



**Citizen CPR
Foundation, Inc.**

*Working to strengthen the
Chain of Survival*

American Heart
Association®



Learn and LiveSM

Currents

in Emergency Cardiovascular Care

Volume 16 Number 3 Fall 2005

CALL FOR PRESENTATIONS

Emergency Cardiovascular Care Update 2006 International Educational Conference

ECCU 2006 will be presented by the Citizen CPR Foundation June 22 to 25, 2006, at Disney's Coronado Springs Resort in Orlando, Florida.

PURPOSE

CCPRF/ECCU 2006 is the 14th in a series of international biennial conferences on CPR and other aspects of emergency cardiovascular care (ECC). This conference provides a grassroots forum for the exchange of information on ideas, innovations, developments, and trends in ECC and recognition and treatment of stroke and other life-threatening emergencies in adults and children. The conference focuses on

- Strengthening the Chain of Survival through early EMS access, early CPR, early defibrillation, and early advanced care
- Examining and discussing changes in the ECC Guidelines
- Developing strategies for management of cardiac arrest and stroke
- Improving out-of-hospital and in-hospital response to life-threatening emergencies (pediatric and adult)
- Applying the science of resuscitation to teaching and learning strategies or opportunities
- Preventing cardiovascular disease and stroke

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All Abstracts and Application Materials Must Be Submitted Electronically by Oct 3, 2005.

Go to the Citizen CPR Foundation (CCPRF) website at <http://www.citizencpr.org>.

CONFERENCE FORMAT AND TOPICS

ECCU 2006 includes:

- Half- and whole-day preconference workshops
- 45-minute plenary sessions featuring presentations from national experts
- 50-minute concurrent session presentations from accepted applicants
- 15-minute scientific presentations from accepted applicants
- Poster presentations from accepted applicants

Currents

in Emergency Cardiovascular Care

An official publication of the American Heart Association and the Citizen CPR Foundation

Currents in Emergency Cardiovascular Care is a quarterly publication sponsored by the American Heart Association and the Citizen CPR Foundation and supported by the American Red Cross and the Heart and Stroke Foundation of Canada. *Currents* was established to exchange information about important ideas, developments, and trends in emergency cardiovascular care.

AHA ECC website: <http://www.americanheart.org/cpr>
CCPRF website: <http://www.citizencpr.org>

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Subscriber Services

Currents in Emergency Cardiovascular Care is available (1) by mail at \$12 per year mailed to US addresses (\$15 elsewhere) or (2) free on the Internet with quarterly email notices that link to the newest issue posted on line. Subscribers must register to receive *Currents* by mail or on the Internet.

To register go to <http://www.americanheart.org/cpr>.

If you have no access to the Internet, phone 214-706-1159 in the United States for instructions on how to register. Mail checks to American Heart Association, P.O. Box 841750, Dallas, TX 75284-1750 USA.

Printed in the USA.

© 2005 American Heart Association
70-0088 ISSN 1054-917X

Topics include prevention, early recognition, and the 4 links in the adult Chain of Survival: early access, early CPR, early defibrillation, and early advanced life support.

These topics are divided into 6 areas of emphasis:

- Science
- Public education
- Professional education
- Legislation
- Program implementation
- Ethics

Applicants may apply to present in 1 or more of the following 3 formats:

Concurrent sessions: 40-minute presentation plus 10-minute question-and-answer period. Twenty-six abstracts will be selected for concurrent sessions.

Scientific sessions: 10-minute presentation plus 5-minute question-and-answer period. Eight abstracts will be selected for scientific sessions.

Poster presentations: visual display of research/program highlights on a display board, combined with an interpersonal question-and-answer period. Poster presenters will be asked to remain with their display for assigned hours, answer questions, and expand on the material for interested visitors. Hours will be assigned to presenters on acceptance. Poster sessions will be moderated.

Those who apply to present a concurrent session or a scientific abstract may also apply simultaneously to present a poster presentation on the same subject. Those who apply to present a concurrent session only or a scientific abstract only should indicate in the application materials if they would like their proposal to be resubmitted as a poster presentation if it is not accepted in the other formats.

PRESENTATION APPLICATION AND SUBMISSION RULES

1. All abstracts and application materials must be submitted through the online submission site. Fax, mail, email, or handwritten submissions will **not** be accepted for review.

2. Without exception, submissions must be received through the website by 12:00 midnight Central Time on **Monday, Oct 3, 2005**. Late submissions will **not** be considered.

3. An abstract for concurrent session, scientific session, and poster presentation must not exceed 250 words including the title and content summary. The application should include the following:

- A. Session description (50 words or less) to be used to promote your session in the registration brochure. See a sample of the correct format on the CCPRF website at <http://www.citizencpr.org>.
- B. Preferred format: concurrent session, scientific session, or poster presentation
- C. Age group focus: adult, pediatric, or both
- D. Teaching method: lecture, cognitive/interactive, hands-on/interactive, role-playing, other
- E. Names of all presenters
- F. Curricula vitae and conflict of interest disclosure forms as applicable

SELECTION PROCESS AND CRITERIA

The selection committee, which includes one representative each from the American Heart Association, the American Red Cross, Heart and Stroke Foundation of Canada, and the CCPRF Board of Directors, will evaluate application materials in a blinded process. The ECCU 2006 Conference Planning Committee will review selection committee recommendations and make final selections.

Abstracts for concurrent sessions and scientific abstracts will be rated on a 4-point scale: 4 = Outstanding, 3 = Very Good, 2 = Good, and 1 = Poor. Ratings are based on content and method of presentation. Quality of content is most important. Determination of quality is based on relevance, significance, originality, innovation, and accuracy. The appeal of the proposed method of presentation, given the content, also influences selection.

Concurrent sessions may be structured as a lecture or an interactive format or hands-on workshop, using various audiovisual techniques. Scientific abstracts generally are presented as lectures, but various audiovisual techniques may be used.

Abstracts for poster presentation will be rated on the same 4-point scale. Ratings are based primarily on content but also on the potential impact on the Chain of Survival.

Applicants will be notified of the Committee's decision by email by Dec 31, 2005.

