CPR in sudden cardiac arrest debated

The 2012 Resuscitation Science Symposium opened Saturday with a lively discussion on the value of AEDs and whether CPR saves lives in patients experiencing cardiac arrest.

Gordon A. Ewy, MD, opened the discussion in support of CPR and AEDs in saving lives, reinforcing that the timing of their use was critical. Looking at cases of defibrillation performed by security personnel in Las Vegas casinos, Ewy reported that the survival rate was 74 percent when patients were shocked within three minutes, but dropped to 49 percent after three minutes.

“A pure scientist would only pray that in cases of cardiac arrest, a patient would be near an AED and that it would be working,” said Ewy, professor of cardiology at the University of Arizona. Ewy referenced another analysis of 17 studies indicating that survival improved when bystander CPR was performed early (at or less than 4 minutes following cardiac arrest). He also cited data from a Japanese study indicating that 3.7 percent of initial shocks were delivered by laypersons and survival in those patients was 37 percent. In this study, which included 12,631 witnessed cardiac arrests, survival also significantly increased with CPR.

“Unless defibrillation is immediate, chest compressions before and after defibrillation increase survival,” said Ewy, citing studies undertaken in animal models. Finally, he shared data from a human study showing that Hands-Only™ CPR administered by a layperson increased survival compared with conventional and no-bystander CPR. Gust H. Hardy, MD, argued that CPR be held to a higher standard of review. CPR is associated with tradition and ritual, as well as the idea that doing something is better than doing nothing, he said. Moreover, its efficacy was based on post-hoc analysis. Hardy, a clinical professor of medicine at the University of Washington in Seattle, stressed that CPR’s value was based on surrogate and short-term outcomes, such as survival-to-hospital discharge, rather than long-term survival. Beyond the lack of long-term benefits, he said that CPR was not benign and associated with serious complications like internal organ injury.

CROWDSOURCING continued on page 12

Crowdsourcing initiative maps AEDs in Philadelphia

Crowdsourcing participants in Philadelphia used a smartphone application to find, photograph and map 1,429 AEDs in public places, according to data presented at Saturday’s Resuscitation Science Symposium. The results will be used to help bystanders and 9-1-1 operators locate AEDs in an emergency.

Crowdsourcing is problem-solving typically undertaken in business settings. Tasks are distributed, or outsourced, to thousands of qualified workers to quickly, accurately and cost-effectively complete a job.

Raina Merchant, MD, MSHP, lead researcher of the crowdsourcing initiative and assistant professor of medicine at the University of Pennsylvania in Philadelphia, presented data from the MyHeartMap Challenge initiative. With AEDs increasingly available in many public places, including gyms, schools, office buildings and retail shops, a centralized database of AED locations increases their usefulness in an emergency, she said.

“Rapid defibrillation is an essential link in the Chain of Survival that’s necessary to save cardiac arrest victims,” Merchant said. “AEDs provide this, but we first need to know where they are. Hiring research assistants to do this task consumes much time and utilizes precious resources.”

Challenge participants, who had to be at least 18, were given a custom smartphone app to use to photograph the AEDs and enter information about their location and accessibility. Participants received monetary prizes as incentives. Data submitted was verified by matching the phones’ GPS coordinates of the photographs presented with GPS coordinates of the location.

Merchant reported that participants submitted the location of the AEDs in the Philadelphia area over an eight-week period. From the demographic data available covering 203 of the 313 participants, 31 percent were students and 22 percent worked in health care. While 64 percent came from the greater Philadelphia area, other participants hailed from 10 states and three countries. Participants who were older than 41 submitted significantly more entries.

CROWDSOURCING continued on page 12

American Heart Association

DAILY NEWS

NOVEMBER 4, 2012

“Too Many Meds?

Recurrent syncope is a frequently occurring and significant public health problem, but its association with polypharmacy is not fully known. Results of a new study examining the association with the number of medications taken simultaneously will be reported during a poster session at 3 p.m. Sunday in Kentia Hall, Core 2, Poster Board: 2070.

American Heart Association

You are the Power

The power to prevent stroke among African-Americans is in your hands. Celebrate with a Power To End Stroke T-shirt; limited quantities available at booth 2035.
HIGHLIGHTS FROM
THE PROGRAM CHAIR

By Elliott Antman, MD, FAHA, Committee on Scientific Sessions Program Chair

The countries honored in this year’s international forum program include Argentina, Australia, Brazil, Canada, China, Germany, Japan, the Netherlands, South Korea, and the United Kingdom. Five top researchers at each country forum will discuss their career development, research, and current work. Key opinion leaders from each country and from the AHA will co-moderate with a country-specific didactic presentation and discussion. See page 13 for the location of each international forum.

OPENING SESSION
The Opening Session, OPS.01, is a must-attend event. The session takes place in Hall G and will begin at 1 p.m. when AHA President Donna Amett, PhD, MSPH, BSN, FAHA, gives the welcome and Presidential Address. She also will introduce and honor a few of our distinguished scientists in basic research, clinical research, population research, academic mentorship and research achievement.

The Lewis A. Conner Memorial Lecture will explore the future of cardiovascular medicine. I will conclude the session with a preview of the next few days, starting with the first Late-Breaking Clinical Trials session, which begins at 3:30 p.m. in Hall G.

Our evening symposium, “Difficult Issues Surrounding the Care of the Atrial Fibrillation Ablation Patient” will wrap up Sunday’s programming.

INTERNATIONAL FORUMS

The international forums are important in highlighting and sharing the best of cardiovascular research from around the globe. They are also networking opportunities – something past attendees have said is extremely important in their careers, as well as their overall Scientific Sessions experience.

LATE-BREAKING CLINICAL TRIALS I — LBCT.01 | 3:30–5:20 P.M. SUNDAY | HALL G

Trial
Aspirin for the Prevention of Recurrent Venous Thromboembolism After a First Unprovoked Event: Results of the ASPIRE Randomized Controlled Trial

Interior
The Trial to Assess Chelation Therapy (TACT) is an NIH-sponsored randomized, double-blind clinical trial testing the benefits and risks of 40 infusions of a standard ethylene diamine tetra-acetic (EDTA)-chelation solution compared with placebo in patients with coronary artery disease.

Main Results of the Future Revascularization Evaluation in Patients with First Unprovoked VTE After a Chest Pain Syndrome Trial: Results from the FREEDOM Trial

The FREEDOM trial was designed to determine whether coronary artery bypass grafting (CABG) or percutaneous coronary intervention (PCI) is the superior approach for revascularization of diabetic patients with multivessel coronary artery disease.

LATE-BREAKING CLINICAL TRIALS II — LBCT.02 | 15:30–6:45 P.M. SUNDAY | HALL G

Trial
Prospective Evaluation of Outcomes With Stress Perfusion Imaging Versus Stress Wall Motion Imaging During Dobutamine or Exercise Echocardiography

The POISE trial was designed to compare stress perfusion imaging with stress wall motion imaging in predicting patient outcomes.

