Welcome to the new design of the SCAA newsletter. The new face and layout is reflective of our ever-evolving organization, the exciting programs we’re developing and the infectious energy of our staff, members and volunteers so dedicated to putting ideas into action and making substantive progress in the fight against sudden cardiac arrest (SCA). And speaking of SCA awareness, in the first week of June, our chapters undertook a noble effort that undoubtedly will create communities that are better prepared to respond to SCA. By donating lifesaving AEDs to nonprofit organizations across the country, chapters participated in SCAA’s “donAtED 2011,” and forever changed the safety of their communities.

Where once there was no AED, now there will be. Where once residents did not know how to respond to a cardiac arrest emergency, now they will know what SCA is and how to save a life! The organizations receiving these devices welcome thousands of visitors through their doors each year and provide critical services to some of the most underserved populations. In all, more than 30 AEDs were deployed in churches, schools, law enforcement facilities, community education centers, public parks, libraries and more.

I couldn’t think of a better time of year to implement this program than CPR/AED Awareness Week, June 1-6, 2011. For the past few years, Congress has designated this special week for Americans to become more knowledgeable about bystander assistance, particularly in the performance of CPR and usage of AEDs. To learn more about CPR and AED use, please view the “Saving Lives from SCA” video on youtube.com. While annual educational campaigns such as this help raise awareness, we must remember that SCA does not take time off. Rather it continues to strike at alarming numbers throughout the rest of the year.

Do you know someone who has gone out of his or her way to increase awareness of cardiac arrest? Or a company that has made SCA prevention/response a focus of employee wellness and safety? Nominate them for one of the following 2011 SCAA Service & Leadership Awards:

• Public Spirit Award
• Public Leadership Award
• Public Service Award
• Medical Leadership Award
• Corporate Leadership Award

Previous award recipients have included June Daugherty, Dr. Joseph Ornato, Maggie Dixon Foundation, University of PA Department of Emergency Medicine’s Center for Resuscitation Science, FDNY EMS “Project Hypothermia,” UPMC Safar Center for Resuscitation Research, The SHARE Program – Bureau of EMS and Trauma System Arizona Department of Health Services, The Honorable Patrick Quinn, Rochester (Minnesota) Police Department, San Diego Project Heartbeat and American Airlines.

Nominations are due by August 1. Specific criteria and application instructions can be found on the SCAA web site at www.suddencardiacarrest.org. Awards will be presented at the 2011 Awards Dinner on Saturday, September 24 at the Millennium Hotel in Minneapolis during the 2011 SCAA Annual Meeting.

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Medical Conference to Focus on Heart & Mind; Life Before and After Cardiac Arrest

Even though the national survival rate for SCA hasn’t changed in approximately 30 years, new methods of prevention and treatment like ICDs and therapeutic hypothermia continue to emerge through advancements in research and technology. Yet, one aspect of SCA treatment has not been adequately addressed in medical literature and research: the psychosocial challenges of recovery and rehabilitation.

Survivors, family members as well as individuals who have lost loved ones to SCA, often experience challenges in adjusting to life after cardiac arrest. Many report experiencing feelings of anxiety, depression, guilt and other difficulties in coping with life. While medical and mental health professionals recognize that SCA is a traumatic experience and the path to rehabilitation and recovery can be daunting, they lack specialized resources and understanding to help patients heal.

Additional sessions during the conference will touch on:
- state of the science on SCA
- screening at-risk individuals and special populations
- athletic participation after diagnosis
- end-of-life concerns with ICD patients

Courses will be led by highly acclaimed medical professionals from across the country with expertise in such fields as genetic testing, cardiac screening, medical ethics, sports and psychosocial adjustment.

Continuing education credits are being administered by the Heart Rhythm Society. To register or for more details, visit the SCAA web site at www.suddencardiacarrest.org.

From the Chairman of the Board:

When it comes to fundraising, I think most people (myself included) would rather have a root canal than hound others for money. It’s not easy asking others for money, unless you are a high school student asking a parent for a few bucks for the weekend. But, do you know why people do not give money? The number one reason people do not give is because they are not personally asked to do so!