ENTITLEMENTS OF ACCEPTANCE

Concurrent Session Presenters: Upon acceptance, free conference registration will be awarded to *one* presenter per concurrent session. Those chosen are responsible for their own travel, food, and hotel arrangements. Additional presenters may participate and have their names listed in the conference brochure but will be responsible for their own registration fees, hotel, food, and travel arrangements.

Scientific Session Presenters: Upon acceptance, *one* presenter per scientific session will be awarded registration at half the early-bird registration rate. Those chosen will be responsible for their own travel, food, and hotel arrangements. Additional presenters may participate and have their names listed in the conference brochure but will be responsible for paying the full registration fee and making their own hotel, food, and travel arrangements.

Poster Presenters: First authors of abstracts selected for only poster presentation are entitled to register at the early-bird rate and are responsible for their own hotel, food, and travel arrangements.

Accepted abstracts may be published in the ECCU 2006 Final Program Syllabus, in the CCPRF/AHA newsletter—*Currents in Emergency Cardiovascular Care*—and on the CCPRF website.

Continued on page 4

How will the new AHA Guidelines for CPR and ECC change the practice of resuscitation—and how we teach it?

Save the Date!

ECCU 2006

Emergency Cardiovascular Care Update
International Educational Conference and Exposition

June 22–25, 2006

Disney's Coronado Springs Resort
Orlando, Florida



- Learn in detail how the new guidelines will be implemented and how they will affect the way CPR and advanced life support are taught and delivered.
- Understand the science behind the changes direct from the experts involved in the debate.
- Get practical training and updates on ways to improve care in your community.

*Special conference hotel rate: \$135 single/double.
Full Passport registration begins at \$395.*

Call for presentations deadline is Oct 3, 2005.

ECCU 2006

William H. Montgomery Excellence in Education Award

All abstracts selected for concurrent session presentation at ECCU 2006 are eligible to compete for the William H. Montgomery Excellence in Education Award. This award, sponsored by the Laerdal Foundation for Acute Medicine, is named in honor of William H. Montgomery, MD, who served as co-founder and President of the Foundation for more than 15 years. A plaque and \$1000 will be awarded to the lead presenter, as submitted on the abstract application, who gives the best concurrent session presentation. Speakers sponsored by the American Heart Association, American Red Cross, Heart and Stroke Foundation of Canada, and Citizen CPR Foundation are not eligible.

The award recognizes the highest level of educational excellence at the ECCU International Conference. CCPRF hopes that this award will encourage presenters to seek excellence in all areas of education. Presentations will be judged on

- Value of content to the ECCU audience
- Quality of teaching methodology
- Innovation
- Presenter knowledge of the subject matter
- Degree to which the objectives of the presentation were achieved
- Overall quality of presentation

PALS in Iraq

by Philip C. Spinella, MD

I am a pediatric intensivist, but my role as an Army physician in combat is to provide care to soldiers. In addition to taking care of soldiers at the Combat Support Hospital in Baghdad, Iraq, I have contributed to the care of many Iraqi civilians, both children and adults.

As a result of treating many Iraqis, I had the opportunity to meet with Dr Ameir, the Director General of Medical City, which is a large medical complex in Baghdad. During a conversation with Dr Ameir, I mentioned that there were many Army pediatricians stationed in Baghdad, that we all wished we had the opportunity to interact with Iraqi pediatricians, and that we all wanted to contribute to the medical care of injured Iraqi children.

The security situation in Baghdad, however, made it too dangerous for military doctors to travel to Iraqi hospitals. Since all Iraqis who interacted with the military were threatened with death to them or their families by terrorists, Iraqi doctors were not able to safely come to our hospitals to interact and share ideas. We concluded that organizing a PALS Course for the leaders in the pediatric community would be a great way for us to interact with and educate Iraqi pediatricians.

Our primary goal was to set up a PALS Course that would be self-sustaining by the Iraqi physicians. Dr Ameir recruited 25 pediatricians who are leaders of the pediatric community. We wanted to provide Dr Ameir and his top pediatricians with

the instructional equipment and knowledge to continue to teach PALS classes to other Iraqi providers after we taught this first group ourselves.

War Zone Logistics

In February 2005 we coordinated the course at the Baghdad Convention Center, within the Green Zone. This allowed the course to be at a relatively secure site with limited risk to the Iraqi doctors attending, because the Convention Center was accessible to Iraqi civilians routinely for their own purposes. The Army physicians who taught the course with me were James Wayne, MD, David Harford, MD, David O'Connor, MD, Abe Gomez, MD, Kurt Grathwohl, MD, and Kenneth Azarow, MD. A provider course was presented in 2 days, and an instructor course was held on the third day with a few of the Iraqi pediatricians. The Iraqi physicians received provider and instructor manuals before attending the class. Pediatric manikins, infant intubation heads, intraosseous needles, AEDs, manual defibrillators, and cardiac rhythm generators were available to us. We also added a pediatric trauma lecture to the course. Kenneth Azarow, MD, Senior Pediatric Surgeon in the US Army, gave the lecture and it was very well received.

As we interacted with the Iraqi pediatricians, all of whom spoke English, we were astounded at the lack of basic equipment available to them. These 25 Iraqi pediatricians represented about 8 different hospitals. Some stated that their hospitals had very few ventilators for



children, and, as a result, children who needed ventilation often could not be resuscitated. Some also stated that the lack of electrocardiograph machines meant that ECGs were rarely done. The doctors told us that they often ran out of epinephrine, lidocaine, and atropine and that they never have had access to adenosine or amiodarone.

When we reviewed the use of defibrillators, some physicians reported that they had never seen defibrillators at their hospitals in Iraq.

Because of their unfamiliarity with most of the equipment and medications the PALS Course reviews, all the Iraqi pediatricians were very interested in the material and excited to be able to share this knowledge with their colleagues. They told us that this course helped them learn what to ask for or purchase to improve healthcare for the children. All 25 Iraqi doctors were able to quickly understand the PALS concepts and easily incorporated them into the case scenarios in each of the modules.

Care for Iraqi Children

Because of the violence in Iraq, the teaching of PALS concepts is very valuable in improving the medical care for the children of Iraq. Dr Ameir stated that for the city of Baghdad, with a population of 5 million people, he has the resources to sustain only a 4-bed pediatric ICU. In just one pediatric hospital more than 1500 children have died in the past year.