Economic Outcomes of Percutaneous Coronary Intervention Performed at Sites With and Without On-Site Cardiac Surgery

This study examined quality of life outcomes in the TACT trial, an NIH-funded, randomized, double-blind, placebo-controlled 2x2 factorial trial comparing 40 infusions of an ethylene diamine tetra-acetic (EDTA)-chelation solution with placebo in patients with coronary artery disease.

Main Results of the Future Revascularization Evaluation in Patients with Diabetes Mellitus: Optimal of Multivessel Disease (FREEDOM) Trial

The FREEDOM trial was designed to determine whether coronary artery bypass grafting (CABG) or percutaneous coronary intervention (PCI) is the superior approach for revascularization of diabetic patients with multivessel coronary artery disease.

Genentech is a proud sponsor of Scientific Sessions 2012

20th Annual Fun Walk/Run Fun Walk/Run Fund Run Fun Walk/Run Tuesdays morning at historic Dodger Stadium. Choose the 5k or 1-mile walk and get your exercise in early while enjoying a cool Southern California morning. And don’t forget to pick up your T-shirt at the finish line.

For more details and to register, visit the AHA Fun Walk/Run Booth in the South Lobby of the convention center.

Today at Sessions

Don’t miss today’s highlighted presentations and events. For a complete schedule, see the Final Program or view it online at scientificsessions.org.

2012 AHA Scientific Sessions

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**Today at Sessions**

Don’t miss today’s highlighted presentations and events. For a complete schedule, see the Final Program or view it online at scientificsessions.org.

**20th Annual Fun Walk/Run**

**When:** 6:15 a.m. Tuesday
**Where:** Dodger Stadium
**Free registration**

Join us for a major-league milestone as we celebrate the 20th anniversary of the Fun Walk/Run Tuesday morning at historic Dodger Stadium. Choose the 5K run or 1-mile walk and get your exercise in early while enjoying a cool Southern California morning. And don’t forget to pick up your T-shirt at the finish line.

For more details and to register, visit the AHA Fun Walk/Run Booth in the South Lobby of the convention center.

**HIGHLIGHTS FROM THE PROGRAM CHAIR**

A highlight of Sunday’s programming is a rundown of the most important articles on cardiovascular medicine published since Scientific Sessions 2011.

- **Session SMP301, “Groundbreaking Studies in the Practice of Cardiovascular Medicine: Circulation Editors’ Choices”** — runs from 8 to 11:30 a.m. in Room 411. The editors of Circulation: Journal of the American Heart Association identified 10 pivotal papers published in the medical literature in the past year. The session concludes with presentations from Circulation’s Best Paper Award winners in basic science, clinical science and population science.

- **Session SMP701, “ATVB Editors’ Symposium: Novel Functions of High-Density Lipoprotein in Vascular Biology”** — runs from 8 to 11 a.m. in Hall A-7 with six pivotal papers.

- **The Opening Session and the first of two Late-Breaking Clinical Trials sessions.**

**INTERNATIONAL FORUMS**

The international forums are important in highlighting and sharing the best of cardiovascular research from around the globe. They are also networking opportunities—something past attendees have said is extremely important in their careers, as well as their overall Scientific Sessions experience.

**LATE-BREAKING CLINICAL TRIALS I — LBCT.01 | 3:30–5:20 P.M. SUNDAY | HALL G**

**Trial**

- **Aspirin for the Prevention of Recurrent Venous Thromboembolism After a First Unprovoked Event: Results of the ASPIRE Randomized Controlled Trial**

**Description**

Aspirin: This trial is investigating the efficacy of aspirin in preventing recurrent venous thromboembolism (VTE) in patients with first unprovoked VTE.

- **A Randomized Trial of Bedside Platelet-Function Monitoring to Adjust Antiplatelet Therapy Versus Standard of Care in Patients Undergoing Drug-Eluting Stent Implantation: The ARCTIC Study**

**Description**

ARCTIC was designed to compare a strategy of monitoring platelet function at the bedside to adjust antiplatelet therapy to standard care in patients having drug-eluting stent implantation.

- **First Large-Scale Platelet Function Evaluation in Acute Coronary Syndromes Trial – The TRILOGY ACS Platelet Function Sub-study**

**Description**

TRILOGY ACS is an international, phase 3, randomized trial comparing the platelet inhibitor prasugrel+aspirin with clopidogrel+aspirin in medically managed US/NSTEMI ACS patients.

- **Results of the Trial to Assess Chelation Therapy**

**Description**

The Trial to Assess Chelation Therapy (TACT) is an NIH-sponsored randomized, double-blind clinical trial testing the benefits and risks of 40 infusions of a standard ethylene diamine tetra-acetic (EDTA)-chelation solution compared with placebo in patients with coronary artery disease.

- **Main Results of the Future Revascularization Evaluation in patients with Diabetes Mellitus: Optimal of Multivessel Disease (FREEDOM) Trial**

**Description**

The FREEDOM trial was designed to determine whether coronary artery bypass grafting (CABG) or percutaneous coronary intervention (PCI) is the superior approach for revascularization of diabetic patients with multivessel coronary artery disease.

**LATE-BREAKING CLINICAL TRIALS II — LBCT.02 | 15:30–6:45 P.M. SUNDAY | HALL G**

**Trial**

- **Prospective Evaluation of Outcomes With Stress Perfusion Imaging Versus Stress Wall Motion Imaging During Dobutamine or Exercise Echocardiography**

**Description**

POISE: This prospective randomized trial compares stress perfusion imaging with stress wall motion imaging in predicting patient outcomes.

- **Economic Outcomes of Percutaneous Coronary Intervention Performed at Sites With and Without On-Site Cardiac Surgery**

**Description**

This study is designed to determine whether total medical costs at nine months were lower for subjects undergoing PCI at a hospital without versus on-site surgery.

- **Quality of Life Outcomes in the Trial to Assess Chelation Therapy (TACT)**

**Description**

This study examined quality of life outcomes in the TACT trial, an NIH-funded, randomized, double-blind, placebo-controlled 2x2 factorial trial comparing 40 infusions of an ethylene diamine tetra-acetic (EDTA)-chelation solution with placebo in patients with coronary artery disease.

- **Cost-Effectiveness of PCI with Drug-Eluting Stents Versus Bypass Surgery for Patients with Diabetes and Multivessel Coronary Artery Disease: Results from the FREEDOM Trial**

**Description**

This trial was designed to compare the cost-effectiveness of coronary artery bypass grafting (CABG) to PCI with drug-eluting stents for revascularization of diabetic patients with multivessel coronary artery disease.
Arnett to discuss growing hypertension pandemic

American Heart Association president Donna Arnett, PhD, MSPH, BSN, FAHA, will discuss the urgent need for solutions to the global threat of hypertension during her Presidential Address on Sunday.

Nearly a billion people worldwide have high blood pressure – more than triple the population of the United States – and all of them face higher risks for cardiovascular diseases, stroke and other serious health problems. Arnett, professor and chairperson of the Department of Epidemiology at the University of Alabama at Birmingham School of Public Health, approaches this pandemic from a unique perspective.

