



PROTOCOL

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SFPA: Who's Who

SFPA Members Receive EMSA Awards



At the December 3rd State EMS Commission meeting held in San Francisco, two SFPA members received recognition for their contributions to EMS. Megan Corry, City College Paramedic Program Director served on the state EMS Commission for over 6 years, ending her service as the Commission chairperson.



Michael Petrie, former S. F. EMS Agency Administrative Director, received the Meritorious Service Award for his leadership in San Francisco and extensive work on statewide disaster planning.

Upcoming Orthopedic Emergencies Lecture

March 11, 6 – 8 pm 2 CE's

In the next SFPA evening lecture, Dr. Joe Serra will explain the management of orthopedic injuries prior to x-rays and definitive care. Health care professionals will learn what signs and symptoms to look for while evaluating fractures, sprains and dislocations, and how to proceed with initial management. Dr. Serra will also demonstrate how to reduce dislocated joints and re-align fractures.

Dr. Serra is a well-known orthopedic surgeon who has taught the management of fractures and dislocations to physicians, nurses, paramedics, EMT's and climbers for many years. He is a 25-year veteran of the National Ski Patrol, and frequent lecturer for the Wilderness Medical Society.

Dr. Serra has been the orthopedist for the University of the Pacific, the Milwaukee Brewers Farm System and the Stockton Ports baseball team. He has had decades of climbing and trekking experience in the Sierras, Andes, Himalayas, and Canadian Rockies. Dr. Serra is currently adjunct professor of orthopedics at the University of Pacific doctorate program in Physical Therapy. To register for this unique lecture, go to the SFPA web site:

<http://www.sfparamedics.org/pages/classes/lecture.php>.

Save the Date!

SFPA EDUCATION CONFERENCE 2009!

September 24 - 25 in San Francisco

Check www.sfparamedics.org for upcoming info!

State EMS Awards

In addition to Megan Corry and Michael Petrie, the EMS Authority recognized other individuals for their outstanding contributions to the California EMS System in 2007:

Distinguished Service Medal

Richard Watson received the medal for 8 years of distinguished leadership as Director of the EMS Authority and EMS Vision Project.

Cesar Aristeiguieta, MD, FACEP also received the medal for 2 ½ years of distinguished leadership as Director of the EMS Authority and significant achievements in the EMT certification process, trauma system planning, and disaster response.

Amy Castelluccio, EMT received the **Community Service Award** for providing extensive community education and CPR training in a rural community.

Bruce Lee was named **EMS Administrator of the Year** for meritorious leadership of statewide EMS Administrator's association, emergency services planning in Santa Clara County, and extensive participation on EMS committees, including the EMS Commission.

Bruce Haynes, MD was named **EMS Medical Director of the Year** for meritorious medical leadership of San Diego County EMS, 25 years of cumulative EMS service, including Director of the EMS Authority, and medical management of the San Diego Firestorm of 2007.

Debbie Becker, RN, MICN was named **EMS Educator of the Year** for meritorious educational leadership in the development of the Advanced EMT curriculum, 25 years of cumulative paramedic training standard setting, and representing paramedic program directors.

Applications for the 2008 Award Nominees are now open. Information and applications can be downloaded at <http://www.emsa.ca.gov/about/awards/default.asp>

Simulation Center Donors

The San Francisco Paramedic Association extends our heartfelt thanks to ALL of our Donors for their generous support of the Simulation Equipment Fund!

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You can join the support of the equipment fund by contacting Theresa Farina at director@sfparamedics.org

EMS License Plate Program

Order yours today



The Emergency Medical Services Authority has developed a specialty license plate to honor and recognize EMS professionals in California. Creating a specialty plate will support and recognize healthcare professionals who work in the prehospital setting. These plates will also increase the visibility of EMS in California. The standard EMS License Plate will be \$50 initially and \$40 for renewals. Personalized plates (new or conversions) are \$90 with a \$70 annual renewal fee. These funds may be used in any of the following areas: public information and prevention, recognition program, an EMS memorial fund, AED programs, a trauma registry and prevention program, charitable programs or programs to enhance EMT applicants statewide.

EMSA must collect 7,500 pre-paid applications before the plate is produced and distributed to applicants. This process could take as long as a year, which could delay applicants receiving their plates. If EMSA cannot collect 7,500 applications a full refund will be given to the applicant. A full description of the program is available here http://www.emsa.ca.gov/about/license_plate/files/LicPlateProgram.doc

SFPA Membership Meeting

The SFPA held its annual meeting in conjunction with a holiday reception on December 4th. After opening remarks by Board Chair Bill Sugiyama, SFPA staff presented an update on the organization's progress and community involvement. The integration of simulation into classes, collaborative EMT programs, and expanded EMS class offerings for the EMT-1 were but a few of the discussion points. In the past two years the SFPA offered 33 CE credits free to members through the evening lecture series. An associate membership program was created to provide more value to the SFPA support who is not an prehospital EMS provider. A summary report can be viewed on the SFPA web site.

Immediately afterwards SFPA members, donors, supporters and staff attended an evening reception. The main classroom was transformed into a simple, yet elegant hall, where attendees mingled and enjoyed gourmet food and drinks. Even the simulation equipment joined in, with the two adults and one pediatric model situated throughout the room. Donors were recognized for their generous contributions, and there was even a raffle draw for attendees.

New SFPA Board Announced

The SFPA recently concluded its election process for the 2009-2011 Board of Directors. The new directors are:

Chair:	Arthur Belton
Vice-Chair:	Edward Sawicki
Treasurer:	David Huseman
Secretary:	Linda Buell Charlene Donahue
Director at Large:	Jorge Palafox Rich Pikelney
Immediate Past President:	William Sugiyama

Diabetes 2008

Summary of a lecture presented by Robert J. Rushakoff, MD

Steve Donelan

On November 6, Dr. Rushakoff (Clinical Professor of Medicine at UCSF) presented an interesting lecture on the incidence, diagnosis, and treatment of diabetes. Overeating and under-exercising, as well as age and genetic predisposition are all risk factors for acquiring diabetes. In 10 years, incidence of diabetes in the U.S. has doubled to about 24 million; and on some South Pacific Islands, 70% of the population is diabetic.

Type I diabetes is an autoimmune disease in which β cells that produce insulin are destroyed, though it may take a long time to lose enough of these cells to require insulin injections. While genetic predisposition is a risk factor for Type I, it is not known what initiates the disease. In Type II diabetes (95% of the cases in the U.S.), body cells become insulin resistant.

Since 1997, however, diabetes has been classified by etiology rather than by treatment, because there is so much overlap. For example, Type II diabetics may also have insulin insufficiency and be taking insulin.

Women who have Type I diabetes need to control it perfectly during pregnancy to avoid the risk of birth defects in the baby. About 4% of pregnant women who were not diabetic before develop insulin resistance and high blood sugar (gestational diabetes) during late pregnancy, and the high glucose level passed through the placenta can result in a difficult delivery because of high birth weight, and a baby at risk of obesity and Type II diabetes.

For both Type I and II diabetes, the most common short-term complications are hypoglycemia and hyperglycemia. Some patients may keep their blood sugar low and not feel symptoms until they become unconscious. Some elderly patients with Type II diabetes, however, may maintain an extremely high blood sugar level, and be at risk of hyperosmolar coma. Other short-term complications may include diabetic ketoacidosis, a catabolic state, susceptibility to infections, and gastric paresis – with high blood

sugar, the stomach is slower to empty, so that a patient may get hypoglycemic even after a meal.

Long-term microvascular complications may include retinopathy and neuropathy (about 7 years). Retinopathy may lead to blindness, and a patient with neuropathy (which usually starts in the extremities) may not feel blisters or other injuries. Neuropathy may eventually require amputation. Intensive therapy to lower blood glucose levels, however (including continuous glucose monitoring to avoid hypoglycemia) can greatly reduce the risk of these complications. Damage to the kidneys (nephropathy) may progress for 20 years before it requires dialysis.

Long-term macrovascular complications may include heart disease, stroke, and peripheral vascular disease. Three studies show that therapy to lower blood sugar levels reduces the risk of CV disease IF it is started early; otherwise it does not. Many drugs may be used to treat diabetes, but they all have side effects. Sulfonylurias and meglitinides, for example (which stimulate insulin production) can cause hypoglycemia. Glucophage (which inhibits production of glucose in the liver) can cause diarrhea and nausea, and should not be used on patients with kidney or liver problems. Insulin sensitizers (that decrease insulin resistance) can cause weight gain as well as edema that is resistant to diuretics. Giving glucose by IV does not promote insulin release as much as oral glucose, so incretins that mimic gut hormones may be helpful. However, they can cause nausea, vomiting, and constipation.