Our PALS team hopes that we have provided pediatric providers in Baghdad with the necessary equipment and knowledge to continue to teach PALS concepts to other providers caring for children. Efforts continue in Iraq to support PALS training and aim toward establishing an International Training Organization.

The opinions or assertions contained herein are the private views of the author and are not to be construed as official or as reflecting the views of the Department of the Army or the Department of Defense.

Philip C. Spinella, MD, is a pediatric intensivist at Wilford Hall Medical Center, San Antonio, Texas. Write philip.spinella@amedd.army.mil.

FOOTBALL REFEREE SAVED ON FIELD

by Ken Patterson

The American football match had ended at the Cherryvale Playing Fields in Belfast, Northern Ireland, on Sunday, March 6, 2005, and the British Red Cross Ambulance Crew on duty packed up. Neil McKelvey, Jennifer Watson, and Andrew Caddies were ready to leave when they heard the players shouting.

They turned the ambulance around and saw Steve Stacher, the referee, lying on the ground about 100 yards ahead of them. Stacher was unresponsive but was breathing. The players reported that Stacher was a diabetic. McKelvey, Watson, and Caddies suspected that Stacher had suffered a hypoglycemic attack but was too unresponsive to take any glucose, so they placed him on a stretcher and were preparing to load him into the ambulance when he stopped breathing. McKelvey and Watson placed him in the ambulance and immediately started CPR and, after 2 rescue breaths, found that he was pulseless and attached the AED, while Caddies phoned 999 (emergency assistance number in Ireland) for a cardiac unit.

The AED delivered 1 shock, which eliminated the shockable rhythm, but a perfusing rhythm did not return. McKelvey and Watson then performed CPR for 1 minute, after which the AED performed a second check.

The AED was still detecting a non-shockable rhythm, so McKelvey and Watson continued CPR for 10 more minutes, after which VF was detected and a third shock was given.

This time a perfusing rhythm was established but Stacher was still in respiratory arrest. McKelvey continued rescue breaths until the cardiac team arrived. Stacher was then stabilized before being transported under police escort to the Royal Victoria Hospital.

Stacher made a good recovery, although he has no recollection of the event or indeed of a 4-week period following it. He now has an ICD implanted and is waiting for cardiac bypass surgery. He is still refereeing American football matches and is very grateful for all that McKelvey and his 2 colleagues did for him.

This is the first time that Red Cross volunteers in Northern Ireland have used a defibrillator, and we are so glad the outcome was successful.



Ken Patterson is an AED Trainer with the British Red Cross Society. He reports that Frank Pantridge (see Summer 2005 issue of Currents) helped him obtain the first AED acquired by the Red Cross in Northern Ireland. Email him at: patterson@dfpmi.gov.uk.



Neil McKelvey, British Red Cross Ambulance crew member, is thanked by Steve Stacher, the referee.

ECC Training Comes to Korea

by Richard Harper, MD, and Diana Cave, RN

The Republic of Korea celebrated its first ever “CPR Sunday” on May 29, 2005. In conjunction with this landmark effort, Korea began the process of introducing training in American Heart Association (AHA) basic and advanced life support. Although Korea has very advanced resuscitation programs, this effort is intended to standardize training across the nation.

The Korean Association of CPR (KACPR) invited the AHA to train Korean instructors in BLS and ACLS. This was part of KACPR’s effort to become an AHA International Training Organization (ITO). The AHA brought instructors from the United States to Korea to offer 1 week of intensive instructor education.

Instructors in Korea deal with a unique and impressive blend of familiar and exotic cultures. Ancient and modern buildings coexist as do traditional Korean values and the best of Western processes. Our new Korean instructors included skilled professionals—cardiologists, emergency physicians, emergency and intensive-care nurses, and prehospital-care providers. These senior clinicians demonstrated a lot of enthusiasm for the new training.

The equipment available for the course was new, and for the most part familiar, thanks to Laerdal International, which furnished the manikins and AED trainers.

Subtle differences in the equipment were evident, though, such as the voice prompt of the AED asking us to “check for signs of circulation” in a very British accent.

Instruction Goes Both Ways

Learning was not limited to the classroom or to the students; our hosts had plenty to teach us. They were generous with their time, taking us to tour local hospitals and discuss patient care methods and issues. We toured a 119 center (in Korea emergency assistance is obtained by dialing 119 rather than 911) and learned about issues of prehospital management and coordination of resource availability.

The team left Korea with a sense of satisfaction that a solid core of instructors had been developed, and future regional faculty had been identified.

Since our return we have received several messages from the Korean team. Some have told us of the success of the training program:

“The first Korean CPR day held on 29 May was so successful. More than 500 people, including many VIPs and congressmen, attended the events. I felt our mission to increase public awareness of CPR and spread awareness of CPR began to be accomplished.”

The success of our Korean training efforts emphasizes the desire among international



healthcare providers to learn the AHA ECC methods of resuscitation. We hope to continue to work with the Korean team to increase training in Korea and to expand our efforts to other places.

Diana Cave can be reached at dcave@pcc.edu.



The establishment of high-quality AHA training programs around the world depends on the work and support of our instructors, their families, and their employers. Our instructors volunteer their time, and this often means rearranging work and home schedules. The team that joined me in providing the training in Seoul for the Korean Association of CPR included Diana Cave, RN, Portland Community College, Portland, Oregon; Richard Harper, MD, Portland Veterans Affairs Medical Center, Portland, Oregon; Michael Kerr, MD, Humility of Mary Health Partners, Youngstown, Ohio; Ed Stapleton, EMT-P, State University of NY at Stony Brook, New York; and Howard Swidler, MD, of Warren Hospital, Phillipsburg, New Jersey.

Thank you to these wonderful volunteers, their families, and their employers.

