Become a patient ambassador to your local cardiology clinic to have pre-implanted patients referred to your SCAA local chapter members. Join with local Mended Hearts volunteers for peer-to-peer support.

9. Set up Patient Support Groups in your local hospital/cardiology clinic for survivors and patients. Talk to local hospitals about distributing patient support group kit.

10. Get a local talk radio program to dedicate a show to “living with an ICD” with a physician/expert and an implanted patient.
Ways that First Responders Can Expand SCA Awareness in Local Communities

Distribute SCAA materials. The SCAA Web site, www.suddencardiacarrest.org, maintains an exhaustive list of consumer-friendly educational materials, from Fact Sheets on various cardiovascular conditions to multi-media videos, public service announcements and community AED development tools. The next time you’re out in the community, consider sharing SCAA publications with others – whether at a community center, library, school, doctor’s office, grocery store or any other public venue. While consumers can quickly search the Internet or World Wide Web for any topic they desire, they still deserve to have access to accurate and credible information from sources with proven competency in this subject matter.

Translate AED materials into non-English languages. Does your agency already have educational materials on SCA or the importance of AEDs? Are there residents in your community, for whom English is not their native language? If so, consider translating those items into other languages. If you do not have a bilingual speaker on staff, reach out to local colleges/universities to see if a bilingual student would volunteer their time and talents. Remember, SCA afflicts all populations – regardless of the language they speak.

Attend community education/health fairs. First responders often go unnoticed by the public until tragedy strikes. By exhibiting at local fairs and education events, residents will see that you are an active part of the community and care about their personal health and safety. Or, look to partner with a hospital or local college to conduct a Healthy Heart Forum or provide CPR/AED instruction/training.

Submit an article to community newspapers. Reporters play a vital “watchdog” role in serving as the voice of the community and chronicling the need and performance of various public services/programs. If you see that AEDs are lacking within your community, detail the statistical and survival need for placing AEDs when reaching out to local media. Or if you find that certain barriers prevent the public from receiving adequate emergency response to SCA, share details of that void or resistance with editors and reporters.

Organize athletes screening events. SCA is the leading cause of death in young athletes and kills an estimated 5,000-7,000 children and young people each year. Media reports often cite “undetected” cardiovascular conditions as the cause of many SCA-related deaths in young athletes. Pre-participatory heart screenings can identify students at risk of SCA and alert families to potential problems before it’s too
late. In fact, community programs in cities like Chicago and Houston comprised of local cardiologists volunteering their time and experience, have yielded worthwhile results.

**Change state laws.** The legal landscape of SCA is changing, though not soon enough. Over 20 states now have laws requiring AEDs at schools or athletic activities. State legislatures across the country are also revamping their Good Samaritan laws to expand civil immunity protection to persons, who acting in good faith, perform CPR and utilize an AED. And even local governments like San Diego, California, have developed ordinances mandating AEDs in certain public places. Review your state’s laws to see if they are outdated. Work with local representatives and your state’s Department of Health to change outdated laws to require AEDs in schools, health clubs or other public places and incentivize bystander involvement, a key element of the “chain of survival.”

**Hold fundraisers to purchase and deploy AEDs.** While speaking to a community group or sharing educational materials doesn’t necessarily involve raising money, other awareness tactics like donating AEDs or developing media campaigns require money. There are a variety of creative and highly-effective ways to raise money to support SCA awareness. Starting out small can make a huge difference, and events like bake-sales, raffles, auctions and walk-a-thons are responsible for the placement of countless AEDs across the country. For more specific ideas and details on fundraising, visit the “Raising Funds to Support SCA” section.

**Develop an SCAA public access defibrillation (PAD) program.** See “Educational Resources” section.

**Organize volunteers to create a local SCA chapter.** Check out the SCAA Web site to see where the nearest chapter is located. If there’s not one near you, create your own chapter by gathering people with common interests. Find other local champions interested in the cause and meet to identify local approaches to increasing awareness of SCA. Even if only a few people join, remember the collective effort can far-reaching.
Importance of Bystander Assistance

The national survival rate for SCA is a low five percent because most cardiac events are not witnessed by others, or sadly, bystanders who are at the scene do not intervene and provide lifesaving assistance. Often times, bystanders enter a stage of shock, or out of irrational fear of contracting a medical condition or legal ramifications; they choose not to attend to the victim. Others simply don’t know how to help. Either way, inactivity on the part of bystanders is deadly. And doing nothing, should no longer be an option.

For every additional minute that passes while the victim is unattended, his/her chance of survival decreases by 10 percent. This number is sobering, as is the fact that most out-of-hospital cardiac arrest victims who survive, are left with neurological deficits.

It’s estimated that as many as 30 to 50 percent of SCA victims would likely survive if CPR and AEDs were used within five minutes of collapse. These numbers are encouraging, as is the number of states across the country re-writing their Good Samaritan laws to now provide civil immunity protection to lay individuals who perform CPR or use an AED.

Being a bystander and providing help is not something reserved only for medical professionals or first responders. Anyone can make a difference – whether a housewife, plumber, crossing guard, radio personality or bank teller. You never know when you will be placed in a situation where you can provide assistance. Learning CPR and how to use an AED is simple and easy, as many local organizations offer FREE courses as active community service projects.
When to Call 9-1-1 & What to Expect When You Do

Dialing 9-1-1 is the first step we normally think of during a medical emergency, and rightfully so as it’s been engrained in our upbringing since early childhood. Consider this, it’s all the more beneficial to the emergency dispatcher on the other end of the phone if you can provide basic details about the medical emergency and victim. So, while in the process of dialing 9-1-1, here are some other extremely helpful and very important steps to take.

Tell the dispatcher the location. If you do not know street names, look around for street addresses on nearby buildings or other distinctive landmarks, and be as specific and detailed as possible.

Check the scene and safety around you. While we want to do the “right thing” and help a person in need, it’s equally important to assess your immediate surroundings and stay out of danger. Little assistance can be given to a victim when the bystander’s life is threatened.

Shake the victim and shout! It’s possible that the individual may have simply “passed out” rather than suffered a heart attack or cardiac arrest. Shaking the person and making loud noises can sometimes bring them to consciousness. If the person does not respond, this information is very valuable to the dispatcher, who can immediately provide you with effective next-steps.

For more details on 9-1-1 and immediate first aid for cardiac emergencies, refer to the following Fact Sheet on CPR.
FACT SHEET: Cardiopulmonary Resuscitation (CPR)

Cardiopulmonary resuscitation, or CPR, is a method of providing oxygen and blood circulation through rescue breathing and chest compressions. During cardiac arrest, the normal rhythm of the heart is interrupted and the heart muscle loses its ability to pump blood (and distribute oxygen through the blood).

The potential loss of oxygen impacts the entire circulatory system, affecting the brain and other vital organs. Delivery of CPR is LIFE-SAVING first aid, and can increase a person’s chances of survival if started within minutes of a sudden cardiac arrest event by helping to maintain vital blood flow to the heart and brain. Without oxygen-rich blood, permanent brain damage or death can occur in less than 8 minutes. Moreover, CPR has been shown to increase the amount of time that an electric shock from a defibrillator can be effective. In fact, the American Heart Association estimates that effective bystander CPR, provided immediately after sudden cardiac arrest, can double or triple a person’s chance of survival.

CPR should be performed when a person is not showing signs of life. Victims will be unconscious, unresponsive, not breathing normally, and not moving. Taking immediate action can help save a life when a potential rescuer follows this emergency sequence:

- **PHONE FIRST**: Dial 9-1-1 immediately, or send someone to make the call if a phone is not immediately available. Tell the dispatcher the specific location and what action is being taken. DO NOT HANG UP!

- **SCENE SAFETY**: Make sure that you are not in immediate danger as well.

- **UNIVERSAL PRECAUTIONS**: If gloves and mouth barrier are available, prepare yourself to use them accordingly.

- **SHAKE AND SHOUT**: Determine unresponsiveness of the victim. “Hey, are you OK?!”

- **CLEAR AIRWAY**: Tilt the head and lift the chin to open the airway.

- **COMPRESSIONS**: Place the heel of one hand over the other, position yourself with shoulders directly over the victim and deliver compressions to the center of the chest (along the line of the nipples). The most effective rate is 100 compressions per minute. Push hard, push fast, and allow for full chest recoil between compressions.
In April 2008, the American Heart Association revised its recommendations and encouraged lay bystanders to use compression-only CPR as an alternative to the combined rescue breathing and chest compression method. Research had shown that many people were reluctant to provide CPR support because of their personal discomfort in providing mouth-to-mouth breathing to a stranger. The compression-only method provides vital blood flow and oxygen support while waiting for emergency responders or the shock of a defibrillator to be administered, and overcomes an important hurdle in getting everyone to act when someone suffers sudden cardiac arrest. New technology has been also developed to assess the efficacy of CPR technique. This new line of devices can help rescuers provide proper pace and depth of compressions, while giving automated voice prompts for breaths.
Toolkit: Participating in a Health Fair

Participating in community health fairs is a highly effective tactic to increasing awareness of SCA and your profession, and obviously let local residents know you are there for them. This kit provides suggestions and tips on making the most out of health fairs.

First, contact the organization who is putting on the health fair. Introduce yourself and explain what your organization is trying to do (raise awareness of SCA). Provide him/her with the SCAA Web site so they can easily obtain more information on our groups. that way they can check us out.

- Have two or three SCAA volunteers staff the table/booth. It is always nice to have an SCA survivor present.

- Keep the table simple: perhaps a red table cloth, at least two AED trainers, “flat matt” to help with the AED trainer/CPR and informational sheets on SCA.

- Consider using table-top filing display stands for various educational material to save space. Often, the less crowded a display is, the more people will be drawn to it. Extra boxes of educational material can be stored under the table, within easy reach to give people looking for more information.

- Promote other upcoming events your group is involved with.

- Take business cards to all health fairs even if you cannot be there in person. The cards can be given out to anyone interested in further engaging with the cause.

- When someone comes up to our table, here is a possible approach:
  - Ask if they know what an AED is?
  - Ask if they know about a SCA is or if they know someone who has had one?
  - Explain both the AED and the SCAA.
  - Demonstrate or allow THEM to operate run the AED trainer.
At this particular Health Fair, don’t you love that the AED is right behind us! Prime location.
FACT SHEET: Diagnostic Testing for Patients at Risk for SCA

A doctor, generally a cardiologist or electrophysiologist, may conduct a series of tests to diagnose patients and determine risk level, treatment options, and indications for implantable cardioverter device (ICD) therapy. These include:

- Electrocardiogram
- Echocardiogram
- Holter Monitor
- Event Recorder
- Electrophysiology Study (EPS)
- Cardiac catheterization
- T-wave alternans (TWA) Test

An **Electrocardiogram**, often called an EKG, is a painless and common test that records the electrical activity of the heart. It produces lines called "waveforms" that a clinician may view on a monitor or print on paper. When divided into time segments, these waveforms are used to measure the rate of movement of the heart's electrical impulses.

An **Echocardiogram** is a non-invasive, safe and effective test to study the anatomy of the heart. It uses sound waves (ultrasound) to form images of the structures of the heart. An "echo" is used to evaluate the size of the different chambers of the heart, the quality of the valves, measure the heart's pumping ability and identify other problems of the heart that may increase a person's risk for dangerous arrhythmias.

A **Holter Monitor** is a portable heart monitor that is worn by patients to monitor heart rhythms over a period of time. Patients wear a small recording box attached to their chest by five adhesive electrode patches for 24-48 hours.

An **Event Recorder** is a portable heart monitor that is worn by patients to monitor heart rhythms over a period of time. When patients experience symptoms, they activate the event record to take a snapshot of their heart's activity as they are symptomatic. This is useful for patients with relatively infrequent and brief symptoms.

During an **Electrophysiology Study**, an electrophysiologist specifically provokes arrhythmia events in the patient in a controlled clinical environment. During the study, data about the flow of electricity during actual events is collected. As a result, EP studies can help locate the specific areas heart tissue that give rise to the abnormal electrical impulses that cause arrhythmias. This detailed electrical flow information provides valuable diagnostic and, therefore, treatment information.

A **T-wave alternans (TWA) test** is used to detect a subtle electrical abnormality in the EKG that is linked to increased risk of dangerous arrhythmias. It is a non-invasive test that requires the patient to wear electrodes on the torso while walking for 5-7 minutes on a treadmill to elevate the heart rate.
Successful Screening Programs Across the Country

**Chicago, Illinois.** Under the guidance of Dr. Joseph Marek, clinical cardiologist with Midwest Heart Specialists, the Midwest Heart Foundation is working to increase awareness of sudden cardiac death in young adults. The Young Hearts for Life® Cardiac Screening Program brings qualified medical volunteers to high schools to provide free electrocardiograms (ECGs) to identify high school students at risk for sudden cardiac death. Since 2006, Midwest Heart Foundation in collaboration with high schools, community hospitals and volunteers has provided free ECG screenings to over 62,000 high school students. Marek's research team gave ECGs to 50,665 teens, 14 to 18 years old, including athletes and non-athletes. The screening was done in 32 schools in suburban Chicago during the regular school day. Screening identified 1,096 teens with abnormal ECGs, indicating a heart irregularity that could result in sudden cardiac death. Of those teens, 150 were found to have left ventricular hypertrophy, which can lead to hypertrophic cardiomyopathy, the most common cause of sudden cardiac death. Another 145 had a condition called prolonged QTc, which could indicate long QT syndrome, also linked to sudden cardiac death.

**Seattle, Washington.** Free advanced heart screenings for high school students and student athletes are being offered throughout the greater Seattle area. Approximately one high school undergoes screening every two months with nearly 400 students at each screening session. The University of Washington cardiology and sports medicine departments, as well as Seattle Children’s Hospital, members of the Nick of Time foundation, local EMS/fire and other physicians have been working together in this broad-based collaborative effort.

**Houston, Texas.** The Houston Early-Age Risk Testing and Screening (HEARTS) program will provide cardiovascular screening to 1,500 sixth-grade students at HISD’s Luther Burbank, Lamar Fleming, James Hogg, Francis Scott Key, and Jane Long Middle Schools. Trained and licensed healthcare workers from the University of Texas Medical School at Houston Division of Cardiology and the Memorial Hermann Sports Medicine Institute will administer a cardiac physical examination, an electrocardiogram (EKG), and a echocardiogram (2-D echo). Students receive a free physical examination and specialized cardiac examinations and any follow-up that’s needed at no cost to students and families.

Also in Houston, the Houston Independent School District and the Center for Coronary Artery Anomalies at the Texas Heart Institute are partnering to provide voluntary screenings for students at various middle schools. With parental permission, each student is screened using both the MRI and ECG equipment in a non-invasive process that typically lasts 15 minutes and is at no cost to parents. The project is being underwritten by a $5 million donation by the local Kinder Foundation.

[www.suddencardiacarrest.org](http://www.suddencardiacarrest.org)
Sudden Cardiac Arrest in Athletes: Debunking the Myth from Media Hype

Christine Lawless, MD, MBA, FACC, FACSM, CAQSM is president of Sports Cardiology Consultants in Chicago, Illinois. A highly regarded expert on SCA and athletics, she also serves as team physician for US Figure Skating, consulting cardiologist to Major League Soccer and co-chair of the American College of Cardiology Council on Sports and Exercise Cardiology. After numerous media documentations of recent SCA incidents in student athletes, SCAA sat down with Dr. Lawless (a member of the SCAA Medical Advisory Board) to find out the truth behind this topic and dispel any misleading information. Here’s what we learned:

Athletes represent fitness and vitality. Thus, when sudden cardiac arrest (SCA) occurs in an athlete, it may be shocking and counterintuitive to what we believe about athletes. Repeated media reports of each individual death makes us think that these episodes occur more frequently than they actually do.

The true frequency of SCA in athletes is not known, as there is no mandatory scientific registry of such events. Some research indicates that the risk of an event in the USA is about 1/200,000 athletes per year; whereas other reports suggest this may be 4-5 times higher, about 1/40,000 athletes/year. Athletes who appear to be at particular risk are football and basketball athletes in the USA, soccer players in Europe, and endurance athletes such as triathletes.

Because of differing causes of underlying heart disease, athletes are generally divided into those under the age of 35-40 years old, and those over the age of 35-40 years. SCA episodes in athletes under the age of 35-40 years are likely to be due to inherited heart muscle disease (hypertrophic cardiomyopathy), a direct blow to the chest (commotio cordis), abnormal position of the coronary arteries (anomalous coronary artery), dilated aorta with valvular disease (Marfans syndrome), or primary disorders of cardiac rhythm (channelopathies like long QT). Although the majority of the SCA episodes in athletes are due to underlying cardiac disease, there are other causes of sudden death in athletes, such as sickle cell disease, and heat illness. In athletes over the age of 35-40 years, SCA episodes are far more likely to be due to blockage in the arteries to the heart (coronary artery disease).

Strategies to prevent SCA episodes in athletes are aimed at two levels. The first is to detect underlying heart disease during pre-participation screening examinations; the second is to treat episodes of SCA as quickly as possible on the athletic field, or in athletic venues.

A variety of primary care healthcare providers perform initial pre-participation screening for heart disease during pre-participation screening examinations (PPE). If a cardiac issue is identified, the athlete is referred to a cardiologist for a participation recommendation. The American College of Cardiology (ACC) and the American Heart Association (AHA) have published a set of expert recommendations called the 36th
Bethesda Guidelines. These guidelines provide a framework for cardiologists to make wise participation and return-to-play decisions in athletes.

In Europe, it is routine to include the 12 lead electrocardiogram (ECG) in pre-participation examinations. Data generated in Italy suggests that the ECG may enhance the ability to detect underlying heart disease, and ultimately lower the SCA and sudden death rates. However, data from Israel suggests that the addition of the ECG does not reduce the incidence of SCA episodes and sudden death rate. At present, the AHA does NOT recommend inclusion of the ECG in pre-participation examinations for athletes in this country. No doubt, this issue will continue to be researched over the next few years to determine if enhanced cardiac screening would be useful in the U.S. to prevent SCA and sudden death episodes.

Recent data suggests that the ECG can improve the sensitivity of the pre-participation examination from 35 or 40 percent to as high as 85-90 percent in detecting underlying heart disease, especially hypertrophic cardiomyopathy.

Critics of ECG screening are opposed for several reasons. Because the incidence of SCA is so low in athletes, addition of ECGs may not have any impact on the incidence of SCA or sudden death when studied in a carefully performed randomized trial. The U.S. has an already low incidence of SCA in athletes, perhaps as low as what Italian researchers ended with after over 20 years of ECG-based screening. Thus, it may not be possible to improve upon this figure. Athletic adaptation can cause changes on the ECG that are difficult to distinguish from pathology, so there is a substantial chance of physicians misinterpreting the ECG. This can result in athletes being disqualified who actually have no underlying disease (false positives). This false positive rate should not be underestimated, as studies have shown it can be as high as 40 percent. The additional resources required to “work up” false positive ECGs may be cost prohibitive, and may result in undue risk to the athlete.

Despite well-meaning screening attempts, no pre-participation strategy is fail-safe, and there is always the possibility of an SCA episode in athletic individuals. If an SCA episode occurs, one must be prepared to treat it quickly with an AED. These machines should be available at all athletic venues to assure that episodes of SCA can be dealt with promptly, thus allowing the opportunity for maximal survival from an event. Although we have limited data in athletes, the success rate of defibrillation with AEDs ranges somewhere between 25-75%, depending on age of athlete, athletic venue, and group studied.

Although the frequency of SCA episodes in athletes is probably quite low, diligent pre-participation screening for underlying cardiac disease, prompt attention to cardiac symptoms, evaluation by cardiologists, and rapid recognition and treatment of an SCA episode with an AED can reduce the likelihood of athlete mortality from such events.
CPR & AED Training in Schools Program

Through our collaborative efforts, SCAA and its chapters have reached thousands of students, teachers, parents, coaches and athletic directors to raise awareness of SCA, the importance of giving CPR and using AEDs to save lives. Our goal is to change the paradigm of unnecessary deaths from SCA by educating and empowering bystanders to act during an emergency situation.

In 2010, SCAA launched its CPR and AED Training Program “Keep it Beating” for high school students. The program is 90 minutes long and consists of two 45-minute classes. Part I teaches the difference between SCA and a heart attack, what an AED is and the importance of a heart-healthy lifestyle. Part II teaches adult/child CPR, use of an AED and adult/child choking rescue.
Emergency Action Plan (EAP)

Schools are an important gathering place for students, staff and visitors within the community. Providing a safe environment for all who congregate on a school campus is a priority! Part of promoting a safe environment is having an effective Emergency Action Plan in place. The goal is to give victims of SCA or other life-threatening emergencies a chance to survive by immediately implementing a consistent response protocol that includes:

- Early activation of the EMS by calling 9-1-1
- Early CPR
- Early defibrillation
- Early transition to EMS

Many schools have an athletic trainer who is able to provide medical assistance during after-school events. However, the availability of the trainer is limited because several sports occur simultaneously. Just one trainer cannot be in several places at one time, and therefore emergency response training is critical for coaches, students, event staff, nurses and other administrators.

Follow these steps to create an EAP:

- Conduct an AED Site Assessment
- Develop a Communication/Crisis Plan
- Create specific entries for Fall sports, Winter sports and Spring sports, and do not forget to cover Fine Arts events, as well.

For coaches and advisors:

- Develop a response protocol worksheet and include a site map for each member of team
- Discuss this plan with the team and identify student responders who can also be of assistance
- Seek input from other staff while developing the document, and always keep an original copy of the plan/document on file in the office
- Take the plan to each practice/game/event
5.2

Link 2: Early Recognition and Activation of 9-1-1
SCAA POSITION STATEMENT

Subject: Automated External Defibrillators in School Facilities

The Sudden Cardiac Arrest Association (SCAA) fully supports legislative efforts to require the placement of Automated External Defibrillators (AEDs) in school facilities. A growing list of states has already enacted such legislation. For example, in November 2007, the state of Ohio completed the task of AED funding, placement and training in 4,400 Ohio public, private, charter, parochial, vocational and community schools.

Public access to AEDs is an appropriate response to the public health crisis of sudden cardiac arrest which kills more than 325,000 Americans each year. Most deaths from sudden cardiac arrest (SCA) can be prevented with rapid response and treatment. By placing AEDs on school grounds, not only are safer, so are teachers, staff, administrators, parents and visitors to school facilities. Equally important, an entire generation of students and their parents are being educated about sudden cardiac arrest and the need for all of us to be prepared to respond to an event through CPR and the use of an AED. The public benefits of such an effort are enormous and as a result, lives will be saved.

There is ample proof that AEDs save lives and the public placement of AEDs is a visible and constant reminder that sudden cardiac arrest does not have to result in a tragic outcome. When people know that there is an AED on the premises, they are not only more inclined to act, but they are also better informed on what to do in such an emergency. Because SCA can occur anywhere and at anytime, the Sudden Cardiac Arrest Association believes that AEDs should be placed in all kinds of public facilities where people congregate to strengthen the chain of survival, expand access to defibrillation, and decrease the number of deaths from SCA.