All Type I diabetics and some Type II diabetics should be taking insulin, but when the patient takes it depends on what type it is. Rapid-acting insulin should be taken shortly before meals; intermediate-acting morning and evening; and long-acting in the evening. Patients may be taking more than one type, as well as other medications. Long-acting insulin has become more popular, for maintaining some insulin in the system throughout the day, but insulin pumps inject short-acting insulin, timed to maximize insulin levels when needed. Patients may also

have a subcutaneous device for continuous glucose monitoring. While inhaled insulin was developed 15 years ago, the device was bulky and hard to use. And by the time it was marketed 2 years ago, injections had become much easier, with smaller needles. So the device failed to find a market.

A number of factors may be involved in diabetic ketoacidosis (DKA), which can be caused by not taking insulin, insulin resistance, or an infection (e.g. respiratory, urinary, gastric). Symptoms are: polyurea, polydipsea, weakness, lethargy, myalgia, headache, anorexia, nausea, vomiting, and abdominal pain. Having ALL of these symptoms points to DKA, and helps differentiate it from conditions such as metabolic acidosis, gastroenteritis, and pneumonia. Signs may include hypothermia; hyperpnea; acetone breath; hyporeflexia; uncoordinated eye movement; fixed, dilated pupils; low blood volume from dehydration; acute abdomen; and stupor. Sodium level may seem to be low, but that's because the patient is dehydrated (pseudohyponatremia). White blood cell count may be high from infection or stress.

Fluid replacement is critical in treatment because it brings blood sugar down and reverses counter-regulatory hormones. Children, however, need to be monitored for signs of cerebral edema as they take on fluid. Insulin should be slowly infused over time, along with potassium and phosphate replacement.

Anaphylaxis Twice as Common

A study from the Mayo Clinic in the December 2008 Journal of Allergy and Clinical Immunology shows that anaphylaxis is much more common than reported, partially because many cases were not identified in previous studies. Insect stings caused 19% of the reactions, medications 14%. About a third of anaphylaxis cases requiring emergency room visits are from food allergies. While there is no cure for food allergies, it is important to identify them so patients know what to avoid. For more information on food allergy, see: www.foodallergy.org.

High Tech Mobile Comm Van

Rakesh Bharania



As part of the HeartSafe City Initiative, the Bay Area Regional Task Force members recently toured the **Cisco Systems Network Emergency Response Vehicle (NERV)** in San Jose. The NERV is a mobile command and communications vehicle that contains state of the art networking, phone, videoconferencing and other technologies to allow first responders to manage large-scale emergencies when normal infrastructure is unavailable or destroyed. Cisco's team has been deployed nationwide to emergencies such as the 2007 San Diego firestorm, the flooding in Cedar Rapids, IA during the summer of 2008, and most recently to East Texas in response to Hurricane Ike. Cisco regularly trains with local responders in the Bay Area to ensure seamless integration into agencies' existing emergency operation plans.

Join Disaster Volunteers

Disaster healthcare volunteers are professionals like you who want to volunteer during an emergency or a disaster. When you register on the secure web-based registry, you will indicate your volunteer preferences and enter information about your skills. The registry will automatically notify you in the case of a disaster and track your deployment.

For information and registration go to: www.healthcarevolunteers.ca.gov

Post-cardiac Arrest Care Key to Survival

The urgent need for treatment doesn't end when a person regains a pulse after suffering sudden cardiac arrest. Healthcare providers need to move quickly into post-cardiac arrest care to keep a person alive and ensure the best outcome. That's the conclusion of the American Heart Association science advisory published today in *Circulation: Journal of the American Heart Association*.

Brain injury, heart dysfunction, systemic inflammation and the underlying disease that caused the cardiac arrest all contribute to the high death rate of patients who initially have their pulse re-started. Collectively, these symptoms are known as post-cardiac arrest syndrome. The largest modern report of cardiac arrest resuscitation was published by the National Registry of CPR in 2006. Among the 19,819 adults and 524 children whose hearts were re-started, in-hospital mortality rates were 67 percent and 55 percent, respectively.

The new statement says that there is growing evidence that post-cardiac arrest care can lower the death rate and improve functional outcome for these patients. "Although we have become better at restarting the heart, we are only beginning to learn and implement the best ways to keep patients alive and minimize brain damage after their heart is re-started,"² said Robert W. Neumar, M.D., Ph.D., head of the statement writing committee and associate professor of emergency medicine and associate director of the Center for Resuscitation Science at the University of Pennsylvania in Philadelphia.

Research shows that many aspects of post cardiac arrest syndrome can be treated. The advisory discussed treatments for various types of patients such as: Unconscious adult patients resuscitated after out-of-hospital cardiac arrest were recommended to receive mild therapeutic hypothermia, which is cooling to 32°C to 34°C (89.6°F to 93.2°F) for at least 12 to 24 hours. Therapeutic hypothermia can improve survival and decrease the risk of brain damage.