—Jo Haag, RN, MSN, Director,
Training, National ECC Programs,
AHA National Center



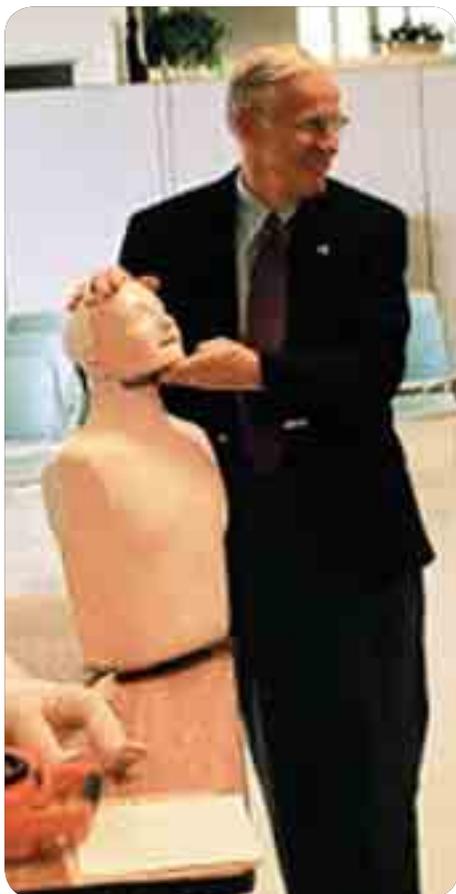
Finding the Right Words: Practice Like It Matters

by Philip J. Goscienski, MD

It was painful to read Brian Hoffman's words "...because we never plan on doing CPR" (*Currents*, Summer 2005) and to feel his torment at having been unable to save his 14-year-old daughter. No matter how hopeless the situation might have been, the loss is the more tragic when someone has to live with daily reminders of the loved one who couldn't be helped.

Professional rescuers get lots of practice in classroom scenarios and in actual emergencies, but most people who take a CPR course will not "rescue" a manikin during the following 2 years nor be called on to aid a real victim. Our students deserve to have the tools and techniques that will keep their mind-set prepared, their muscle memory firm, and their algorithms on autopilot.

In Spring 2001 our 1800-member parish community acquired an AED and began to develop a cadre of rescuers that now number more than 250 persons. That doesn't include



Dr. Phil with St Annikin the Manikin. Photo by Christina Smith.

an estimated 50 or so people who have received CPR training elsewhere because of job requirements. My own experience in learning—and forgetting—ACLS drug dosages and algorithms convinced me that the new rescuers needed a system of "hooks" on which they could hang memory reinforcers. Giving this information adds no more than 4 or 5 minutes to the course curriculum, but our feedback tells us that it makes a difference.

We teach our students to visualize what they would do in real-life situations. One that these churchgoers can relate to is my collection-basket scenario. Prayer is not my priority during that part of the Sunday service when the ushers are making their rounds collecting offerings. I tell the class that during that period I select a victim across the aisle and mentally run through what I would do if that man or woman suddenly keeled over. Whom would I send to call 911? Which bystander would I send to get the AED? Who would help me clear the area? Would I remember to note the time? Will I be calm enough to open the airway properly? Happily, in my make-believe scenario the defibrillated victim is always awake by the time the paramedics arrive.

Sitting in an airport lounge is no longer boring; it's a chance to mentally rehearse an arrest scenario. I encourage our students to do the same in the supermarket line or while watching their children or grandchildren scramble up the jungle gym.

Students can use the American Heart Association's online programs to reinforce what they have learned. There are inexpensive (\$15 to \$25) CPR videos that any church or school library can afford.

Dozens of our graduates have participated in our Saturday morning Tune-Ups—monthly walk-in practice sessions in which every attendee gets one-on-one attention from our instructors. There is no cost and it rarely takes more than 15 minutes. The set-up isn't complicated: a manikin and an AED training unit, extra faces, and a foam pad to spare the rescuer's knees.

These monthly reviews are paying off in CPR proficiency. My next-door neighbor is

an engineer who had never attended a CPR class before our program began. Over several months I have watched him progress from clumsiness and unease to near-perfection. And I'm glad that he's *my* neighbor!

Dr Philip Goscienski welcomes your comments and questions at drphil@cox.net.



Washington State Trooper Earns AHA Award

Trooper Jason Gainer is presented a Certificate of Achievement for "The Lifesaving Act of Airway Management and Cardiopulmonary Resuscitation" in Amboy, Washington, Feb 24, 2005, by T.J. Bishop, EMT-P, Clinical Officer, North Country EMS. Gainer performed CPR on professional truck driver James Anthony Holcomb when he suffered a cardiac arrest. Photo courtesy of Washington State Patrol Public Affairs Office.

Taking Care of Lay Caregivers

Editor's Note: In the Summer 2005 issue of Currents, CPR instructor Brian Hoffmann told the heartbreaking story of professional rescuer turned frightened father in his attempts to save the life of his daughter (page 6). He found himself unable to continue working as a lifesaver until another instructor, who had experienced a similar personal tragedy, helped him find his way back. Lifesaving efforts as a professional team member can certainly carry an emotional toll, but usually systems exist to help the professional rescuer through the emotional aftermath. Most members of the lay public who respond in an emergency can expect little post-event help, even though their psychological state can be precarious. But some instructors in their classes and some EMS systems in their responding actions are offering hope.

Maureen O'Connor at the AHA Training Center in San Diego reports:

One aspect of our Project Heart Beat program is Incident Management for businesses and organizations that have AED programs. There are 18 incorporated cities in the San Diego area. We have nearly 1700 AED units in lay rescuer CPR and AED programs throughout the area and have saved 24 lives.

We're on a 24/7 basis for anyone's resuscitation situation. We go out to the site, download the reports from the AED, and get the ECG data. Each staff member is trained in critical incident stress debriefing.

Whether the victim survives or not, it has the same impact on the people involved. When I go out to a business I say: "Our debriefing process helps to put your people back into service after this traumatic incident they've been through." In one instance CPR was being performed. The AED was brought out. The police took over. The guy who had responded first with CPR was just sent back to work! We want to ensure that anyone who responds gets appropriate follow-up.

Philip Doherty of St. Joseph's Hospital in Marshfield, Wisconsin, is an AHA instructor who warns his students about what an overwhelming event this is:

We expect people NOT to remain calm. This impacts their life. I work on a

volunteer service and it takes us 20 to 25 minutes to get to the house. First responders can get there more quickly. The length of experience of the provider dictates the kind of care the family gets. To those who say, "You don't have the time to talk with them," I say, yes, you do.

I make a point of telling a lay CPR provider that they are doing excellent CPR and that if the person has any hope of survival, it will be because of what they're doing. We let them witness the resuscitation attempt. We help coordinate what they do when they leave the house. We arrange for transport to the hospital and find someone to help them.

After 15 years of doing this, with very little prompting, I can remember every home I've been in.



Jennifer Pickett, MSPH, Heart & Stroke Initiatives Director, Metropolitan Detroit, Michigan, wrote:

In your editor's note, you indicated that the emotional impact of attempted rescue by the lay bystander is being recognized. This issue is of great interest to me; I am an AHA staff person and a BLS instructor. I also tried to save a life this year.

On Jan 16, 2005, I came across an unconscious man in his car at an intersection. Several other bystanders helped break into his car, and I pulled him out and performed CPR for about 5 minutes while waiting for EMS. To make a long story

short, he did not survive the incident. I was not prepared for the emotions that flooded me for the next week or so (and come back from time to time now). I felt incredibly guilty—like I hadn't done enough. Or if I had just done something different he would have survived. Soon after, I spoke with several of my EMS volunteers and ECC contacts to discuss the situation. I now know that I did as much as I could.

After the man was taken away by EMS, my name and contact information were taken by police officers at the scene. They then thanked me for what I did. Since this information is already obtained, could there be some kind of debriefing when a bystander is involved? This would no doubt be an extra chore for somebody, so perhaps at the very least, police officers/EMS personnel can encourage these bystanders to talk to a professional (family doctor, mental health professional if they have one, etc) about the incident. I'm very interested to hear what others have to say.

Eileen Reichert, ARNP, PALS Training Center Coordinator at Children's Hospital and Regional Medical Center, in Seattle, Washington, shared a different perspective and an experience almost as devastating as Brian's:

Citizen CPR has a different flavor than that which we do in the well-equipped and staffed hospital setting.

Seven years ago I was driving my then-12-year-old to his pediatrician for immunizations. We never made the appointment. Coming around the curve of a busy arterial I saw a man lying on the street behind his parked car. He was having a grand mal seizure and was at risk for being run over by a vehicle. I stopped my car, blocking traffic, and ran to the victim's side in time to witness his last agonal breath. His mouth was drooling bloody saliva. He became apneic and was pulseless. No bystanders were willing to initiate CPR on his secretion-stained mouth. I ran back to my car to get my pocket mask and realized I was driving my husband's car (no pocket mask). I told my son to use the cell phone to call 911.

Admittedly grossed out by the oral secretions, I attempted 15 compressions alone

Tiny Community Trains to Help One Another

without positive effect. I had to choose whether or not to expose myself to potentially lethal contamination. I couldn't not give him breaths. So I used his shirt to wipe as much blood and saliva out of his mouth as was possible. Two cycles of 2 effective breaths and 15 chest compressions revived him just as the fire engine and medic unit pulled up beside us.

I sat on the curb and wondered, "What have I done to myself and my family?" and tried to avoid swallowing the taste of death. Although I knew that there never has been a reported case of transmission of hepatitis or HIV through CPR, I didn't know what germs were in the saliva that I touched. I spit onto the street more of my own saliva until my mouth was dry and I could no longer spit.

The responding paramedic said that the EMS system had no way of recording exposures, and so it was my responsibility to follow-up. ED policy said that the patient would need to agree to be tested for HIV and hepatitis. He consented; both tests were negative, but advocating for the process and waiting for the report was an anxious period of time.

The outcome was good for the patient—he is alive and well and very grateful that a Good Samaritan was willing to help. The outcome for me was that I now have a CPR pocket mask in each of our cars. I have a CPR shield key chain that I carry in my pocket while out walking. I have a CPR face shield in my purse, in my wallet, in my ski jacket, and in the coat that I wear to the concert hall.

I can conjure visions of that man's cyanotic face, the relief I felt when I could see his chest rise and fall with my deep rescue breaths, the reward of seeing an unresponsive, apneic, and pulseless victim transformed into a confused but talking person, and I do believe I would make the same choice. But now I am a good girl scout and I am prepared.

The unfinished business lies in having medical responders provide a mechanism of follow-up for exposed rescuers. If we train people to perform CPR, then we should have a public health system that is responsive to the rescuer's health consequences.

Lake of the Ozarks in central Missouri is a beautiful place to live. More than a thousand miles of restful shoreline, sparkling water, and breathtaking sunsets attracted Mimi Gillespie and her husband Don to a small waterfront neighborhood with other young retirees.

Gillespie was a nurse "a thousand years ago," she said, and her medical background gave her a cautionary perspective on life in this idyllic setting. "Emergency services are at least 15 minutes away," said Gillespie. Not all firefighter responders carry AEDs, and the closest hospital is a 45-minute journey. Gillespie had taken CPR courses for 20 years and decided that what her remote neighborhood needed was an AED program. "I put together a 'Hi, Neighbor' letter with information about how user-friendly an AED program would be for us, comparing it to having an insurance policy."

Her neighbors didn't get it and Gillespie was discouraged. Then her husband had a coronary angioplasty with a stent, and Gillespie renewed her efforts. "I

approached my closest neighbors and started to get more support—75% of them agreed to learn CPR and contribute to the purchase of an AED to be kept in a common area in our neighborhood." The remaining members of the 10 families received their training later.

Fire Chief Ed Hancock helped the group arrange the AED purchase. "We've been working with our subdivisions, homeowner associations, and the community at large for years to help them improve safety," he said. "Now we have a program for which we can hold up a banner."

Conrad Collison was their CPR instructor. Usually he trains firefighters, ambulance companies, and daycare workers, all of whom need the training for their jobs. "This little group is different," he said. "They need it for each other. If I were looking for a place to retire, I'd certainly like their neighborhood!"

Gillespie is happy to share her experiences in turning her neighborhood into an AED-trained community. Write her at degilles@socket.net.



Instructor Conrad Collison, at right, trains Lake of the Ozarks neighbors Jerry Oxler and Bubbles King.

Japan's "Magnificent Seven" (Shichinin No Samurai) Could Inspire Millions

by Katsuyuki Miyasaka, MD, PhD

Golf and baseball are very popular sports among people of all ages in Japan. Medical emergencies on the playing field, such as cardiac arrests on isolated golf greens and instances of *commotio cordis* at home plate, require that laypeople be trained and ready to respond to those events before advanced medical care arrives on the scene. Recently, a small squad of Japanese athletes came to the rescue.

Our "magnificent seven" were not the famous samurai of film fame but 7 Japanese golfers and baseball players who wanted to protect their athletic community. This group, professional golfers from Tadash Ezure Golf School and baseball players and coaches from the Japan Sports Trainer Association, took the initiative of requesting BLS training from Japan Medical Response, Inc, a company in Minato-ku, Tokyo, that conducts training seminars for laypeople. Professor Kazuo Okada, MD, Professor Seishiro Marukawa, MD, and Professor Tetsuo Hatanaka, MD, members of the Japan Resuscitation Council (JRC), introduced me to Sumiko Watabe, president of Japan Medical Response, and asked me to arrange the training.

Dr Naoki Shimizu and I worked together to plan the course agenda of the first AHA Heartsaver AED Course offered to lay responders in Japan, and we added an extra 30 minutes for pediatric CPR training. Although we usually train pediatricians only, this request was an excellent opportunity to consider extending our efforts outside the hospital, especially to school teachers and people involved in education through childhood sports activities.

Prepared to Protect

Our 7 golfers and baseball coaches were highly motivated and eager to learn. Their physical skills were impressive. They expressed strong interest in spreading the CPR/AED concept to many more golf courses and baseball parks and of becoming instructors themselves. These high-profile athletes are terrific advertising for mass training programs. They were Naoki Sugiyama, former player for the Yomiuri Giants (NY Yankees of Japan), Vice Chairman of the Board, Japan Sports Trainer Association, and Yoshifumi



Ayukawa, former player for the Hanshin Tigers (Kobe based pro team), Member, Japan Sports Trainer Association. Also participating were Yoshihisa Iwamoto, former player for Koshien (very prestigious national high school baseball tournament event), and Naoki Kurashige, leader of an amateur baseball supporter group, currently a coach of a youth baseball team. Golf was represented by Satoshi Ezure, promoter of professional golfers and manager of Japanese golf superstar Tadashi Ezure; Ei Kaawato, professional golfer; and Norio Nakajima, professional golfer.

This highly positive experience has inspired us to consider programs that reach out to laypeople all over Japan. Why dream small? We could use the Tokyo Dome or sports TV programs to educate thousands of people at once!





Virtual Reality Games Spark Gains in Stroke Rehabilitation

Game Playing for Recovery

Three games were used—Stepping Up/Down, Sharkbait, and Snowboarding—to build range of motion, balance, mobility, stepping, and ambulation skills.

Stepping Up/Down simulates going up and down stairs and helps hip flexion and extension, weight shifting, and balance.

Sharkbait simulates deep-sea diving with sharks, electric eels, and other sea creatures and requires weight-shifting, stepping, protective reflexes, and squatting.

Snowboarding simulates snowboarding down a narrow slope and requires trunk flexing and extending, lateral bending, and weight shifting.

In each game the patient is positioned in front of an interactive screen that projects a virtual reality scenario.

Researchers measured patients' ability to walk before and after therapy and did imaging studies of the brains of the 5 patients who had VR training.

Before therapy, brain imaging showed that movement in the affected leg stimulated activity on both sides of the brain, which is abnormal. After therapy, movement in the affected leg stimulated activity in the opposite hemisphere.

“These are the first findings that suggest that VR training results in a reorganization of brain activity, which is associated with improved gait function,” Dr You said. The brain reorganization was associated with notable gain in locomotor function.

“Most of the VR-trained subjects reported spontaneous uses of and confidence in the affected limb during daily activities such as transferring in and out of the bathtub, putting on trousers, and stepping onto a step or curb,” Dr You said. “These functions were not possible before VR.”

To view a video news release of this story, visit <http://www.strokeassociation.org>.

Reprinted with permission from StrokeCONNECTION, July/August 2005. Also see: You SH, Jang SH, Kim YH, Hallett M, Ahn SH, Kwon YH, Kim JH, Lee MY. Virtual reality-induced cortical reorganization and associated locomotor recovery in chronic stroke: an experimenter-blind randomized study. Stroke. 2005;36:1166-1171.

Playing interactive virtual reality games significantly improved motor function in a small study of stroke survivors. The technology appears to help reorganize brain functions, allowing survivors to regain some walking ability.

Stroke often impairs one side of the body and walking ability. In many cases survivors compensate for the impaired leg by using the intact leg, which can cause further problems in the weakened limb.

“There have been a number of approaches used in stroke rehabilitation to help patients recover gait function, but outcomes have been variable,” said lead author Sung H. You, PT, PhD, assistant professor of physical therapy at Hampton University in Hampton, Virginia. “The problem is that we don’t fully understand how recovery after stroke affects the brain. So we investigated how virtual reality intervention affects stroke patients’ brains, and ultimately their ability to walk.”

Dr You studied 10 survivors (average age 57) who had experienced strokes at least a year earlier. All had weakness on one side. They were randomly assigned to a control group, which received no intervention, or a virtual reality (VR) group, which received the computer-assisted training an hour a day, 5 days a week, for a month.



ADVANCES

IN PREHOSPITAL CARE *by Mike Mills*

When Doris, age 71, went into the kitchen to turn on the stove, her husband Fred was sitting in the recliner in the den. When she returned to the den a few minutes later and made a comment, his only response was a moan. She rushed to his side and found him slumped to his left.

“Fred, speak to me!” Doris demanded. He groaned, but no words came out.

Doris immediately dialed 911 and described Fred’s symptoms to the dispatcher. In a few minutes, paramedics and EMTs arrived at the house. One examined Fred using the Cincinnati Prehospital Stroke Scale (see “Stroke Alert,” page 14) while another checked his breathing and administered oxygen.

The EMTs asked Doris what time she noticed his symptoms and about his medical history.

Soon Fred was in the ambulance, with Doris at his side, headed to the local hospital, the site of a primary stroke center. En route, the paramedics checked Fred’s glucose and started an ECG to detect any heart problems. While starting a saline IV and checking Fred’s blood pressure, the paramedics alerted the emergency department (ED) that a 73-year-old man with stroke symptoms was on the way.

All the prescribed steps for prehospital stroke care had been taken.