Thousands of Americans are alive today because public buildings, police cars, commercial airliners and other locations are now equipped with AEDs, but that number could be higher with broader AED implementation. Schools are a vital component of our local communities and a natural gathering place. By enacting legislation to require AEDs at school facilities, legislators will be taking an important step in protecting students, staff, parents and visitors and educating them about their role in preventing sudden cardiac arrest.

The Sudden Cardiac Arrest Association’s mission is to prevent loss of life from sudden cardiac arrest. We seek to increase awareness, encourage training for immediate bystander action, increase public access to defibrillation and promote the use of available medical devices and therapies, principally, implantable cardioverter defibrillators (ICD). SCAA members are the beneficiaries of improved science and medical technology, coupled with the wisdom and caring of thousands of physicians. For more information, please visit us at www.suddencardiacarrest.org
SURVEY FOR AED NEED

Sudden cardiac arrest (SCA) is a leading cause of death in the U.S., killing more than 325,000 people each year. That’s more than the total death rate for breast cancer, lung cancer, and HIV/AIDS combined. SCA is different than a heart attack and is caused by an electrical failure of the heart to beat. Many heart attacks are associated with symptoms such as chest pain, cold sweats and/or nausea. Sudden cardiac arrest, however, is just that – sudden – and the victim could be exercising or talking one moment, and unconscious the next. The growth of automated external defibrillators (AEDs) in schools, airports and other public facilities has improved response and awareness of SCA, but it is still a misunderstood condition, and many patients who may be at risk are not being helped with understanding the need for widely-available AEDs.

Name of Person completing survey: ____________________________________________
Organization or Location: ____________________________________________________
Phone: __________________________ Email: ______________________________________
City: __________________________ Zipcode: ________________________________
County: ______________________

1. Do you know what an AED is?       □ Yes       □ No

2. Do you have on-site access to an AED?:       □ Yes       □ No
   If yes: How many?: ______________
   Manufacturer: __________________________

   If not, why not? (check all that apply) □ Cost □ Don’t know what they are
   □ Liability Concerns □ Other

3. How many additional AEDs are needed to fully equip your organization or location? __________

4. Who completes routine AED maintenance checks? □ Training Officer □ Paid maintenance
   □ Volunteer       □ Other
   service

5. What is your proximity to the following?
   □ Police Station       □ Fire Station       □ Hospital ER       □ Nearest AED
   __________       __________       __________       __________

6. Does a physician, nurse or trained EMT oversee your AED:       □ Training       □ Protocols

7. How many persons in your location have had the following training:
   American Heart Association Health Care Providers/CPR Course: ______________________________________
   American Heart Association AED Course: ______________________________________
   Other: __________________________________________________________________
8. How many additional persons in your location need AED training? ____________________________

9. Please provide an address if you want more information on AEDs training programs available for AEDs:

______________________________________________________________________________

______________________________________________________________________________

Phone: ____________________________________________

The Sudden Cardiac Arrest Association’s mission is to prevent loss of life from sudden cardiac arrest. We seek to increase awareness, encourage training for immediate bystander action, increase public access to defibrillation and promote the use of available medical devices and therapies, principally, implantable cardioverter defibrillators (ICD). SCAA members are the beneficiaries of improved science and medical technology, coupled with the wisdom and caring of thousands of physicians.

For more information, please visit us at www.suddencardiacarrest.org
## SURVEY FOR AED NEED

Following is a partial listing of sites in many communities that may have AEDs or could be potential sites for AEDs. Please IDENTIFY those that are in your area and community:

<table>
<thead>
<tr>
<th>SITE</th>
<th>LOCATION (City or Zip Code)</th>
<th>AEDS</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Responder Unit *(not ambulances)*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>County Sheriff Vehicles</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fire Department Vehicles</td>
<td></td>
<td></td>
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<tr>
<td>Police Vehicles</td>
<td></td>
<td></td>
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<tr>
<td>Schools</td>
<td></td>
<td></td>
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<tr>
<td>Faith-based Organizations</td>
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<tr>
<td>Local Businesses/Shopping Malls</td>
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<tr>
<td>Public/Government Facilities</td>
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<td></td>
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<tr>
<td>Health Clinics /Physician/Dentist offices</td>
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<td></td>
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<tr>
<td>Hospitals</td>
<td></td>
<td></td>
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<tr>
<td>Nursing Homes</td>
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<tr>
<td>Assisted Living Facilities</td>
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<tr>
<td>Community Centers/YMCA/YWCA</td>
<td></td>
<td></td>
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<tr>
<td>Movie Theaters</td>
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<tr>
<td>Private Fitness Centers</td>
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<td></td>
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<tr>
<td>Motels/Hotels/Resorts</td>
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<tr>
<td>Marinas</td>
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<tr>
<td>Golf Courses</td>
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<tr>
<td>Restaurants / Bars</td>
<td></td>
<td></td>
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<tr>
<td>Grocery Stores</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Community Gathering Places (Parks, pools, ski areas, other)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other:</td>
<td></td>
<td></td>
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</tbody>
</table>

\* Note: Ambulances are typically equipped with AEDs and therefore do not need to be identified separately.
10 Step Community AED Program

SCAA MISSION: ELIMINATE UNNECESSARY DEATHS FROM SUDDEN CARDIAC ARREST (SCA) BY 2020

10 steps to success

Step 1: Establish AED task force

Include all key stakeholders to create buy-in

Community level
For example: EMS director, first responder (fire/police) leadership, corporate leaders, elected officials, representatives of training organizations, civic groups, senior citizen organizations, the media

On-site level
For example: EMS director, first responder (fire/police) leadership, company physician, building owner, building manager, corporate management, security personnel, school administration, volunteer responder leadership

Step 2: Review laws, regulations and advisories

Federal level
1. FDA: Requires prescription
   • Philips OnSite HOME defibrillator does NOT require prescription
   • Philips regular OnSite defibrillator does require prescription
   • Pediatric pads for both models require prescription
2. CASA: Addresses AED placement in federal buildings and provides immunity
3. FAA ruling: Requires AEDs on airlines
4. OSHA advisory: Recommends workplaces consider AED placement
5. GAO report: Recommends SCA data collection
Step 3: Conduct a needs assessment (community)

Early CPR

- Are dispatchers trained to coach callers in CPR and AED use?
- Do your community dispatchers know the location of nearby AEDs during an SCA call?
- Is most of the teen and adult population trained in CPR?
- Does the public understand and appreciate the need for immediate intervention by bystanders?

Step 3: Conduct a needs assessment (community)

Early defibrillation

- Are responders trained to deliver first shock within 60 seconds of arrival?
- Is the "call-to-shock" interval ≤5 minutes in 90% of cases?

Step 3: Conduct a needs assessment (community)

Early advanced care

- Does your community have paramedics, nurses, physician assistants or emergency physicians prepared to provide advanced care in the field?
- Do local hospitals provide state-of-the-art post-resuscitation care in ED and ICU?
- Do survivors routinely undergo electrophysiology (EP) evaluations to determine whether implantable cardioverter defibrillation (ICD) therapy is appropriate?

Step 3: Conduct a needs assessment (on-site)

Should you create an on-site program?

- Does location have at least 10% of personnel willing and able to respond?
- Is EMS response time > 5 minutes for more than 10% of responses?
  - Response time should be defined as from placement of 9-1-1 call to arrival at victim and not how close the Fire Station is to the facility.
- Does location have "at-risk" population?
- Is location "higher-risk"?
Step 3: Conduct a needs assessment (on-site)

"At-risk" population
- Men age 40 or older
- Post-menopausal women
- High blood pressure
- High cholesterol
- Sedentary lifestyle
- Diabetes
- Personal history of heart disease
- Family history of heart disease

Step 3: Conduct a needs assessment (on-site)

"Higher-risk" locations
A. Residential (57-75% SCA occurs at home)
B. Non-residential
  - Airports, businesses, county jails, dialysis centers, gaming establishments, golf courses, large industrial sites, homeless shelters, nursing homes, physician offices, shopping malls, sports complexes, streets and highways, trains and ferries, urgent care centers

Public Access Defibrillation (PAD) Study formula for identifying "higher-risk" locations
- Take number of individuals at location
- Multiply by percentage age 50 and older
- Multiply by hours spent at location each day
- Multiply by 350 if residential or 250 if non-residential
- 600,000 or higher = "higher-risk"

What if the location is "low-risk"?
- Should AED program be started anyway?

Considerations:
- Increase in public awareness and bystander action
- Local resources and priorities
- Community values
- Is location used for mass gatherings?
- Rare but real opportunities to save lives
**Step 4: Estimate program costs and seek funding**

**Costs typically include:**
- Devices, wall mounting cabinets and ancillary supplies
- Initial and refresher training
- Medical direction
- Program management
- Continuous quality improvement
- Maintenance
- Documentation
- Public relations/ media coverage
- Citizen CPR/ AED training

**Government grants: Federal**
- Rural Access to Emergency Devices Act
- FEMA Assistance to Firefighters Grants
- Homeland Security grants

**Step 4: Estimate program costs and seek funding**

**Sources**
- Organizational budget
- Local corporations and corporate foundations
- Local civic organizations
- Hospital foundations
- Public charities
- Government grants

**Government grants: State examples**
- PA: Provided funding for AEDs in schools
- TX: tobacco funds for AEDs
- Proposed legislation in many states. Contact state EMS agency for details.
- Many states have confiscation funds (i.e. from illegal narcotic raids) which can be allocated to a public agency to acquire AEDs. Check with your state’s Attorney General for more information on how these funds are allocated.
Step 4: Estimate program costs and seek funding

What grant-makers look for:
- Does program fit scope of foundation?
- Is there a need in the community?
- Is the program unique and creative?
- Is there a realistic budget?
- Can concepts be applied elsewhere?
- Is organization committed?
- Is there evidence of collaboration?
- Will organization report on progress?
- Will program make a difference?

General tips:
- Create 501(c) (3)
- Check out www.foundationcenter.org
- Be patient, positive, persistent: the funding is there...you just have to find it.

Step 5: Establish medical oversight and program management

Role of oversight physician
- Provide medical leadership
- Write prescription for device(s)
- Help develop response plan
- Provide guidance in selection of device and deployment
- Provide guidance regarding training
- Review responses to all medical emergencies
- Follow up with patients
- Conduct data analysis and system review
- Assume overall responsibility for program

Role of program coordinator
- Help develop response plan
- Oversee deployment of devices
- Oversee initial and refresher training
- Recruit new trainees as needed
- Spearhead public awareness initiatives
- Manage data collection process
- Help review responses to all medical emergencies
- Responsible for overall program management
Step 6: Select device

Considerations when buying AEDs:
- User level (EKG screen not advised for layperson responders)
- Frequency of expected use
- Environmental needs (temperature, water exposure, durability, etc.)
- Integration with other devices in system (Note: Adapters may be used with different devices)
- User preferences
- Cost: both initial and follow-up expenses
  - Initial: cost of device, installation, training
  - Follow-up: replacement of pads and battery

Step 6: Select device

- Cardiac Science
- Cintas (distributor for Defib Tech)
- Defib Tech
- HeartSine Technologies
- Laerdal (outside U.S.)
- Medtronic Physio-Control
- Philips Medical Systems
- Welch Allyn' MRL
- ZOLL Medical Corporation

See www.suddencardiacerrest.org for details and demos
See Health Devices report for device review

Step 7: Develop response plan

- Register program with state agency
- Integrate response system with EMS
- Identify and train response team (plan for initial and refresher training and turnover)
- Determine specific roles of team members
- Determine AED placement

Step 7: Develop response plan

- Consider on-site and external (9-1-1) notification systems
- Ensure system functions during business hours and ideally, after hours (on-site)
- Conduct periodic AED drills (on-site)
- Conduct post-event review and feedback
Step 7: Develop response plan

- Establish operational policies and procedures that address
  - Battery checks
  - Ancillary supplies
  - Electrode expiration date check
  - Data cards
  - Equipment maintenance

Step 8: Conduct training

- Training: 2-4 hours classroom instruction/practice
- National AED training organizations include:
  - American Heart Association
  - American Red Cross
  - American Safety & Health Institute
  - MEDIC FIRST AID International
  - National Safety Council
- Considerations: out-sourcing instruction or developing on-site instructors
- Periodic refresher training
- Explore on-line training options
- See [www.suddencardiocarearrest.org](http://www.suddencardiocarearrest.org) and AED Instructor Foundation for a trainer near you

Step 9: Track and evaluate program data

- Track training and device deployment data
- Conduct post-event follow-up
  - Establish plan for notification of program manager and medical director when event occurs
  - Identify mechanism for downloading data from AED
  - Record case data
  - Review case with rescuers to evaluate care provided and need for critical incident stress debriefing (CISD)
  - Provide CISD as needed
  - Report data to appropriate authorities
- Conduct system evaluation to ensure continuous quality improvement

Step 10: Cultivate public awareness

Why?

- Generate funding to create and sustain program
- Educate public about critical need for bystanders to intervene quickly
- Empower public with knowledge that they can help save a life
Step 10: Cultivate public awareness

How?

- Frame the issues
- Develop a statement of need
- Lobby local political leaders
- Identify and address potential obstacles
- Promote media coverage

Community Criteria for Resuscitation Readiness

1. Is there broad-based collaboration and buy-in?
2. Has a community needs assessment been conducted?
3. Is there sound medical oversight?
4. Is a specific person responsible for program management?
5. Are training efforts producing responders who are competent, confident and likely to help in emergencies?
6. Is there a response plan with written policies and procedures?
7. Is the response plan integrated with EMS?
8. Is there a continuous, concerted effort to increase public awareness?
9. Have methods been established to track operations data?
10. Have methods been established to evaluate SCA incidence, treatments and outcomes?

Sustaining your AED program

What happens after the champion moves on?
- Need for systems approach that addresses
  - Ongoing refresher training
  - Recruitment of new AED responders
  - Periodic AED drills
  - Continuing public awareness initiatives
  - Data collection and analysis for CQI
  - Periodic response plan review

Why follow 10-step approach?
- Because so many more can survive!
Sudden Cardiac Arrest Association

- Non-profit organization headquartered in Washington, DC
- www.suddencardiacerrest.org
- Singularly focused on sudden cardiac arrest for survivors, those at risk, health care providers and activists
- Founded in March 2005, it is an outgrowth of the National Center for Early Defibrillation (NCED) at the University of Pittsburgh
- 50+ chapters
- Chair of SCA Coalition, a 40 member group developed to foster greater public awareness, research, and access to life-saving therapies.
- (www.stopcardiacarrest.org)
- Very active and strong online support community

SCAA Goals

- Develop & grow a grassroots membership that will effectively eliminate unnecessary deaths from SCA
- Increase awareness and understanding of Sudden Cardiac Arrest
- Build and maintain effective SCAA Chapter involvement and leadership among physicians, EMTs, public policy makers and general public
- Collaborate with others to increase access to CPR, early defibrillation, ICDs and other therapies
- Provide patient and survivor support and information
5.3

Link 3: Early CPR
Resuscitation Programs
(listed by increasing complexity)

1. Complete a survey of the number of AEDs in your community. You may want to target specific types of public facilities. Examples could be houses of worship, health clubs, golf and tennis clubs, hotels, government buildings, shopping malls, etc. Develop a census from the information gathered. Submit an article to local newspapers/community newsletters detailing the results.

2. Distribute SCAA brochures and other AED Fact Sheets to community centers, libraries, schools, physician offices or grocery stores and other public places.

3. Translate AED materials into non-English languages as required to reach all citizens in your community. Use local college/university resources and/or native language people to keep costs down.

4. Exhibit at community fairs/health fairs to distribute materials and host an SCAA chapter booth/table to enroll survivors, recruit new members and educate the community.

5. Collaborate with existing community health centers to provide assistance/instruction of CPR Training.

6. Contact local high schools to find out about community service volunteer requirements. Find students who may be interested in spending community volunteer time to work with local chapter on AED programs.

7. Use step by step Public Access to Defibrillators (PAD) Process to place permanent AEDs in specific types of public facilities. Again, these may be schools, businesses, places of worship, airports, grocery stores or fitness centers. Ensure training on the use of the AED.

8. Partner with a hospital, local college or university to sponsor a Healthy Heart forum focusing on SCA awareness.

9. Submit an article to community newspapers and community newsletters detailing the statistical and survival need for placing AEDs.

10. Organize athletes screening event at schools, health fairs.

11. Work to equip local police department vehicles with AEDs. EMS 10-step program to place AEDs with first responders.

12. Contact a local talk show host or local news media outlet to have a program or segment on chapter activities. Offer interviews with chapter leadership and with survivors resuscitated with CPR/AED.

13. If already in place in your state, work with your state Department of Public Health and the American Heart Association towards achieving a “HeartSafe Community” status.

14. Change the state laws to require AEDs in schools, health clubs or other public facilities, working with local and/or state legislators/Department of Public Health.
5.4

Link 4: Early Defibrillation
Public Access to Defibrillation (PAD)

Numerous scientific studies conducted during the past two decades have proven that rapid defibrillation is the single most important factor affecting survival from Sudden Cardiac Arrest in adults. This research, coupled with important technological advances, has driven an international movement to increase access to early defibrillation.

In order to have AEDs available more quickly for persons who need them, some facilities (such as hotels, airports, country clubs, schools etc.) are purchasing these devices under what is called a Public Access Defibrillation (PAD) program. Since AEDs are prescription devices and must be labeled with the prescription statement required by law (CFR 801.109), a physician who oversees the PAD program at a facility must write a prescription for most AEDs in order for the facility to purchase it. This is easily accomplished and there are many who are willing to help you start a PAD program. To date, one model of AED has been cleared for the FDA for over-the-counter sale and in-home use.

Public Access refers to accessibility for trained users to use AEDs in public places. While AEDs are now very simple to use and many untrained laypersons have used them successfully, it is best to assure that trained personnel are always on site (at locations where this is feasible). A trained user does not necessarily mean trained medical personal but also refers to laypersons with AED training.
How to Set Up an AED Program

The Sudden Cardiac Arrest Association is committed to broadening public access to defibrillation. Numerous scientific studies conducted during the past two decades have proven that rapid defibrillation is the single most important factor affecting survival from sudden cardiac arrest in adults. This research, coupled with important technological advances, has driven an international movement to increase access to early defibrillation. In this section, SCAA highlights important information for identifying your community's needs and implementing a successful community AED program.

This information can also be helpful for businesses, schools, service organizations and others seeking to establish AED placement and CPR/AED training programs in schools, sports centers, office buildings, shopping centers, residential communities and other venues.

On-Site AED Programs

Even if a community has done everything possible to strengthen its chain of survival, the success of a community defibrillation program can be limited. For example, if you live in rural area and EMS has long distances to cover, or an urban area, where EMS has to contend with traffic and high-rise buildings, the time to first shock may be delayed. This is why many locations – such as airports, office complexes, residential communities, shopping centers, sports stadiums and schools – have established on-site defibrillation programs to place AEDs and to train staff and volunteers in CPR and AED use.

When sudden cardiac arrest occurs outside the hospital, it occurs most often in the home. For this reason, some families of at-risk individuals have elected to place AEDs in their homes and to be trained in CPR and AED use. As research continues in this area and AEDs become more readily available for home use, it is possible that home placement of AEDs will increase significantly.

Determine The Need

Saving lives takes a team effort. And, it takes consideration of a number of factors that will help determine the type of AED program your community needs, including the size and location of your community - large city, small suburb, and rural community. Evaluation of the current emergency response system is important to assess how prepared your community currently is to handle sudden cardiac arrest. Checking with your local government is also important as laws and requirements vary. Once you determine your community's needs, then you can identify areas for improvement: greater public awareness, more public and professional training, wider placement of AEDs.

www.suddencardiacarrest.org
Based on the chain of survival approach, the following questions can help your community assess areas of focus and need:

**Early Access**
- Does your community have Enhanced 9-1-1 coverage?
- Does the public know how to recognize a cardiac emergency?
- Does the public know to call 9-1-1 (or the local emergency number) immediately in the event of an apparent cardiac emergency

**Early CPR**
- Are emergency dispatchers trained to give callers instructions in CPR?
- Is most of the teen and adult population trained in CPR?

**Emergency Defibrillation**
- Do state laws and regulations permit first-arriving emergency personnel and trained laypersons to use defibrillators?
- Are all first-responding emergency personnel equipped with defibrillators?
- Are these personnel trained to deliver the first shock within 60 seconds of their arrival (if response time is greater than five minutes)?
- Is the average "call-to shock" time five minutes or less in at least 90 percent of cases?

**Early Advanced Care**
- Does your community have paramedics or emergency physicians prepared to provide early advanced care?

*If you can answer "yes" to each of these questions, the chances for SCA survival in your community are strong. If any answer is "no", the chances for SCA survival are greatly diminished.*

**Key Community Program Components**
Once you have identified your community's needs, developing an on-site Public Access Defibrillation program involves consideration of four major components – personnel, equipment, emergency response plan, and ongoing quality improvement. The following check list provides essential elements to consider for your program.
Personnel
1. Identify program coordinator.
2. Identify a group of responders and train in CPR and AED use.
3. Enlist a medical consultant (consider local EMS).

Equipment
1. Select AED appropriate for venue and users.
2. Determine most accessible location for 24 hour availability.
3. Check AED present and in "ready" mode daily.
4. Replace pads and batteries as needed (expire about every two years).

Response Plan
1. Develop an emergency response plan (ERP) including activation of on-site responders and call to 911.
2. Assure occupant awareness of ERP and AED location(s).

Quality Improvement
1. Assure compliance with local legal requirements
2. Review plan annually and consider drills

Download, read, print, and distribute the 10 Step Community AED Program Guide from the SCAA website to begin your community AED program today.

Legislative Initiatives
The Sudden Cardiac Arrest Association (SCAA) is deeply committed to preventing loss of life due to sudden cardiac arrest. For this reason, SCAA has taken a leadership role and joined forces with other professional and patient organizations that share this commitment and have unified to form the Sudden Cardiac Arrest (SCA) Coalition. By leveraging the passion and resources from its member organizations, the SCA Coalition aims to prevent sudden cardiac arrest deaths through legislative initiatives that lead to greater public awareness, research and access to life-saving therapies.

