LA County DHS-EMS Agency Newsletter

EMERGIPRESS

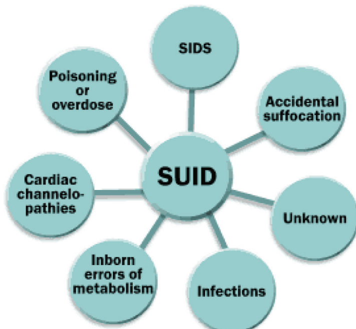
2013 Volume 18, Issue 1

Something's Wrong With My Baby!

By Deidre Gorospe, with special thanks to Denise Bertone of the LA County Department of Coroner and Dr. David Whiteman for their contributions and photographs

Even the most hardened EMS provider dreads this call. Is it a case of Sudden Infant Death Syndrome (SIDS)? Choking? Respiratory arrest? None of the options are good, and you will need to be on your game if there is a chance of helping.

Most of us are familiar with the term SIDS, but less frequently heard is the term Sudden Unexpected Infant Death or SUID. Each year in the United States, more than 4000 infants without prior known illness or injury die suddenly and unexpectedly. **SUID is the sudden and unexpected death of an infant in which the manner and cause of death are not immediately obvious prior to investigation.** SUID can be caused by metabolic disorders, hypothermia or hyperthermia, neglect or homicide, poisoning, or accidental suffocation. Sometimes the cause is unknown. About 30% of SUIDs are classified as resulting from sudden infant death syndrome (SIDS). **SIDS is the sudden death of an infant under the age of one year that remains unexplained after thorough investigation has been conducted, including a complete autopsy, an examination of the death scene, and a review of the clinical history.**



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SIDS mortality rates in the United States have declined by more than 50 percent since national campaigns promoting "Back to Sleep" for infants were introduced in 1994. Interestingly, during this same period, infant mortality rates resulting from overlaying, suffocation, wedging, and other causes increased – probably as a result of improved death scene investigations and consistency in SIDS definitions and documentation. First responders now play an important role in contributing to the work being done in this field, helping to exonerate innocent parents in some cases, and identify abuse in others.

ASSESSMENT

Los Angeles County Prehospital Care Reference No. 814: *Determination/Pronouncement of Death in the Field* provides parameters for determination of obvious death by EMS personnel,

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

2013 EMS Agency Outstanding Nurse of the Year

(left to right) Richard Tadeo, EMS Agency Asst Director, Christine Clare, Sr Nursing Instructor, Cathy Chidester, EMS Agency Director

Congratulations Christine Clare!

The Emergency Medical Services (EMS) Agency staff first met Christine in 2007 when she came to us with an impressive nursing resume from various facilities both in and outside of this County. We decided her varied experience as an emergency department nurse, a nursing director, an educator, and a Mobile Intensive Care Nurse would fit our Special Projects Coordinator position. And did it ever! Despite the fact that no two assignments were the same, she was able to do it all: data trending, policy development, hospital diversion auditor, project manager; virtually anything

see **Nurse of the Year** (concluded on pg.6)

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Technology Corner... Zoll LifeVest

By John Quiroz

ZOLL LIFEVEST

The Zoll LifeVest is a portable cardiac defibrillator worn by patients at risk for sudden cardiac arrest (SCA). The device was approved by the Centers for Medicare and Medicaid Services (CMS) in 2005 and has been prescribed to more than 100,000 patients as of October 2013. Its use is likely to grow due to its efficacy at reducing mortality and cost benefits compared to other treatments, including Automated Implantable Cordioverter-Defibrilator (AICD). CMS approval was important because it meant that insurance providers had to start paying for its use. As an emerging treatment, nurses, emergency medical technicians, paramedics and physicians will likely cross paths with patients wearing the device.

INDICATIONS

The Zoll LifeVest may be prescribed to patients at increased risk of SCA. These patients include those who have suffered a myocardial infarction (MI), are pre or post bypass surgery, or have had angioplasty (balloon) and coronary artery stent placement with low cardiac output (ejection fractions <35% , 55%-60% is normal) all showed significant improvement in survival rates over three months (80% lower mortality) to three years (57% lower mortality) compared to patients who did not have the vest. Other conditions such as heart failure, cardiomyopathy, patients on heart transplant waiting lists and other terminal diseases also demonstrated varying degrees of reduced mortality and may be prescribed the device.