She’s a first epidemiologist to lead the American Heart Association, and she’s also a basic researcher and a nurse.

“I’ve seen this global crisis unfolding in patients, in basic science research and through population studies,” she said. “I know we can do more to help prevent hypertension and to treat hypertensive people.”

The need for immediate and innovative solutions is critical, Arnett said, because the hypertension crisis is expected to worsen. The World Heart Federation estimates the number of people with hypertension to increase by more than 50 percent by 2025.

Arnett, the principal investigator of several studies of genetic determinants of drug response in cardiovascular disease, will discuss some of her work in hypertension genetics and the need to continue pushing for more genetic discoveries.

She also plans to cover the importance of improving our environment, which in just a few generations has fundamentally transformed the basic human approach to eating. “Normal” means for many people today are now loaded with large amounts of sodium, added sugars, and excessive fats and calories.

“The genetics of this is intriguing, and the interactions between the genome and this new environment are critical,” Arnett said. Arnett plans to close with a series of challenges for clinicians, researchers and educators in the fight against hypertension.

She will also share a compelling story about a patient who to this day inspires her to fight cardiovascular diseases and stroke.

“I think it’s important for all of us to remember those stories that illustrate why we do what we do – and help to drive us forward,” Arnett said.

Major AHA awards

Several major awards will be presented after the Presidential Address:

- American Heart Association Chairman Ron Haddock will present the Chairman’s Award for excellence in volunteer service to Kenneth H. Cooper, MD, MPH, the founder and chairman of the Cooper Aerobics Center in Dallas.
- Six top scientists will be named AHA Distinguished Scientists: Donald M. Beres, PhD, FAHA; Gary Yowkes, PhD, FAHA; Charles B. Higgins, MD, FAHA; Sharon-Lise Normand, PhD, FAHA; Dan M. Roden, MDCM, FAHA; and Warren M. Zapol, MD, FAHA. (See full story on the Distinguished Scientists on page 6.)
- The Basic Research Prize will be awarded to Jeffrey Molkentin, PhD, professor in the Division of Molecular Cardiovascular Biology at Children’s Hospital Medical Center in Cincinnati.
- The Clinical Research Prize will be awarded to Daniel Rader, MD, FAHA, the Edward S. Cooper MD, Norman Roosevelt and Elizabeth Meriwether McClure Professor of Medicine in the University of Pennsylvania’s Perelman School of Medicine.
- The Population Research Prize will be presented to Aaron Folsom, MD, MPH, FAHA, FACE, professor in the Division of Epidemiology and Community Health at the University of Minnesota, Twin Cities, in Minneapolis.
- The Eugene Braunwald Academic Mentorship Award will be presented to Robert William Schrier, MD, Emeritus Professor of Medicine, Division of Renal Diseases & Hypertension, at the University of Colorado in Denver.
- The Research Achievement Award will be awarded to Valentyn Fuster, MD, PhD, FAHA, Physician in Chief at Mount Sinai Medical Center in New York, Director of the Cardiovascular Institute and the Mount Sinai Heart Center, and the Richard Gorlin MD Heart Research Foundation Professor at Mount Sinai Medical Center.

Lecture preview

Speaker: Donna Arnett, PhD, MSPH, BSN, FAHA
Title: Transforming Cardiovascular Health Through Genes and Environment
Time: 1–3 p.m. Sunday
Location: Hall G – South Building

Today’s Opening Session.

While some countries have seen enormous research and treatment advances, another 5 billion people in countries with struggling economies essentially have no access to the most basic cardiovascular care.

“Innovation in cardiovascular health has been very expensive,” MacMahon said. “The business model very clearly has to be about making huge returns on services and products for a relatively small proportion of the world’s population, but making relatively small returns on services and products for a very large proportion of the world’s population.”

Obstacles include a lack of cardiologists and, more broadly, a lack of physicians to provide basic care for most of the world, MacMahon said. He adds that there is no realistic expectation that this shortage will be resolved any time soon.

Technology offers part of the solution to staffing shortages. Internet access using smartphones or other mobile devices can provide computer-guided care for a wide range of common cardiovascular conditions, potentially empowering an alternative, lower-cost healthcare workforce. Telemedicine, already a reality in several parts of the developing world, also has helped extend the reach of trained specialists across North America, Australia and Western Europe.

Another change involves using specialist medical technicians in place of physicians for routine surgical procedures. MacMahon said parts of Asia, South America and Africa have a strong history of specialist technicians performing many common procedures. For example, surgical technicians in India routinely perform cataract surgeries with good outcomes at a fraction of the cost a physician would charge. These technicians follow strict algorithms and only do cataract surgeries. MacMahon suggests a similar model for coronary angiography or percutaneous interventions.

“This is not taking doctors out of the picture,” he said. “In an environment where access to physicians is so limited, we have to move physicians further up the food chain and make them responsible for teams of technicians who will provide the bulk of the service.”

Another example MacMahon cited was the role of surgical technicians in cardiac bypass surgery in India.

“The technicians perform all the routine procedural components and the surgeon focuses on the critical and complex tasks only, allowing vastly reduced costs and very good outcomes since the teams focus exclusively on performing only one or two types of procedures,” he said.
Pulse loss after out-of-hospital resuscitation linked to significant increase in hospital mortality

Individuals experiencing out-of-hospital cardiac arrest who suffer rearrest — another loss of pulse after return of spontaneous circulation (ROSC) — before reaching the emergency room are six times more likely to die in the hospital compared with similar patients who sustain a pulse, according to research presented Saturday on a poster at the Resuscitation Science Symposium. “Rearrest is a very serious event and can have a detrimental affect on patient outcomes,” said David D. Salcido, MPH, research specialist in the Department of Emergency Medicine at the University of Pittsburgh. “We are aiming to bring attention to this phenomenon and to advance its understanding.” Salcido presented an analysis of data from the Resuscitation Outcomes Consortium that included 10 areas in North America with 18,937 out-of-hospital cardiac arrest records. Case data was available for non-traumatic emergency medical services-treated cases, with any instance of prehospital ROSC, patient vital status at ER arrival, survival to hospital discharge, patient demographics, and ancillary resuscitation variables also available to the researchers. CPR was suspended when a pulse was detected as a result of ROSC. Of the 18,937 cases of out-of-hospital cardiac arrests, EMS personnel treated 11,456 (60.5 percent) patients with an average age of 64, reving 4,609 (40.2 percent). Of the 3,116 patients whose health status at emergency department arrival was available, 15.2 percent had lost their pulse after being revived outside the hospital. The study determined specifically whether rearrest was resolved by the time the patient arrived at the ER. Overall survival based on hospital discharge after treatment was 28 percent. Survival to hospital discharge for those still in rearrest at ER admission was 7.8 percent compared with 33.3 percent for patients who had a pulse. Adjusting for patient and treatment variables, subjects who were still in rearrest at ER arrival were six times more likely to die compared to those who had not gone into rearrest or whose rearrest had resolved. The odds ratio for mortality was 6.14 (CI: 4.31-8.75; p <0.001), Salcido said a variety of factors might predispose a patient to rearrest. “Patient variables could involve comorbidities at the time of cardiac arrest,” he said. “Besides, not all CPR is identical. Compression rates, pre shock pause and drugs given by paramedics during resuscitation may contribute to rearrest. Ultimately, what is startling is that rearrest is a strong predictor of whether a patient will live or die. Further research will look into factors that predispose patients to rearrest. If we can predict it, we may be able to prevent it or treat it appropriately.”

Research Summit moves AHA’s strategic plan forward

No organization outside the federal government funds more research into cardiovascular diseases and stroke than the American Heart Association. The association has funded 13 Nobel Prize winners and numerous important breakthroughs, and its peer review process ensures that the most deserving research is supported. But the AHA isn’t resting on that success. Instead, the organization this year launched a major effort to evaluate every aspect of the research program and set its course for 2020 and beyond. A key step was collecting stakeholder input via surveys, interviews and a Research Summit. About 100 AHA science and lay leaders, donors and representatives of other funding organizations met in Dallas in early May. The purpose was to gather ideas about how the AHA’s research program can achieve the greatest impact on its mission of building healthier lives free of cardiovascular diseases and stroke. The results are providing guidance to the AHA Board of Directors in planning for AHA’s research program over the next decade and beyond.

“The pillar and the foundation of the American Heart Association is research,” said Mark Creager, MD, FAHA, an AHA volunteer who chairs the AHA Research Committee and was co-chair of the summit with Immediate Past President Gordon Tomaselli, MD, FAHA. “We have a research program that we can all be proud of. But without periodic re-examination of our research program, we risk falling behind in our role as the pre-eminent research organization in cardiovascular disease.” Creager, the director of the Vascular Center at Brigham and Women’s Hospital and Professor of Medicine at Harvard Medical School in Boston, said the stakeholders spent two full days discussing ways to “sustain the extraordinary impact the American Heart Association has always had.”

The summit was another step in the long-term program that began in 2011 to re-examine and rework the AHA’s strategic research plan within the context of the AHA’s overall strategic vision. The summit spurred discussions on how to ensure that the AHA’s research program aligns with the association’s mission and 2020 Impact Goal: to improve the cardiovascular health of all Americans by 20 percent while reducing deaths from cardiovascular diseases and stroke by 20 percent by 2020. The summit resulted in 12 Research Essential Elements (see sidebar) to guide and focus future efforts, Creager said. Creager said that ensuring these outcomes is very important. “To accomplish this, we will expand research programs to include more multidisciplinary and multicenter collaborative approaches,” he said. “We will address research from a broader perspective that brings together basic, clinical and population science with bridges to translational research. We will foster more collaboration across institutions and add emphasis to mentoring so that we enhance training opportunities for the next generation of cardiovascular researchers.”

The AHA’s Research Committee is developing details on the 12 Essential Elements, including how each might work within the context of the AHA’s overall mission. We will ensure continued funding mechanisms for early, mid- and established career investigators in the basic, clinical and population research disciplines.” A progress update webinar is scheduled for Nov. 12, and is open to anyone who is interested. (email pat.hinton@heart.org for dial-in information.) The AHA Board of Directors is expected to review and approve the new strategic research plan in February. This is not the first time the AHA has re-examined its research priorities and goals. The current strategic research plan grew out of a similar re-examination that began in 2006 and includes goals through 2013. Priorities identified for the current plan have resulted in the Science & Technology Accelerator Program (see article on page 7). These programs include the Innovative Research Grant to fund high-risk/high-return ideas; Summer Undergraduate Research Fellowship to foster students’ interest in research; the Clinical Research Program to develop patient-focused researchers and topics; a revised peer review process, and multidisciplinary grants. The current reassessment is expected to result in similar shifts in priorities and program spending.
AHA guidelines for ‘new CPR’ benefit patients, study finds

The American Heart Association’s 2005 Guidelines for CPR and ECC probably have improved CPR quality and patient survival rates, according to a study presented Saturday at the Resuscitation Science Symposium.

Researchers analyzed data from seven EMS systems that serve a total of about 3.2 million people to determine whether the revised guidelines for CPR affected survival outcomes.

“Maximizing outcomes after cardiac arrest depends on optimizing a sequence of interventions from collapse to hospital discharge,” said Tom P. Aufderheide, MD, professor of emergency medicine and director of the Resuscitation Research Center at the Medical College of Wisconsin in Milwaukee. “The revised CPR guidelines were expected to increase rates of return of spontaneous circulation and survival to hospital discharge in patients with an out-of-hospital cardiac arrest.”

The 2005 guidelines recommended several new interventions during CPR to improve circulation. These include a compression-to-ventilation ratio of 30 to 2, increased emphasis on the importance of chest compressions, complete chest recoil after each compression and minimal interruption of chest compressions.

In the study, the intervention group of 893 patients experienced cardiac arrest followed by an attempt at EMS resuscitation and met local criteria for the use of an impedance threshold device (ITD). An ITD is a valve used during CPR to decrease chest pressure and improve blood flow to the heart. Patients with cardiac arrest of presumed traumatic etiology (blunt or penetrating) were excluded. Historic data was obtained from a control population of 1,424 patients derived from matching local criteria for ITD use during a one-year period before the new CPR guidelines were implemented. Patients in the intervention and control groups were on average 63.2 and 66.8 years, respectively. The majority of patients were males — 63 percent in both the intervention and control groups.

Regardless of the kind of rhythm associated with the cardiac arrest, return of spontaneous circulation (ROSC) rates of 37.9 percent and 33.8 percent were reported for patients in the intervention and control groups, respectively. With an odds ratio of 1.2, patients in the intervention group were 20 percent more likely to experience ROSC compared with the control group (p<0.001).

Rates of survival to hospital discharge also were significantly higher for patients in the intervention group — 15.7 percent versus 7.9 percent for patients in the intervention and control groups, respectively. With an odds ratio of 2.2, patients in the intervention group were 120 percent more likely to survive to hospital discharge compared with those in the control group (OR: 2.2; p<0.001).

Aufderheide also provided data indicating rates of survival to hospital discharge were significantly higher by those presenting with cardiac arrest rhythm. Survival to hospital discharge for patients with ventricular fibrillation increased from 17.2 percent to 28.1 percent.

For non-VF rhythms (pulse-less electrical activity and asystole), survival increased from 4.5 percent to 8.1 percent, indicating improved outcomes for all patients with cardiac arrest. Neurological outcome only was available from three of the seven sites but indicated no difference between patients treated with the 2005 guidelines and historical controls.

The quality of CPR delivered was not monitored and in-hospital treatment was not controlled. For example, about 40 percent of resuscitated patients surviving to hospital admission received therapeutic hypothermia in two of the seven EMS systems.

“Because this is a study with a quasi-experimental design, it is impossible to say what specifically contributed to the differences seen,” Aufderheide said. “What we can say is the quality of CPR made a difference, and the guidelines helped improve the quality of CPR delivered.”