- State Laws on Heart Attacks (provided by the National Conference on State Legislatures) (February 2008 update)
- State Laws on Automated External Defibrillators (provided by the Centers for Disease Control and Prevention)
- Josh Miller Helping Everyone Access Responsive Treatment in Schools (HEARTS) Act of 2007
- Cardiac Arrest Survival Act (Public Health Improvement Act of 2002)

Links to more information on these initiatives can be found on the SCAA website!
Successful Programs
Many communities around the United States are actively engaged in improving survival from sudden cardiac arrest. Examples of some of the successful efforts include the following:

• Rochester
• Maine Cardiovascular Health Program
• Nashville Public Access Defibrillation Program
• San Diego Project Heart Beat Public Access Defibrillation Program

ADDITIONAL AED RESOURCE LINKS

ABCs of AEDs
http://www.nirsa.info/know/2007/08/risk001.html
AEDs at Camp
http://findarticles.com/p/articles/mi_m1249/is_2_79/ai_n16133379
AEDs: Life-saving Technology is Only Part of the Story
http://findarticles.com/p/articles/mi_qa3922/is_200212/ai_n9150907/pg_1
American Hearth Association Policy Recommendations on Community Lay AED Programs
http://circ.ahajournals.org/cgi/reprint/CIRCULATIONAHA.106.172289v1
Federal Occupational Health Guide to AEDs
http://www.foh.dhhs.gov/Public/WhatWeDo/AED/AED.asp
Recent Changes in CPR
http://www.nirsa.info/know/2008/04/risk001.html
Occupational Health and Safety: Assessing Your Needs
http://www.ohsonline.com/articles/44642/
Occupational Health and Safety: It’s a Matter of Time
http://www.ohsonline.com/articles/44626/
Occupational Health & Safety Administration (OSHA) Guidelines on AEDs
http://www.osha.gov/SLTC/aed/solutions.html
Occupational Health & Safety Administration (OSHA) Statement on AEDs in the Workplace
Sample Policy and Procedures Statement for AED Programs
http://policy.iastate.edu/policy/defibrillator/
http://www.northwestern.edu/risk/defib.htm

Follow these links from the SCAA website for more info!
Link 5: Early Advanced Life Support
Early Advanced Care/Early EMS Care

Prompt and expert care by advanced EMS providers is another important link in the Chain of Survival. Some things you can do to assure your citizens are getting the best possible cardiac arrest care are:

- **Optimize EMS Dispatch**
  Make sure your dispatch center is using an effective emergency medical dispatch system so that possible cardiac arrest and other critical calls are dispatched first and that closest first responder and ALS units are both dispatched. Review call received to dispatch times. Review call-taker prioritization.

- **Optimize System Efficiency**
  Assure that ALS units are scheduled and deployed to most efficiently cover high priority calls with reasonable response times. Monitor mean and 90% fractile response intervals.

- **Protocols**
  Engage your medical director to assure your system is using state of the art protocols for treatment of cardiac arrest in line with the latest American Heart Association CPR and ECC Guidelines as well as the latest prehospital care and resuscitation science.

- **Education and Training**
  Promote state of the art care by continuing education on the latest concepts in cardiac arrest care, including the importance of high-quality chest compressions with minimal interruptions. Consider running crews through simulation drills to develop efficiency with care delivery and teamwork.

- **Quality Improvement and Feedback**
  See separate section in toolkit.
Link 6: Post Cardiac Arrest Care
Post Cardiac Arrest Care

Only recently has the importance of specific therapies and treatment goals after return of spontaneous circulation (ROSC) been fully appreciated. Return of pulse is really only the first step in treating a cardiac arrest victim. What you do after return of pulse makes a huge difference in not only whether the person survives but also on their neurological recovery if they do survive.

• **Post resuscitation care protocol**
  Work with your medical director to adopt a state of the art protocol for what to do after the patient develops ROSC. This should include attention to the following:
  • Maintain perfusion: vasopressor infusion to maintain systolic blood pressure
  • Therapeutic hypothermia for patients who are unresponsive (unable to follow commands)
  • Proper ventilation and oxygenation
  • Transfer to appropriate receiving facility (see next bullet)

• **Participate in regional system of care for cardiac arrest patients**
  Hospitals and EMS agencies should develop a plan for determination of patient destination and transfers, so that patients are directed to hospitals with dedicated comprehensive post-cardiac care programs. This may involve direct transport from field by ground or air or transfer from local community emergency department, depending on local factors.
Link 7: Rehabilitation and Recovery
INSPIRE: the SCAA Online Support Community

The Sudden Cardiac Arrest Association (SCAA) is pleased to offer an Online Community that provides many ways for SCAA members and others to communicate. SCAA Online Community members will be able to connect with other members who have suffered sudden cardiac arrest, have an implantable defibrillator, provide emergency or medical treatment related to cardiac arrest, are family or caregivers for someone who suffered a cardiac arrest and all who want to interact with others interested in reducing sudden cardiac arrest. SCAA's Online Community contains several options - members can participate in discussion groups on a variety of topics, invite members to be friends who become part of an online inner circle, and even create and read others' personal blogs (online diaries). We encourage you to register and become members of our new Online Community for those affected by and interested in sudden cardiac arrest. Registration is FREE!

Click here to enter the SCAA Online Community!
Surviving a Cardiac Arrest…

Now What?

An educational resource addressing psychological, social and quality-of-life concerns in survivors and family members after cardiac arrest, published by the

“After my cardiac arrest, it was months before I was emotionally ready to reach out to others and address what happened. For a while, I would only share my experience with another survivor from my state. Soon I discovered SCAA and learned I wasn’t alone. From the personal connections I made with other survivors and advocates to the educational resources, I found support, strength and encouragement to live and enjoy life again.”

Mary Tappe
SCA Survivor

www.suddencardiaccarest.org
Surviving cardiac arrest is rare. For the six percent of patients who do survive, recovery is often a long process that simply doesn’t end with the insertion of an ICD or application of an external wearable defibrillator.

**Facts of Life After SCA:**
- 90% of SCA survivors experience impairment in performing daily life skills
- Nearly 40% of patients experience symptoms of anxiety after cardiac arrest
- A third of patients with ICDs require coping skills to address fear of potential shocks
- Typical adjustment period can take 6-12 months
- Over 50% of SCA survivors are diagnosed with psychiatric disorders

SCA is traumatic for survivors but also can be life-changing for their loved ones. In fact, it’s common for both survivors and family members to experience challenges adjusting to life after cardiac arrest. Many report feelings of:

- Anxiety
- Withdrawal
- Fear
- Loss of interest, depressed
- Loneliness
- Inability to relate to others
- Guilt

ICDs and other devices can monitor the heart and prevent future cardiac arrests, but they can’t heal emotions, calm anxiety or ease fears. That’s where the **Sudden Cardiac Arrest Association** (SCAA) and its nationwide network of SCA survivors, resources and advocates can help!

**SCAA Connects**
In addition to medical professionals, emergency responders and patient advocates, SCAA has the largest gathering of survivors and their family members in the United States. SCAA connects survivors and patients at risk from across the country through “**Inspire**” - an interactive online support community, where together they can share concerns, discuss medical issues

*Rehabilitation Resources for Survivors & Family Members*
-SCAA 2011

[www.suddencardiакarrest.org](http://www.suddencardiакarrest.org)

Each survivor’s experience is unique, and we realize that. The Survivor Page of the SCAA Web site is a forum that allows survivors to share their individual experiences and show the world they are not alone. Located on the Web at www.suddencardiocarrest.org, these stories chronicle life before and after SCA along with the variety of emotions patients experience and prove to be helpful outlets in the recovery process.

Personal support is given through SCAA’s nationwide network of 50+ chapters. Many operate or collaborate with local support groups which meet regularly to help the healing process. They also conduct a variety of CPR/AED training sessions, hold fundraisers to donate AEDs in their local communities, work with cardiologists to provide free heart screening tests for students.

SCAA Educates
Striking without warning, SCA leaves patients and their loved ones with a multitude of questions. Immediate care is often characterized by numerous examinations, tests and treatments. And quite frankly, it all can be overwhelming and confusing.

The SCAA Web site provides a variety of educational resources and materials on the etiology of cardiac arrest, its risk factors, treatments and preventive measures. Patient materials cover a broad array of topics, including:

♦ Cardiac Rehabilitation
♦ Living with ICDs
♦ Lab tests
♦ Therapeutic Hypothermia
♦ CPR
♦ AEDs
♦ Atherosclerosis
♦ Coronary Artery Disease
♦ Risk Factors

In addition, SCAA’s interactive media platform reaches the general public through a variety educational videos, public service announcements (PSAs) and media awareness campaigns. Our established presence on TV, radio and the Web helps inform everyday individuals of the public health crisis of cardiac arrest.
SCAA Advocates

SCAA works toward establishing a nationwide response to cardiac arrest, in which communities are better prepared and bystanders are trained to offer assistance in cardiac emergencies. To expand the number of publicly accessible AEDs, we support federal and state legislation that require the devices in schools and other public places.

SCAA Partners

To increase the number of bystanders, SCAA works with state governments to revamp Good Samaritan laws to include protection of bystanders using AEDs.

And in promoting local ordinances, we join forces with EMS agencies, police and fire departments across the country to recognize the life-saving efforts of emergency responders and dedication of survivors.

Additional Resources for the Rehabilitation & Recovery Process

Beyond these core pillars, SCAA’s focus on the physical, mental and emotional aspects of complete SCA recovery continues to expand as we:

- link survivors living with ICDs to ongoing nationwide research studies
- provide patients access with medical professionals including mental health specialists
- share overall heart-healthy lifestyle guidance

SCAA is the nation’s leading nonprofit advocacy organization exclusively dedicated to SCA awareness, and prevention to create safer communities that are better prepared to respond to cardiovascular emergencies and increase survival from SCA. Visit www.suddencardiacarrest.org to learn more.

1250 Connecticut Ave. , NW, Suite 800
Washington, DC 20036
(202) 534-1875
www.suddencardiacarrest.org
Scaa-info@goamp.com

Rehabilitation Resources for Survivors & Family Members
-SCAA 2011
www.suddencardiacarrest.org
COPE:
Cardiovascular Outcomes/Psychosocial Education

Sadly, a significant concern of SCA survivors and family members has yet to draw much attention from the medical profession. While advancements in care and technology continue to develop within the EMS and hospital settings, psychosocial challenges and various mental health issues occurring post-SCA have rarely been the focus of research and discussion, especially among cardiologists and electrophysiologists. And while many SCA survivors individually report experiencing difficulties in adjusting to life, the combination of few resources and unaware medical professionals often prevent them from reaching out and seeking help.

As part of the Rehab and Recovery Initiative, SCAA is developing materials and resources to educate survivors and family members (Phase I), medical professionals (Phase II) and EMS first responders (Phase III).

Phase I will consist of materials focusing on depression, anxiety and brain trauma, among others, that will be available via a new online Web platform. In addition, Phase I will also include a directory with links to mental health specialists throughout the country, thereby providing local access for patients in need of assistance. Content specifically targeting medical professionals and EMS providers will also be accessible via this platform.
Fundraising Ideas for EMS and First Responders
Civic Resources Focused on Community Service

In communities across the country, there are local organizations chartered to help strengthen education and services within the community. In addition to donating funds, goods and services, these groups may welcome a presentation on cardiac arrest, AEDs or other emergency response concerns. Most common of these organizations are:

- AARP
- American Legion
- Boy Scouts of America
- Girl Scouts of America
- Elks
- Freemasons
- Jaycees
- Junior League
- Kiwanis
- Knights of Columbus
- Lions Club
- Moose
- NAACP
- Rotary International
- United Way
- YMCA
- YWCA

In addition to these groups, locally based corporations and businesses (many of which have existing corporate grant programs often focusing exclusively on the geographic area of their operations) can be a source of financial assistance.

Also, don’t rule out the effectiveness of bake sales, walk-a-thons, auctions and raffles in your pursuit to raise funds in support of SCA awareness. These events may seem small in scale but are actually responsible for many AEDs placed across the country.

Asking for money and applying for grants is no easy task. To help guide you through the process, check out grant request resources and tips available at:

The Foundation Center
1627 K St., NW, 3rd Floor
Washington, DC 20006
http://foundationcenter.org
Private Foundations

Private foundations have longstanding history of providing grants for general health initiatives and specific cardiovascular-related outreach efforts. Some of the major private donors include:

- Robert Wood Johnson Foundation: [www.rwjf.org](http://www.rwjf.org)
- David & Lucile Packard Foundation: [www.packfound.org](http://www.packfound.org)
- Pew Charitable Trusts: [www.pewtrusts.org](http://www.pewtrusts.org)

**The McKesson Foundation**

**Funding Available:** The majority of grants range from $5,000 to $25,000, although amounts can vary widely. **Eligibility:** The Foundation supports health-related, social, educational, civic, and cultural projects primarily focused on youth and located in the San Francisco Bay Area. To receive funding, an organization must be tax-exempt under Section 501(c)(3). **Priority:** The Foundation seeks to enhance the health and quality of life in communities where McKesson HBOC Inc., operates and its employees live. Our emphasis is focused on youth, especially health services for under-served populations, educational enrichment, recreation and youth development activities. The Foundation also funds emergency services for children and families, and a variety of social, educational, and cultural programs. **Deadline:** N/A. **Information:** Marcia Argyris, VP, Community Relations and President, McKesson HBOC Foundation, One Post Street, San Francisco, CA 94101.

**Milagro Foundation**

**Funding Available:** Funding typically ranges from $2,500-$10,000 with an absolute upper limit of $25,000. **Eligibility:** The Milagro foundation partners with the nonprofit community to serve the needs of children and youth in the areas of the arts, education and health. Started in 1998 by Deborah and Carlos Santata, the foundation supports grassroots, community-based, tax exempt organizations in the San Francisco Bay area, the United States and the countries touched by the music of Santana. **Priority:** Projects which help children and youths lead healthy lives through education and prevention. **Deadline:** Grant applications are accepted continuously. **Information:** [www.milagrofoundation.org](http://www.milagrofoundation.org).
Public Safety Foundation of America

**Funding Available:** $3 million. **Priority:** Planning and Coordinating Proposals to determine how to best implement wireless 911 location technology for a single PSAP or a county, region or state. PSAP Equipment and Technology upgrades to make the PSAP capable of receiving and utilizing information on wireless Phase II calls. Strategic Deployment Initiatives for programs designated at a high level to address implementation challenges. Education Proposals to educate public safety agencies and other stakeholder groups about the importance of implementing wireless location technologies. **Eligibility:** Public safety and non-profit organizations in the U.S. are eligible to apply for the grants. **Deadline:** Round 2 Pre-applications are due June 6, applications are due July 3. Round 3 Pre-application by September 5, 2003 Grant application submitted by October 3, 2003. Round 4 Pre-application by December 5, 2003 Grant application submitted by January 2, 2004. **Information:** Public Safety Foundation of America, 1-888-APCO911, [www.psfa.us](http://www.psfa.us).

Ahmanson Foundation

**Funding Available:** Maximum Amount: $1,850,000.00, Minimum Amount: $300.00, Average Amount: $25,000.00. **Priority:** The Ahmanson Foundation provides funding for higher and other education, the arts and humanities, medicine and health, and a broad range of social welfare programs, including youth organizations. Fund Subject(s) include: Community health education, Community programs, Health care, Public education, and Social services. **Eligibility:** Community based organizations and IRS 501 (c)(3) Organizations located in Los Angeles, CA. Southern CA. **Deadline:** No deadlines. **Information:** Lee Wolcott, Managing Director, 9215 Wilshire Blvd., Beverly Hills, CA 90210, (310) 278-0770.

Albertson's Inc.:  

**Funding Available:** $3 million. **Eligibility:** Nonprofits, including those with a focus on health and education. Community-based organizations in: Arizona, Arkansas, California, Colorado, Florida, Idaho, Iowa, Kansas, Louisiana, Mississippi, Missouri, Montana, Nebraska, Nevada, New Mexico, Oklahoma, Oregon, South Dakota, Tennessee, Texas, Utah, Washington, and Wyoming. **Priority:** Programs that meet a community need, have volunteer support, serve large groups of people, have long-term effects, and community-wide support. **Deadline:** None. **Information:** Send requests to Corporate Treasurer, Albertson's Inc., P.O. Box 20, Boise, ID 83726; (208) 395-5949.
California Wellness Foundation

**Funding Available:** Maximum Amount: $110,000.00, Minimum Amount: $5,000.00.  
**Priority:** The California Wellness Foundation's General Grants Program provides organizations with the opportunity to pursue innovative projects in the field of health promotion and disease prevention, with special emphasis upon provision of direct services. The Foundation's priority funding areas include community health; population health improvement; teenage pregnancy prevention; violence prevention; and work and health. Respectively, projects within these priority areas should: promote healthy lifestyles with emphasis upon changing behaviors, risk factors, or social and physical environments relevant to health; encourage development of integrated systems of health service delivery; focus on primary and secondary prevention of teen pregnancy and the special healthcare concerns of pregnant and parenting teens and their families; promote violence prevention; and provide programs and services that improve the health status of California workers and their families through health promotion. **Eligibility:** California. National organizations providing services in California are also considered. Occasionally, grants will be made to projects that are national in scope where benefits to California can be clearly demonstrated.  
**Deadlines:** No deadlines. **Information:** Joan Hurley, Grants Administrator, 6320 Canoga Ave., Ste. 1700, Woodland Hills, CA 91367-7111, (818) 593-6600, (818) 593-6614 - FAX.

The Chartwell Charitable Foundation

**Funding Available:** In 2001, the foundation awarded $11 million for 167 grants, with roughly two-thirds of the grants going to Southern California. **Priority:** The foundation gives grants to hospitals and other health-care organizations, with an emphasis on helping children. **Eligibility:** Giving is restricted to Southern California and New York. **Deadline:** Deadlines are rolling. Send a letter outlining needs first. **Information:** Chartwell Charitable Foundation, 1999 Avenue of the Stars, Suite 3050, Los Angelos, CA 90067, 301-556-7600.

The Community Collaboration Fund

**Funding Available:** Grants range from $30,000-$35,000, with statewide, regional and multi-site projects receiving up to $100,000.  
**Priority:** The Fund makes grants to non-profit organizations to expand rural telemedicine equipment, purchase and install telemedicine and telecommunications equipment and develop health network Web sites. **Eligibility:** Non-profits in California.  
**Deadline:** Call for deadline info. **Information:** Nelson Holl, 707-829-5626; Cassandra Malry, 323-857-0526.
Walt Disney Company Foundation

**Funding Available:** In 2000, grants totaled $5.2 million. **Priority:** The foundation invests in youth and child welfare agencies, health-care organizations, and hospitals. Funds support general operations and program development, annual and capital campaigns. **Eligibility:** Non-profits in Florida and California. **Deadline:** Initial letters or proposals are accepted continuously, The board makes grant decisions each summer. **Information:** Tillie Baptie, 818-560-1006.

Johnson & Johnson Community Health Care Program

**Funding Available:** Non-profit organizations selected by the Community Health Care Program will receive a competitive $150,000, non-renewable two-year grant ($75,000 per year). **Priority:** The primary goal of the Johnson & Johnson Community Health Care Program is to support community-based health initiatives offering quality health care services to medically under-served populations. The program is fully underwritten by the Johnson & Johnson Family of Company funds. The main objective of the Johnson & Johnson Community Health Care Program is to enhance access to health care among medically under-served patients by supporting the nation's safety-net of community-based health centers and providers; Providing grants to community based non-profit organizations that propose creative and effective ways of improving access to health care services. Considering the special needs of individuals at high risk for medical under-service particularly programs that support quality of care for women and children. Assisting organizations to develop a broad-based public and private support network. **Eligibility:** Funding during the 2003 Community Health Care Grant Cycle will be made available to qualified community based health care organizations; located in and providing direct service to the following geographic areas only: New Jersey (all areas), New York (all areas), Pennsylvania (all areas), San Angelo, TX, San Francisco, CA, and Washington, DC. **Deadline:** N/A. **Information:** www.jhsph.edu/johnsonandjohnson.

John D. and Catherine T. MacArthur Foundation

**Funding Available:** Most grants are expected to be $5000-$15,000. **Priority:** The foundation has several priority areas. One of which is child abuse. Support is given for child abuse prevention programs and to provide necessary services for victims of child abuse and their families. **Eligibility:** Proposals will be considered in the above general areas or for special project areas established by the Board. Proposals will only be accepted from Los Angeles and San Diego counties of California. **Deadlines:** Grant proposals received by March 15 will be considered for decision/funding in June. Grant proposals received by September 15 will be considered for decision/funding in December. **Information:** Write or e-mail the Foundation at: Jane D. McCarthy, President, McCarthy Family Foundation, P. O. Box 27389, San Diego, CA 92198-1389, familyfdn@aol.com.
Nevada Community Foundation

Funding Available: Maximum Amount: $75,000.00, Minimum Amount: $100.00. Priority: The Nevada Community Foundation is a non-profit corporation that distributes funds to charitable organizations in Nevada. The Foundation supports services for youth, women, minorities, immigrants, the economically disadvantaged, and the homeless. HIV/AIDS organizations, such as Aid for AIDS of Nevada, and AIDS research are also supported. Eligibility: Applicants must be non-profit or public entities located in Nevada. Applicant organizations must be governed by either a voluntary board of directors, a publicly elected body, or a board duly appointed by a publicly elected official or officials. Deadline: No deadlines. Information: Jennifer Charlton, Development Officer, 1660 E. Flamingo Rd., Las Vegas, NV 89119, (702) 892-2326, (702) 734-8504 - FAX.

Child Care Playground Safety Initiative

Funding Available: $5 million. Priority: The David and Lucile Packard Foundation in Los Altos, California, has announced a two-year, $5 million initiative to upgrade 169 playgrounds in San Mateo, Santa Clara, Santa Cruz, and Monterey counties. The new Child Care Playground Safety Initiative also will provide training and technical assistance materials to all 1,051 licensed child-care centers in the four counties. In 2000, the state of California mandated new safety standards for licensed child-care centers, giving playground operators until January 2003 to implement them. However, the state did not make adequate funds available for repairs, upgrades, and costs related to bringing playgrounds up to code. The initiative attempts to address the funding shortfall by offering technical assistance and financial resources to upgrade playgrounds in the four counties. Eligibility: San Mateo, Santa Clara, Santa Cruz, and Monterey Counties in California. Deadline: N/A. Information: The David and Lucille Packard Foundation, 300 Second Street, Suite 200, Los Altos, CA 94022, 650-948-7658, inquiries@packfound.org.

QUALCOMM Corporate Giving Program

Funding Available: N/A. Eligibility: Non-profits in communities in which our employees work and live. Priority: QUALCOMM is dedicated to being a valued corporate citizen and good neighbor by providing cash donations of 1-2% of pre-tax profits each year to the communities in which our employees work and live. In addition to cash donations, QUALCOMM contributes to the community through donations of computers and electronic equipment, information technology consulting and services, and the time and talents of our diverse employee base. QUALCOMM donates to organizations in three major categories: Math and Science Education, Health and Human Services, Arts and Culture. Deadline: Requests to QUALCOMM are accepted year-round, and are reviewed in the middle of each month by the QUALCOMM Corporate Giving Committee. Proposals received by the second Monday of the month will be reviewed that month. Proposals received after the second Monday of the month will be reviewed in the following month's cycle. All proposals will be answered in writing within three weeks following the mid-month Corporate Giving Committee
Charles Schwab Corporation Foundation

Funding Available: Maximum Amount: $5,000.00, Minimum Amount: $500.00. Priority: The Charles Schwab Corporation Foundation gives general operating and restricted program grants to organizations in the following categories: K-12 education; health and human service programs that serve youth, underserved populations, and respond to current community needs; arts organizations and cultural institutions that provide educational and community-based programs; organizations in which Schwab employees are actively involved as volunteers; and environmental, conservation, and civic issues. The Foundation has supported HIV/AIDS projects in the past. Eligibility: San Francisco Bay Area, CA, and other areas where Charles Schwab Corporation has offices are given priority for Foundation funding. Grants to state or national organizations will be considered only if programs directly serve the above communities. Deadline: No deadlines. Information: Karen Ens, Community Relations, 101 Montgomery St., 26th Fl., San Francisco, CA 94104, 415-627-8415.