In the world of nonprofit organizations, fundraising is an essential element to growth and sustainability. And as uncomfortable and challenging as fundraising may be, something positive usually comes out of it. In our case, SCAA raises money from a number of sources -- public and private. Throughout our early years, SCAA had been fortunate to receive grants and sponsorships from several device manufacturers that share the same desire to expand patient advocacy and awareness of this fatal condition. Now, as we continue to grow, SCAA needs to expand its fundraising.

SCAA has undertaken a number of new programs and initiatives this year to reach broader audiences in the fight against sudden cardiac arrest. At the 2011 Annual Meeting, we will be unveiling a consumer-friendly CPR/AED training program available to high school students and eventually the general public. There too, we will be rolling out a new Rehabilitation & Recovery program addressing mental health resources for survivors and family members. All of these efforts will further SCAA’s mission nationally and locally as the Pulse of our Communities.

Unfortunately, SCA continues to take another life every two minutes; therefore, our work is not done and we must remain steadfast in continuing SCAA’s important work.

Each time we apply for a grant or seek donations, it is with the goal of saving and enriching lives. If our outreach efforts can bring one family together to search for AEDs in its community, then we have raised awareness. If our chapter support network can help a survivor cope with the rehabilitation and recovery process, then a life has been changed. And if just one student walks away from an SCAA presentation with the confidence in knowing how to recognize and respond to an SCA, then the “chain of survival” has become stronger.

Our country is known for its considerate and compassionate people. As the world has seen many times throughout history, it is the strength, will and character of everyday Americans who rise to a challenge and help others in need. So, with that patriotic character in mind, I ask you to give whatever money you can to support the SCAA. I hope that you will rise to the challenge and take this one simple step to impact the world in such a positive way. Thank you in advance for your support and generosity.
Survivor Story

Jen Morrow | Age: 30 | Date of SCA: June 4, 2010 | Activity: at home

She had celebrated her 30th birthday just one month before, but on this day Jen went into cardiac arrest at her home in California. “From what I have been told, it was a typical Friday morning,” she says. Helping her two children get ready for school, she suddenly didn’t feel well and laid down on the kitchen floor to catch her breath.

As she lay face down and gasping for air, her son ran to get her husband. “Apparently, I sat up, asked him for water and explained that I would just need a few moments.” Eventually, Jen managed to stand on her own and walked to the bathroom. Now lying down on the bathroom floor, she became dizzier, again gasped for air and turned gray and cold.

Her parents arrived and took control of the scene, providing details to the 911 operator. When the paramedics arrived, they shocked Jen with the defibrillator approximately five times. Upon arrival at the Emergency Room, her body temperature was down to a chilling 92 degrees, and she was shocked approximately 12 more times.

With a fatal diagnosis, Jen was given a mere four hours to live. She continued to experience several more cardiac arrests that morning, and each time was shocked and successfully resuscitated. Those were soon followed by a medically induced coma and therapeutic hypothermia treatment. Upon waking up from the coma on June 14, she tried writing but was shocked to see that the penmanship wasn’t her natural style.

Since being discharged from the hospital, Jen now sports an implantable cardioverter defibrillator, takes a beta-blocker and makes sure to consume more potassium in her diet. Additional tests ruled out Long QT Syndrome, arrhythmogenic cardiomyopathy, heart disease and a range of other syndromes. Though her family has a history of heart disease and diabetes, Jen was never diagnosed with either condition.

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Vision: By 2020 preventable deaths from Sudden Cardiac Arrest will be eliminated.

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Studies Find that When it Comes to Utility of AEDs, It Could All Be About Location, Location, Location

I could call this column the good, bad and ugly about AEDs. We know that CPR and the use of AEDs are the only way to survive SCA because they keep blood flowing and restore healthy electrical activity. Recently, several studies were published that provide some additional insights into the benefit and potential impact of AEDs, and perhaps challenge us to figure out how to fully exploit that potential.

10-Center Resuscitation Outcomes Consortium (ROC)

Data from this study was published in the New England Journal of Medicine in January 2011.1 The study looked at ventricular arrhythmias and AED use in cardiac arrests that occurred at public locations versus residential ones. The database included 2,042 cases in public and 9,564 at home—thus a large number from which to draw conclusions. The report’s findings confirm what a number of smaller studies had previously reported: Ventricular fibrillation (VF) and ventricular tachycardia (VT) are much more common as the initial rhythm in arrests in public locations than at home.