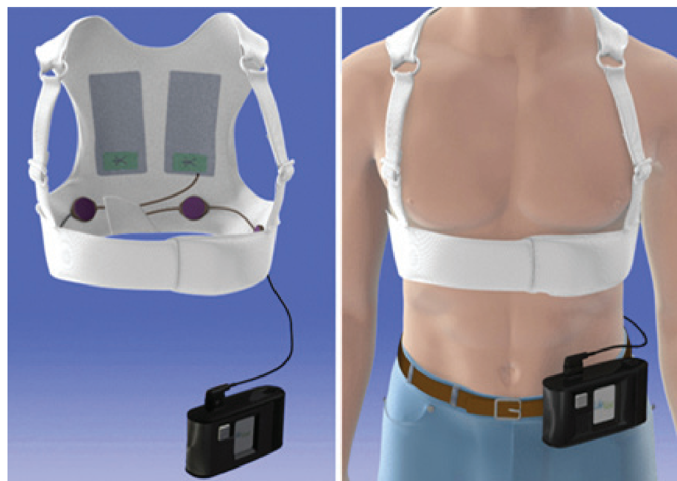
For patients who are candidates of AICD placement, the waiting period for AICD can range from 40 to 270 days, depending on the patient's condition. This waiting period was established by insurance providers because some patients with low cardiac outputs may improve over time. The LifeVest provides temporary protection to patients during the waiting period. With AICD placement costing around $158,000 compared to a rental cost of $2,300 per month for a Zoll LifeVest, the cost benefit speaks loudly to the bottom line of healthcare economics.

HOW IT WORKS

The LifeVest monitors the patient's cardiac rhythms and automatically then delivers a therapeutic shock when a life-threatening rhythm (defibrillation) is detected. It takes about 25 - 60 seconds from the onset of the cardiac arrest to deliver a shock and it is capable delivering repeated shocks as necessary. Similar to an Automated External Defibrillator, the Zoll LifeVest has audible alarms, warnings and voice commands to alert the patient and bystanders.

PATIENT USE

Zoll LifeVest is worn outside the body and consists of two components the garment (vest) and the monitor:



PREHOSPITAL CARE CONSIDERATIONS

- When caring for patients wearing the device, leave the vest on unless it prevents the delivery of care.
- It is okay to place a patient on a cardiac monitor who is wearing the device.
- The LifeVest monitor will announce "Respond" prior to delivery of a shock. You can press and hold the "Response" button located on the monitor to prevent the delivery of a shock.
- Emergency personnel can get shocked when touching the patient during the delivery of defibrillation. The monitor will alert "electrical shock possible", "do not touch patient" and "bystanders do not interfere" before a shock is delivered.
- To remove the life vest, first disconnect the monitor from the garment. This will deactivate the life vest and it is not necessary to remove the garment unless it interferes with delivery of prehospital care.
- When transporting patients to the hospital, bring the monitor, modem and extra battery to the hospital. This will allow hospital personnel to download any stored data.

The Zoll LifeVest wearable defibrillator is a proven life-saving device for patients who are at risk for SCA. Studies indicate it effectively lowers mortality and is cost effective. If you haven't already treated a patient in the field wearing one, chances are that you will soon.

and guidelines for discontinuation of resuscitative efforts and pronouncement of death by base hospital physicians. As per Reference 814, if the initial prehospital assessment reveals rigor mortis and/or post-mortem lividity, field personnel shall perform a thorough assessment to confirm the absence of respiratory, cardiac, and neurologic function in order to determine death in the field (assessment steps may be performed concurrently)

In the presence of 814 criteria, death is determined on scene and the infant is not transported. In the absence of 814 criteria, resuscitation is initiated and patient is transported only if Return of Spontaneous Circulation (ROSC) is achieved. If ROSC is not achieved, the base hospital physician is consulted for pronouncement of death.

If signs of life are not immediately observed, it is appropriate at that point to let the family know that the situation is grave. Doing so may help prepare the family for further bad news should the baby subsequently be determined to be dead.

SCENE MANAGEMENT

For years, suspected SIDS victims were often treated with a “load-and-go” philosophy, regardless of situation or viability. It was widely believed that the best thing to do was rapidly transport the infant “just in case,” and for the benefit of the family. However, time and experience have shown us that this is simply not the best option for a number of reasons.

First, transporting a body to the hospital Code 3, when signs of obvious death are present is a poor use of resources that creates a potential public danger, and that generates needless, substantial ambulance and hospital bills for the survivors. Parents of SUID babies have told us that whisking their child away in the ambulance gave them renewed hope and made them think that something could be done at the hospital, or the medics would not have taken such action.