Union Pacific Foundation


Weingart Foundation

Funding Available: N/A. Priority: "Credible" non-profits serving children and youth can get help from the foundation for specific projects and capital costs. Weingart expects applicants to show they are getting substantial financial support from other sources. Eligibility: The foundation makes grants in the Southern California counties of Kern, Los Angeles, Orange, Riverside, San Bernardino, Santa Barbara and Ventura. Non-profits in San Diego and Imperial counties can call the related Weingart-Proce Fund, which is administered by the San Diego Foundation. Deadline: N/A. Information: Weingart Foundation, www.weingartfdn.org, 619-235-2300.
Government Funding Sources

Information about municipal, state and federal grants can be found on the following:

- FEMA/United States Fire Administration: www.usfa.fema.gov/grants
- Catalog of Federal Domestic Assistance: www.cfda.gov

AEDs

**Edward Byrne Memorial Justice Assistance Grant (JAG) Formula Program: Local Solicitation**

Catalog of Federal Domestic Assistance (CFDA) #16.804 (for information on Recovery Act funding available through 2011) and #16.738 (for the regular non-Recovery Act funding). The 2010 Recovery Act grant application deadline has passed; however, monitor the Web site for funding available under CFDA #16.738. You can go to CFDA.gov to review the full intent of the legislation behind each of these grant funding opportunities.

**Funding Cycle: Winter and Spring (annually)**

**Specifics:** The Edward Byrne Memorial Justice Assistance Grant (JAG) Formula Program is the primary provider of federal criminal justice funding to state and local jurisdictions. JAG funds support all components of the criminal justice system, from multijurisdictional drug and gang task forces to crime prevention and domestic violence programs, courts, corrections, treatment, and justice information-sharing initiatives. JAG-funded projects may address crime through the provision of services directly to individuals and/or communities and by improving the effectiveness and efficiency of criminal justice systems, processes, and procedures.
How a Formula Grant Works and Eligible Applicants: The Bureau of Justice Statistics (BJS) calculates, for each state and territory, a minimum base allocation which, based on the statutory JAG formula, can be enhanced by (1) the state’s share of the national population and (2) the state’s share of the country’s Part 1 violent crime statistics. Once the state funding is calculated, 60% of the allocation is awarded to the state and 40% to eligible units of local government. States also have a variable percentage of the allocation that is required to “pass through” to units of local government. This amount, also calculated by BJS, is based on each state’s crime expenditures. In addition, the formula calculates direct allocations for local governments within each state, based on their share of the total violent crime reported within the state. Local governments that are entitled to at least $10,000 awards may apply directly to Bureau of Justice Assistance for Local JAG grants.

Allowable Activities Include Equipment Purchases: JAG funds may be used for state and local initiatives, technical assistance, training, personnel, equipment, supplies, contractual support, information systems for criminal justice, and criminal justice–related research and evaluation activities that will improve or enhance:

- Law enforcement programs
- Prosecution and court programs
- Prevention and education programs
- Corrections and community corrections programs
- Drug treatment and enforcement programs
- Planning, evaluation, and technology improvement programs
- Crime victim and witness programs (other than compensation)

Tip for Incorporating AEDs into Your Allowable Activities: No JAG funds may be expended outside of the JAG purpose areas. Even within the purpose areas, however, JAG funds may not be used directly or indirectly for security enhancements or equipment for nongovernmental entities not engaged in criminal justice or public safety. Nor may JAG funds be used directly or indirectly to provide for any of the following matters unless the Bureau of Justice Assistance (BJA) certifies that extraordinary and exigent circumstances exist, making them essential to the maintenance of public safety and good order:

- Vehicles (excluding police cruisers), vessels (excluding police boats), or aircraft (excluding police helicopters)
- Luxury items
- Real estate
- Construction projects (other than penal or correctional institutions)
- Any similar matters

The sole purpose for applying for JAG funds should not be for the acquisition of AEDs. However, you can add AEDs when you request funds for your main programs that fall under the Allowable Activities. Implementing a program in any one of these areas requires materials, supplies, and equipment. Adding AEDs to your program’s needs and including
them under the Equipment line item in your budget summary and narrative is allowable. Don’t miss this annual opportunity to apply for JAG funding; it is a definite recurring funding source for purchasing AEDs for your law enforcement agency.

What Happened to the Local Law Enforcement Block Grants Under JAG? The JAG Program allows states, tribes, and local governments to support a broad range of activities to prevent and control crime based on their own local needs and conditions. JAG blends the previous Byrne Formula and Local Law Enforcement Block Grant Programs to provide agencies with the flexibility to prioritize and place justice funds where they are needed most.

How to Contact BJA: It’s a good idea to contact BJA and get on their notification list for the annual funding cycles. Here is their contact information:

Bureau of Justice Assistance
810 Seventh Street NW, Fourth Floor
Washington, DC 20531
Phone: 202-616-6500
Toll-free: 1-866-859-2687
Fax: 202-305-1367
Online email form:
http://bja.ncjrs.gov/app/contactus/contactus.aspx

U.S. Department of Justice – Other Programs to Track

Grant Program: Weed and Seed Grant Program
Look up Catalog of Federal Domestic Assistance (CFDA) #16.595 (www.cfda.gov) to review the full intent of the legislation behind this grant funding opportunity.

Second Chance Act Adult and Juvenile Offender Reentry Demonstration Projects - CFDA #16.812

The Second Chance Act will help ensure the transition individuals make from prison, jail, or juvenile residential facilities to the community is a safe and successful process. Applicants are limited to state and local government agencies and federally recognized Indian tribes. Applicants must adhere to all of the eligibility and funding requirements of the Second Chance Act. In order to be eligible to apply for funding, the jurisdiction preparing the application must have developed a reentry strategic plan, which includes a detailed implementation schedule as well as extensive evidence of collaboration with key public and
private stakeholders. Applicants must also have established a Reentry Task Force comprised of specific justice system and community representation.

**Note:** Remember, you’ll need to work with your Agency’s community partners (Social Services, Healthcare, Schools, Human Services Providers) to plan and write a comprehensive grant-specific program that just happens to include the need for AEDs in all areas where law enforcement personnel will interact with a high risk public—including juveniles.

The next program is a competition that your state agency must apply for; however, once these funds are in your state, you can contact your Department of Justice agency to inquire about their re-granting process and how your agency can be a partner in regional or local services. If your state does re-grant these funds, you’ll need to check with the state-level contact to make sure that equipment is an allowable cost since the state can deviate from the federal guidelines for allowable costs.

**Title II Formula Grants Program** – CFDA #16.540

This program supports state and local efforts in planning, establishing, operating, coordinating, and evaluating projects directly or through grants and contracts with public and private agencies for the development of more effective education, training, research, prevention, diversion, treatment, and rehabilitation programs in the area of juvenile delinquency and programs to improve the juvenile justice system. The grant awards to states are for three years.

**Note:** At least 66% of Title II funds (unless waived by the State agency) must be expended:

A. Through programs of **units of local government** or combinations thereof, to the extent such programs are consistent with the State plan;

B. Through programs of local private agencies, to the extent such programs are consistent with the State plan, except that direct funding of any local private agency by a State shall be permitted only if such agency requests such funding after it has applied for and been denied funding by any unit of local government or combination thereof; and

C. To provide funds for programs of Indian tribes that perform law enforcement functions (as determined by the Secretary of the Interior).
**Funding**

**Department of Health and Human Services – Health Resources and Services Administration**

Web site: http://ruralhealth.hrsa.gov/funding/aed.htm

Grant Program: Rural Access to Emergency Devices Grant Program

**Funding Cycle:** In the past, grants have been awarded annually and were made for up to two years. Monies have severely decreased since 2008. *Monitor this program closely for 2010 (and beyond) funding availability.*

**Specifics:** The Office of Rural Health Policy’s Rural Access to Emergency Devices (RAED) Grant Program provides funding to rural communities to purchase automated external defibrillators (AEDs) and provide training in their use and maintenance. The legislation that created this program states that awards will be made to community partnerships. These partnerships are defined as a consortium of first responders (e.g., EMS, law enforcement, and fire departments) and local for-profit and nonprofit entities that may include, but are not limited to, long-term care facilities, rural health clinics, community health centers, post offices, libraries and other civic centers, athletic facilities, senior citizen and day care facilities, faith-based organizations, and schools without AEDs. An applicant must be part of a statewide, regional, or multicounty consortium or rural community organization applying as a community partnership. Funding preference is given to those community partnerships that are statewide in scope. Each community partnership must have a designated lead applicant as the grantee of record and to act as the fiscal agent for the partnership. To qualify as a statewide community partnership, all eligible counties do not have to be included. However, a state-level office must be the lead applicant. State Emergency Medical Services Offices and State Offices of Rural Health are encouraged to apply as lead applicant.

**How to Know if Your Location Qualifies:** The Office of Rural Health Policy has issued a new list of areas eligible for Rural Health Grant Programs based on 2000 Census data. You can check your geographic location by reviewing this document:


**Tip:** If your Department is located in a rural community, use this Web site to find the rural health contact in your state:

http://ruralhealth.hrsa.gov/funding/50sorh.htm
Department of Health and Human Services – Health Resources and Services Administration

Web site: https://grants.hrsa.gov/webexternal/FundingOppDetails.asp?FundingCycleId=F78D5F33-ABFD-4C02-A0F7-BDE8029355C4&ViewMode=EU&GoBack=&PrintMode=&OnlineAvailabilityFlag=True&pageNumber=1

Grant Program: Public Access Defibrillation Demonstration Projects (PADDPs)

Funding Cycle: In the past, grants have been awarded annually and were made for up to three years. Monitor this program closely for 2010 (and beyond) funding availability.

Specifics: The Office of Rural Health Policy's (ORHP) PADDP grant program will fund applications that propose to develop and implement innovative, comprehensive, community-based public access defibrillation demonstration projects that: (1) provide cardiopulmonary resuscitation and automated external defibrillation to cardiac arrest victims in unique settings; (2) provide training to community members in cardiopulmonary resuscitation and automated external defibrillation; and (3) maximize community access to automated external defibrillators (AEDs). The purpose of this grant program is to: “(1) purchase AEDs that have been approved, or cleared for marketing by the Food and Drug Administration; (2) provide basic life training in automated external defibrillator usage through nationally recognized courses; (3) provide information to community members about the public access defibrillation demonstration project to be funded with the grant; (4) provide information to local emergency medical services (EMS) systems regarding the placement of AEDs in the unique settings; and (5) further develop strategies to improve access to AEDs in public places.” To be eligible to receive a grant under this announcement, the applicant must be a political subdivision of a State, a federally recognized Native American Tribe, or a Tribal organization. Applicants are encouraged to form collaborative partnerships that will ensure maximum benefit to the limited funding available through this competition. Though the applicant organization must be a political subdivision of a State, a federally recognized Native American Tribe, or a Tribal organization, partnerships may be composed of emergency response entities such as training facilities, local emergency responders, fire and rescue departments, police, community hospitals, and non-profit entities and for-profit entities concerned about cardiac arrest survival rates. Statewide and multistate partnerships do not need to include all counties in the State.
U.S. Department of Health and Human Services –
Office of Preparedness and Emergency Operations (OPEO)


Grant Program: Hospital Preparedness Program (HPP)

Funding Cycle: In the past, grants have been awarded annually and were made for up to three years. Monitor this program closely for 2010 (and beyond) continuation grant funding availability.

Specifics: The Hospital Preparedness Program (HPP) enhances the ability of hospitals and health care systems to prepare for and respond to bioterrorism and other public health emergencies. Current program priority areas include interoperable communication systems, bed tracking, personnel management, fatality management planning and hospital evacuation planning. During the past five years HPP funds have also improved bed and personnel surge capacity, decontamination capabilities, isolation capacity, pharmaceutical supplies, training, education, drills and exercises. Hospitals, outpatient facilities, health centers, poison control centers, EMS and other healthcare partners work with the appropriate state or local health department to acquire funding and develop healthcare system preparedness through this program. Funding is distributed directly to the Health Department of the State or political subdivision of a State (cities and counties are considered political subdivisions of States).

Tip: When you write about medical equipment stockpile needs and outcomes, it’s critical to include the need for and plans to acquire and incorporate defibrillators into your surge capacity language.

Agency: U.S. Department of Education – Office of Safe and Drug Free Schools

Web site: http://www2.ed.gov/programs/dvpemergencyresponse/applicant.html

Grant Program: Readiness and Emergency Management for Schools (REMS)
Funding Cycle: In the past, grants have been awarded annually and were made for up to two years. The 2010 grant application was in February. Monitor this program closely for 2010 (and beyond) funding availability.

Specifics: The REMS grant program provides funds to Local Education Agencies (LEAs) to establish an emergency management process that focuses on reviewing and strengthening emergency management plans, within the framework of the four phases of emergency management (Prevention-Mitigation, Preparedness, Response, and Recovery). The program also provides resources to LEAs to provide training for staff on emergency management procedures and requires that LEAs develop comprehensive all-hazards emergency management plans in collaboration with community partners including local law enforcement; public safety, public health, and mental health agencies; and local government.

Can districts use grant funds to buy safety and security equipment? Yes. Applicants may propose to use a small portion of these funds to buy safety and security equipment and technology. However, applicants that propose in their application to use these funds primarily to buy safety and security equipment will NOT score highly on their application, and will decrease their chances of receiving funds. The selection criteria for this competition call for a comprehensive, systematic, coordinated improvement of emergency management plans, and applications that mainly request funds for technology and equipment will not meet those criteria.

Tip: Propose a program that just happens to need public access AEDs throughout your school campus!
State Agencies with Grant Funding Programs for Public Access AEDs

California Office of the Attorney General

Tobacco Settlement Fund


The State of California’s Tobacco Settlement funds are a result of a settlement in November of 1998 between state attorney generals and US tobacco companies. The State receives 50% of the revenues and counties receive 50% of the revenue. Payments will be made to state and local governments for 25 years. In the Tobacco Control Program the funding serves to fill the funding gaps both for the prevention/education services and the stop smoking services for pregnant women. Not only does the funding provide stop smoking services to the general population, it also is the **sole source of funding** providing those services to the general population.

Each unit of local government (Counties have this funding in California) makes grants at their own discretion. For example, in Shasta County, the following grantees received funding to purchase AEDs:

- The American Red Cross received $4,827.67 to purchase AED training equipment and trained 853 students.
- The City of Redding Recreation Department received $3,750 to purchase two AEDs and provide training to over 500 individuals.
- The Happy Valley Fire District received $13,947.69 to purchase AEDs and train over 500 individuals.

**Tip:** Whether you are located in California or another state, call your Attorney General’s office and your County’s Tobacco Fund Administration Office to inquire about using funds from the Tobacco Settlement Fund to purchase public access AEDs.

**States with Legislation Requiring AEDs in Public Access Domains**

**Web site to Track Legislation and Funding (if available):**

**Nevada** - School districts in a county whose population is 100,000 or more shall ensure that at least one AED is placed in a central location at each high school within the district.
Template

AED Grant Proposal

The target population for this grant proposal is the 907,574 residents of Honolulu County, Hawaii (U.S. Census, 2008 update). Approximately, 15.4% of residents are medically fragile and require some form of nursing home, adult foster, homebound, or respite care. The Sheriff’s Department is called first because the patient in need of immediate transport is often combative and family members seem to accelerate the medical crisis situation. Since our units are already on patrol and can respond quickly, deputies often arrive on the scene before EMS personnel. Often, the patient is so worked up with anxiety and fear, cardiac arrest is in the process and there is no time to wait for the County’s EMS unit to arrive. Alarmingly, Honolulu County deputies cannot wait to begin administering CPR; more alarmingly, our deputies do not have AEDs in their units. Therefore, without any type of protective barrier or electronic life saving device, mouth-to-mouth CPR is started. In the past year alone, 87 responses involved manual CPR; in 20 cases, the patient had AIDS/HIV or herpes simplex or reactivated tuberculosis. In the past three years, 246 responses involved manual CPR; in 49 cases patients had communicable diseases. Yes, our deputies forged ahead putting their own health in harm’s way.

For the past five years, the County experienced one budget cut after another. County offices are now open four days per week instead of five days. Overtime for all deputies has been eliminated. Most recently, the County started requiring all of its employees to contribute to the cost of their health care coverage. Vehicles for the Sheriff’s Department are over 10 years old and constantly in maintenance. Budget line items for equipment have long been eliminated from the Department’s budget. This means there are no internal funds to purchase any of the critically needed equipment including AEDs. For 48 squad cars, there are two ten-year-old AEDs that are outdated and often malfunction (sparking or failing to turn on). It is essential that the Department equip its squad cars with one AED each. The cost for each one is $1,600. We need 48 at a total cost of $76,800. Sadly, the County Commissioners won’t even allow the Sheriff to plead his case before the Finance Committee because of all of the lingering and crippling budget deficit issues.

Service Issues: Honolulu is located in Honolulu County, Hawaii. The Police Department is under the jurisdiction of the Township. According to the U.S. Census Bureau (2007), there are 4,567 residents. Some 12% of residents are between the ages of birth and 5 years old; 6% are ages 6 to 18 years old; 24% are ages 19 to 44 years old; 40% are ages 45 to 64 years old; and 18% are over the age of 65 years old. According to the American Heart Association (study released in 2009), about 34% of people who experience a coronary attack in a given year die from it. The average age for a first attack is 66 for men and 70 for women; people in their 20s and 30s suffer attacks too. The risk of a heart attack climbs for men after age 45 and for women after age 55. The risk is even higher for Hispanics and Blacks. Heart attacks occur roughly every 35 seconds in the United States, and most occur in the morning, a time when the platelets in the blood are especially "sticky" and prone to form clots. Survival odds for people who have had a heart attack keep getting better thanks to advances in
diagnosis, medication, and lifesaving technology. Last year we responded to 94 incidences of cardiac arrests while performing normal law enforcement duties. Regrettably, only 52 of the victims survived. This survival rate is in itself a miracle since the Police Department has no AEDs in squad cars and must call in and wait on an EMS unit from an adjacent county (47 miles away) for cardiac arrest calls. The risk for our officers who must administer manual CPR is high given today’s myriad transmittable disease concerns. Grant funds will enable the County Sheriff’s Department to purchase 48 HeartStart FRx Defibrillators manufactured by Philips Healthcare. The HeartStart FRx offers on-demand CPR Coaching to help the stressed user recall their training. Calm, clear voice instructions are precisely timed to the responder’s actions, guiding the responder every step of the way. At just 3.5 pounds, it is among the smallest and lightest defibrillators.

Capabilities and Features:

• **Simplify the rescue of a child with the Infant/Child key.** Unique in the industry, the Infant/child key turns the HeartStart FRx into a pediatric defibrillator, tailoring the voice instructions and therapy to the needs of a child. That means just one pad set works for adults, children, and infants, simplifying a stressful rescue.

• **Rugged.** Designed for real-world use, the HeartStart FRx was built to surpass rigorous testing requirements: jetting water, crushing loads up to 500 pounds and a one-meter drop onto concrete.

• **Ready when needed.** Every HeartStart FRx goes through a 120 point test before it leaves the factory. On the job, the HeartStart FRx automatically conducts self-tests every single day, not just weekly. It performs over 85 different tests in all. Even the pads are tested for readiness.

• **Effective.** The electric medicine delivered by the HeartStart FRx is the world leader in automated external defibrillators (AEDs), with more than 40 studies on its effectiveness. Philips' high-current/low energy therapy ensures a potent defibrillation dose, while at the same time, minimizing side effects that are harmful to a fragile heart. So the HeartStart FRx can deliver its most powerful therapy from the very first shock. There’s no need to hold back.

• **Make the most of CPR.** Recent studies have shown that CPR is even more vital to survival than previously realized. Yet its benefits dissipate in seconds. Delivering a shock quickly after chest compressions is critical. The HeartStart FRx’s Quick Shock feature delivers therapy in just 8 seconds (typical) after chest compressions. Other devices can take 2 or 3 times that, reducing the likelihood of shock success, and potentially, survival.

• **Give your early defibrillation program the best chance for success.** With HeartStart Essentials AED Services, Philips experts can draw on a wealth of experience to help you get your program started on the right foot, with pre-implementation consulting and site assessments. We can help manage your everyday needs, including medical direction from a licensed physician, AED/CPR training, web-based program management, and case management software.
The purchase will be used to fully equip 48 Sheriff’s Department squad cars bringing the Department to full AED capacity. The grant funding will alleviate the problem of outdated AEDs and a limited supply of life-saving equipment.

It’s critical that our deputies begin life-saving efforts first and then notify EMS once the patient is stabilized. Deputies are typically in their zones, well-dispersed and only minutes away from a 911 call to provide immediate help. This is a priority as cardiac patients have a four-minute window from the time of cardiac arrest until brain cells begin to die. Defibrillators in every squad car will allow deputies to start using life-saving treatment on arrival at the scene. In addition, AEDs will reduce the risk of transmission of communicable diseases which is a public health risk when manual CPR is administered.

The Department has multiple levels of community, regional and state-level law enforcement and other partners. Officer training and administrative oversight is provided the Arizona Department of Public Services. We are also the lead agency in the County’s Immigration and Customs Enforcement (ICE) Unit. ICE brings together 14 municipal law enforcement agencies for joint operations, planning, and resource sharing. In addition, our Department assigns training officers as instructors for the regional Calvin B. Klein Training Academy in Prescott Valley. Deputies also help patrol campuses at six county school districts that have a total of 3,295 students enrolled. Collaborative efforts have included participating in the Junior Police Academy Program, Public Safety Day, Police/Fire Fundraising Basketball Tournaments, and assisting the Sheriff’s Auxiliary (spouses of officers who volunteer to raise funds for the Department) in selling raffle tickets and raising over $5,000 annually for bullet proof vests and in-car video cameras.

According to recent research (Law Enforcement Newsletter, 2010), 85.6% of law enforcement agencies with an AED program believe it has been one of the main reasons for improving their Department’s image among the public they serve. Research findings support the benefits for the residents and the communities that our Department serves:

• Cities that equip police with automated external defibrillators (AEDs) are finding that people who suffer sudden cardiac arrest have a better chance of surviving (Health-Net, 2010).

• Ability to cut response time to sudden cardiac arrest victims by almost three minutes. More than 95 percent of these people die because life-saving defibrillators arrive on the scene too late, if at all. Medical experts say those statistics could be improved if more law enforcement personnel, including sheriff deputies, state troopers, correctional officers, treasury police, and SWAT teams were trained to recognize and respond in a timely manner with cardiopulmonary resuscitation (CPR) and to use AEDs (American Heart Association, 2010).