Here’s what researchers discovered in public settings:
- VF/VT was found in 79% when bystander assistance included usage of an AED
- VF/VT was found in 60% when a bystander witnessed the arrest
- VF/VT was found in 38% when EMS witnessed the arrest

In residential settings, researchers learned:
- VF/VT was found in 36% when bystander assistance included usage of an AED
- VF/VT was found in 35% when a bystander witnessed the event
- VF/VT was found in 25% when EMS witnessed the arrest.

In general, researchers found that in all SCA events (witnessed or not):
- VF/VT was the initial rhythm in 51% of public cases
- VF/VT was the initial rhythm in 21% of cases occurring at home
- Another interesting finding of the ROC study focuses on survival of SCA to hospital discharge. When an AED shock was delivered by a bystander in public, survival of SCA to hospital discharge was 42%. When a bystander applied an AED in public, survival of SCA to hospital discharge was 34%. But when bystander applied an AED in home setting, survival to hospital discharge was only 12%.

An earlier study from the same ROC investigators examined survival after bystander CPR and AED use, regardless of public or private setting.2 This report was based on an analysis of almost 14,000 out-of-hospital cardiac arrests. Analyses found that bystander AED use was associated with about a doubling of survival.

The Good/Bad/Ugly about AEDs from These Studies

So, the good news is that these very large multi-center studies re-affirm the tremendous benefit of AED use by bystanders for cardiac arrest in public settings. These reports provide us a strong scientific foundation for continuing and re-doubling our efforts to promote public access defibrillation programs.

However, the bad news is that the prevalence of VF/VT is much lower for arrests at home and residential settings, thus limiting the impact of AEDs in this setting.

The reason for this finding is not definitively known. The authors suggest it is not just a matter of longer arrival times for EMS and delayed rhythm determination in home arrests; rather, the more likely reason is that persons who experience cardiac arrest at home are more likely to be older and have more severe underlying disease than those who experience SCA in public settings.

And now for the ugly. Another recent study looked at cardiac arrests in the hospital, using the National Registry of Cardiopulmonary Resuscitation which collects information from many hospitals across the US.3

This report was based on another large database including nearly 12,000 in-hospital cardiac arrests. The perhaps surprising, and disappointing, finding is that AED use was associated with lower survival. This was likely due to there being mostly non-shockable rhythms although survival was not significantly better even among those with shockable rhythms.

The bottom line of all this is that AEDs definitely improve survival for cardiac arrests in public. AEDs have less of an impact when used in the home up to this point, and seem to worsen survival in the hospital setting.

We are very appreciative of our tireless chapter leaders who presented AEDs, provide community education and awareness and celebrate lives that have been saved. We are equally appreciative of the companies who have so generously agreed to donate the AEDs—Cardiac Science, Defibtech and Zoll.

In the coming weeks I look forward to sharing details of chapter activities and accomplishments during this unique event. More than 55 strong, our chapters are dedicated to stamping out SCA, yet they cannot go at this challenge alone.

Interestingly, CPR/AED Week occurs in between two other popular holidays – Mother’s and Father’s Day. Parents can help us make a dent in the survival rate of SCA, and so I call on all mothers and fathers to talk to their children about CPR and AEDs. Better yet, take a CPR/AED class together or search for AEDs in your community.

There are so many ways to help in the fight against SCA, and I encourage you to visit the SCAA web site at www.suddencardiacarrest.org, to find other opportunities in which you can make a difference. Together we can give our neighbors—far and wide—a fighting chance at surviving SCA.

Lisa A. Levine, CAE
SCAA President

H.R. 1377 – “Josh Miller HEARTS Act” – which would establish a funding source to place AEDs in schools across the country was introduced in congress by Representative Betty Sutton (OH-13) and has quickly gained support in the House. The bill passed the House last session but failed to make it through the Senate. A similar version of H.R. 1377 has not yet been re-introduced into the Senate.