Second, determining the cause of infant death is extremely difficult, and often the most important information can only be collected from the body at the scene of the death. This includes information like the exact position of the body at the time of discovery; the type of bedding present; items found near the body, and the presence, quality, and location of findings such as bodily fluids. Ideally, an infant who is obviously dead or pronounced should be left in place until the arrival of law enforcement. If the baby must be moved, its original position should be documented in precise detail, via narrative description, drawings, and/or photographs.

Unwarranted resuscitation attempts can destroy on-scene evidence, and unwarranted transport may allow family and well-wishers to ‘clean up’ the scene and unwittingly lose valuable information.

A good investigation can protect an innocent family from false accusation, or surviving siblings from harm if abuse is suspected. An intact scene allows for a good investigation. Most infant deaths are now attributable to unsafe sleep environments, and because more babies are being left at the scene, we have gained a better understanding of what goes wrong. As a result, a $1.5 million safe sleep campaign and public service announcements were launched in May 2013 to decrease the incidence of these tragedies.

Finally, when the baby stays in the home, the family is allowed to spend more time with their child in a quiet environment, once initial scene processing is complete. Both law enforcement and the Los Angeles County Coroner’s Office strive to do what they can to simplify the process for the family; parents may wait in the quiet of a neighbor’s home rather than in a busy ER waiting room, and the Coroner’s Office personnel will wait with them for clergy and/or the crisis team to arrive.

DOCUMENTATION

While law enforcement and the Coroner’s Office are responsible for the scene investigation itself, thorough, objective documentation can augment the process and strengthen cases that must go to court. While the scene of an infant death can be traumatic and chaotic, special attention to documentation of the following is critical:

- Description of any **bodily fluids** that were seen on or around the mouth, airway, or bedding (blood, mucus, foam, vomitus)
- Whether the **jaw was stiff, floppy or normal tone** if the mouth was opened for rescue breathing (the jaw is one of the first sites affected by rigor mortis – if present, this helps establish time of death)

In addition to the usual Who, What, When, Where and Why questions, observation and documentation of the following factors can be helpful:

- Type of **clothing** on the infant, how it was secured, and whether it was removed or disturbed in order to perform the initial assessment
- **Sleep conditions** like room temperature, sleep surface, bedding
- Presence of co-sleepers; age, size, compromised by fatigue, alcohol, or drugs
- History of **illness** in the infant
- Exposure to cigarette or other **smoke** in the home
- General appearance of the residence
- **Consistency** between witnesses’ accounts

SUID(continued on pg.4)

SUID(from pg.3)

DEATH NOTIFICATION AND SUPPORTING THE PARENT/CAREGIVER/FAMILY

At the scene of an infant death, we are responsible not only for the treatment of the child, but for the treatment of the family as well. Notification of death will be the first step in a long journey to recovery from their devastating and tragic loss, and our professionalism and compassion are our most important tools in these difficult situations.

Death notification training programs developed for law enforcement note that the term "breaking the news" implies one-sided communication, which may leave the notifier feeling awkward, anxious, and uncomfortable about communicating with the family. Thinking of the notification process as "initiating or engaging in a difficult conversation" may be one strategy to help the notifier.

Notifications should be done promptly, in person, in pairs, and in plain language with compassion. While you may not memorize the tips below, reading them and going through them mentally may help prepare you for that tragic call.

- If possible, prepare for the worst case scenario en route – pick a spokesperson
- During initial assessment, if applicable, let the family know that "this does not look good," which may allow some psychological preparation for what is expected to be tragic news
- If death is determined, verify the baby's name, and identify the parents or closest next of kin. Let them know you have bad news, and ask them to sit if practical, and gather others in the house if they wish. These steps may provide further psychological preparation.
- Position yourself at the parent's side if possible/practical, and use the baby's name. Make eye contact and tell them that the baby has died in plain, simple language: "I'm sorry, but [use baby's name] has died." Do not use euphemisms such as 'passed on' or 'expired,' and do not use medical jargon
- Refer to the baby by name throughout the incident – do not use 'the deceased' or 'the body.'
- What survivors want most is a notifier who seems to care that their loved one has died.
- Be prepared for any variety of normal reactions, from none to extreme, and respect the individual and cultural differences.
- Be silent and listen. Resist temptation to 'fix' pain and grief, and do not use platitudes such as 'you will be OK' or 'it was God's plan' etc.
- Answer questions truthfully, even if answer is "I don't know." Explain your findings and why no treatment was possible (e.g., Ref 814 info). Do not speculate about cause of death, report only objective findings.
- Provide information about what will happen next, to the extent possible
- Explain importance of intact scene management
- Wait with family until law enforcement arrives
- Reach out physically if you are comfortable, and if the person does not pull away
- When leaving, offer condolences
- When the call is over, think about how you feel. Talk to your partner, and think of anything you would change for next time. If you or any member of your crew is having difficulty dealing with the situation, get help. Critical incident stress debriefing may be warranted.

If first responders are honest, direct, and caring, they may help to ease the pain of a family's grief process. Parents have said that although they may not remember exactly what was said by first responders, they do remember how they made them feel.

POSSIBLE CAUSES

Research suggests that SIDS occurs when an infant's body has difficulty regulating breathing, cardiovascular functions, and/or body temperature because of an underlying developmental delay or problem in parts of the brain controlling those activities

- Infants who died from SIDS **had abnormal brain pathways** in regions that control breathing, heart rate, temperature, and arousal.
- SIDS victims' **ability to use and recycle serotonin**, brain chemical which helps cells communicate with one another is reduced in these brain regions.
- Infants who died of SIDS **produce low levels of serotonin**, which plays a vital role in regulating breathing, heart rate, sleep, and arousal from sleep.

Scientists believe that while developmental defects or delays alone may not cause SIDS, death may occur when other events occur in the presence of these defects. For instance, while a normal infant who begins re-breathing air that is trapped in their bedding, or begins to overheat, may wake up and cry, an infant with a brain abnormality may not send or receive a protective wake up signal.

Additional risk factors include:

- Maternal age less than 20 years
- Maternal smoking, alcohol, drug use during pregnancy
- Caretaker smoking, alcohol drug use in the presence of the child
- Poor prenatal care
- Prematurity/low birth weight
- Prone position during sleep

SUID(continued on pg.5)

A seasonal component has also been noted in SIDS, as SIDS deaths tend occur more frequently during the winter months. This may be linked to using excess clothing and bedding in an attempt to keep infants warm, and to the increase in respiratory infections that occur during the winter.

PREVENTION

Certain risk factors associated with sudden infant death are beyond our control, but some are preventable. Knowledge about these preventable risk factors can be used to educate parents when responding to non-SUID calls involving infants, and family and friends to increase awareness and possibly prevent tragedy. The National Institute of Child Health & Human Development (NICHD) has recommended that all health care professionals who come in contact with newborn infants educate caregivers about SIDS prevention, and specifically urge them to place infants to sleep on their backs. Some of the most important preventable risk factors are: sleep position, overheating, bedding, and co-sleeping.

Sleep Position

Placing infants on their backs for sleep remains the single most effective means we know to reduce the risk of sudden infant death syndrome. Babies should not be placed on their stomach or side to sleep, and EVERY time matters – infants who usually sleep on their backs but who are then placed on their stomachs, like for a nap, are at very high risk for SIDS. So it is important for babies to sleep on their backs every time, for naps and at night.

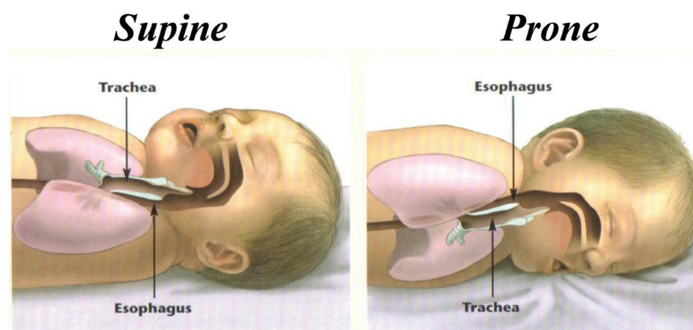
While the initial recommendation was that infants be placed on their backs or sides to sleep, recent studies have shown that infants placed on their sides were more likely to roll on to their stomachs, so the current recommendation is for caregivers to place infants to sleep exclusively on their backs. Some health professionals may not be aware of the change. Stomach sleep position increased SIDS risk regardless of race/ethnicity.

Barriers identified to caregivers placing infants to sleep on their backs include lack of physician recommendation to place infants on their backs for sleep, fear that the infant might choke while sleeping on their back, and concerns for an infant's comfort while sleeping on the back.

Re-creation of an actual Coroner's investigation showing baby placed on side (top left) then found on stomach (bottom right).

Choking: As you can see in the illustration below, if a baby lying prone (on its stomach) were to vomit in their sleep, any gastric contents remaining in the oropharanx would be at high risk for entering the trachea, and occluding the airway or entering the lungs. Additionally, the baby's mouth and nose may become occluded by expelled gastric contents. There is also speculation that bunched up bedding may trap CO2, which is one theory for why some infants simply stop breathing. When the baby is on its back, unexpelled gastric contents are more likely to return safely to the esophagus due to gravity.