Our community and regional partners benefit from our Department’s ability to meet and exceed its ability to protect and serve its residents. The goodwill generated by having functional and reliable life-saving equipment in every squad car will result in an improved community-wide image for the Department and its partners.
The County’s Board of Commissioners has been working aggressively to reduce operational costs for non-essential services. The Finance Committee has recommended cutting non-essential services from five days per week to three (Tuesday-Wednesday-Thursday). In addition, rather than being laid off, County workers have agreed to forego a cost of living salary increase for the next three years. These two moves will eventually save the County $2.4 million next year; however, this cost savings will be used to reduce the deficit. In future years, with prudent spending and careful financial monitoring, the County expects to be operating without a deficit. After a public hearing on Departmental expenditures and equipment purchasing needs, the County Board of Commissioners have agreed that equipping the Department with life-saving equipment, like AEDs, is essential for public safety.

This show of support for the Department was further strengthened when one of our deputies responded to a call to one of our longest serving County Commissioner’s home. The Commissioner’s mother-in-law (80-year old medically fragile female) was in full cardiac arrest. While the Commissioner and his wife stood by, our Deputy started manual CPR. After witnessing this fateful event (resulting in death), the need for AEDs suddenly become more important for incorporating into future budget line items.
The target population for this grant proposal is the 22,563 public school children in 47 schools, 1,458 teachers, and 497 support staff of the Moore County, Georgia (Moore County Intermediate School District (2009) Moore County Educational Directory 2009-10). Middle school children comprise 19.6% (4,469) of enrollment; 35.5% (8,087) of students are in high school. Approximately, 7.8% (1775) of students require special education services. The nine middle schools and the nine high schools each have an average of 4 sports teams with cheerleader squads. There are an average of four school-sponsored or school-approved events (including athletics) per school on site each week. There are also school-sponsored athletic events on sites other than a school facility. A recent Harvard study (March, 2010) showed that about 2% of students have heart problems, usually undetected. Extrapolated, that means as many as 452 of the students could have a potentially life-threatening heart conditions. In addition, it has been shown that athletics increase the likelihood of cardiac events. It is imperative to have AED equipment available and trained personal to operate it. Three years ago, there were 3 life-threatening incidents at athletic events. In the last year, there were two cardiac events at games. Fortunately, each time, the Sheriff’s department arrived before the EMS personnel with the basic tools to sustain the life of the victims. However, this year, because of the extreme County budget cuts, officers are much less likely to be available. It is imperative that each school have at least one AED and at least one staff member who is trained to use it.
The narrative must answer the following questions about funding problems:

- Why can’t you use internal funds to purchase AEDs?
- What is happening with your budget (cuts, layoffs, etc.) because of the local, regional, state, and national economies?
- If you now have AEDs, how old are they and are they in need of replacement? What is the total cost to replace the equipment and how is this cost a barrier to purchasing new equipment?
- If you are purchasing critically needed equipment for the first time, why don’t you already have it? What type of equipment is needed (detailed listing) and what is the cost per unit? Also include the total cost for all needed equipment.

For the past five years, the County experienced one budget cut after another. As a result, the City Parks and Recreation Department offices are now only open four days per week instead of five days. Three park maintenance staff positions were eliminated and overtime for all park employees has been eliminated. Most recently, the County started requiring all of its employees to contribute to the cost of their health care coverage. Vehicles for the City Parks and Recreation Department are over 7 years old and their heavy use means that several are constantly in maintenance. Budget line items for equipment have long been eliminated from the Department’s budget. This means there are no internal funds to purchase any of the critically needed equipment, including AEDs. To cover 3 county parks, 5 picnic grounds, and the county fairgrounds (which contain several buildings for community use) there is only one ten-year-old AED that is outdated and often malfunctions (sparking or failing to turn on). Cuts in the Sheriff’s department mean that officers can no longer be relied on to appear as first responders. It is essential that the Department equip its own 6 vehicles with one AED each. The cost for each one is $1,600. We need 6 at a total cost of $9,600. Sadly, the County Commissioners won’t even allow the Parks and Recreation Manager to plead her case before the Finance Committee because of all of the lingering and crippling budget deficit issues.

Here’s a sample paragraph of how to incorporate convincing statistics into gloom, doom, drama, and trauma-oriented narrative language:

**Service Issues:** Chadwick Township is located in Monroe County, Michigan. The Monroe County Hospital is under the jurisdiction of the Township. According to the U.S. Census Bureau (2007), there are 4,567 residents. Some 12% of residents are between the ages of birth and 5 years old; 6% are ages 6 to 18 years old; 24% are ages 19 to 44 years old; 40% are ages 45 to 64 years old; and 18% are over the age of 65 years old. According to the
Grant funds will enable the Buena Vista Community Hospital to purchase 18 HeartStart FRx Defibrillators manufactured by Philips Healthcare and install them in 18 hospital departments. The HeartStart FRx offers on-demand CPR Coaching to help the stressed user recall their training. Calm, clear voice instructions are precisely timed to the responder’s actions, guiding the responder every step of the way. At just 3.5 pounds, it is among the smallest and lightest defibrillators.

Here is a short sample paragraph:

American Heart Association (study released in 2009), about 34% of people who experience a coronary attack in a given year die from it. While the average age for a first attack is 66 for men and 70 for women, people in their 20s and 30s suffer attacks too. The risk of a heart attack climbs for men after age 45 and for women after age 55. The risk is even higher for Hispanics and Blacks. Heart attacks occur roughly every 35 seconds in the United States, and most occur in the morning, a time when the platelets in the blood are especially “sticky” and prone to form clots. Survival odds for people who have had a heart attack keep getting better thanks to advances in diagnosis, medication, and lifesaving technology. Last year there were over 125 incidences of cardiac arrests in county residents. Regretfully, only 84 of the victims survived. This survival rate is in itself a miracle since the hospital has only a single 10-year-old AED in the emergency room.

Capabilities and Features:

**Simplifies the rescue of a child with the Infant/Child key.** Unique in the industry, the Infant/child key turns the HeartStart FRx into a pediatric defibrillator, tailoring the voice instructions and therapy to the needs of a child. That means just one pad set works for adults, children, and infants, simplifying a stressful rescue.

**Rugged.** Designed for real-world use, the HeartStart FRx was built to surpass rigorous testing requirements: jetting water, crushing loads up to 500 pounds and a one-meter drop onto concrete.

**Ready when needed.** Every HeartStart FRx goes through a 120-point test before it leaves the factory. On the job, the HeartStart FRx automatically conducts self-tests every single day, not just weekly. It performs over 85 different tests in all. Even the pads are tested for readiness.

**Effective.** The electric medicine delivered by the HeartStart FRx is the world leader in automated external defibrillators (AEDs), with more than 40 studies on its effectiveness. Philips’ high-current/low energy therapy ensures a potent defibrillation dose, while at the
The purchase will be used to fully equip 18 hospital departments to have access to AEDs in high-risk areas where patients are treated or tested. The grant funding will alleviate the problem of outdated AEDs and a limited supply of life-saving equipment throughout the hospital.

**Makes the most of CPR.** Recent studies have shown that CPR is even more vital to survival than previously realized.\(^1\)\(^2\)\(^3\)\(^4\) Yet its benefits dissipate in seconds. Delivering a shock quickly after chest compressions is critical. The HeartStart FRx’s Quick Shock feature delivers therapy in just 8 seconds (typical) after chest compressions. Other devices can take 2 or 3 times that, reducing the likelihood of shock success, and potentially, survival.

**Gives your early defibrillation program the best chance for success.** With HeartStart Essentials AED Services, Philips experts can draw on a wealth of experience to help you get your program started on the right foot, with pre-implementation consulting and site assessments. We can help manage your everyday needs, including medical direction from a licensed physician, AED/CPR training, Web-based program management, and case management software.

**Footnotes:**
\(^1\) Cobb LA, et al. JAMA. 1999; 281(13):1182-1188

The narrative must answer the following questions about how the new equipment will be used:

- How will you use the AEDs to increase your responding staff members’ CPR capability prior to the EMS unit’s arrival?
- How will you use the equipment to decrease the chance of a public health incident when manual CPR must be performed?
It’s critical that our staff begins life-saving efforts first and then notifies EMS once the patient is stabilized. The two trained staff members typically work in different areas of the college campus and can be quickly summoned to be first responders. This is a priority as cardiac patients have a four-minute window from the time of cardiac arrest until brain cells begin to die. Defibrillators in every building will allow staff to get to the scene and start using life-saving treatment without having to lose time by bringing equipment with them. In addition, AEDs will reduce the risk of transmission of communicable diseases, which is a public health risk when manual CPR is administered.

Description of the Cost-Benefit for the Possible Grant Award

- What partnerships and collaborative efforts will this project initiate or support?
- How will awarding this grant benefit the members of your organization, region, or community?
- What steps have you taken to keep the cost down while adequately addressing the problem or risk?

Partnerships and Collaborative Efforts

The narrative must answer the following questions about your organization’s partnerships and collaborative efforts:

- Who are your community, regional, and state-level public access entities (hospitals, airports, ports, parks, schools, universities and colleges, public government buildings, etc.) and other partners (units of government; fundraising auxiliary arms of your police department; social and human services organizations; community colleges and universities; foundations; corporations and mom and pop businesses; membership organizations, including chambers of commerce; and volunteers)?
- What types of collaborative efforts has your organization been involved in?
- What activities has each partner been involved in (projects, special events, fundraising, contributions, etc.)?
The Department has multiple levels of community and regional agency involvement. We partner closely with law enforcement to police the recreation areas. We train jointly with local administrative departments and law enforcement as first responders. We are the lead agency in the 10-day-long County Fair, which requires coordination of law enforcement, community organizations, vendors, and state fair representatives. Two years ago we developed a volunteer program that collects trash and removes graffiti once a month in all the parks and recreation areas administered by the Department. That same volunteer program has helped to alleviate the extreme staff shortage. A by-product of the volunteer program is that there has been a decrease in the amount of vandalism.

Benefits of the Grant Award For Your Stakeholders

The narrative must answer the following questions about the benefits of the pending grant award to your stakeholders:

- What are the benefits to the residents that you serve?
- What are the benefits to the communities that you serve?
- What are the benefits to your community partners?

Heart attack (acute myocardial infarction or AMI) outcome is often chosen as one of the first indicators to be reported when evaluating a hospital because heart attacks are important, common, and deadly. Hospitals use the outcome statistic to evaluate and improve care. Insurance companies and other providers use outcome as a gauge of what hospitals are best to contract with. Patients also use reports of outcome to make their decisions. Every year approximately 40,000 heart attack patients are admitted to 400 state hospitals. More than 5,000 of these persons die.

In 2000, introducing AEDs to hospitals was a novel idea (Critical Care Nurse. 2005; 25: 25-33). Since then, hospitals have continued to acquire AEDs as an aid to timely and efficient treatment. There is a 6% to 9% early mortality from heart attack for those who survive long enough to reach the hospital. Careful monitoring and efficient cardiac care are still necessary once the patient reaches the hospital. Our community and regional residents benefit from our hospital’s ability to meet and exceed its ability to serve its residents. The goodwill generated by having functional and reliable life-saving equipment in every patient unit will result in an improved community-wide image for the Hospital and its providers.
Steps Taken to Reduce Costs and Address the Problem

The narrative must answer the following question about the measures your organization will take to reduce costs and address the problem:

❤️ What steps are your administrators or governing body taking to cut operational costs and allocate more funding in the future for critically needed equipment?

Here is a short sample paragraph:

The County’s Board of Commissioners has been working aggressively to reduce operational costs for non-essential services. The Finance Committee has recommended cutting non-essential services from five days per week to three (Tuesday-Wednesday-Thursday). In addition, rather than being laid off, County workers have agreed to forego a cost of living salary increase for the next three years. These two moves will eventually save the County $2.4 million next year; however, this cost savings will be used to reduce the deficit. In future years, with prudent spending and careful financial monitoring, the County expects to be operating without a deficit. After a public hearing on Departmental expenditures and equipment purchasing needs, the County Board of Commissioners have agreed that equipping the City Parks and Recreation Department with life-saving equipment, like AEDs, is essential for public safety. This show of support for the Department was further strengthened when one of our park staff responded to a complaint of chest pain while one of our longest serving County Commissioners was fishing at the county reservoir. Actually, the Commissioner’s 80-year old father-in-law was in full cardiac arrest. While the Commissioner and his wife stood by, the Park Ranger started manual CPR. After witnessing this fateful event (resulting in death), the need for AEDs suddenly become more important for incorporating into future budget line items.

NOTE: This may be your last chance to convince potential funders of the worthiness of your grant request! Don’t be afraid to add an actual event where your staff had no AEDS and the outcome resulted in the loss of a life.
Viewing a Grant Proposal for Public Access AEDs

Wisconsin State University: Wisconsin State University has provided an excellent example of a grant proposal written by their Public Safety Department requesting funds for AEDs. While the products requested were not Philips Healthcare brand, the proposal language and format is a starting point for those who are new to grant writing. The Web site for the sample proposal is:


Getting a Copy of a Funded Federal Grant Application for AEDs

Finding Internet links for federal grant applications requesting AEDs that have been funded is like looking for needles in a haystack—little, if any, return for your time. However, you can write a letter to any federal agency (like the agencies listed in the Funding Resources section of this Toolkit) and request copies of funded grant applications. The key to being successful in this endeavor and expecting a timely response from the federal agencies is that you must cite the Freedom of Information Act (FOIA) in your letter. This link will give you more information about how to make a request using the FOIA:


When you make a FOIA request, you must describe the records that you seek as clearly and specifically as possible and comply with the agency’s regulations for making requests. If the agency cannot identify and locate records that you have requested with a reasonable amount of effort, it will not be able to assist you. All federal agencies strive to handle all FOIA requests in a customer-friendly fashion, in accordance with the FOIA.

Here is an example:
To: U.S. Department of Health and Human Services – Health Resources and Services Administration

From: Harry Smith, Director, Boscobel Area Hospital – Boscobel, Wisconsin (our mailing address is at the top of this letter)

Regarding: Freedom of Information Act Request

Request: Under the Freedom of Information Act and on behalf of Boscobel Area Hospital, I am requesting one copy each of at least three recent federal grants funded under the Public Access Defibrillation Demonstration Project Grant Program. The CFDA for this Grant Program is 93.259. If there is a charge for print copies, please contact me as soon as possible to arrange for payment of any fee. Please mail the grant application examples to:

Harry Smith, Director
Boscobel Area Hospital
1290 N. Calumet Street
Boscobel, Wisconsin 99999

I can be reached at 555-555-1212 or by email at hsmith@BAH.org

Thank you, in advance, for expediting this Freedom of Information Act request.

Note: Under the FOIA, federal agencies are generally required to respond to your request within 20 working days of receipt (excluding Saturdays, Sundays, and federal holidays). If you have not received a response by the end of that time (allowing for mailing time), you may contact the agency to ask about the status of your request. Agencies often need more time to find the records, examine them, possibly consult with other agencies or components within the same agency, decide whether to disclose all of the information requested, and prepare the records for release to you. Agencies may extend this 20-day period for up to 10 more working days, with written notice to you.
Hints, Tips, and Tricks for Fast Fundraising

Get the school administration involved. The more involvement from the school, the more fun and successful the fund raising event will be!

Get the students excited!!!

- Encourage students to customize their personal page, adding images and themes.

- Set a “Goal Date”, the date by which the school wants to acquire the first/additional AED. If you do, this will be met with some kind of reward.

- Have an assembly to raise awareness. Explain cardiac arrest and about AEDs as well as how the fundraiser is going to work.

- Show YouTube videos in class to raise awareness.

- Show “How to use” videos:

  - Have classes compete against each other as “teams”. Top however many classes get rewards.

  - Have individuals compete against each other and award prizes for top participants.

  - Ask other companies for sponsorships to support prizes/rewards.

Create an actual event to center the fundraising around. This can be a walk-a-thon, read-a-thon, healthy-eating-a-thon, or any other event. This can combine the school’s educational and health goals with safety measures. Students can get pledges based on the number of miles they walk, pages they read, or vegetables they eat, etc.
Reward Ideas

Free:
- Recess time
- “free time”
- Extra credit
- Water-balloon fight
- Game day/hour
- Movie day
- Top-earning student gets to be principal for the day
- Fun assembly:
- Play/skit/show
- Teacher/student dance-off
- Teacher vs students basketball game

Not Free:
- Sticker chart: ie. For every dollar you raise, put a sticker on the chart. After the chart is full, you get a reward (this would be a good visual for younger kids)
- Prize box: this would create a sense of urgency as the box would be filled with different kinds of prizes, and the first person to reach their goal would get the best pick.
- Clown
- Magician
- Toys
- Posters
- Candy
- T-shirts
- Unique/cool/colorful pencils/pens/notebooks
- Pizza party
- Ice cream/ice cream cake party
- Gift certificates
- Carnival day
- Field trip or individual tickets
- Nintendo Wii
- Nintendo DS
- Play station
- X-box
- Game boy
- Limo ride
- Hypnotist
- Bikes
- Video games
- Computer games
- Remote-control toy car/truck
- DVD’s
- Mp3 player/iPod
- Dunking tank for teacher/principal
Sudden Cardiac Arrest claims an estimated 325,000 lives each year in the United States, more than breast cancer, prostate cancer, hand guns, automobile accidents and household fires combined. Every two minutes, another life is lost. The Sudden Cardiac Arrest Association was founded to change these alarming statistics. Our mission is to prevent loss of life from SCA. Through your generosity and support, we can succeed.

Donate Online
To access our secure online form to make a donation with a credit card, visit our website at www.suddencardiinarrest.org

All transactions conducted on our website are encrypted using a secure server to protect your privacy.

Donate by Mail
If you wish to mail a donation to the SCAA, make your check payable to the Sudden Cardiac Arrest Association, and mail it to:

Sudden Cardiac Arrest Association
1250 Connecticut Ave NW Ste. 800
Washington, DC 20036

If you would like to make a donation to one of SCAA's chapters or affiliates, please visit the chapters/affiliates page of our website.

Matching Gift Information
Many companies have matching gift programs to encourage employees to donate to charitable organizations. Most of these programs match your contribution dollar for dollar and some will even double or triple the amount of your gift. If your employer has a matching gift program, SCAA will help you facilitate the paperwork.

Estate Planning - Legacies
Remember SCAA in your will. Bequests are greatly appreciated. For more information, please contact SCAA at 866-972-SCAA (7222).

The Sudden Cardiac Arrest Association is a 501(c)3 nonprofit charity. Your donation is tax deductible to the full extent of the law.
7.0 Quality Assurance/Improvement and Research
QI Research

Quality improvement efforts are essential to peak performance. Only when we assess and evaluate what we are doing can we improve. While QI is important for all aspects of an EMS agency, here are just a few ideas specifically related to cardiac arrest.

- Monitor mean and 90% fractile response times for defibrillation-capable first responders and for the EMS unit (specifically the ALS unit for ALS agencies).
- Review and provide feedback to crew for every cardiac arrest, including adherence to protocol, CPR fraction (percent of time that chest compressions were being delivered while patient pulseless), timeliness of defibrillation, post arrest care and destination decision.
- Monitor patient outcomes after cardiac arrest if possible through collaboration with receiving hospitals.

EMS agencies should consider collaboration with local medical schools and teaching hospitals to participate in research efforts. Only with high quality research will be able to advance our knowledge about how to best care for patients in the pre-hospital setting.
FACT SHEET: Automated External Defibrillators (AEDs)

An automated external defibrillator (AED) is a portable device used to administer an electric shock to the heart and restore the heart’s normal rhythm during sudden cardiac arrest. Ventricular Fibrillation (VF), the abnormal heart rhythm that most often leads to sudden cardiac arrest, is treatable. If the heart can be shocked quickly with an AED, a normal heart rhythm may be restored.

In the past, defibrillators were complicated and cumbersome. Only medical professionals with extensive training in heart rhythm interpretation could use them. Today, defibrillators used in public places and in the home are automated, portable and easy to use. They are no longer limited to emergency room and are now placed in airports, schools, offices, houses of worship, gyms, and most recently in homes. It is estimated that approximately 20 percent of all police cars carry AEDs to improve response times to assist SCA victims.

An AED consists of a small computer (microprocessor), electrical circuitry, and adhesive electrode pads. The electrodes collect information about the heart's rhythm. The microprocessor interprets the rhythm. If the heart is in ventricular fibrillation, the microprocessor recommends a defibrillating shock. The shock is delivered by way of the electrode pads, through the victim's chest wall, and into the heart. The shock stuns the heart momentarily, stopping all activity. This gives the heart a chance to restart normal electrical activity and resume beating effectively.

While AED and CPR training are available and recommended for those responsible for managing a public access to defibrillation (PAD) program, training is not required to use an AED. These machines have voice prompts to easily assist a novice at successfully using the device. It is important for bystanders who witness the collapse of an SCA victim to act quickly. If a person does not need the shock of an AED, the machine will not deliver a shock. It is not possible to hurt someone with an AED; they can only be used to save someone’s life.

It is essential that defibrillation be administered immediately following the cardiac arrest. If the heart does not return to a regular rhythm within 5-7 minutes, this fibrillation could be fatal. If defibrillated within the first minute of collapse, the victim's chances for survival are close to 90 percent. For every minute that defibrillation is delayed, survival decreases by 7 percent to 10 percent. If it is delayed by more than 10 minutes, the chance of survival in adults is less than 5 percent.

Most AEDs are prescription devices and must be labeled with the prescription statement required by law (CFR 801.109), a physician who oversees the PAD program at a facility must write a prescription for most AEDs in order for the facility to purchase it. This is easily accomplished and there are many who are willing to help start a PAD program. In addition, one model of AED has been cleared by the FDA for over-the-counter sale and in-home use.
FACT SHEET: Implantable Cardioverter Defibrillators (ICDs)

Implantable cardioverter defibrillators (ICDs) are small devices designed to recognize certain types of abnormal heart rhythms (arrhythmias) and correct them. ICDs continuously monitor the heart rhythm in order to detect overly rapid arrhythmias such as ventricular tachycardia (a rapid, regular heartbeat) and ventricular fibrillation (a rapid, irregular heartbeat). When an abnormal heart rhythm is detected, the ICD corrects the heart rhythm by delivering precisely calibrated and timed electrical shocks to restore a normal heartbeat.

An ICD, smaller than the size of a pager, is implanted under the skin below the collarbone. Each device consists of a battery-powered generator, energy delivery components, and electronic circuitry, which all are sealed in a case. The ICD is connected to the heart with one or more wires. These wires, called leads, are thin, coated wires that travel in the veins between the implant site and the heart. The leads allow the ICD to monitor the heart's rhythm and deliver corrective electrical shocks. Patients describe these defibrillation shocks as somewhat painful or uncomfortable. However, they generally occur rarely and provide a life-saving event for the user.