Tom P. Aufderheide, MD
The American Heart Association will honor six researchers as 2012 Distinguished Scientists for their groundbreaking discoveries in the field of cardiovascular research. The researchers, who have been funded by the American Heart Association (AHA) through its research program, will be celebrated on Sunday at the Annual Scientific Sessions, which will begin at 1 p.m. in Hall G.

The 2012 Distinguished Scientists are:

Donald M. Bers, PhD, FAHA

Bers is an expert on the cellular and molecular factors that regulate heart excitation and contraction. His research has advanced the scientific understanding of cardiac myocyte dynamics. His emphasis on quantitative measurements and his ability to synthesize experimental results from many levels of biology have produced an integrated picture of heart function.

Gerry Fowkes, PhD, FAHA

Fowkes has served as principal investigator on several large epidemiological studies, including the Edinburgh Artery Study, the Edinburgh Vein Study, the Aspirin for Prevention of Cardiovascular Disease study, and the Ankle Brachial Index (ABI) Collaborative Review Group on Peripheral Atherosclerosis. His emphasis on understanding the potential to transform our approaches to health services and outcomes. He is Director of the Wolfson Unit for Prevention of Peripheral Vascular Diseases, a research unit concerned primarily with epidemiological studies of peripheral arterial disease in the legs, varicose veins and aortic aneurysm. He established the Wolfson Unit in 1990, and, in 1996, he set up the Cochrane Collaborative Review Group on Peripheral Vascular Diseases. The ABI Collaboration, which he established in 2004, culminated with the award of the PAD Coalition Population Research prize in 2009.

Charles B. Higgins, MD, FAHA

Higgins is a pioneer in cardiovascular imaging research. He has studied the cardiovascular system for more than 30 years and his research has garnered worldwide praise.

Higgins is a Distinguished Professor of Radiology and Biomedical Imaging at the University of California-San Francisco School of Medicine, and also Vice Chair of the Department of Radiology at UCSF. He has produced nearly 750 scientific papers, journal articles, books and other publications. As a principal investigator and co-principal investigator, he has received more than 20 grants from the National Institutes of Health. His numerous accolades include a recent Gold Medal from the Society of Cardiovascular MR in Nice, France. In addition to his research in cardiovascular MRI, heart disease and thoracic aortic disease, Higgins performs daily clinical duties, including interpreting imaging studies of the thorax and cardiovascular system. He is an active member of many organizations, including the AHA and the American College of Radiology.

Normand’s research focuses on the development of statistical methods for health services and outcomes. She is Director of the Mass-DAC, a data-coordinating center that monitors the quality of all adult cardiac surgeries and coronary interventions in Massachusetts’ acute-care hospitals. She also is Professor of Biostatistics in the Department of Health Care Policy at Harvard Medical School and Professor in the Department of Biostatistics at the Harvard School of Public Health.

Normand has served as president of the Eastern North American Region of the International Biometrics Society and is vice chair of the Patient Centered Outcomes Research Institute’s Methodology Committee. She is a fellow of the American Statistical Association, the American College of Cardiology and the AHA, and an associate of the Society of Thoracic Surgeons. She was awarded the ASA’s Health Policy Statistics Section’s Long Term Excellence Award in 2011.

Dan M. Roden, MDCM, FAHA

As a clinical pharmacologist and cardiologist, Roden’s research focuses on mechanisms underlying variability in drug therapy responses. His major interest has been the relationship between mutations and polymorphisms in ion channel and other genes, and susceptibility to arrhythmias, including drug-related arrhythmias.

Roden is Professor of Medicine and Pharmacology and Assistant Vice Chancellor for Personalized Medicine in the Department of Medicine and Pharmacology at Vanderbilt University School of Medicine in Nashville, Tenn. He directs the Pharmacogenomics of Atherosclerosis and Therapeutics program, which is Vanderbilt’s site of the NHLBI’s Pharmacogenetics Research Network. The site studies drugs used to treat cardiovascular diseases and tests the hypothesis that the effect of certain drugs to unexpectedly provoke potentially fatal arrhythmias includes a genetic component.

Roden has received a Young Investigator Award from the American Society of Clinical Pharmacology and Therapeutics, as well as a Distinguished Scientist Award from the Heart Rhythm Society.

Warren M. Zapol, MD, FAHA

Zapol’s research efforts include studies of extracorporeal membrane oxygenation, acute respiratory distress syndrome and cardiopulmonary physiology in animals and humans. He has led nine Antarctic expeditions to study how marine mammals avoid hypoxia during prolonged free diving. His expertise in hypoxia led to the development of an inhaled nitric oxide treatment for hypoxic newborns—a technique that saves the lives of more than 10,000 babies each year and earned him the Intellectual Property Owners Association’s Inventor of the Year Award in 2003.

Zapol is Director of the Anesthesia Center for Critical Care Research at Massachusetts General Hospital and the Reginald Jenney Professor of Anesthesiology at Harvard Medical School. He is also the Director of the Massachusetts General Anesthesia Center for Critical Care Research.

In 2008, President George W. Bush tapped Zapol to be an academic representative to the U.S. Arctic Research Commission. President Obama reappointed him in 2012.
Accelerator program investing in transformational cardiovascular technology

The first clinical trial funded by the American Heart Association’s Science & Technology Accelerator Program — involving a promising new blood test that can assess the health of the cells lining blood vessels — is set to begin in late 2012.

The Science & Technology Accelerator Program is focused on helping achieve AHA’s 2020 Impact Goal of decreasing cardiovascular disease and stroke by 20 percent and improving the cardiovascular health of all Americans by 2020 percent by 2020. The program accomplishes this by identifying the most transformational, “game-changing” innovations for diagnosing and treating cardiovascular disease and accelerating their transition from bench to bedside where they can begin positively impacting outcomes.

The program’s first investment was in a blood test developed by CytoVas, LLC, a Philadelphia-based diagnostics company. The CytoVas assay can identify asymptomatic people at high risk of myocardial infarction or stroke, so they can receive preventive therapy.

The blood test combines high throughput flow cytometry with high-speed computational data mining algorithms. It collects and analyzes data on cellular debris from breakdown of vascular endothelium along with data on reparative vascular endothelial progenitor cells from the bone marrow to generate a “snapshot” of the state of health of the vascular endothelium. The result is called the “vascular health profile,” or VHP.

The Phase II clinical trial funded by the Accelerator program’s investment will test the VHP’s ability to assess and monitor response of the VHP to preventive therapy, a statin in this case. The trial is designed as a double-blind, placebo-controlled, crossover study comparing preventive therapy with rosuvastatin (Crestor®) versus placebo in asymptomatic individuals at high risk for heart attack or stroke, who are identified by currently accepted standards.

Researchers will use the assay to monitor changes in the participants’ vascular health profile from baseline, and expect to see significant improvement in it with statin therapy, but not with placebo.

“We think the technology is very strong,” said James Weyhenmeyer, PhD, vice president for research and economic development at Georgia State University in Atlanta and chairman of the AHA’s Accelerator Committee.

“CytoVas has already shown the immense potential diagnostic value of the assay, and we think it will be very significant in being able to assess the impact of therapy on a disease process as well,” said Weyhenmeyer, a longtime AHA volunteer. “There is nothing in the market like it using biomarker technology to measure the efficacy of preventive treatment on the progress of disease.”

If proven effective, the technology would be licensed to biotechnology and pharmaceutical companies to identify or quantify treatment outcomes, Weyhenmeyer said.

“Although, in the long run, the VHP blood test could well become as standard a component of yearly health assessments as cholesterol, glucose and blood pressure measurements,” he said.

The Science & Technology Accelerator Program was established in 2010 through the generosity of Franck and Katina Gougeon. The goal is to propel innovative technologies to marketplace by shortening the development timeline, which currently can take up to 15 years. The Accelerator Committee screened about 100 research proposals for investment and narrowed the field to four before choosing CytoVas.

The committee is made up of research cardiologists and neurologists; investment specialists; a nurse who is now partner in a venture capital group; a senior vice president of therapeutics at the world’s largest clinical research organization; one of the founders of a major pacemaker, implantable defibrillator and stent company; an intellectual property attorney; and the head of the translational science division at a major university.

The committee’s composition permits the Science & Technology Accelerator to provide innovators with investment capital and whatever expertise is needed to achieve the milestones defined in their investment agreement.

“For the future, we want to expand the number of technologies we can provide with capital and with resources for business development,” Weyhenmeyer said. “We want to nurture technologies that could be transformative and could have a significant impact on the prevention and treatment of cardiovascular disease and stroke.”

The program is meant to fill a gap in research funding caused by the increasing hesitance of investors to risk support of early-stage innovations. Unlike research traditionally funded through AHA grants, the program supports product development through investments or loans that can generate revenue. Any revenue generated will go back into the program to support acceleration of more major innovations to market.

“The potential for return on investment is important to the committee, although the potential to save lives and improve cardiovascular health is the overriding factor in determining funding,” Weyhenmeyer said.

“Mission will always trump margin.”

The Science & Technology Accelerator Program is funded solely through philanthropic contributions, which are given directly to the program. The program does not compete for AHA research grants.
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Sunday’s Theater Demonstrations

CARDIOVASCULAR EXPERT THEATER

Booth 1623

11:00 a.m.-11:30 a.m.
New Treatment Options for Obesity
WAG

12:15-12:45 p.m.
A Stroke Prevention Option in Nonvalvular Atrial Fibrillation
JANSEN

HEARTQUARTERS THEATER

Booth 2035

11:30 a.m.-Noon
Preventing, Treating and Beating Stroke: American Stroke Association Priorities
Speakers: Hank Wasiak MBA, ASA Advisory Committee Chair

12:15-12:45 p.m.
Power to End Stroke
Speaker: Nurse Alice Benjamin

12:45-1:15 p.m.
Science News

1:30-1:45 p.m.
Sessions OnDemandTM Premium Product Demonstration

2-3 p.m.
Stroke Journal Webinar: Brain Repair After Stroke
A Recorded Webinar From Stroke, an American Heart Association Journal, Steven C. Cramer, MD, MMSc,Presenter

3:25-3:45 p.m.
Mission: Lifetime STEMI and Cardiac Resuscitation Systems of Care
Speaker: Grey Elradt MD, Chief of Medicine Berkshire Medical Center

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AHA volunteers deliver lifesaving CPR, first aid training to providers around the globe

With 360 training centers in 70 countries, and the help of countless volunteers, the American Heart Association is bringing lifesaving CPR skills to far-flung locations in great need of emergency cardiovascular training.

Working with national heart foundations, health ministries and other organizations, these volunteers have trained more than 500,000 providers around the globe.

And despite sometimes serving in troubled parts of the world, it is easy to stay focused on the mission, said longtime volunteer Vinay Nadkarni, MD, MS.

“Government relations may oftentimes be strained, as in the Middle East, but when people unite around saving lives, there are no boundaries and no nationalities,” said Nadkarni, who has been involved in training courses in Oman, Brazil, Taiwan, China, Singapore and India. “The interaction with individuals who are volunteering their time to advance ECC around the world is an enriching experience in every way.”

Nadkarni is an endowed chair in pediatric critical care medicine and is an associate professor of anesthesia, critical care and pediatrics at the University of Pennsylvania Perelman School of Medicine and Children’s Hospital of Philadelphia.

At a science symposium in Oman in the Middle East in April, Nadkarni lectured on the latest advances in resuscitation science as well as the basics of ECC.

“We also learn that there are many different ways to accomplish the goal of ECC training — saving lives,” he said. “Often, systems that have evolved differently from our own are able to teach us things about simpler approaches to delivering care effectively. We always come back with a few more tricks for improving training.”

Training sessions typically begin with a large number of volunteer instructors from ECC International to show how the courses are taught.

While teaching those initial courses, AHA volunteers identify healthcare professionals to teach others. The volunteers then teach the courses with these hand-picked local professionals. Ultimately, the local professionals teach the courses on their own, with AHA volunteers and staff visiting periodically to troubleshoot, assess results and support the instructors’ growth and development, Nadkarni said.

The 2010 AHA Guidelines for CPR and ECC are used as the basis for the training, although the materials are often translated in each country.

“The systems are much more varied in developing countries,” Nadkarni said. “EMS systems are not as well developed. There may be gaps in the Chain of Survival. Instead of instructions to call 9-1-1 and get an automated external defibrillator to the patient, if the 9-1-1 system doesn’t exist and there are no AEDs in the country, we need to change the training so it’s useful to the people we are training.”

Want Even More Science?

AHA Cardiovascular Evening Symposium

Preventing Cardiovascular Disease by Dyslipidemia Management: State of the Art

Presentations

- Status: New Wrinkles at Age 25
  - Terry Jacobson, MD, FAHA, FACP, Atlanta, GA

- The Many Faces of HDL: Current Clinical Take-Home Message
  - Philip Bartter, MD, PhD, Newton, NSW, Australia

- Is Hypertriglyceridemia Clinically Important? If so, When and How?
  - Michael Miller, MD, FACC, FAHA, Baltimore, MD

- Dyslipidemia Management 2012: State of the Art
  - Neil Stone, MD, MD, Menlo Park, CA, Chicago, IL

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AHA Volunteers

Home Message

The Many Faces of HDL: Current Clinical Take-Home Message

- Philip Bartter, MD, PhD, Newton, NSW, Australia

- Preventing Cardiovascular Disease by Dyslipidemia Management: State of the Art
  - Neil Stone, MD, MD, Menlo Park, CA, Chicago, IL

- Is Hypertriglyceridemia Clinically Important? If so, When and How?
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Wide-ranging CPR education and awareness efforts focus on increasing survival after sudden cardiac arrest

With CPR being taught in more schools, more 9-1-1 dispatchers being trained in identifying cardiac arrest and expanding awareness of Hands-Only™ CPR, the American Heart Association continues to make strides toward increasing survival from cardiac arrest and doubling bystander CPR response in out-of-hospital cardiac arrest by the end of the decade.

Only 41 percent of individuals who suffer out-of-hospital cardiac arrest receive CPR from a bystander despite the fact that bystander CPR can double or triple survival rates. So there is plenty of room for improvement.

The AHA’s Emergency Cardiovascular Care (ECC) Committee is excited by the progress of the CPR in Schools campaign because it means the training of the next generation of lifesavers. Advocacy efforts in federal, state and local legislative bodies are bringing CPR training and automated external defibrillators to schools nationwide. Iowa, Alabama, Minnesota, Tennessee, Vermont and North Carolina now have laws requiring students to be trained in CPR prior to graduating high school.

“ECC’s focus on schools is a natural way of reaching a large cross-section of young people,” said Monica Kleinman, MD, chair of AHA’s ECC Committee and clinical director of the medical/surgical intensive care unit at Boston Children’s Hospital. “They could be the most likely people to do CPR on family members. Having CPR training in schools as part of an overall emergency preparedness plan for schools, and particularly high schools and colleges, is simply a wise thing to do.”

Another important initiative is the 9-1-1 dispatcher-assisted CPR program. As the name implies, dispatchers are trained to interrogate callers to identify cardiac arrest and provide them with immediate CPR instructions before EMS arrives.

“The ultimate just-in-time way to treat out-of-hospital cardiac arrest is for a 9-1-1 dispatcher to recognize that an individual is likely suffering cardiac arrest and to instruct the caller to perform Hands-Only CPR until trained rescuers arrive,” Kleinman said. “It can be seven to 10 minutes before professional help arrives on the scene, by which time the chances of saving that individual are really low.”

In January, the ECC Committee released an online statement in Circulation outlining this approach. It also called for communities to regularly evaluate the performance of 9-1-1 dispatchers and the community’s overall emergency response system.

Another major focus is encouraging the use of Hands-Only CPR by singing along to the 1970s disco hit Stayin’ Alive by the Bee Gees. The song’s beat matches the rate needed when performing chest compressions. (See related story in Nov. 3 Daily News. You also are encouraged to stop by the Mobile CPR Tour visiting Sessions.)

“Immediately after the first several minutes after adult cardiac arrest, doing chest compressions only without ventilations is an acceptable way to treat an adult who has just collapsed from cardiac arrest,” Kleinman said.

In another move, the ECC Committee held a CPR Quality Summit in Dallas in May. Key AHA volunteer leaders offered recommendations to optimize CPR performance and monitoring.

Monica Kleinman, MD

Join in our Annual Awardee Group Photo at Scientific Sessions

Current and past research awardees are invited to join AHA President Donna K. Arnett, PhD, MSPH, BSN, FAHA, and the other officers for our annual awardee group photo on Monday, Nov. 5, at 1:30 PM, in the West Lobby inside of Peteet Hall C. The photograph will be taken immediately following the Nobel Laureate Lecture by Dr. Louis Ignarro.

All participants will receive a special AHA Research Awardee lapel pin!

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Almost 60 percent of AEDs submitted (852 of 1,429) were unique and in 528 buildings. AEDs were identified in 46 of 49 Philadelphia ZIP codes, 41 percent were in private buildings and 59 percent were in public places, including gyms (19 percent), schools (16 percent) and offices (11 percent). Validation was made for 98 percent of the AEDs in person or through GPS coordinates of photographs.

The data collected will help create a new mobile app to help bystanders locate the nearest AED during emergencies and to help paramedics and 9-1-1 operators direct bystanders to AEDs nearest AED during emergencies. We found that crowdsourcing is a feasible approach for identifying AED locations throughout a major city and GPS technology can validate health data provided by the public.

About 1 million AEDs have been sold in the United States. Because they are not subject to the same FDA regulations as implantable medical devices, their locations need to be mapped.

Merchant said there are plans to expand the project across other counties and cities across the United States. She added that anyone can report an AED in any public place around the world at MyHeartMap.org.

A total of $20,000 in prize money was distributed to participants in the MyHeartMap Challenge. The study was funded by the Robert Wood Johnson Foundation Health & Society Scholars Program at the University of Pennsylvania and several AED manufacturers, including Physio-Control and Philips Medical in Seattle, Zoll Medical in Boston and Medtronic Foundation Heart Rescue Project, the Penn University Research Fund and the McCabe Fund provided additional funding.

Almost 60 percent of AEDs submitted to the MyHeartMap Challenge represent an opportunity to save lives,” Merchant said. “The project was initiated to engage the public to collect important data about emergency health issues. We found that crowdsourcing is a feasible approach for identifying AED locations throughout a major city and GPS technology can validate health data provided by the public.”

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Researchers, healthcare providers work to stop NIH budget cuts

More than 60 researchers, heart disease and stroke survivors, and healthcare professionals from 17 states were part of an American Heart Association delegation that visited Capitol Hill this summer, urging lawmakers to protect the National Institutes of Health from cuts slated to begin in January. The NIH stands to lose about $2.5 billion in government support under the Budget Control Act of 2011, which requires mandatory cuts — or sequester — of at least 8 percent from most domestic spending, including spending by every NIH institute and center.

The congressional visits were part of the AHA’s ongoing federal advocacy effort to protect the NIH from the sequester, especially heart and stroke research. In addition to bringing volunteer advocates into Washington, D.C. to meet with their Member of Congress and urging them to visit with them in their State offices, this effort includes meetings between AHA staff members and the staffs of the Labor-Health and Human Services appropriations subcommittees in the House and Senate that determine funding for the NIH, as well as preparing testimony to make the case for funding for the NIH.

In addition, the AHA helped found United for Medical Research, a coalition of leading research institutions, universities, patient and health advocates, and private industry designed to seek steady increases in funding for the NIH. According to a report by United for Medical Research, the $2.5 billion cut in NIH funding would reduce the NIH budget to 2004 levels and would mean that 2,300 research grants that the NIH currently plans to fund would not be awarded. The report concluded that a typical NIH grant supports about seven full- or part-time jobs, and that the cuts would result in the loss of 33,000 NIH-related jobs and a $4.5 billion decline in NIH-generated economic activity in the U.S.

Key decision-makers targeted

The congressional visits were targeted at key decision-makers on Capitol Hill. The AHA paired a researcher with a heart disease or stroke survivor to deliver messages about the impact of NIH funding cuts on research, health care and the economy, including jobs. Volunteers also sent about 12,000 emails urging members of Congress to protect the NIH from funding cuts.

Lindsay Calderon, PhD, an AHA volunteer from Kentucky, attended the event and was paired with Jack Keeney, executive director of God’s Food Pantry in Somerset, Ky., and a former middle school principal who survived valvular heart disease and has an implanted pacemaker. Calderon is a biology professor at Eastern Kentucky University in Richmond and was conducting hypertension research funded by the AHA and the NIH at the time of the visits.