When Fred was wheeled into ED, the team was prepared to receive him. The EMTs shared their information about the patient’s symptoms and condition with ED physicians. Fred was immediately prepared for a CT scan so that physicians could determine what kind of stroke he was having and how to treat it.

Only 21 minutes had passed from the time Doris had returned from the kitchen until Fred arrived in the ED. Preparing Fred for

a CT scan, performing it, and interpreting it took an hour, bringing the elapsed time to less than an hour and a half for him to be ready to receive the fibrinolytic drug tPA. The treatment is more effective the earlier it is given. He was off to a good start.

Even with today’s advances in EMS training and the use of tPA, acute stroke events don’t always unfold like clockwork. The case of Fred and Doris is an ideal, although fictional, scenario in prehospital stroke care.

IT WASN’T ALWAYS LIKE THAT

To understand how far prehospital stroke care has come, consider what was done for stroke patients before the FDA approved tPA in June 1996.

“Before tPA, emergency personnel could wait about an hour to respond to a stroke call,” said Charles Sand, MD, an emergency physician at St Joseph’s Hospital, a primary stroke center (by Brain Attack Coalition standards) in Tampa, Florida. “Stroke was no more an emergency than someone with a hurt arm or a diabetic who had run out of medicine.”

It seems unthinkable now, but it made sense at the time. “There was not much you could do about a stroke,” Sand said. “You got to it when you could. In the ED, patients with suspected stroke would just wait for their CT scan, which could take many hours.”

Stroke treatment is different today because of tPA, a drug that can reduce morbidity and improve recovery following stroke. However, tPA must be given within a healthcare system that is organized to care for stroke victims, and it must be given using strict criteria, including time limits. “Time is the critical factor now,” said Todd J. Crocco, MD, assistant professor and director of Clinical Research, Department of Emergency Medicine, West Virginia School of Medicine, in Morgantown, West

Virginia. “A well-rehearsed 911 system is required today so EMS can provide the highest level of care as soon as possible.”

Even if the patient or a bystander doesn’t recognize the stroke warning signs, 911 dispatchers and EMS personnel should be able to. This rapid recognition and reaction phase is the first of 4 links in the “Stroke Chain of Survival.” After rapid recognition and reaction, the other 3 links are rapid start of prehospital care, rapid EMS transport and hospital prenotification, and rapid diagnosis and treatment at the hospital (see Stroke “Chain of Survival”, page 13).

TRAINING IS KEY

One of the challenges in creating a strong system of stroke care is making sure EMS personnel recognize the warning signs.

“Having a system in place where EMS personnel can rapidly and efficiently evaluate a patient for a potential stroke was, and remains, a critical issue,” said Crocco, a member of the ACLS Subcommittee of the American Heart Association’s ECC Committee. “With good training, EMS personnel can do this, and they can do it very well.”

One system doing it well is the Hillsborough County Fire Rescue in Tampa. “All of our paramedics and EMTs are trained that this is an urgent matter now, whereas 10 years ago it was not considered a true emergency,” said David Travis, chief of the rescue division.

In Hillsborough County, Stroke Alert forms became a major tool when new procedures for stroke calls were adopted in 1999. As EMS began using the form, identification of stroke symptoms improved greatly. Hospitals were notified of a stroke alert quickly and were better prepared to act, keeping more patients within the 3-hour window to receive tPA.

WHERE YOU'RE TAKEN MATTERS

"Another challenge in the Stroke Chain of Survival is getting the patient to the most appropriate hospital. Ensuring that the hospital can treat the stroke patient as an emergency is second in importance only to the sense of urgency by EMS," Travis said. Those two factors—quick action by EMS and a hospital's ability to start treatment quickly—are the major differences in how stroke patients are handled today.

Florida is the first state to pass a law mandating a transport protocol for stroke patients, requiring the use of the Stroke Alert forms and taking patients to the closest appropriate hospital. Other states are considering such a law.

Even though hospitals with dedicated stroke units are the preferred place to take stroke patients, many other hospitals provide excellent care and treatment. In addition, other factors must be considered, including time and distance required to reach such units.

The American Stroke Association and the Brain Attack Coalition have established recommendations for hospitals to develop stroke units and stroke centers.

The first component of a stroke center is a team to treat acute stroke, including a physician with experience in diagnosing and treating stroke. Treatment must follow written procedures to streamline and speed up diagnosis and treatment of stroke patients.

Other stroke center requirements include a specially trained emergency staff, the ability to perform brain-imaging studies, a stroke unit for patient monitoring and care by a team familiar with stroke care, and continuous medical education for the staff.

SETTING NEW STANDARDS

Hospitals that receive certification as primary stroke centers from the Joint Commission of Accreditation of Healthcare Organizations (JCAHO) must measure up in 3 main areas: compliance with national standards, effectively following Brain Attack Coalition stroke center recommendations and clinical guidelines, and meeting performance standards.

The certification program is a year old, and as of February 2005, JCAHO had

approved 88 primary stroke centers with more applications to process. For a listing of primary stroke centers, visit <http://www.strokeassociation.org/presenter.jhtml?identifier=3030094>. Or you can call 630-792-5800.

Some hospitals also are pushing the 3-hour window of care to 4 hours with advances in surgical procedures. Intracerebral thrombolytics involves inserting a catheter into the brain to deliver the clot-busting drug, instead of using the standard IV method. In neurovascular surgery, devices can be used to open blood vessels to restore blood flow to the brain.

"The EMS system is gearing up, and the hospital system is gearing up," said Sand, who serves on the American Stroke Association's Advisory Committee. "We're really in our infancy in acute stroke care. The main thing right now is to get the system improved and for EMS to take [the patient] to the right place."

Swift action by the professionals, however, can do only so much if they don't get to the patient in time. "Before tPA, and after tPA, the average Mr and Mrs American still don't recognize the signs and symptoms of a stroke as rapidly as we need them to," Crocco said. All stroke survivors and their families should know the warning signs of stroke (see page 14).

Travis, the chief of rescue operations at Hillsborough County Fire Rescue in Tampa, agrees that knowing the warning signs is the best starting point for the public. Anyone with symptoms should call 911 immediately. "A lot of times the onset happens and people are not really sure what is going on. The sooner they call us, the sooner we can get them into the system." EMS providers can not only transport the patient more quickly and more safely to an appropriate hospital, they can also identify signs and symptoms of stroke and provide pre-arrival notification to the receiving hospital, so that the hospital is ready to provide efficient care to the victim of possible stroke.