In addition to monitoring heart rhythms and delivering electrical shocks, ICDs also record the electrical patterns of the heart whenever an abnormal heart beat or arrhythmia occurs. An electrophysiologist (a cardiologist specializing in the electrical function of the heart) can then review the heart's activity after a shock is administered or during regular patient follow-up visits.

The technology of ICDs has advanced greatly in the past decade. ICD therapy is considered effective in fighting cardiac arrest over 90 percent of the time, an astounding success for a condition that few survived as recently as 15 years ago.

Candidates for ICDs are people at risk of sudden cardiac arrest, specifically those with the following:

- Prior cardiac arrest due to Ventricular fibrillation (VF), which is characterized by a heartbeat that is too rapid and chaotic to allow the heart to pump blood. (An exception may be if the VF occurs during a heart attack).
- Ventricular tachycardia (VT) (which is a rapid heartbeat originating from the lower chambers of the heart) which is sustained or causes symptoms.
- Ejection fraction of less than 35 percent. An ejection fraction (EF) is the proportion, or fraction, of blood pumped by the heart with each beat. A normal heart pumps out a little more than half the heart's volume of blood with each beat, making a normal EF 55 percent or higher. A previous heart attack or heart failure can lead to weakened heart and low EF.
Cardiac rehabilitation is a medically supervised program that helps people recover from heart disease and other heart related conditions. Although exercise is the cornerstone of cardiac rehabilitation programs, getting back to an active productive life after a cardiac event requires much more than just resuming regular physical activity. It can be a useful tool in the recovery of a sudden cardiac arrest (SCA) survivor or a patient who has suffered a heart attack, has coronary artery disease, has had a surgical procedure such as a stent, bypass, valve replacement or angioplasty, or another condition that puts him/her at risk of SCA.

Cardiac rehabilitation programs use a multidisciplinary approach to educate participants about the management of individual risk factors. Cardiac rehabilitation participants are encouraged and supported in making lifestyle changes needed to maintain and even improve one’s health. The education provided to patients generally centers on nutritional counseling, instructions for safe exercise, introduction to stress management techniques and specific information on risk factors such as high cholesterol, hypertension, obesity, diabetes, and smoking. Participants are taught how to monitor symptoms and the appropriate actions to take.

Many cardiac rehabilitation programs are housed within hospital or cardiac clinic settings, and have a variety of exercise equipment to help patients build strength and endurance, as well as build good heart health habits to follow outside of the rehab facility. During supervised exercise programs, EKG monitoring is often used to evaluate heart rhythm changes and heart rate response to exercise. Cardiac rehabilitation programs also have the ability to provide individualized instruction and personalized exercise programs to match the needs of the patient.

Cardiac rehabilitation also provides a safe environment where emotions can be dealt with when someone is diagnosed with heart disease and/or a heart related condition. Fear, anxiety, denial, and depression are common emotional responses to illness and can prevent the individual from returning to previous activities and leading a normal life. With the help of trained professionals, evaluation and treatment can be initiated to support the healing process. Participants often develop relationships with other members who understand what they are feeling and can provide encouragement and support to help get through the recovery process. Many studies have shown that cardiac rehabilitation provides the emotional support that helps to sustain the physical recovery process. In fact, cardiac rehabilitation programs have recently been shown to help participants live longer compared to those who do not attend cardiac rehabilitation.

Patients generally need a referral from their physician prior to enrolling in a cardiac rehabilitation program, and insurance reimbursement varies by carrier and diagnosis. Cardiac rehab staff can usually assist with questions you might have about billing and eligibility.

Additional information about cardiac rehabilitation and how to find a program in your area is available at from the American Association of Cardiovascular and Pulmonary Rehabilitation Program Director at www.aacvpr.org or the American Heart Association at www.americanheart.org/presenter.jhtml?identifier=3047844.
FACT SHEET: Wearable Cardioverter Defibrillator (WCD)

The Wearable Cardioverter Defibrillator (WCD) is a non-invasive device for patients at high risk of sudden cardiac arrest (SCA). The device requires no family, bystander, or EMS intervention.

The WCD consists of two main components – a garment and a monitor. The garment, worn under the clothing, detects arrhythmias, including before and after treatment. The monitor records the arrhythmias and is worn around the waist or from a shoulder strap. It weighs only about 1.8 pounds, allowing for easy adaptability to a patient’s lifestyle.

The WCD continuously monitors the patient’s heart with dry, non-adhesive electrodes. If a life-threatening heart rhythm is detected, the device alerts the patient prior to delivering a shock treatment. The device releases a conductive gel onto the therapy electrodes to protect the skin, and then delivers a shock to restore normal heart rhythm. The entire event, from detecting a life-threatening arrhythmia to automatically delivering a defibrillation shock, usually occurs in less than a minute. Timely defibrillation is the single most important factor in saving a SCA victim’s life.

Additionally, patients can connect the WCD monitor to a telephone modem and transmit their heart monitoring data, allowing their physician to review the data. Patients wear the WCD almost continuously, excluding time when bathing or showering.

The WCD was pioneered by ZOLL Lifecor, a division of ZOLL Medical, and received FDA approval in 2002 and is marketed as the LifeVest. At this point, there are no comparable medical products on the market. To date, more than 13,000 patients have been prescribed a WCD to protect them from SCA while their long-term arrhythmic risk is assessed or if implant surgery is not an option.

The WCD is considered a treatment option for patients who meet certain criteria, including but not limited to:

- Immediately after a heart attack during the recovery and evaluation process to determine if the patient should receive an ICD
- Before and after some coronary bypass and angioplasty procedures to allow for recovery and evaluation for the need of an ICD
- Patients awaiting a heart transplant or patients with terminal diseases
• Recently diagnosed or suspected conditions such as cardiomyopathy which might require additional follow-up and evaluation
• After an ICD is removed due to complications or other medical reasons

The WCD also may be prescribed by a physician for patients who are awaiting surgery for an implantable cardioverter defibrillator (ICD), until their heart gets stronger or their physician decides on another course of treatment.

The patient who is prescribed the WCD for the above-mentioned reasons may leave the hospital, not only improving quality of life but potentially reducing hospitalization costs. The LifeVest is covered under most insurance plans in the United States as Durable Medical Equipment (DME) and is covered by Medicare and most Medicaid plans.

**How is the WCD different from an automatic external defibrillator (AED)?**

An AED requires a bystander to witness an arrhythmia event (such as ventricular fibrillation) and take action to operate the device and administer the treatment shock to the patient. In order to be effective, the treatment must be delivered within a few minutes after the event. For each minute that a patient’s heart is in cardiac arrest, the chance of survival decreases by about ten percent.

By contrast, the WCD requires no bystander intervention. The WCD protects the patient when alone or asleep. The WCD provides constant monitoring and immediate protection with lifesaving therapy (if required), creating peace of mind for patients and family members who otherwise would worry about having to resuscitate a loved one or wait for EMS to arrive.
FACT SHEET: Therapeutic Hypothermia and SCA Recovery

Therapeutic hypothermia — where a patient’s core body temperature is cooled to slow down the functions of the major organs — is a growing and promising trend in the immediate, post-resuscitation care of sudden cardiac arrest (SCA) survivors. Researchers and physicians are reporting remarkable recovery, especially as it relates to full or nearly-intact neurological function for patients who survive a cardiac arrest and are provided quick access to hypothermic treatment.

The goal of therapeutic hypothermia is to limit damage to the heart, brain, and other vital organs in order to limit permanent damage to SCA survivors. It is now recognized that an extended period of low blood flow initiates a series of metabolic and inflammatory responses, which are detrimental to cellular function and tissue survival. The re-initiation of normal blood flow and delivery of oxygen can interact with these response cascades to lead to greater cell damage. Therapies such as hypothermia and glucose control can help to limit this damage.

Cooling the core temperature to approximately 90-93 degrees Fahrenheit has been shown in two large human trials and previously in animal studies to improve the ultimate survival and neurological outcomes in victims of SCA. Most experts believe it is most effective to begin cooling as soon as possible after the return of spontaneous circulation (ROSC) and to continue this therapy for 24 to 48 hours based on patient condition. Hypothermia can now be initiated effectively through fairly low-tech methods such as administration of chilled saline solution intravenously, which can be done by EMS providers in the field. A device that cools the IV fluid as it is infusing is also now available.

In the hospital emergency room and intensive care unit, additional methods to achieve and maintain the desired level of hypothermia are available. These include invasive devices such as cooling catheters, which are inserted into large blood vessels, and less invasive devices such as special gel pads applied to the skin. These pads contain a tubing system through which coolant is pumped from a control module. Cooling blankets can also be helpful.

The American Heart Association (AHA) has issued recommendations to encourage the practice of therapeutic hypothermia as a standard of care in SCA post-resuscitation care. While most experts support the benefit and importance of post-resuscitation hypothermia, many resuscitated SCA victims do not receive this therapy. There are a variety of reasons for this, including the historically slow adoption of new therapies by medical providers, the fact that few physicians have a dedicated interest in resuscitation, and that there is no hot drug or device (with FDA
indication for this specific condition) for manufacturers to promote. This trend, however, is beginning to change. Hospital systems like Virginia Commonwealth University in Richmond, the University of Pennsylvania in Philadelphia, and the University of Pittsburgh Medical Center have been leaders in the research and implementation of both pre-hospital and in-hospital programs. In January 2009, New York City implemented a city-wide policy that directs emergency medical service providers to transport SCA patients only to hospitals that have hypothermic treatment capabilities. These and other initiatives across the country are leading to dozens of hospitals implementing programs of their own.

SCAA recognizes the value of therapeutic hypothermia and advocates for its adoption in local communities. Increasingly, EMS agencies are initiating this therapy in the field and transporting resuscitated patients to dedicated cardiac arrest centers when possible. As this trend grows, the result will be more SCA survivors who are able to quickly return to full health and an active life.
FACT SHEET: Long QT Syndrome (LQTS)
Produced by the SADS Foundation; Approved by the SCAA Medical Advisory Board

What is Long QT Syndrome?
LQTS is a disturbance of the heart’s electrical system causing an abnormality of the heartbeat, or rhythm of the heart. Because of this abnormality, affected people are vulnerable to sudden fainting (syncope) and even death. Unfortunately, many times the cause of the syncope is overlooked and the events are called simple fainting spells or seizures. Most often, these events occur during physical exertion, emotional stress or startle (alarm clock). Sometimes they occur during sleep. Fortunately, most deaths are preventable if the condition is recognized and treated.

What are the Symptoms?
- Fainting episodes (syncope) with physical activity
- Fainting as a result of emotional excitement/distress/startle
- Family history of unexplained death below age 40

How is it Diagnosed?
The diagnosis is made from an ECG that has been read by a cardiologist, not a computer. Usually a series of ECGs will enable your doctor to diagnose LQTS. In some cases, an exercise ECG or event monitor will clarify the diagnosis. Finally, a diagnostic genetic test is now available and is the best way to know for sure, as well as assist in the treatment decisions.

How is it Treated?
Treatment is very effective in the vast majority of patients. Medications called beta-blockers are effective in about 90% of patients. In the remaining cases, an implantable cardioverter defibrillator (ICD) is used.

A child should be seen by a doctor if he/she has family history of unexplained sudden death in a young person, fainting (syncope) or seizure during exercise, excitement or startle, and/or consistent or unusual chest pain, shortness of breath
SAVING LIVES
IN SCHOOLS AND SPORTS

AED

Sudden Cardiac Arrest Association
POWER AND PASSION... SAVING LIVES

An educational supplement by the Sudden Cardiac Arrest Association in conjunction with the National Association of Emergency Medical Technicians (NAEMT) and the National Association of State EMS Officials (NASEMSO).
**Saving Lives in Schools and Sports Booklet Order Form**

*Saving Lives in Schools and Sports* is a new SCAA publication now available to encourage school and athletic league administrators and organizations to install AEDs and develop emergency action plans to respond to sudden cardiac arrest events.

The booklet covers medical terminology, a guide to implementing emergency action plans, AED programs, case studies, and supporting evidence about the effectiveness of AEDs in school and sports settings.

A set of 25 copies of the booklet can be ordered for a nominal fee of $15 to cover shipping and handling. The 16-page educational booklet can also be downloaded for free off the SCAA website. Visit [www.suddencardiacaress.org](http://www.suddencardiacaress.org) and click on the "Resources" link at the top of the homepage to download the booklet or process an order request. Thanks to Philips Healthcare for providing a grant underwriting the production of this publication.

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**Order Saving Lives in Schools and Sports**

Please indicate the number of booklets desired and calculate the total amount due below. Booklets are available in sets of 25 for $15 each.

☐ I would like to order _____ sets of the *Saving Lives in Schools and Sports* booklet.

This publication is provided free of charge and is available for download on SCAA’s website. Please note that your payment only offsets the cost of shipping the printed booklets. Donations are appreciated.

☐ I support the goals of SCAA and would like to donate $_____ to the Sudden Cardiac Arrest Association.

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PHONE
☐ CHECK ENCLOSED check payable to "SCAA"
☐ CREDIT CARD indicate card type: ☐ VISA ☐ MC ☐ DISC

CARD NUMBER EXP DATE CARD SECURITY CODE (3 digits on back of card)

NAME ON CARD

BILLING ADDRESS (Leave blank if same as above) CITY STATE ZIP

SIGNATURE DATE

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The Sudden Cardiac Arrest Association (SCAA) collects credit card information to make it easier for you to register for seminars and events online, as well as paying for services. SCAA does not use or share credit card information for any other purpose. We retain such information as is needed for standard accounting record keeping requirements. Every step is taken to protect the loss, misuse, and alteration of the information under our control. If you prefer, please use a check or money order to make any necessary payments. Thank you.

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Federal Tax ID# 20-2413593

Mail completed form with payment to:

SCAA
P.O. Box 14546
Lenexa, KS 66285-4546

or fax completed form with credit card information to: (913) 895-4652

Contact SCAA at (866) 972-7222 with questions.
“Let the Beat Go On” Wristbands

Wear your heart on your sleeve with the Sudden Cardiac Arrest Association’s official “Let the Beat Go On” wristband. Adorned with a hopeful slogan, this durable rubber wristband displays your commitment to SCAA’s mission of preventing loss of life due to sudden cardiac arrest, and is perfect for distribution at heart- and health-related events.

One hundred percent of the proceeds from the sale of these wristbands go to the Sudden Cardiac Arrest Association, helping to effectively pursue its goal of eliminating needless death caused by sudden cardiac arrest by the year 2020.

“Let the Beat Go On” wristbands are available in quantities of ten or more for $1 each.

Let your dedication to this noble cause show. Let the beat go on.

Please send me _____ “Let the Beat Go On” wristbands at a cost of $1 apiece (minimum 10).

Additionally, I would like to donate $_______ to the Sudden Cardiac Arrest Association to help wipe out preventable death caused by sudden cardiac arrest.

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SCA Educational Videos

“Saving Lives from Sudden Cardiac Arrest”
http://www.youtube.com/watch?v=vXFEIoNkfQo

“Sudden Cardiac Arrest Awareness with University of Tennessee Basketball Coaches”
http://www.youtube.com/watch?v=zCyz4baolfM

“SCA Awareness with Tom Brokaw”
http://www.youtube.com/watch?v=ufjcpbrrdWQ

“SCA Awareness with University of Washington’s June Daugherty”
http://www.youtube.com/watch?v=5Oa6Ul3bPTI&NR=1
MARKETING & MEDIA GUIDE

Generating awareness in the community – whether to educate the public, recruit new members, raise funds or promote programs and services – is critical to your chapter’s success. We encourage chapter leaders to follow this simple, yet somewhat daunting rule: you are always on duty. Every interaction is an opportunity to build a relationship, promote your work and prevent sudden cardiac arrest. Obviously the stakes are higher when talking to a reporter or before a large group, but don’t underestimate the importance of this rule in your everyday dealings as well.

Working with the SCAA, each chapter will have its own website that will give your chapter visibility and a place for members and visitors to come for information. That is the first place to start with regard to marketing and promoting your activities. And while some chapter leaders and volunteers have experience in working with reporters and developing marketing programs, others may not.

Don’t be afraid to be creative and find some help. Local college/university students are a great resource. Many students are required to complete internships and other programs that you can tap to design a logo, write a newsletter or be your public relations chair for the year – for free. So think about those kinds of resources that can supplement your chapter of volunteers. A few phone calls to local college programs in the areas of marketing, public/community health and public relations might identify some enthusiastic assistance from young people looking to develop their work experience by volunteering their services and expertise.

You should also develop a good list of community contacts that might have an interest in the mission of your chapter. A brainstorming session with your chapter could help create the list, and making assignments of other members is a good way to get them involved. Those contacts should include, but are not limited to:

- State/local elected officials - Cardiac clinics
- Hospital community affairs staff - Rotary Club, Lion’s Club, United Way,
- Physician or nursing organizations YMCA/YWCA, and other such
- Emergency service officials community groups

Get good addresses and contact information. Make a phone call and introduce yourself and the chapter, and follow-up with a note and an information brochure. The quicker you can establish those relationships and make them aware of your organization, the quicker you will have credibility and become a part of a network of volunteer/health-related organizations that people will think about in your community.
Next, think about the “free” publicity opportunities that exist in your communities and create an email and/or mailing list. Know the deadlines, guidelines and requirements. Many newspapers have a “community” section to list meetings of non-profit and volunteer groups – don’t overlook the free community papers that are often delivered to every home in suburbs and neighborhoods. Many hospitals have bulletin boards and publications where you can promote your activities. These opportunities are going to vary from community to community, so the key here is to think about where people get information, and what already exists that you can take advantage of to promote your chapter activities.

**Working With the News Media**

News coverage of your chapter activities and on the broad subject of sudden cardiac arrest is an important element in public education and SCA prevention. SCAA will rely on our chapters to be our voice in your community, and to develop knowledgeable and effective spokespersons. When it comes to dealing with the press, especially television and radio interviews where you are recorded, practice makes perfect. A good chapter activity might be to bring in a video recorder and have members be “interviewed” to practice key message points and get comfortable in front of the camera. “Bad habits” like shifting your weight from side to side or moving your eyes around the room while talking are amplified on camera, so it can be tremendously helpful just to watch yourself in a friendly environment before you go “on camera” for the first time.

The key, however, is to be in control of the interview. Remember, each interview is your opportunity to get out our message.

**Interview Do’s and Don’ts**

Try to keep in mind that reporters are neither enemies nor your friends. The role of the reporter is to objectively seek truth, balance and substance in information that is provided. You may not feel that you are in control of the story; but you are certainly able to influence the outcome by taking control of what you say. To do this, you should remain focused on your main points:

Two Things to Remember:
1) Do your best to meet the reporter’s needs if you choose and are able to participate.
2) Get your message across with honesty, credibility and diplomacy. That requires you to have your message(s) developed before you conduct an interview.

Remember: Every interaction is an opportunity.
When a Reporter Calls:

• You’re not obligated to grant an immediate, on-the-spot interview. Explain to the reporter that you would like to help him/her, but you would like to know more about what the reporter is writing about and what they specifically would like to talk about. Let them do most of the talking in the initial conversation. And remember, even in this initial conversation, your comments may be considered “on the record” and wind up in print.

• Get the reporter’s name, phone number, email contact and deadline. Don’t be afraid to ask the reporter to email you a list of possible questions that he/she would like to discuss. Most reporters know that working with a volunteer organization is not the same as working with a large company or public agency that has staff dedicated to working with the media.

• Arrange a time in which you or the reporter will initiate a second call or meet.

• Take ample time to prepare for the interview.

How to Prepare:

• Ask yourself, “Why are we doing this interview?” Set a clear objective. Determine between one to three key messages you want to get across during the interview:

• Using the information the reporter gave you in response to your questions about the story, think about what the reporter may ask (anticipate questions that will be difficult to answer, too).

• Prepare answers to all of the questions. Make sure you insert a message you want to come across during the interview, wherever it logically fits.

• Think about what your ideal quote on the subject would be. Practice saying it out loud. If you’re lucky, you will get 15 seconds in a broadcast piece and 2-3 sentences in a print story. So make every comment count with key messages and crisp responses. In sum: don’t ramble.

• Identify other good sources that the reporter should interview; a physician or another SCAA member or chapter leader, for example.
Talking Points:
Talking points should revolve around 3-4 most important points you want to convey in an interview. It takes some time and critical thinking to boil down everything that you know about the subject into a few simple points. However, it’s very important to remain focused during the conversation. Remember that talking points must not only speak to the mission of your institution but also be of value to the reporter’s readers, listeners or viewers.

When developing talking points, be sure they meet the following criteria:

• They are true
• They are concise
• They are conversational (sound like what a person would say, not an institution wants you to hear)
• They are memorable words, pictures or phrases
• They are of value to your audience(s)

The Interview Begins
Remember the reporter’s job is to tell a good story. However, it is also not a reporter’s job to make you look impressive. Making a memorable impression is up to you. Start by listening carefully to the context and content of the questions. Be brief, simple and clear in your answers.

  o Use short sentences. The less complex you are, the less there is room for error or misinterpretation.

  o Try not to use medical jargon or terminology that a reporter, patient or friend would not likely understand. “Implanted defibrillator” is better than “ICD,” for example.

  o Make your point at the beginning of the answer.

Support Your Points
Use conversational anecdotes, comparisons and easily followed examples in your answers. You might also consider providing an interesting statistic if it is simple to convey, such as “Sudden cardiac arrest kills more people each year than breast cancer, HIV/AIDS and lung cancer combined.”
Don’t Over Answer
When you have said all that you want or need to say, stop talking. Do not feel you need to continue the conversation. Instead, add pauses to think about what you are going to say next (i.e., “That isn’t the topic of today’s discussion, but I am happy to discuss that matter at a later date”).

If you don’t know, say so.

Do not attempt to detract from the question. If you do not have an answer or cannot provide an answer, say you will conduct the necessary research and find the information as quickly as possible.

Follow up as soon as you can.

If you aren’t going to answer a question, explain why.

Never say “no comment” as this evokes more curiosity about the reason why, or the perception that you should not be trusted. Instead, provide a truthful explanation:

• Proprietary information
• Pending litigation
• A matter under internal review that is not complete

If a Reporter Asks Several Questions
Choose one to answer. If two related questions are raised, answer them in the order that you choose. If several questions are asked, answer the question you prefer and believe will best illustrate your contribution to the story.

Correct Mistakes
If the question is based on faulty information or a false premise, say so simply, matter-of-factly and politely.

Keep the Audience Interested
Use metaphors and descriptive language but only if that comes naturally. Use humor only if it is not open to misunderstanding. If you are unsure, don’t use it.

Do Not Try to Influence the Reporter
The reporter is not your audience. People who will read, listen to or watch the reporter’s story are your audience. Try to remain focused on speaking to them as if they were in the room.
Ending the Interview
If a reporter has failed to ask a key question, raise the subject yourself. Always offer to be available for clarification as the reporter writes the story. If you have provided numbers in response to questions, check them again with the reporter. Offer to fax any additional numbers to assure accuracy. Your best opportunity to head off mistakes is to offer your availability for follow up calls.

The Sudden Cardiac Arrest Association’s mission is to prevent loss of life from sudden cardiac arrest. We seek to increase awareness, encourage training for immediate bystander action, increase public access to defibrillation and promote the use of available medical devices and therapies, principally, implantable cardioverter defibrillators (ICD). SCAA members are the beneficiaries of improved science and medical technology, coupled with the wisdom and caring of thousands of physicians.
A

**AED** – see: Automated External Defibrillator

**Ablation** – Procedure that eliminates extra electrical pathways within the heart that cause fast or irregular heart rhythms.

**Ablation Catheter** – The therapeutic destruction of a small part of heart muscle shown at an electrophysiologic study to be responsible for an arrhythmia.

**ACE Inhibitor** – An ACE Inhibitor (angiotensin-converting enzyme) is a medication that opens up blood vessels, making it easier for the heart to pump blood forward to the body. ACE inhibitors are also used to lower blood pressure.

**Amiodarone (Cordarone)** – An antiarrhythmic agent (class III) widely used for acute (intravenous) and chronic (tablets) treatment of both ventricular and supraventricular arrhythmias. Unlike antiarrhythmic agents with local anesthetic effects (Class I agents), it has little propensity to produce rhythm disturbances (see proarrhythmia).

**Aneurysms** – Aneurysms are small pouches on blood vessel walls. The blood vessel or area of the heart is thin or weakened in this area. They can rupture (break), causing bleeding.

**Antiarrhythmic Agents** – Medications for the prevention or termination of arrhythmias. They are categorized into four groups according to their presumptive mechanism of action:

- **Type I** – Predominantly inhibit sodium ion channels and act as local anesthetics. Class I drugs are effective agents, but may depress heart performance and induce arrhythmias under special circumstances (proarrhythmia).

- **Type II** – Known as beta-receptor blockers (beta adrenergic receptor blockers). Adrenalin (epinephrine) acts *partly* through these receptors. These drugs may reduce mortality in patients recovering from a heart attack or suffering from heart failure.

- **Type III** – Inhibits potassium ion channels and prolongs recovery after electric activation of cardiac cells. Currently the drugs of choice for the
prevention of serious (ventricular) arrhythmias; also useful to prevent or terminate supraventricular arrhythmias.

**Type IV** – Inhibits calcium channels, which influence impulse conduction at the level of the AV node. Because these drugs relax (widen) small blood vessels, they are useful for the treatment of high blood pressure.

**Angina** — Angina pectoris or angina is a recurring pain or discomfort in the chest area. This discomfort is caused by some part of the heart not receiving enough blood. The pain can feel like heaviness, a burning sensation or a discomfort in the left arm or jaw.

**Angiography** – A procedure to x-ray blood vessels usually to view the legs, heart, or brain. A dye is injected into the blood vessel using a catheter or small tube. The dye shows up on x-ray showing blockages and other problems interfering with the blood flow.

**Angioplasty** – A procedure to open clogged arteries. A catheter, with a tiny balloon at the tip, is snaked into the coronary artery. The balloon is used to stretch or break open the narrow part of the artery and improve passage of blood flow.

**Anticoagulant** – Any medication that keeps blood from clotting is referred to as an anticoagulant.

**Antihypertensive** – Hypertensive is another word for high blood pressure. An antihypertensive medication is one that lowers blood pressure.

**Aorta** – The aorta is the largest artery in the body, and the primary blood vessel that carries oxygenated blood out of the heart to the rest of the body.

**Aortic Arch** – A curved portion of the aorta on the heart. The aorta is the large blood vessel that carries oxygen-rich blood away from the heart to the body.

**Aortic Regurgitation** – A backwards leakage of blood from the aorta, through a weakened aortic valve, into the left ventricle. This results in stress in the left side of the heart and an inadequate blood flow to the body.

**Aortic Stenosis** – A narrowing of the opening of the aortic valve, the valve that regulates blood flow from the left ventricle of the heart into the aorta.

**Aortic Valve** – A cardiac membrane that controls the flow of blood out of the heart and into the aorta.
Artery – An artery is a blood vessel that carries oxygen rich blood away from the heart to the body. The major arteries of the heart are called the coronary arteries.

Arrhythmia – Also called dysrhythmia. Arrhythmia is a fast, slow, or irregular heartbeat.

Arrhythmogenic Right Ventricular Dysplasia (ARVD) – A rare condition that produces ventricular tachycardia. In this disease ventricular muscle is replaced by fatty and fibrous tissue for unknown reasons. It is emerging as a cause of sudden cardiac death (SCD) in young otherwise healthy adults.

ASA Aspirin – ASA or acetylsalicylic acid, is the chemical compound know as aspirin.

ASD / Atrial Septal Defect – An ASD is a small hole in the septum or top part of the heart.

Atherosclerosis – A build-up of cholesterol or other fatty deposits called plaque that can occur on the inner walls of blood vessels and arteries, which in advanced stages causes restriction or blockage of blood flow to the heart or brain.

Atrial Fibrillation – A very fast and irregular beating or quivering of the upper two chambers of the heart. This condition happens just before a cardiac arrest or just as the heart stops all together.

Atrial Flutter – A supraventricular tachycardia with a characteristic electrocardiographic appearance. It frequently coexists with atrial fibrillation and is usually associated with structural heart disease.

Atrial Septum - The wall between the right and left atrial. The two upper chambers of the heart are called the septum.

Atrial Tachycardia – A rapid rhythm driven by pacemaker activity in atrial sites other than the SA node (the natural pacemaker).

Atrioventricular Block – An interruption of the electrical signal between the atria and the ventricles.

Atrioventricular (AV) Node – The atroioventricular (AV) node is a cluster of cells between the atria and ventricles that regulates the electrical current.

Automatic Implantable Defibrillator (ICD) – A device used to correct serious ventricular arrhythmias that can lead to sudden death. The defibrillator (ICD) is
surgically placed inside the patient's chest. There it monitors the heart's rhythm and identifies serious arrhythmias. Once identified produces an electrical shock, disrupting a deadly arrhythmia.

**Atrioventricular Nodal Reentrant Tachycardia (AVRT)** – A supraventricular tachycardia caused by dual conduction pathways within the AV node which have different speeds of transmission.

**Atrium** – One or two chambers in the heart. Atria is the plural for Atrium.

**Automated External Defibrillator (AED)** – A portable electronic device that automatically detects irregular heart rhythms and, if a problem is present, will deliver an electric shock to the heart, allowing it to re-establish a normal rhythm.

**Balloon Angioplasty** – A procedure that is usually performed in the cardiac catheterization laboratory (cath lab) that uses a catheter (tube) with a balloon at the tip to open a narrowed valve or blood vessel.

**Beta-Blocker, B-B** – Medications given to control the heart rate and rhythm.

**Blood Clot** – A thick, gelled mass of blood.

**Blood Pressure (BP)** – The force or pressure exerted by the heart against the walls of the arteries when pumping blood. It is the measurable pressure of blood in the arteries. Pressure is measured in systolic (upper number) and diastolic (lower number), and is measured in millimeters of mercury against a meter stick. Ex: 120/80.

**BNP (Brain and Peptide)** – A blood enzyme which can be measured to diagnose heart failure (HF).

**Bradycardia** – Slowness of the heartbeat, as evidenced by slowing of the pulse rate to less than 50 beats per minute in an adult.

**Brugada Syndrome** – An inherited electrical disease of the heart.

**Bundle Branch Block** – A condition in which the heart's electrical system is unable to normally conduct the electrical signal.
**Bypass Surgery** – A blood vessel, usually taken from the leg or chest and is grafted onto the blocked artery, bypassing the blocked area. The blood can then go around the obstruction to supply the heart with enough blood to relieve pain.

**Capillaries** – Tiny blood vessels between arteries and veins that distribute oxygen-rich blood to the body.

**Cardiac Arrest** – A cardiac arrest is when your heart stops functioning.

**Cardiac Catheterization** – A diagnostic procedure in which a tiny tube (catheter) is inserted into an artery or vein in order to evaluate the heart and blood vessels.

**Cardiac Catheter** – A long, flexible tube designed especially for passage through an artery or blood vessel.

**Cardiac Enzymes** – Evaluated in blood tests to diagnose a heart attack.

**Cardiac Output** – The volume or amount of blood that goes through the circulatory system in one minute.

**Cardiac Tamponade** – Effusion of fluid in the pericardium (sac enclosing the heart) compresses the heart preventing normal filling.

**Cardiomyopathy** – Disease of the heart muscle, causes decreased functioning of the heart.

**Cardiovascular Disease (CVD)** – A disease affecting the heart and its circulation is referred to as Cardiovascular Disease.

**Cardioversion** – Delivery of a shock to the heart to interrupt arrhythmias. Paddles on the chest or electrodes placed directly on the heart are used. So-called chemical cardioversion is intravenous administration of medications to terminate arrhythmias.

**Catheter** – A small, plastic tube used to enter a cavity of the body.

**Chamber** – An enclosed space. The heart is divided into four chambers. The upper chambers are called the right and left atrium, and the lower chambers are called the right and left ventricle.

**Cholesterol** – A waxy substance that is produced by the human body. Cholesterol is found in animal fats (beef, chicken, pork), shellfish, and dairy products (butter,
milk, cheese, eggs). The body needs cholesterol to produce hormones. When too much cholesterol circulates in the blood, there is an increased risk of atherosclerosis (hardening of the arteries).

**Commotio Cortis** – Is a disruption of heart rhythm that occurs as a result of a blow to the area directly over the heart (percordial region) as a critical times during the cycle of a heartbeat. It is a form of ventricular fibrillation, not mechanical damage to the heart muscle or surrounding organs, and not the result of heart disease. The fatality rate is about 65%. It can sometimes, but not always, be reversed by defibrillation.

**Congenital** – Present at birth.

**Congenital Heart Disease** – A heart defect present at birth.

**Congestive Heart Failure (CHF)** – A condition in which the heart cannot pump out all the blood. This can lead to an accumulation of blood in the vessels going into the heart and an accumulation of fluid in the body tissues. Excess blood can increase in the lungs blood vessels leading to fluid accumulation in the lungs which creates congestion.

**Continuous Loop Recorder** – An electrocardiographic monitor worn for up to a month that stores limited periods of continuously recorded ECG.

**Coronary Artery** – Either of the two arteries that originate in the aorta and supply blood to the heart.

**Coronary Artery Disease (CAD)** – Result of the build-up of plaque deposits on the inner lining of the coronary arteries (heart attacks occur in the advanced stage of CAD).

**Coronary Heart Disease (CHD)** – The most common form of heart disease. This type of heart disease is caused by a narrowing of the coronary arteries that feed the heart. The result in not enough oxygen-rich blood reaching the heart.

**Coronary Spasm** – Abnormal sustained constriction of a major coronary producing symptoms of ischemia.

**Coronary Thrombosis** – Total blockage of the blood flow to the heart due to a blood clot in a coronary artery, also called a “heart attack” or "myocardial infarction".

**Cyanosis** – Due to an insufficient oxygen supply in the blood that would leave tissue appearing blue. First seen in lips and nails.
Defibrillator – An electronic device used to deliver an electrical shock to the individual to help the heart establish a normal heartbeat.

Defibrillation – A process in which an electronic device gives an electric shock to the heart. This helps reestablish normal contraction rhythms in a heart having dangerous arrhythmia or in cardiac arrest. In recent years small portable defibrillators have become available. These are called automated external defibrillators or AEDs.

Diastole – The time during each heartbeat when the ventricles are at rest, filling with blood and not pumping.

Diastolic Blood Pressure – The lowest blood pressure measure in the arteries. It occurs between heartbeats when the heart is at rest.

Doppler Ultrasound – A procedure that uses sound waves to evaluate the heart, blood vessels and valves.

Dyspnea – Shortness of breath; occurs normally during intense physical exertion or at high altitude.

Dysrhythmia – An abnormal heart rhythm.

Echocardiogram – A cardiac test and way to see the heart with the use of ultrasound imaging.

Ejection Fraction (EF) – A measurement of the amount of blood pumped out of the ventricles. When the left ventricle of the heart contracts, blood is forced into the veins and pushes blood throughout the body. The heart literally releases or ejects the blood out of the left ventricle. Not all the blood is released with each beat. The percentage that is released or ejected measured between each heartbeat in a fraction call the ejection fraction. A good ejection fraction is 55% to 60%. When the percentage falls below 55% your heart is not forcing as much blood as is needed into the arteries. The left ventricle is the number we look at for a measurement. When your EF falls below 35% your heart is working too hard.

Electrocardiogram – A method for studying the heart by measuring the electrical impulses of the heart as they are detected on the surface of the body.
**Electrode** – Patch that adheres to the skin to serve as the medium between the heart and an EKG recorder.

**Electrode Catheter** – A long, flexible wire that can transmit electrical currents to and from the heart.

**Electromagnetic Interference (EMI)** – Impaired function of a pacemaker or ICD under the influence of electric and magnetic fields emitted by Magnetic Resonance Imaging (MRI), power plants, transmitter antennas, amusement parks, or nearby equipment such as, arc welders, CB radios, cellular phones, etc.

**Embolism** – A blood clot in a blood vessel.

**Endocardium** – The membrane that covers the inside surface of the heart.

**Endocarditis** – A bacterial infection that can form on the valves and on the interior surfaces of the heart.

**Epinephrine** – A vital hormone secreted by the adrenal glands. It plays an important role in cardiovascular and neural regulation. It is produced synthetically for use as a stimulant.

**Extrasystoles** – Extra beats, usually occurring earlier than expected in normal rhythm, triggered by impulses originating from an abnormal site. Premature contractions are common and usually require no treatment. However for patients with underlying heart disease they can be markers of a life threatening arrhythmia. Premature contractions PAC and PVC originate in the atria and ventricles respectively and Premature Junctional (AV nodal) originates in the vicinity of the AV node junction.

**Fibrillation** – Rapid contractions of the heart muscles, sometimes called quivering of the heart muscle. When your heart is in fibrillation blood cannot be pumped in or out properly. Fibrillation can lead to cardiac arrest, a stopping of all heart functions.

**Flutter** – Ineffective contractions of the heart muscle.

**Heart attack** – A heart attack is caused by a circulation or pumping of the heart, one (or more) of the arteries delivering blood to the heart is blocked. Oxygen in the blood cannot reach the heart muscle, and the heart muscle becomes damaged.
Heart Block (HB) – An interruption of the electrical pathway causing a slowing of the heart rate.

Heart Failure (HF) – A condition where the heart fails in its duties of circulating blood through the lungs and back out to the tissues. Congestive heart failure refers to a heart failure condition in which the body has accumulated extra fluid so that the lungs are congested.

Heart Valve Prolapse – A condition of the heart valve where it is partially open instead of being closed.

Hemodynamic Monitoring - A diagnostic study that evaluates the movement of blood circulation.

High Blood Pressure (HBP) – The pressure in the blood vessels that is above the normal range. Also called Hypertension.

High-Density Lipoprotein (HDL) – The "good" cholesterol that promotes breakdown and removal of cholesterol from the body.

His Bundle – The topmost part of the heart's wiring system between the AV node and the ventricles. The His bundle penetrates the electrically insulating fibrous layer between the atria and ventricles. See Normal Heart Structure & Function.

Hypertension – High blood pressure that is exerted against the walls of blood vessels as blood is pumped through the body.

Hypertropic Cardiomyopathy – A disease of the myocardium (the muscle of the heart) in which a portion of the myocardium is thickened without any obvious cause. It is most well-known as a leading cause of sudden cardiac death in young athletes.

Hypokalemia – Low potassium concentration in the blood. Low potassium concentrations may invite arrhythmias. Certain diuretics may increase loss of potassium and produce hypokalemia.

Hypotension – Low blood pressure.
Ibutilide (Corvert) – An antiarrhythmic drug used for atrial fibrillation and flutter that works by prolonging the recovery of the heart muscle after electrical stimulation.

Implantable Cardioverter Defibrillator (ICD) – A small battery-powered electrical impulse generator that delivers electrical shocks, or pacing therapy, when the heart suffers arrhythmias. ICDs are surgically installed, usually near the heart.

Infarct – The area of the heart tissue damaged by a lack of blood and oxygen.

Ischemia (ischemic = withheld) – Reduced nutrient blood flow to organs or tissue resulting in reversible or irreversible damage to tissue.

Left Atrium – The upper left-hand chamber of the heart which receives oxygen-rich blood from the lungs via the four pulmonary (lung) veins and sends it to the left ventricle. The workhorse ventricle of the heart.

Left Ventricle – The lower left-hand chamber of the heart which receives oxygen-rich blood from the left atrium and pumps it to the aorta which sends it to the body.

Left Ventricular Ejection Fraction (LVEF) – The amount of blood ejected during a single contraction of the LV, expressed as a fraction of the amount of blood the LV contains at the onset of contraction. It measures the completeness of active ventricular emptying, an index of functional adequacy. Normal LVEF at rest is about 2/3 or 66%.

Lidocaine – A drug administered intravenously for acute management of ventricular arrhythmias or for local anesthesia. See Antiarrhythmic Agent Class I

Lipid – Any fatty substance in the body, including cholesterol and triglycerides.

Long QT Syndrome – An inherited heart condition in which a delayed action in the heart following a heartbeat forms an irregular heartbeat. These episodes may lead to palpitations, fainting and sudden death due to ventricular fibrillation.

Low-Density Lipoprotein (LDL) – The primary cholesterol-carrying substance in the body. In large amounts LDL accumulates inside the arteries and can lead to cardiovascular disease.
Mitral Valve – The valve between the left atrium and the left ventricle functions like a one way door to keep blood flowing in one direction as it enters the left ventricle from the left atrium.

Monounsaturated Fats – Dietary fats, such as olive oil or canola oil. This may lower LDL cholesterol levels. Look for foods high in Monounsaturated Fats.

Myocardial Infarct – Occurs when one or more regions of the heart muscle experiences a severe or prolonged decrease in oxygen supply caused by a blocked blood flow to the heart muscle, which causes the heart to stop. Also called a heart attack.

Myocardial Ischemia – An insufficient blood flow to part of the heart.

Myocardium – The muscular layer of the heart.

Myocarditis – Inflammation of the muscular walls of the heart.

Obesity – Defined as being overweight by 30% of the ideal body weight.

Occluded Artery – An artery that is narrowed by plaque, impeding the flow of blood.

Pacemaker (Artificial) – An electrical device which delivers electrical impulses to produce a heartbeat of desired frequency (fixed frequency). Modern pacemakers "kick in" on demand only when heart rate falls below a critical (chosen) value and may deliver impulses at rates adapted to physical activity (rate adapted). Implantable pacemakers are the mainstay of treating slow heart rhythms.

Pacemaker cells – Cardiac cells whose electrical oscillatory activity (clock like function) release electrical impulses eliciting rhythmic cardiac contraction. See Normal Heart Structure & Function.

Pacing – Delivery of electrical stimulation to the heart muscle to produce a heartbeat.

Palpitation – Forcible or irregular pulsation of the heart, usually with an increase in frequency or force, with or without irregularity in rhythm.
**Pericarditis** – Inflammation of the pericardium.

**Pericardium** – Sac that surrounds the heart.

**Plaque** – A combination of cholesterol, fatty deposits, cellular debris and calcium that form deposits on the inner lining of the coronary arteries, results in coronary artery disease.

**Polyunsaturated Fat** – A type of fat found in vegetable oils and margarines that does not appear to raise blood cholesterol levels.

**Premature Arterial Contraction (PAC)** – An early heartbeat started by the atria.

**Premature Ventricular Contraction (PVC)** – An early heartbeat started by the ventricles.

**Proarrhythmia** – Creation of a new arrhythmia by drugs.

**Procainamide** – A medication introduced in 1950 to treat supraventricular and ventricular arrhythmias.

**Prosthesis** – An artificial substitute for a missing body part.

**Pulmonary** – A term pertaining to the lungs and respiratory system.

**Pulmonary Artery** – The artery originating from the heart's right ventricle that carries oxygen-depleted blood to the lungs.

**Pulmonary Valve** – The valve between the right ventricle and the pulmonary artery.

**Pulmonary Vein** – The vessel that carries oxygenated blood from the lungs to the left side of the heart.

**Pulse** – The rhythmic expansion of an artery that can be felt with the finger on your wrists, neck and temple, reflects the number of times your heart beats each minute.

**P Wave** – Part of the ECG recording reflecting depolarization of both atria.

**Q Wave** – First wave of the ECG recording reflecting ventricular activation.

**QRS Complex** – Part of the ECG recording reflecting ventricular depolarization.
**QT Interval** – period of the ECG recording from the onset of the Q wave to the T wave.

**Right Atrium** – The upper chamber of the heart which receives oxygen-poor blood from the body and sends this blood to the right ventricle.

**Right Ventricle** – The lower right chamber of the heart, which receives oxygen-poor blood from the right atrium and sends this blood to the pulmonary artery.

**Risk Factor** – Defined as a condition, element, or activity that may adversely affect the heart. Non-controllable risk factors: age, gender, genetics. Controllable risk factors: smoking, high blood pressure, high blood cholesterol, obesity, excessive alcohol use, drug use, abuse of dietary supplements.

**Saturated Fat** – A fat that is found in foods from animal meats and skin, dairy products, and some vegetables. Saturated fats are usually solid at room temperatures and can increase LDL levels.

**Septal Defect** – A hole in the wall between the atria or ventricles (upper or lower heart chambers).

**Septum** – A muscle wall between the atria or ventricles.

**Shunt** – A connector to allow blood flow between two locations.

**Sinus Node** – The heart’s natural pacemaker, produces electrical impulses to keep the heart beating at a healthy pace by causing the heart to contract and pump blood at regular intervals.

**Sinus Rhythm / Normal Sinus Rhythm (NRS)** – A normal heart rhythm of 60-100 beats per/min at rest originating from the sinoatrial node.

**Sinus Tachycardia** – A normal heart rate greater than 100 beats/min. It occurs as a desirable response to exertion, pregnancy, and emotion. It may also occur with, illness, circulatory problems, or drug use.
Stent – An expandable mesh tube (about one-half inch long) that is placed in an artery to maintain the free flow of blood through the vessel following an angioplasty or atherectomy.

Stenosis – A narrowing or constriction of a blood vessel or valve in the heart.

Sternum – Bony area in center of chest connecting the ribs. Also called the breastbone.

ST Segment – The segment of the ECG recording connecting the end of the QRS complex with the beginning of the T wave.

Stroke – The sudden disruption of blood flow to the brain. Many strokes are caused by a clot of blood traveling into the brain (thrombosis). A stroke may also be caused by a rupture of a blood vessel (hemorrhage).

Sudden Cardiac Arrest – A sudden abrupt loss of the heart’s electrical system function. The most common cause of the arrest is an irregular heart rhythm (arrhythmia) called ventricular fibrillation (VF), in which the heart ventricles begin to quiver (fibrillate) instead of contract. When this happens, blood is no longer pumped to the rest of the body.

Sudden Cardiac Death (SCD) – Generally SCD is defined as an unexplained (non-traumatic) death that occurs suddenly and unexpectedly within one hour of onset of symptoms. Death is usually due to cardiac arrhythmias ventricular tachycardia/fibrillation.

Superior Vena Cava – The large vein that returns blood to the heart from the head and arms.

Supraventricular Tachycardia (SVT) – Arrhythmias caused by electrical events originating in the atria, i.e. above the ventricles.

Syncope – Loss of consciousness and postural tone caused by diminished cerebral blood flow usually associated with aging.

Systole – The time during the heartbeat when the ventricles are pumping blood, either to the lungs or to the body.

Systolic Blood Pressure – The highest blood pressure measured in the arteries.
**T Wave** – Ventricular repolarization wave inscribed on the ECG.

**Tachycardia** – Excessive rapidity in the action of the heart, usually above 100 beats per minute in an adult.

**Telemetry Monitor** – A method for measuring a patient’s vital signs from a distance, transmits through radio signals or other means and displays on a monitor.

**Thrombolysis** – A clot-busting drug used to dissolve a blood clot that is causing a heart attack.

**Thrombus** – A clot in the cardiovascular system.

**Tilt Table Test** – Test that involves placing the patient on a special table and standing him or her upright at 60 to 70 degrees for 30 to 45 minutes.

**Torsade de pointes (Twisting of the points)** – A unique form of ventricular tachycardia that can be congenital in origin or can result from antiarrhythmic or psychotropic drug therapy, hypocalcemia, or acute myocardial infarction.

**Trans Fat** – This is a vegetable oil that has been treated with hydrogen in order to make the oil more solid and provide a longer shelf life. It is the "bad" fat which raises LDL (bad) cholesterol.

**Transducer** – A device that translates one form of energy to another, such as during an ultrasound when high frequency sound waves are transmitted through a transducer and then converted into electrical impulses.

**Transtelephonic Event Recorder** – A miniaturized computer chip operated unit that stores brief ECG recordings when patients experience symptoms.

**Tricuspid Valve** – The valve between the right atrium and the right ventricle that functions like a one-way door to keep blood flowing in one direction as it enters the right ventricle from the right atria.

**Triglyceride** – Fats or lipids from fatty foods that are primarily found in the blood. Main constituent of vegetable oil and animal fats. Excessive triglycerides are linked to the occurrence of coronary artery disease.
U

Ultrasound – An imaging modality that visualizes the body’s internal structures by recording the pulsating "echoes" of sound waves that are directed into the tissues.

V

Valve – Membrane in a passage that prevents the reflux of the contents flowing through it.

Valvular Stenosis – Narrowing of the heart valves (the specific valve that is affected is often preceded by the word stenosis, i.e., aortic stenosis, mitral stenosis, pulmonary stenosis and tricuspid stenosis).

Vascular – Refers to the blood vessels.

Vasodilators – Drugs that widen (dilate) blood vessels. They unload the heart because it requires less effort to pump a given amount of blood per minute through a system of wide vessels compared with narrow ones.

Vein – A blood vessel that carries low oxygenated blood from the body back into the heart.

Ventricle – A small cavity (the right and left ventricles of the heart have thick muscular walls that make up the bulk of the heart and propel blood through and from the heart)

Ventricular Fibrillation (VF) – A rapid, disorganized, and chaotic contraction of ventricular muscle accompanied by loss of effective pumping of blood. It results in loss of consciousness and death if is not terminated immediately by delivery of shock with a defibrillator.

Ventricular Tachycardia (VT) – A very rapid heart rhythm arising within the ventricles.

Vertigo – Dizziness or the feeling that you are falling or watching the world go round.

Vessel – Any channel for carrying a fluid, such as blood vessels, which include arteries, arterioles, capillaries, venules and veins

W

Wolff-Parkinson-White Syndrome – A syndrome with abnormal ECG and where aberrant conducting pathways allow inappropriate transmission of signals from the atria to the ventricles or back to the atria from the ventricles.
Survivor

Dawn Botwen-Hauver

Age: 41
Save Date: February 11, 2009

"Ironically, I remember feeling the best I had in a long time on the morning of that fateful day," notes 41 year-old wife and mother of two, Dawn Botwen-Hauver, of Hollywood, Florida. On February 11, 2009, Dawn received a phone call from her son's school, alerting her that her five-year-old son wasn't feeling well. Little did she know how his illness would end up saving her life that very same day.

After taking her son home and calling the family doctor, Dawn was instructed to take him immediately to the hospital. Weakened by his illness, her son was unable to walk from the house to the car and into the hospital, so Dawn carried him. "As I approached the ER desk at Joe DiMaggio Children's Hospital, I told the receptionist that I felt like I was going to faint." Dawn then collapsed and went into sudden cardiac arrest. A nearby paramedic caught her son as her body fell to the floor.

Her husband arrived to find that his son was no longer the issue, and was immediately escorted to the adult ER where CPR was being administered on Dawn. "At first, he couldn't see my face and thought he must have walked into the wrong room. And since I have a history of passing out, he definitely wasn't expecting to see me in such grave condition."

Dawn was initially treated for what was thought to be a seizure but later diagnosed as ventricular fibrillation and Prolonged QT Syndrome coupled with premature ventricular contractions (PVCs). After her condition stabilized, a cardiac catheterization was performed which showed that none of her arteries were blocked. She was then placed in a hypothermic coma for 24 hours to reduce swelling in her brain and prevent any potential brain damage from taking place.

"On the day I was to be taken out of the coma - someone working on my case told my husband there could be many outcomes: from brain damage to death to not being able to breathe on my own." After an unsuccessful attempt at removing her breathing tube, doctors placed Dawn back in the coma. She was eventually able to be taken off machines and begin the 13-hour long "defrosting" process. To the relief of her entire family, she awoke, was able to speak and had no signs of brain damage.

Yet her journey to recovery was not complete. She immersed herself in educational
materials, finding out as much as she could about Prolonged QT Syndrome (LQTS). She was implanted with an ICD.

Two weeks later she was back in the hospital only to learn that the ICD needed adjusted, after going into ventricular fibrillation, passing out again and being shocked twice. Back in the hospital, this time Dawn was without a crucial part of her support system. "My husband was on the tarmac at Miami International Airport, and officials would not let him off the plane. So, he had to fly to New York and take the early morning flight back home the next day."

Two weeks after the ICD adjustments were made, Dawn was back on the road to feeling well, yet her journey remained unfinished. She soon learned that LQTS is either genetic or acquired, and since she had children, she needed to identify if the deadly condition could be passed on.

Unlike most victims of SCA, Dawn had experienced cardiovascular problems in the past. In addition to her frequent fainting spells, about a year and a half earlier she was diagnosed with arrhythmia. She was placed on beta blockers and has since been under the care of a cardiology specialist and electrophysiologist.

"I was referred to as a 'miracle' by one of the hospital administrators, and I have my five year old to thank. Had this not happened at the hospital, I would not be here today." Her family is currently undergoing genetic testing for LQTS.
Ryan Arnold

Age: 25
Save Date: June 16, 2009
Activity: Playing softball

When Ryan Arnold woke up in a strange room with no idea how he got there, the first thing that crossed his mind also happened to be the first thing he saw just a few moments later.

"It was her," he said, looking at his fiancée, Jamie Sawyer. "She was right there by my side."

Arnold, 25, spent nearly four days in the hospital - including almost two in a medically induced coma - when his heart stopped after he was struck in the chest Tuesday night with a softball during a game at Stewart Park.

He was cleared for release from Billings Clinic and a little more than an hour later was surrounded by nearly 100 friends and family at a barbecue fundraiser in his honor. As Arnold slowly walked up to the barbecue at Rose Park, heads turned and a round of applause rippled through the crowd.

"It makes you feel good," he said of the support. "I guess you don't know how many friends you've really got until something happens. That means a lot."

Wednesday night, more than 150 people attended a candlelight vigil to pray for Arnold.

When Arnold's heart stopped after the softball, thrown from the outfield, accidentally hit him in the chest, two Billings Clinic nurses who were at the park, Megan McLeod and Becky Parnell, performed cardio-pulmonary resuscitation until firefighters and paramedics arrived. They intubated him and used a portable defibrillator to shock his heart back into beat.

Arnold said McLeod and Parnell saved his life and that he owes them "a million thanks."

"I call them 'angel one' and 'angel two,' " said Laurie Dukart, Arnold's mother, of McLeod and Parnell.
The accident almost threw a wrench into what Arnold said is the most important thing on his mind now, his upcoming marriage to Sawyer. The two have been dating for about four years and are scheduled to be married on Saturday. She was by his side for much of the time he was hospitalized and was there when he was brought out of the coma almost two days after the accident.

Family members said they are optimistic the two will be able to walk down the aisle as scheduled.

"They predict he's going to make a full recovery," said Arnold's father, Gary Arnold. "Every day he gets a little bit better, and they plan on going through with it."

While Sawyer declined to be interviewed, the look of relief on her face was evident as a small smile spread across her face when people lined up to hug her fiancé.

After word spread that Arnold had been released and as friends and family waited for him to make an appearance at the fundraiser, they expressed their relief that he is recovering and their thanks to everyone who had a hand in helping him out. Dukart and her husband, Scott Dukart, said the support was overwhelming, with 95 people visiting Arnold during the first two days he was in the hospital.

"What do you say to everybody?" Laurie Dukart asked. "It doesn't seem like 'thank you' is enough."

Eric Keller has known Arnold for 20 years, since they started playing tee-ball together as kids, and expressed similar feelings.

"It's thank you enough to see him up and walking around," he said. "It restores your faith in the community."

Arnold said he doesn't remember the day the accident happened and that he is feeling "a lot better." He is already chomping at the bit to get back on the field and jokingly argued back-and-forth with a teammate about playing in their next softball game on Tuesday.

When asked if he had anything else to say, Arnold plugged his favorite sports team.

"Go Yankees," he said.
Jacquelyn Carter

It was her first day back to work at the Department of Labor after Christmas vacation in 2003. After returning from lunch, Jacquelyn Carter of Laurel, MD, then 60 made what she thought was going to be a quick stop at the restroom. Beyond those details, Mrs. Carter – like most SCA survivors – doesn’t remember much about her SCA. “My coworker has since told me that one minute we were talking and the next moment she suddenly heard a loud ‘thud,’ and there I was... passed out in the restroom.”

A native Washingtonian, Mrs. Carter knows the city like the back of her hand. Yet that day she wasn’t aware of one small but powerful device that would play a crucial role in saving her life. Fortunately, her coworker knew that an AED was installed nearby in the Labor Department’s Health Unit, and as she called out for help, she specifically instructed bystanders to retrieve the AED.

After CPR was performed and several shocks were administered by the AED, Mrs. Carter regained consciousness and began breathing again. By that time, paramedics had arrived and she was immediately transferred to George Washington University hospital. Days later she was released from the hospital with an ICD and a new lease on life.

“Today, I’m functioning as I normally would: enjoying my family and friends, playing cards, following a regular exercise program, and gardening. “I just feel great!”

As is also common with other SCA survivor experiences, Mrs. Carter had no prior signs of heart problems. In the days leading up to her SCA, she helped her mother complete some household chores. She lightheartedly recalls, “My mother later scolded me because I hung some drapes for her, and she thought that physical exertion may have brought on my SCA.”

While she may not know what exactly triggered her event, Mrs. Carter tends to focus on the positive outcome. “My mother still had a daughter, my daughter still has a mother, and my coworkers have become educated on the existence and importance of AEDs.”

Now retired, Mrs. Carter recently received a new ICD. “I tell my friends, getting the ICD was a piece of cake, and because of it, there’s nothing I can’t do.”

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Vince Graziano

Vince Graziano knows all too well the mysterious omen of Friday the 13th. On Friday, February 13, 2009, he remembers that day started out like many others; he arrived at work shortly after heading to the gym for his daily swim. While sitting at his desk and talking to coworkers, Vince suffered SCA. Up to that point, he led an active lifestyle, cycling, exercising, swimming and following a reasonably healthy diet. "I thought I was doing all the right things and in relatively good shape, but apparently it wasn't enough," recalls Vince. Two of his colleagues, Richard Reynolds and Robert Hughes, immediately began CPR while others called 911 and alerted building personnel. Moments later Frank McLean, a building security agent, arrived with an AED and proceeded to place the pads and deliver a shock. EMTs arrived quickly thereafter and transferred Vince to NYU Medical Center where he received immediate hypothermic treatment.

Over the next few days Vince remained unconscious while doctors still tried to explain what caused the SCA. Vince soon experienced a Myocardial Infarction, and doctors quickly performed an emergency cardiac catheterization which showed that all coronary arteries were 90-100% blocked. Unable to place stents or do angioplasty, a surgeon was called in to perform an emergency triple bypass. "The surgeon informed my family and friends that this was my only hope and the chances of survival were 50%. Through God's grace I made it through the surgery and with each passing day improved."

After six days on a ventilator, Vince was extubated, and although he does not recall anything that happened, he was fortunate to have suffered no cognitive deficits whatsoever. He now participates in a cardiac rehab program and has since received an ICD.

"Without the courage and willingness of my coworkers and the building security staff to act quickly I would not be here today. My angels were surely out in full force, at the right place at the right time."

Like most SCA survivors, Vince had no prior signs or symptoms of heart problems. "Had this taken place an hour and a half earlier, I very well could have drowned in the

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pool," he remarked. The prior evening he was on a flight from Houston returning from a business trip.

Numerous medical professionals who have been involved in various stages of Vince's care remain awestruck at how he has managed to pull through, and all of them have attributed much of it to the quick action of his first responders.

Throughout the entire ordeal, Vince's outlook remains positive. "So much for bad luck on Friday the 13th!"
Kayla Donahe

Age: 16
Save Date: 5/19/2009
Activity: Playing soccer

Tuesday, May 19, 2009: this date I will remember for the rest of my life. It was what seemed to be a normal day. I woke up at my usual time, got ready for the day and headed out the door for school. I was a 16 year-old sophomore at Valley High School in West Des Moines, Iowa. The school day, again pretty typical, ended and I headed home to get ready for my last soccer game of the season which was against my school’s biggest rival, Dowling Catholic High School. This is all that I can remember from that day.

My next memory is when I awoke several days later in the hospital, surrounded by my family, clueless as to what had happened to me and why I was there. It was explained to me that I had suffered a sudden cardiac arrest while playing soccer. This was so confusing to me and my family as well, as I have always been active and healthy, had never displayed any signs or symptoms and there was not a family history. I had played soccer since I was five years old, ran track, and played volleyball, too.

From what I am told, I had been playing in the soccer game for about five minutes when I suddenly collapsed midfield and was unresponsive. The coaches called 911 and spectators from the stands rushed to my side to start CPR. Nearly nine minutes later, two police officers arrived with an AED and administered the first shock. The EMS/Fire crew arrived shortly thereafter and began their resuscitation efforts. Several shocks later and still unresponsive, I was loaded into the ambulance and in route to Blank Children’s Hospital. Thankfully, I finally returned a pulse. The records indicate that I had been without a pulse for 25 minutes that day.

I spent a week at Blank Children’s hospital and was then transferred to the University of Iowa Hospital in Iowa City for further testing. A diagnosis had not been made but it was determined that I should have and ICD implanted. The ICD was implanted, and six days later I was on my way home to continue my recovery. I had missed the last two weeks of my sophomore year.

Now, I am a junior at Valley High School. I am restricted from competitive sports but am allowed to do pretty much anything else I choose. My memory of everything prior to that soccer game is amazingly intact. Even though it is unknown as to what exactly
happened at that moment during the game, I feel extremely fortunate to have survived. I am very grateful for everyone that had a hand in saving me that day, the people performing CPR, police officers, EMS crew, doctors, nurses, etc., and so thankful that they did not give up on me. I thank God every day that I am alive and healthy.
Survivor

Timmy Kiedrowski

Age: 19  
Save Date: 5/2003  
Activity: Playing softball

From an email sent from Timmy's brother to family and friends

In May of 2003, Timmy (19-yrs-old at the time) collapsed during one of our softball games. An ambulance was called and they immediately took him to the hospital. At the time, we thought he was dehydrated, so we thought nothing of it and played the rest of the game. Actually, things were a lot worse than we thought.

On the way to the hospital, they had to give the "Paddles of Life," while he was awake to bring his heart back down to a normal beating rate. Before the paddles, his heart was beating to fast that it seemed to stop. He suffered from ventricular fibrillation (VF), where the top and the bottom of the heart can get a rhythm and beat faster to catch up with the other half and it's just a violent cycle. His heart was beating at 425 beats per minute. (The normal rate is around 80-100 beats per minute.) From what he was suffering from that day, only 20 percent of victims live. Essentially, God kept him here that day.

My cousin in Colorado died of a mysterious heart disease when he was 20 back in 1998. After looking at the data, they determined that he had something that resembled what Timmy had. After looking at this, they never officially narrowed it down as to what he had or what caused it, but it was determined that he probably had something called Long QT syndrome. It's a genetic disease that appears in the late teens and it cannot be diagnosed easily. The only cure for such a disease is to take heart medicine, avoid participation in rigorous athletic activities (football, basketball) and implant a device called an implantable cardioverter defibrillator or ICD. The ICD in Timmy's chest will jump start the heart if it goes into VF again.

They say that of the 20 percent that survive the first attack, only 50 percent survive the second if they don't have an ICD, so he got the ICD. Because it's genetic, we all got tested and it was determined that Mark and I don't display signs of having it now, but I could also appear around the age of 40. Michael heart rate, on the other hand, was a little irregular but wasn't as severe as Timmy's. And after having my mom's whole side of the family tested for this, we found out that one of our cousins (19 yrs. old) might have the same thing Timmy does.
So everything was fine till five months later (October 6, 2003) when the ICD went off when he was playing basketball at college. I live close to where he goes to school and I picked him up to take him home. While he was waiting for me, it went off again. He said it's like a metal baseball bat hitting him in the chest as hard as it can and he blacks out. So we took him to the hospital and they said that it went off at the right times and that they had to change his medication. Things were quiet for the last year.....till Sunday (October 10, 2004). About 7 pm, Timmy and my parents were over my house and he was complaining about how he wasn't feeling well. He got up to go to the bathroom, came back into the living room, took off all his clothes to his underwear, started breathing heavy and said he couldn't slow his heart down. He was walking over to sit next to my mom and we heard a huge "THUMP!" like someone punching him in the chest. It was his ICD going off. It threw him back onto the couch and he had this immense look of pain in on his face. I ran out to his car and got his pills and my parents took him home that night. He said he was okay and wanted to go to the hospital in the morning. They checked him out in the morning and said that everything looked okay and that his electrolytes were low and white blood cell count was high, but other than that nothing else was wrong and they let him go home.

That Monday, I got a call from Joy on my way home from work around 6:30 pm. She told me that I needed to get home and we HAD to get to Lorain ASAP. She told me that my parent's neighbor called and told us that Timmy was in the hospital and it wasn't looking good. We rushed there and she told us this story that Timmy's ICD started going off at my parent's house around 5 pm and went off 20 times in the matter of an hour. She said that it was hitting him in the on the porch, on the grass in front yard and in the ambulance when they got there. She said he would close his eyes, take a deep breath, a thumping sound would come out of this body and his body would jerk. Then he would wake up and it would happen again between 3-5 minutes later.

They go him stabilized 20 minutes after he got to the hospital, and put him on some serious medication. Eventually he got transferred to a different hospital that night where his doctor came and reprogrammed his ICD to that it would pace his heart down instead of just letting it get up to around 400 beats per minute and go off. He was discharged from the hospital on that Thursday and was told he can go back to living his life like normal. His doctor said Timmy is a rare case that he lived through all this, and it seems like Timmy is his golden boy. It's tough for him now because he suffers from thoughts that it's going to go off again whenever it feels like it, he has to take medication that screws with his intestines and makes him tired and sleepy. He has gone back to school now and the teachers are very supportive of him. They are working with him to get him back on track, and he might be going to counseling to help him lose the stress of thinking it's going to go off. He's okay now and looking to get his life back on track and in the groove of things.

Lots of people were praying for him and still are. God kept him here for a reason. Keep him in your thoughts and prayers. Just wanted to let you guys know what was going on. Thank you for your thoughts and prayers.
Survivor

Julie Lycksell

Age: 48
Save Date: 2/6/1998
Activity: At restaurant

On February 6, 1998, I was celebrating my 48th birthday at a restaurant when I suddenly collapsed on my husband’s shoulder. He thought I was just sleeping because as an Operating Room nurse, I was on call the night before and had worked all night and all day. He tried to wake me up but I was not responding. Our friend sitting across the table from us thought I didn’t look so good and said that they should call 9-1-1. The Maitre d’ called 9-1-1 while my husband started mouth-to-mouth resuscitation. They also called out to see if there was a doctor or a nurse in the restaurant. Lucky for me there was a doctor and a nurse who was an EMT. They came around to our table, laid me on the floor and started CPR. Within a minute or two, Police Officer James Brierton came in to the restaurant with an AED, an oxygen tank, and an airway. He connected me to the machine and pushed the analyze button. The machine told him that I needed to be defibrillated. He had to defibrillate me twice before my heart went into normal rhythm.

The ambulance came within five minutes and took me to the St. Charles Hospital emergency department. I was still unconscious when I arrived. The doctors gave me a paralyzing drug and put a breathing tube in my throat. An EEG was done to see if there was any damage to my brain but it was negative. The next morning I started waking up and the breathing tube was removed. They told me that I was awake and talking but I can’t remember my whole stay at St. Charles Hospital. I was transferred to St. Francis Hospital on Sunday, February 8. An Echo Stress Test was done the next day and it was negative. On Tuesday, a cardiac catheterization and a renal angiogram were done which turned out to be negative also. On Wednesday, they did an electrophysiology study of my heart. The doctor could not even induce my heart to go into ventricular fibrillation. They did not know what to do next. But because I was a documented cardiac arrest patient, they implanted an ICD on Thursday February 12. The device was tested the next day and I went home on Saturday February 14, Valentine's Day.

What a present for my family. A bouquet of flowers was waiting for me at home from my guardian angel, Police Officer James Brierton. I went back to work after four
weeks but was not allowed to drive for six months. I have been back to work full time and have done some traveling to talk about how important it is to have an AED close by when the need arises. I am thankful to the Suffolk Police Department for implementing a program in which their squad cars are equipped with AEDs and their police officers are trained EMTs. I have been involved with the American Heart Association and the American Red Cross in their symposiums on AEDs in Schools and Communities. I was asked to testify at the Suffolk Legislative Assembly about the importance of Public Access Defibrillation. I am involved with a local cardiac arrest survivor support group and I am a board member for the NCED SCA Survivor Network that has a website with a chat room. My goal is to be visible and let the people know that a life can be saved if we give it a try.

The reason I am here today is because the chain of survival was carried out smoothly—early action (calling 911), early CPR (husband, doctor and nurse doing CPR), early defibrillation (police officer with AED), and early advanced cardiac life support (ambulance to hospital). I am happy to be one of the five percent that survived sudden cardiac arrest.