The Health Resources & Services Administration (HRSA) recently unveiled plans to reduce its current funding for the Rural Access to Emergency Devices Program to a mere $236,000—down from $8.927 million in 2005. The program provides grants to states for the deployment of AEDs in rural areas to increase cardiac arrest survival rates. SCAA is working with senators on the Appropriations Subcommittee of Labor, HHS and Education, and members of the Senate Rural Health Caucus to see that this program continues to be supported and receives adequate funding in the FY 2012 budget.

The Centers for Medicare and Medicaid Services has created a Partnership for Patients initiative, a new national partnership aimed at saving 60,000 lives by stopping millions of preventable injuries and complications in patient care over the next three years. “Americans go the hospital to get well, but millions of patients are injured because of preventable complications and accidents,” said HHS Secretary Kathleen Sebelius at the program’s launch in April. “Working closely with hospitals, doctors, nurses, patients, families and employers, we will support efforts to help keep patients safe, improve care, and reduce costs,” she continued. The Partnership has the potential to save up to $35 billion in health care costs, including up to $10 billion for Medicare. Already more than 500 hospitals, as well as physicians and nursing groups, consumer groups and employers have pledged their commitment to the new initiative.

Stay up-to-date on a variety of legislative and regulatory matters affecting patient access and quality of care. Sign up to receive SCAA’s E-news and updates by visiting the SCAA web site.
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 US 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 US, 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 older than the age of 35-40 years. SCA episodes in athletes younger than 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 (Marfan’s 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 older than 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 examinations (PPEs); 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 PPEs. 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 PPEs. Data generated in Italy suggest 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 suggest 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 PPEs 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 suggest that the ECG can improve the sensitivity of the PPE from 35% or 40% to as high as 85-90% 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 more than...
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%. 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 maximum survival from an event. Although we have limited data in athletes, the success rate of defibrillation with AEDs ranges somewhere between 25% and 75%, depending on age of athlete, athletic venue, and group studied.

Although the frequency of SCA episodes in athletes is probably quite low, diligent PPE 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.

Learn more Dr. Lawless will host a session on this topic at the SCAA Annual Meeting. Register today.

This just in... Heart Beat from Around the World

Sleep Disorder Risk for Patients with ICDs

Patients with an ICD who have a breathing disorder that occurs during sleep are at greater risk for developing fatal heart conditions at night. The study, published in the May edition of the journal HeartRhythm, chronicles efforts of Israeli researchers analyzing 45 patients with ICDs in an overnight sleep center. Researchers discovered that more than 57% of patients experienced disordered breathing, and that the potential for ventricular arrhythmias was most dangerous between midnight and 6:00 a.m. Based on their findings, researchers recommend patients with ICDs undergo testing for sleep disorders.

Software Glitch Reason for Recall

AED manufacturer Defibtech has voluntarily recalled more than 65,000 of its Lifeline and ReviveR AEDs after discovering that some units were shipped with outdated software. The older version of software could cause an affected AED to cancel shock and fail to provide therapy to patients. Although not every unit has been affected, the company will provide customers with a free software upgrade, but in the meantime recommends that customers maintain the operational status of the devices until the software upgrade has occurred. Customers can report any adverse results to the Food & Drug Administration (FDA) MedWatch program.

Paper Prescriptions Becoming Thing of the Past

Handwritten prescriptions are becoming fewer in today’s society, according to the National Progress Report on E-Prescribing and Interoperable Healthcare. In 2010, over 230,000 prescribers were prescribing electronically. Cardiologists ranked as the highest medical specialty to participate in e-prescribing. Last year, the total number of e-prescriptions grew to 326 million from 190 million in 2009. The report also indicates that an amazing 90% of community pharmacies were able to receive electronic prescriptions.

Stay up-to-date on industry news pharmaceutical and device developments and SCA-related studies. Sign up to receive SCAA’s E-news and updates by visiting the SCAA web site.
Calendar of Events

SAVE THE DATE

Don’t miss your opportunity to attend the SCAA 2011 Annual Meeting September 23-25 in Minneapolis, Minnesota. Hear the latest information about community volunteerism, and efforts to prevent and treat SCA presented by top experts in the field. Visit www.suddencardiacarrest.org for more information and make your plans to attend the Annual Meeting now!

Power and passion, saving lives

For up to the minute information, find us on the web: