LA County DHS-EMS Agency Newsletter

EMERGIPRESS

Spring/Summer 2012 Volume 17, Issue 1

Potable Water Solutions

James Eads, Chief, Disaster Response

The LA County Emergency Medical Services (EMS) Agency has acquired a water purification system donated by First Water. The system is comprised of two separate components: one with a water purification capacity of 60 gallons per hour and the other with 720 gallons per hour capacity. The First Water system offers a solution and relief to many of the challenges related to access to potable water in the provision of emergency medical care, medical shelter operations, as

see **Water** (continued on pg.3)

EMS MORE THAN A JOB. A CALLING.

National EMS Week 2012 is May 20 - May 26.

The theme of this year's EMS Week is "EMS: More Than A Job. A Calling." This week has been set aside to bring together local communities and medical personnel to publicize safety and honor those among us who provide day-to-day lifesaving services. The Los Angeles County EMS system consists of emergency physicians, emergency nurses, emergency medical technicians, paramedics, firefighters, educators, and the local EMS agency, all of whom work together for the benefit of the sick and injured. We are proud of the work you do everyday to make our EMS system the BEST! Thank You.

Electronic Patient Care Field Documentation

By Christine Clare, Data Programs Manager

Los Angeles City Fire Department (CI) has successfully converted from a paper-based EMS Report Form to an electronic patient care record (ePCR). In a massive educational and technical effort, CI trained 2,600 EMTs, paramedics and civilian personnel on the software, which is housed in a rugged, waterproof laptop computer with a wireless card.

The Project

The following statistics illustrate just how large an undertaking this conversion was: CI's Operations Control Dispatch Center receives an estimated 600 rescue ambulance calls every 24 hours and projects that total EMS calls in 2012 may reach 325,000. EMS responses account for 80-88% of CI's total call volume in a 470 square mile area. In terms of EMS units, CI is the largest fire department west of the Mississippi. On any given day, the department can field up to 89 ALS ambulances, 34 BLS ambulances, 72 ALS assessment units, 60 BLS fire units, an ALS fire boat, and four ALS helicopters. As an EMS provider, CI responds to everything from minor scrapes and cuts to major trauma to stand-by for visiting royalty and presidents. It has now added the electronic patient care record to its list of accomplishments.

see **field documentation** (continued on pg.5)

In This Issue

Richie Pediatric Trauma Center - One Year Later

by Christy Preston,
Trauma SystemProgram Manager

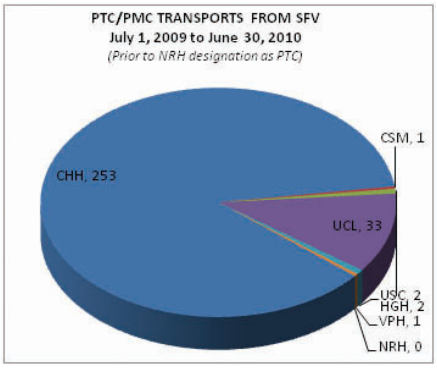
Traumatic injuries are the leading cause of death and disability in children, making immediate, life-saving care crucial. Nearly twenty years ago, little Richie was traumatically injured after the car his great-grandmother was driving was broadsided by a suicidal driver on Victory Boulevard. Due to the severity of Richie's injuries, and the lack of a pediatric trauma center in the San Fernando Valley, he was airlifted to Children's Hospital Los Angeles for the critical care he so desperately needed. While most of you may be familiar with the term "Golden Hour" - the first 60 minutes after a traumatic injury when prompt treatment is critical to increase one's chance of survival - you may not know that for children, that Golden Hour is often reduced to what has been termed the "Platinum 30 Minutes." Richie's Platinum 30 Minutes were spent in transport to Children's Hospital, where he died the next day in his father's arms. As we are all aware, trauma knows no boundaries and can affect anyone, including Richie's father, Los Angeles Councilman Richard Alarcon.

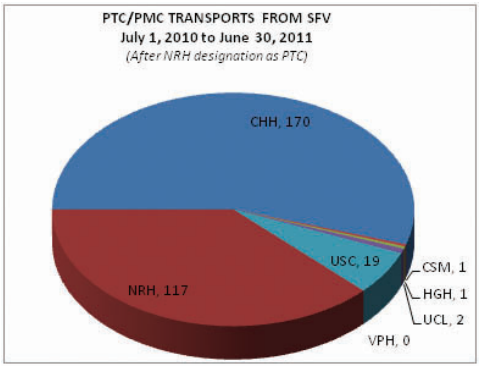
Because of his loss, opening a pediatric trauma center in the San Fernando Valley became Councilman Alarcon's crusade, believing something good had to come from his tragic loss. While serving as a State Senator he introduced legislation that levied additional fines on traffic violations to support emergency medical services, of which 15 percent would go directly into "Richie's Fund" to support pediatric trauma centers. With additional efforts from State Senator Alex Padilla and LA County Supervisor Zev Yaroslavsky, 3rd District, local and state officials were able to raise funding for the start-up costs of opening a pediatric trauma center in the San Fernando Valley.

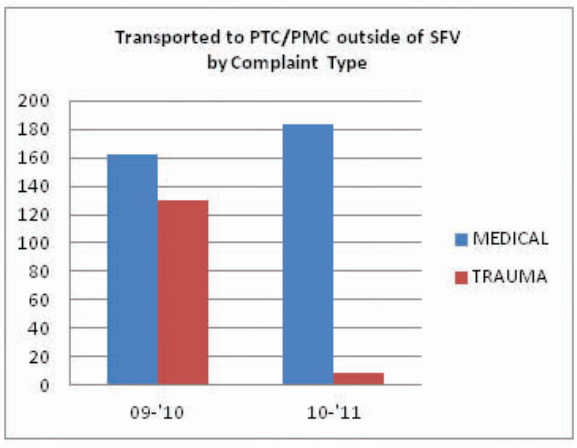
After years of planning, Northridge Hospital Medical Center (NRH) was officially designated as a Pediatric Trauma Center by the EMS Agency on October 4, 2010. NRH's pediatric trauma center is named after Richie Alarcon. Designation of a pediatric trauma center in the San Fernando Valley helps to ensure that pediatric trauma patients receive the specialized care they need in the least amount of time in order to enhance their ultimate outcome.

With NRH's pediatric trauma center designation, the need to transport pediatric trauma patients out of the San Fernando Valley is nearly nonexistent. The EMS Agency continues to work with the dedicated staff at NRH to meet the additional requirements needed to also be recognized as a Pediatric Medical Center. Once achieved, the need to transport critically ill, as well as critically injured, pediatric patients out of the San Fernando Valley for the care they so desperately need, will no longer exist.

While we will never know if Richie's outcome could have been altered if a pediatric trauma center had existed in the San Fernando Valley all those years ago; we do know that access to a pediatric trauma center in the San Fernando Valley will make a difference in the lives of the pediatric trauma patients today.







EMS Agency Nurse of the Year

By Lucy Hickey, Chief, Prehospital Certification & Program Approvals

Joan Lockwood, RN, MICN, was selected as the EMS Agency's Nurse of the Year for 2012. She will be recognized along with other honorees by the Los Angeles County Board of Supervisors on May 15.

Known to everyone as "Joannie", she is a proud "County Grad" from the Los Angeles County USC Medical Center's School of Nursing Class of 1981. As a student nurse she worked on the Jail Ward at LAC+USC Medical Center. After graduation, she first worked in the emergency department at Daniel Freeman Memorial Hospital and later at Torrance Memorial Medical Center for 25 years where she was the Prehospital Care Coordinator for 15 years. Until recently, Joannie taught EMT courses at Los Angeles Harbor College with her husband Steve, a retired Los Angeles County Fire Department Lifeguard Paramedic.

Joannie's EMS Agency current "tour of duty" with Los Angeles County began in September 2008. Her clinical experience in emergency nursing, prehospital care and education made her an excellent addition to the EMS Agency's staff. As a Nursing Instructor, her duties and responsibilities are unique. She works in the Office of Certification, reviewing EMT background reports and conducting EMS-related investigations. Joannie was instrumental in the implementation of the EMS Authority's EMT 2010 requirements with respect to Emergency Medical Technician (EMT) certification. She conducted the first ever Mobile Intensive Care Nurse (MICN) Development Courses held by the EMS Agency. The three classes she taught "graduated" 63 RN's, from various Base Hospitals, who were eligible for the MICN Certification exam.

Joannie is an avid Dodger fan and true animal lover. She cannot recall a time when she did not go to Dodger Stadium to see the "boys in blue" play. When asked, Joannie admits to having five dogs, two horses, a turtle and a pot-bellied pig.

Water (from on pg.1)

well as general population water needs. The systems are packaged with accessories that accomplish tasks such as storing source water prior to treatment, establishing central distribution points and packaging clean water for final distribution. They can be stored in caches at strategic locations for easy deployment in the event of a water disruption.

The images from disasters such as Hurricane Katrina, the Haiti earthquake and, most recently, the earthquake and subsequent tsunami in Japan remind us of how important disaster preparedness is and how fragile life and infrastructure can be. The utility infrastructure delivering potable water to the community is especially susceptible to these types of disasters.

Traditionally, emergency managers rely on stockpiles of bottled or canned water or agreements with local suppliers to fulfill the water needs for their community. While this approach may be adequate, it is not a comprehensive solution. There are many points at which bottled water may fail; therefore, additional contingencies should be considered. With any stockpile of supplies, distribution to the final destination can be challenging. Depending on the geography, getting bottled water to the point of distribution may require extraordinary logistics and can become labor intensive. During events such as earthquakes, transportation routes can be blocked and inhibit not only initial delivery but also resupply. While bottled water is an ideal method of delivering small quantities to individuals, it cannot support critical functions such as food preparation, ice production, or hand washing, let alone those functions that are required to operate an emergency care site or medical shelter.

Water (concluded on pg.8)

Exciting Turn for the 2012 LA County Disaster Healthcare Volunteers Annual Training Summit

By Johnny Ku
Los Angeles County Healthcare Volunteers Collaborative Coordinator

Sandra Shields, LMFT, CTS
Sr. Disaster Services Analyst - EMS Agency

Since 2007, and to meet the increased need for health care personnel following disasters, LA County has been participating in a nation-wide effort to recruit, register, and pre-verify credentials of health, mental health, and other volunteers in advance of the next large scale disaster or other public health emergency. This program--known as Disaster Healthcare Volunteers (DHV) Collaborative--is a joint partnership between the Emergency Medical Services Agency, County Department of Public Health, Long Beach Public Health, and the Beach Cities Health District.

Each year, the LA County DHV Collaborative hosts an annual training conference for its' 4,000+ registered volunteers. This year, the conference is taking an exciting turn as a functional exercise!

The 2012 LA County DHV Training and Exercise Summit, held this year on June 9, 2012 in the City of Commerce, will help registered DHV volunteers prepare for their volunteer roles and responsibilities – particularly in the hospital settings. The first portion of the summit will feature an overview of key concepts from the new LA County Disaster Healthcare Volunteers Deployment Operations Manual. Volunteers will engage in facilitated discussions and mobilization exercises to help them better understand how they will be deployed. In the afternoon portion of the summit, volunteers will have the opportunity to apply what they learned in the morning by participating in a functional exercise that will simulate deploying to a hospital setting following a major disaster. Participants will be assigned to one of three host hospitals participating in the summit: Providence Little Company of Mary-San Pedro, Henry Mayo Newhall Memorial Hospital, and Presbyterian Intercommunity Hospital. The three hospitals will have the opportunity to test their policies and procedures for accepting and assigning DHV volunteers. As the summit concludes, all participants will have time to share their thoughts and offer suggestions on how to improve DHV deployment procedures.

In addition to the exciting hospital-based functional exercise, each of the four DHV Collaborative volunteer units will have their own sessions to answer any questions volunteers may have. The "unit break-out sessions" will also allow volunteers to network, learn more about the unique identity of their unit (the four DHV units are: LA County

Surge Unit, MRC Los Angeles, Beach Cities Health District MRC, and Long Beach MRC). The summit exercise is a part of a preparedness effort for an upcoming full-scale DHV hospital deployment exercise in spring of 2013. For more information about the exercise, please contact Sandra Shields at the EMS Agency at: sanshields@dhs.lacounty.gov.

Want to become a Disaster Healthcare Volunteer? Visit: http://www.lacountydhv.org and go to "Click Here" in the orange bar at the top of the web site.

field documentation (from on pg.1)

The Rollout

On August 3, 2010, the Los Angeles City Council approved CI's proposed contract with Sansio for the development and implementation of the ePCR. This approval allowed CI and Sansio to immediately begin working with their outside stakeholders (Hospital Association of Southern California (HASC), the Los Angeles EMS Agency) and vendors (Life Pak and Physiocontrol) on the transmission of electronic patient care records to the receiving hospitals.

Three months later, CI began a series of meetings with their receiving hospitals to apprise them of the project's status. Once all participants were on board, the initial transmission was accomplished via facsimile and through ReddiNet® (a computer program all 9-1-1 receiving hospitals in LA County use for emergency medical communications). Transmission is triggered by the paramedic entering the receiving hospital code into the patient care record, which then automatically faxes the ePCR to the hospital where it is uploaded onto the ReddiNet® screen. While working on this transmission mechanism, Sansio also developed a web-based alternative to faxing called XchngER™.

CI selected Battalion 7, located in the Lincoln Heights area, for ePCR training in January 2011. The staff practiced with the product for two weeks before going live for a 45-day trial period. Building on the success in Battalion 7, the program then rolled forward to Battalion 1. Training was weekly, with live implementation every 10 days, allowing for practice before implementation. Over the next several months, additional battalions were converted to the electronic patient care record so that by June 2011 all EMS documentation was being performed on an electronic device.

The Challenges

According to Assistant Chief Gregory Reynar, CI's first challenge was for paramedics to relinquish the familiar paper F-902M and start locating the same fields on a laptop screen. Since the ePCR looks nothing like the F-902M, this required a period of transition. The change proved difficult not only for fire department personnel but also for hospital staff. The receiving hospital staff, accustomed to being handed the patient care record upon paramedic arrival in the ED, now had to check the ReddiNet® or the fax machine instead. A second hurdle was to incorporate the 12-Lead ECG transmission into the electronic patient care record. The solution required the purchase of specialized cables to connect the cardiac monitor to the laptop.

The ongoing challenge is to create a single record for each patient. Since every resource dispatched to an incident starts an ePCR, ultimately there can be as many as four records for one patient. Because of continuing information technology (IT) challenges, a workgroup has been created to meet regularly and resolve issues as they arise.

As of March 27, 2012, CI has generated 577,000 complete ePCRs. Even with all the challenges and training requirements, the majority of front-line staff who have mastered the ePCR like it and are adamant that they do not want to go back to paper-based documentation.

Ongoing Training

Retrospectively, Chief Reynar credits the success of the ePCR implementation to provision of an adequate practice period. To build on the initial training, CI created an ePCR educational program that is readily available in every fire station computer through video vignettes. Each one is three to five minutes in length and reviews a specific section of the ePCR. Chief Reynar acknowledges that training will remain a continual process since the ePCR, like its paper counterpart the F-902M, is only as good as the quality of the paramedic documentation.

Advantages of the ePCR

- Reduces printing costs, paper handling, and storage issues.
- Facilitates the quality improvement process and review of practice changes.
- Increases speed of reimbursement. When using paper documentation and manual billing, reimbursement took 30-45 days after the date of service. With the ePCR, that has been reduced to 5-7 days from date of service. Increases in reimbursement have not materialized as originally hoped but this is due to an overall decrease in Medicare reimbursement nationally, not the ePCR.
- Increases accountability and compliance with the Health Information Portability and Accountability Act (HIPAA) or the release of Protected Health Information (PHI). All transactions are secured and are easily traced to the individual(s) who accessed the record.
- Improves evaluation of data elements for Quality Improvement (QI) purposes. Combing through thousands of forms to extract indicator data is now a

field documentation (concluded on pg.7)

On occasion, the Los Angeles County EMS Agency re-prints outstanding articles from other sources that we feel would be of interest to our readers. Dr. Joe Barger is our guest contributor for this issue.

POISONS IN SMALL AMOUNTS

By Joe Barger, M.D.
Interim Medical Director, Alameda County EMS Agency

"Medications are just poisons in small amounts." In my medical school pharmacology class, this was one of the first things the instructor said. And now, 35 years later, this still holds true. Medications basically either disrupt or augment normal physiologic processes in the body, and they have the capacity to help or harm.

I bring this up because the medications we deliver in EMS also have this "two-edged sword" capability. While protocols are written to help assure safety, even then there is a potential to cause harm. We always need to make sure that the risks of treatment are outweighed by the potential benefits.

Aside from dosing errors, how can our medications cause harm? There are a number of examples that I'd like to review:

Naloxone

In some patients who have chronic use of narcotic opiates (whether they are prescribed drugs or street drugs), the reversal of the effects with naloxone can cause a significant epinephrine rush leading in rare cases to seizures, pulmonary edema, or cardiac arrhythmias. More commonly, patients become combative, and their actions create safety hazards for both patients and providers. Patient with significant pain may have a return of severe symptoms.

The use of naloxone simply to reverse minor changes in mental status is unnecessary. It is more appropriate to use when there is respiratory depression (generally a respiratory rate of less than 10) and to titrate it so that the effects may not be so jarring. Dilution of the medication with saline may allow even better control – this is especially appropriate when patients with severe pain (such as those with cancer) become overly sedated and the effort should be to reverse respiratory depression without fully reversing the effects on pain.

You may encounter patients who require a lot of naloxone; however, you shouldn't titrate intranasal administration. If you are giving naloxone IV, restraint in dosing is reasonable. Respiratory depression should be manageable with basic airway procedures until the desired effects have occurred so there is no rush to immediately reverse things if oxygen and ventilation are being managed.

Diphenhydramine

While this seems like a pretty benign drug, in certain situations it can be harmful. Diphenhydramine is used in EMS both as an antihistamine (to address allergic reactions) and for sedation (taking advantage of a side effect). But it also has anticholenergic activity – blocking the activity of an important chemical, acetylcholine. This effect leads to dry mouth, ataxia (unsteady gait), and can even cause urinary retention. But one of the biggest potential dangers is that a patient who may be toxic on another drug that also has anticholinergic processes can get additional toxicity. This can lead to increased delirium, seizures, and even coma. Many psychiatric drugs that may be ingested as overdoses also have potent anticholinergic effects.

For that reason, when a drug is needed to sedate an agitated patient who may have an ingestion issue, it is probably far better to use midazolam than diphenhydramine. The mild effects of diphenhydramine are unlikely to be effective anyway, and they can worsen the situation.

Dextrose 50%

What can go wrong with administering dextrose? Most of the time, nothing, but D50 is highly concentrated. It can scar veins and if it extravasates, can lead to significant tissue damage. For patients who are unconscious or unable to take oral medications, D50 is the best treatment. Many patients, however, particularly those with sugars above 50, often are conscious enough to take oral glucose paste, which is a safer treatment. Choosing the safest drug for the particular situation is an important factor in treatment. Yes, D50 most assuredly can skyrocket the serum glucose temporarily and obliterate hypoglycemia. But sometimes that is unnecessary. Over 2/3 of patients transported in Alameda County have a blood glucose determined in the field. If an incidental finding of a slightly low glucose is found (generally in the 50-60 range) and the patient does not have altered level of consciousness and is not having symptoms referable to hypoglycemia, there really is no good reason to treat with D50. The benefits of correcting a number in an

Poison in small amounts (from on pg.6)

asymptomatic patient are outweighed by the small but present risks of treatment. [material intentionally omitted]

Summary

It's critical to have respect for the potential harmful effects of medications that are given in EMS. Most of these situations are avoidable by maintaining a thoughtful approach to drug administration. Patient safety is important, and I think there is an opportunity to reinforce some of the safe practices by both education and future modification of patient care policies.

I would be happy to discuss this or any other medication-related questions. Contact me at joe.barger@acgov.org

---

field documentation (from on pg.5)

thing of the past. QI can be done quickly and completely for any data element captured on the ePCR; for example, number of runs, number of patients intubated or number of patients with an ST-Elevated Myocardial Infarction (STEMI), etc.

Future Plans

CI's ultimate goal is to go completely paperless, which would eliminate ePCR faxing. In the first quarter of this year, CI focused on ensuring that receiving hospitals have access to, and know how to use, XchangeER™. By March 27, 2012, 48 of the 59 hospitals to which CI transports patients had signed XchangeER™ agreements. The ideal record handling process, merging the EMS record directly into the hospital's electronic record, is still a future project due to the number of different hospital IT programs and the need to obtain firewall clearance to submit data.

Provider agencies that are considering implementation of an ePCR should coordinate with the EMS Agency to ensure a smooth implementation process. Chief Reynar and his staff at CI are willing to share their experience and assist other providers who plan to convert an electronic patient care field documentation system. For further information, please contact Christine Clare, Data Programs Manager, at (562) 347-1674.

FAST-MAG; The Countdown to 1700

Randy Sanoff RN

Seven years and one month to the day after paramedics enrolled the first patient in the FAST-MAG Trial, Los Angeles Fire Department Station 105 paramedics Scott Salerno, David Morales and paramedic intern Shaun Hannan enrolled FAST-MAG patient #1500 on February 27, 2012. The official countdown to trial completion has begun with less than 200 patients left to enroll to complete the trial.

Paramedics in Los Angeles County have been the key personnel leading the way to success of the FAST-MAG Trial, pioneering many activities for the first time ever undertaken by paramedics in the field. Included in these accomplishments are:

- Employing the use of informed consent in the field
- Initiating treatment in acute stroke patients within two hours of stroke symptom onset
- Enrolling over 1500 patients in an earlier time window than any prior stroke trial

With the success of the paramedics in Los Angeles leading the way, paramedics in Orange County joined the FAST-MAG Trial in 2010 and have accelerated trial performance.

We are currently embarking on an additional first in the FAST-MAG Trial. In an effort to determine if using videophone technology can enhance the enrollment process, paramedics from 20 high-enrolling rigs will be asked to use a video cell phone to enroll patients who meet the FAST-MAG criteria (symptom onset less than two hours, positive mLAPSS exam, and no FAST-MAG exclusion criteria).

The FAST-MAG team has seen an increase in the pace of enrollments and is working double time to ensure that all of the study data documents are complete and processed for statistical analysis. We anticipate that the FAST-MAG trial will have a major impact on future prehospital research and patient care when it is completed.

For Your Information

EMSAAC
EMERGENCY MEDICAL SERVICES ADMINISTRATORS' ASSOCIATION OF CALIFORNIA

EMSAAC Conference June 5-7

The 2012 EMSAAC Conference will be held at the Queen Mary this year on June 5th and 6th. Keynote speakers Ken Perlman and A. J. Heightman headline a dynamic group of EMS leaders who will be discussing communication, training, organizational design, disaster response, prehospital medical studies, and documentation. Approved for 10.5 hours of prehospital continuing education credit for MICNs and paramedics, and 10.5 hours of BRN credit for nurses, the two-day program promises to be interesting, informative and fun. **www.emsaac.org**

Sidewalk CPR - June 7, 2012!

Rapid, effective cardiopulmonary resuscitation (CPR) performed by bystanders in a witnessed cardiac arrest is a proven life saver. This critical skill can be learned in less than five minutes! To train as many people as possible, the Los Angeles County EMS Agency is partnering with AHA,local hospitals, provider agencies and other Southern California EMS Agencies to sponsor a Sidewalk CPR event on June 7, 2012. Stations will be set up in building lobbies, civic centers, fire stations, schools, malls and other venues to train people in hands-only, adult CPR. This is a quick and easy way to help someone learn how to help others in need. To participate in Sidewalk CPR, contact Susan Miller at the EMS Agency (sumiller@dhs.lacounty.gov) for pre-registration materials, a sample press release and sign-in sheets.

Water (from on pg.3)

The First Water systems will be positioned to function with the LA County Mobile Medical System (MoMS) during deployments. The MoMS will function as a temporary medical facility, supporting patient surge or stand-alone treatment site in austere conditions. With the new solution in place, LA County EMS Agency is now better equipped to respond to water disruptions in a self-reliant, all-hazards manner.

Pediatric Advisory Committee

The Pediatric Advisory Committee (PedAC) a new committee that will be advisory to the EMS Commission, has been formed to specifically address the needs of pediatric patients in the prehospital setting. The members met for the first time on December 13, 2011 to develop bylaws and discuss goals and objectives for 2012. The committee will meet quarterly at the EMS Agency. Projects under discussion include drafting a job description for Pediatric Liaison Nurses and an evaluation of pediatric readiness in emergency departments.

EMS MORE THAN A JOB. A CALLING.

National EMS Week 2012 is May 20 - May 26

New Low Price!

The J. Michael Criley Paramedic Training Institute Commemorative album is now available for purchase ($55.00 cash or check). The limited edition, hardcover album features the history of EMS in Los Angeles County, letters from Randy Mantooth and Kevin Tighe, profiles of 911 public provider agencies, and over 350 pages of paramedic photos. To purchase the album, please visit the EMS Agency at 10100 Pioneer Blvd, Suite 200 Santa Fe Springs, CA or contact us at: 562-347-1500 or ems@dhs.lacounty.gov.

The EMERGIPRESS is a newsletter providing the Los Angeles County prehospital care personnel with informative and educational articles, updates, announcements and resources of current interest.

Editorial Board:

Cathy Chidester
EMS Director

William J. Koenig, M.D.
EMS Medical Director

Kay Fruhwirth
Assistant Director

Richard Tadeo
Assistant Director

Lucy Adams
Roel Amara
Christine Bender
James Eads
Diedre Gorospe
Michele Hanley
John Quiroz
Editorial Staff

Ernest Aldama
Design & Production

Suggestions and contributions are strongly encouraged. Please email submissions to ems@dhs.lacounty.gov or write to us at: Los Angeles County EMS Agency 10100 Pioneer Blvd Suite 200 Santa Fe Springs, CA, 90670. Archives of EmergiPress can be found on our website at: http://ems.dhs.lacounty.gov.