Calderon personally knows the devastating effect the cuts would have on researchers. Keeney, a friend of Rep. Rogers who also knows Sen. McConnell, told them that people like Lindsay made it possible for him to be alive and to share his message.

This contingent of AHA volunteers came from around the country to ask key decision-makers in Washington to protect the National Institutes of Health from budget cuts.
A stroke weakened her mind, not her will

Think about the number 764. Can you recall it in reverse order? Four months after surviving a stroke, Beverly Paige couldn’t. And she wasn’t about to tolerate that.

Beverly was 52 and a proactive problem-solver. A doctor told her mother’s sister, “There’s nothing else we can do.” She awoke four days later, hardly able to speak and temporarily paralyzed on her right side.

While hospitalized, Beverly tried working out her mental muscles by repeating things she wanted to remember, such as the date of her wedding anniversary and the birth weights of her two daughters.

Months later, she found out the hard way that there was a disconnect between what she thought she had and what she said. It happened at the grocery store, when she went to check to find the milk and she was sent to the deli.

“I thought I said ‘milk,’ but I said ‘meat,’” Beverly said. “I would see milk in my head — the container, the department I have to go to — and I would say ‘milk’ in the store. I wouldn’t always realize when I was saying it.”

A neuropsychology report helped her realize how far she still had to go. This test featured the challenge of remembering a three-digit number in reverse; she also had to recall a five-digit number in reverse. She left her in the ninetieth percentile for her age.

Beverly figured a few English classes at Rockland Community College would jump start her brain. But it wasn’t as simple as signing up for English 101. She needed a degree plan. So, she majored in liberal arts — and wound up getting an associate’s degree. With honors. She’s now taking a course to start a small PR firm. Only, she can’t always control her right foot as she steps out the door. “If you want to come back as far as you can, I would have to work on that,” said Beverly, who has tapped into the experience and connections from her PR career to help promote her local Heart Walk and Go Red For Women.

Beverly’s recovery isn’t complete. She has a sensory delay in her right side, so she doesn’t always realize when she’s holding something hot or cold. She also can’t fully control her right foot, making it tough to drive — and impossible to wear heels.

“Before the stroke, I was either in heels or flip-flops. Now I can’t wear heels,” she said. “But I still see a woman in heels, I think about it.”

Don’t have a gown on for one day strutting into a Go Red For Women parade.

“I will wear a red dress and red high heels,” she said, laughing. “I will celebrate with a new pair!”

Beverly Paige

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**Table 1: Bleeding Events in ROCKET AF**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>XARELTO N = 7125</th>
<th>Event Rate (per 100 Pt-yrs)</th>
<th>Warfarin N = 4487</th>
<th>Event Rate (per 100 Pt-yrs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major bleeding*</td>
<td>396 (5.6)</td>
<td>3.0</td>
<td>389 (5.5)</td>
<td>3.5</td>
</tr>
<tr>
<td>Gastrointestinal bleeding</td>
<td>221 (3.1)</td>
<td>2.0</td>
<td>140 (2.0)</td>
<td>1.2</td>
</tr>
</tbody>
</table>

*Major bleeding events include bleeding resulting in hospitalization, a critical site bleed, or with a fatal outcome. Major bleeding events include bleeding at a critical site, or with a fatal outcome. Hemorrhagic strokes are 3.3 per 100 Pt-yrs for XARELTO vs. 2.9 per 100 Pt-yrs for warfarin.

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**References**

1. Beverly was 52 and a proactive problem-solver. A doctor told her mother’s sister, “There’s nothing else we can do.” She awoke four days later, hardly able to speak and temporarily paralyzed on her right side.

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4. “Before the stroke, I was either in heels or flip-flops. Now I can’t wear heels,” she said. “But I still see a woman in heels, I think about it.”

5. Don’t have a gown on for one day strutting into a Go Red For Women parade.

6. “I will wear a red dress and red high heels,” she said, laughing. “I will celebrate with a new pair!”
The American Heart Association has launched the Corporate Forum, a new initiative that brings together the organization and leading corporations in a shared effort to build healthier communities. AHA officials said they are proud to be collaborating with corporations that are standard worldwide for innovation and that are equally admired for their commitment to community health.

Founding Corporate Forum members are: Avenir, AstraZeneca, Bristol-Myers Squibb, Daiichi Sankyo, Eli Lilly, Forest Laboratories, Genentech, GlaxoSmithKline, Jenny Craig, Novartis, Pfizer, Quest Diagnostics, Quintiles, Sanofi, Solae, Subway, Unilever and Walmart.

The inaugural Corporate Forum symposium was held Friday at the Westin Bonaventure hotel. It provided an opportunity for members of the private sector to better understand the many challenges facing the AHA’s mission of building healthier lives, free of cardiovascular diseases and stroke. Executives also shared information and ideas about how their companies can actively play a role in supporting the mission and the 2020 Impact Goals of improving the cardiovascular health of all Americans by 20 percent, and to reduce deaths from cardiovascular diseases and strokes by 20 percent, by the year 2020.

The forum was led and facilitated by AHA President Dr. Donna Arnett, PhD, MSPH, BSN, FAHA, and President and Chairperson of the Department of Epidemiology, University of Alabama at Birmingham School of Public Health; AHA Chairman of the Board Ron Haddock; AHA Corporate Forum Chairman John Agwunobi, MD, MBA, MPH, senior vice president and postal/die of health and wellness for Walmart; and AHA Chief Executive Officer Nancy Brown.

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### Table: Percent Increase of Rivaroxaban PK and PD Parameters from Normal in Subjects with Hepatic Insufficiency from a Dedicated Hepatic Insufficiency Study

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Mild (Child-Pugh A)</th>
<th>Moderate (Child-Pugh B)</th>
<th>Severe (Child-Pugh C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exposure</td>
<td>N=8</td>
<td>N=8</td>
<td>N=8</td>
</tr>
<tr>
<td>AUC</td>
<td>15</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>% increase relative to normal</td>
<td>132</td>
<td>137</td>
<td>127</td>
</tr>
<tr>
<td>FVIIa inhibition</td>
<td>20</td>
<td>27</td>
<td>27</td>
</tr>
<tr>
<td>% increase relative to normal</td>
<td>117</td>
<td>143</td>
<td>107</td>
</tr>
<tr>
<td>PT prolongation</td>
<td>4</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>% increase relative to normal</td>
<td>112</td>
<td>170</td>
<td>170</td>
</tr>
</tbody>
</table>

**Notes:**
- PT = Prothrombin time; FIIA = Coagulation Factor Xa, AUC = Area under the concentration or effect curve; Cmax = maximum concentration; Emax = maximum effect
- Avoid the use of XARELTO in patients with moderate (Child-Pugh B) and severe (Child-Pugh C) hepatic impairment and with any hepatic disease associated with coagulopathy (see Dosage and Administration (2.1) in full Prescribing Information and Warnings and Precautions)
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Xarelto®
rivaroxaban tablets

Please see the Brief Summary of the full Prescribing Information, including Boxed WARNINGS, on adjacent pages.

Janssen Pharmaceuticals, Inc.