Mike Mills is a contributing writer for *StrokeCONNECTION* magazine. Write strokeconnection@heart.org.

Adapted from *StrokeCONNECTION* March/April 2005.

STROKE CHAIN OF SURVIVAL

1. RAPID RECOGNITION AND REACTION TO STROKE WARNING SIGNS

EMS personnel need to know the signs and symptoms of stroke and must act quickly by calling 911. The operator needs to know that you or the person you are with is showing warning signs of stroke. This link corresponds to the first "D" where potential delay in stroke care may occur: Detection of the signs of stroke.



2. RAPID START OF PREHOSPITAL CARE

EMS personnel receive early assessments of the patient's condition and start prehospital care as soon as the early responders reach the patient. This link corresponds to the second "D" of stroke care where delay may occur: Dispatch of EMS providers.



3. RAPID EMERGENCY SERVICE TRANSPORT AND HOSPITAL PRENOTIFICATION

While the patient is being transported quickly by ambulance and stabilized, the hospital's emergency department is notified by phone. This third link corresponds to the third "D" in stroke care: Delivery.



4. RAPID DIAGNOSIS AND TREATMENT AT THE HOSPITAL

The patient is taken to the closest properly equipped and staffed hospital, and EMS personnel facilitate a smooth transition of the patient and his or her information to emergency department personnel. The fourth link in the Stroke Chain of Survival corresponds to the fourth through seventh "Ds" in stroke care where delay in treatment may occur: Door (evaluation in the ED), Data (obtaining a CT scan), Decision (ruling out contraindications to tPA administration), and Drug (delivery of the tPA within 3 hours from the onset of symptoms).



STROKE ALERT

When EMTs are dispatched in Florida, they use the Cincinnati Prehospital Stroke Scale as part of their Stroke Alert report. It provides quick identification of symptoms.

Cincinnati Prehospital Stroke Scale (FAST)

F (*FACE*) **Facial Droop:** Have patient show teeth or smile. (Look for asymmetry.)
Normal: Both sides of the face move equally or not at all.
Abnormal: One side of the patient's face droops.

A (*ARM*) **Motor Weakness:** have patient close eyes and hold both arms straight out for 10 seconds. (Look for arm drift.)
Normal: Arms remain extended equally, or drift equally, or do not move at all.
Abnormal: One arm drifts down when compared with the other.

S (*SPEECH*) Have patient repeat phrase, such as "You can't teach an old dog new tricks."
Normal: Phrase is repeated clearly and correctly.
Abnormal: Words are slurred (dysarthria) or abnormal (aphasia) or none.

T (*TIME*) **Time Last Seen Normal**

The FAST test has proven remarkably effective at predicting stroke, and not just for EMTs. Like knowing the warning signs, it is another helpful tool that stroke families can use to reduce the time to treatment, because time lost is brain lost.

KNOW... THE WARNING SIGNS OF STROKE:

- Sudden numbness or weakness of the face, arm, or leg, especially on one side of the body
- Sudden confusion, trouble speaking or understanding
- Sudden trouble seeing in one or both eyes
- Sudden trouble walking, dizziness, loss of balance or coordination
- Sudden, severe headache with no known cause

<http://www.strokeassociation.org>

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American Heart Association
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by Marc Jennings

Connie Johnson is an American Heart Association (AHA) ECC Regional Committee Chair out of Lexington, Kentucky. Angie Drexler is the coordinator for a CPR training center at Western Kentucky University. Johnson had come to the training center for a site visit. She would quickly get proof that the Center knows its stuff.

They'd never met before this visit, so to break the ice Drexler suggested going out to dinner and picked up Johnson at her hotel. Half an hour later, the training center coordinator saved her site inspector's life.

"One of the biggest chokers of people is steak," said Drexler, "and that's what she choked on." Johnson sat there with a strange look on her face, Drexler recalls, and tried to drink some water.

When asked if she was all right, Johnson shook her head "no," then got up from the table and went out the restaurant's back door. She said that, despite knowing better, she was so panicked that all she could think to do was try to get away.

Drexler had the good sense to follow her. Nobody else seemed to notice that something was wrong, including restaurant employees, who appeared later.

Outside, Drexler realized what she was seeing but didn't quite believe it. She thought Johnson was putting her through some sort of test in

connection with the training center site visit!

This was not a test. Johnson was choking on a solid piece of steak.

Drexler stopped the choking woman from continuing to move, kept her cool, and performed the Heimlich maneuver.

The obstruction didn't come out immediately. Johnson said it took eight or nine thrusts: "It was very scary for me."

Drexler said she didn't feel helpless because, as a CPR instructor, she knew what to do—even though she had never before needed to perform the Heimlich maneuver in a real-life situation.

Johnson is thoroughly pleased with Drexler's "performance."

"It really made an impact on me. I can't tell you how important it is to teach people how to do this maneuver properly," said Johnson. "She saved my life."



EMS

Education Research Grants Awarded

The Emergency Cardiovascular Care Programs of the American Heart Association and the Acadian Ambulance Service National EMS Academy have selected the recipients of the EMS Education Grants:

- Brigham and Women's Hospital, Harvard Medical School of Boston, Massachusetts. Tobias Barker, MD, principal researcher, will compare high-fidelity human patient simulation-based training with traditional training methods for critical resuscitation skills in EMS personnel.
- The Program Development Division of Inland Northwest Health Services of Spokane, Washington. Douglas Weeks, PhD, principal researcher, will deliver synchronous distance training and study an instructor's ability to accurately conduct skills tests in person compared with conducting them virtually.
- The University Hospitals of Cleveland, Case Western Reserve University of Cleveland, Ohio. Jeffrey Lubin, MD, MPH, principal researcher, will study performance results of daily intubation practice on manikins.

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State EMS Educators
San Antonio, TX
<http://www.naemse.org>

Sept 12-15, 2005
American Society for
Industrial Security
Orlando, FL
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Sept 21-23, 2005
National Safety Council
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Sept 26-29, 2005
American College of
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Resuscitation Science
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