Patients resuscitated from a cardiac arrest caused by a heart attack (as seen on an

electrocardiogram) should have immediate coronary angiography (an X-ray examination of the heart arteries) to check for artery blockages. Standard guidelines for heart attack treatment should be followed, which may include an artery-opening procedure (angioplasty) or administering a clot-busting drug to re-establish blood flow to the heart.

The advisory also discussed treatment for high blood sugar, seizures and infection, all of which are common concerns after cardiac arrest resuscitation. Also, inserting an implantable cardioverter defibrillator (ICD) is indicated for many patients with good neurological function.

Cooling Therapy

Moderate hypothermia treatment during surgery that requires circulatory arrest dates from the 1950's; research showing that mild hypothermia could improve survival of cardiac arrest patients dates from 1988. Some clinical trials, however, have shown mixed results due to inadequate monitoring and control of the cooling process.

New York City's decision to route ambulances with cardiac arrest patients to hospitals equipped for cooling therapy, starting January 1 (reported in the NY Times) has put this therapy back in the news. So far, Seattle, Boston, Miami, Vienna and London have implemented similar policies. Not all hospitals, however, are prepared to provide this therapy, which requires close monitoring and coordination by many hospital staff; and those that do not are concerned that their income and reputation will suffer.

Even after defibrillation restores a pulse, the patient may lapse into a coma and suffer damage to the brain and other organs from the body's reactions (post-resuscitation syndrome). Cooling therapy can prevent this damage, and save patients who would otherwise be lost. While cooling therapy has yet to be implemented in many hospitals, however, Zoll Medical is developing a system that can be installed in ambulances.

Emergency Care National Disgrace say Doctors

Emergency care in the United States received an overall grade of C- from the American College of Emergency Physicians in its first annual report; and many states were close to failing. The grades “are not evaluations of physicians or hospital emergency departments, but they show the overall efforts of states to support effective emergency medicine systems.” Each state was graded in 4 categories: access to emergency care (40%); quality and patient safety (25%); public health and injury prevention (10%); and medical liability environment (25%).

As emergency department visits continue to increase, with more and more indigent and uninsured patients, insurance payments and state health budgets go down. Also, the number of emergency departments and inpatient beds keeps decreasing, leading to more ambulance diversions.

No state received an A. California was ranked highest – one of only 10 states that received a B or B-. At the other end of the scale, 12 states received a D. California received A+ in public health and injury prevention (fewer traffic and alcohol-related fatalities, good adult vaccination and occupational safety records); and in medical liability environment (because of its model \$250,000 cap on non-economic damages). It did not do so well in access to patient care (C) or quality and patient safety (C+).

California scored last in the number of emergency departments per 1 million people, and near last in number of nurses and hospital beds per 1000. It also scored low in per capita expenditure on hospital care, and percent of young children immunized. One alarming finding is that California offers no statewide training to hospital personnel for response to disasters.

To improve its grade, California would need more emergency departments, hospital-staffed beds, and nurses – an unlikely prospect given its current budget crisis and the state of the U.S. economy. For the complete report, go to: <http://www.acep.org/assets/0/16/648/1994/00FA9DFA-9B89-4DA8-A3D8-5FBD37DD858D.pdf>

WEMT & WFR class

Tues. & Thurs. 7-10 pm: 3/3 - 5/7

Sat. 9-5: 4/4, 4/18, 5/9

Off-site: Piedmont Adult School

Want to learn more about emergency care for wilderness and other situations where EMS is not available, and get a lot of CEU's? The SFPA offers a class this spring with WEMT certification for those certified as EMT's or Paramedics, and WFR certification for other participants.

WFR/WEMT Upgrade trains you to understand and avoid wilderness hazards and cope with emergencies anywhere. You learn how to do emergency care with whatever you have on hand or can improvise. We use vivid slides and interactive teaching methods to bring the topics to life. Skills practice is intensive. Realistic simulated accidents help you put your skills together and develop your leadership abilities.

To register, go to the SFPA web site: <http://www.sfparamedics.org/pages/classes/professional.php> or call the SFPA: (415) 543-1161. Lead instructor is Steve Donelan author of the course textbook, *Wilderness Emergency Care*, and national chairman of the WEC program he developed for the American Safety & Health Institute (www.ashinstitute.org), which provides the WEMT and WFR certification, valid 3 years.

To be certified, participants must complete all skills logs, make up any missed class sessions, and pass the practical and written exams. For more information about the course, go to Steve's web site: www.wildernessememergencycare.com and email him with any further questions: donelan@speakeasy.net.



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