Supine ***Prone***



Comfort / Depth of sleep: Some caregivers do not to place infants on their backs for sleep because of concern that the infants might sleep less soundly. Dr. Marian Willinger of the NICHD explained that this is desirable, and that if infants are consistently placed on their backs for sleep, they become accustomed to sleeping in that position.

Studies have suggested that sucking pacifiers might help keep vulnerable infants from slumbering too deeply to rouse themselves. Providing a clean, dry pacifier when placing an infant down to sleep is now recommended, but the baby should not be forced to take it. However, breast-fed infants should not be offered a pacifier until they are one month old and breast-feeding is well established.

Overheating

Avoid letting baby overheat during sleep – Dress infant in light sleep clothing and keep the room at a temperature that is comfortable for an adult.

Co-sleeping

Baby is safest in a crib or bassinet by themselves rather than co-sleeping with other adults or children

CONCLUSION

In Los Angeles County, EMS personnel respond to an average of 1.5 infant cardiac arrest calls per week. Responding to a call involving an infant in full arrest is oftentimes difficult and tragic. These incidents require prehospital care professionals to perform thorough patient assessment to provide the appropriate level of care. Proper scene management and detailed documentation will assist law enforcement investigation process to determine whether abuse was a factor in the case. Firsthand access to the patient and the scene of the incident allows the prehospital care provider to play a key role in recognition, treatment and even prevention of SUIDS and near-SUIDS.

For more information about SUIDS prevention, please visit http://www.safesleepforbaby.com/get-educated.shtml

2012 California EMS Awards

The California Emergency Medical Services Awards were created to honor exceptional acts and services by EMS certified or licensed personnel, administrators, trainers, or volunteers. The 2012 California EMS Awards were presented on December 5, 2012 in San Francisco and Los Angeles County Honorees include:

Nancy Alvarez - Los Angeles County Fire District

Community Service Award for exceptional EMS education efforts in training of Paramedics, EMTs and civilians in Los Angeles County.

Senior Nurse Instructor Alvarez's EMS outreach and educational efforts in the Los Angeles region are second to none. Alvarez trains paramedics and EMTs for the Fire District in two battalions comprised of 13 stations and 225 uniformed personnel plus dozens of civilians.

Dr. Marianne Gausche-Hill – Harbor/UCLA Medical Center

Distinguished Service Award for superior sustained statewide leadership, research and education in improving EMS for Children.

Dr. Gausche-Hill is the Director of Emergency Medical Services and Director of the EMS and Pediatric Emergency Medicine Fellowhips at Harbor/UCLA Medical Center in Torrance, California. She is nationally known for her research in airway management for children and for her leadership in the field of pediatric emergency medicine. Dr. Gausche-Hill has devoted hundreds of hours to the Emergency Medical Services Authority EMS for Children program and is an essential partner in that effort.

Dr. Baxter Larmon – Ronald Reagan UCLA Medical Center

Distinguished Service Award for superior sustained statewide contributions and dedicated leadership in initiating prehospital medical care in California and nationwide.

Dr. Larmon is the Director and co-founder of the Prehospital Care Research Forum at UCLA and UCLA Center for Prehospital Care, which was the first program to receive national accreditation. He also serves on the National Emergency Medical Services Advisory Council providing valuable guidance to the National Highway Traffic Safety Administration.

EMS Agency Nurse of the Year (from pg.1)

we asked of her was done quickly and thoroughly. Not only could she do it well, she took on everything with unflagging energy and enthusiasm.

Because Christine's work profoundly impacts the medical care of Los Angeles County residents who call 9-1-1, because she consistently exceeds work-related expectations, and because she demonstrates good cheer no matter how difficult the assignment, the EMS Agency is proud to select Christine Clare as Outstanding Nurse of the Year.

EMT Scope of Practice Deadline

December 31, 2013 is the deadline for all EMT's to obtain Los Angeles County 2011 EMT Scope of Practice training. Effective January 1, 2014 EMT certification cannot be renewed without having submitted proof of training.

http://ems.dhs.lacounty.gov/Certification/EMTScope.pdf

EMS Week 2013

By Christine Bender

The theme for EMS Week 2013 was "One Mission, One Team." In honor of EMS Week, the EMS Agency recognized nine EMS professionals for their length of service in Los Angeles County's EMS system at the Emergency Medical Services Commission meeting on May 15, 2013. Agency records identified the three Paramedics and three MICN's as active in the system for 40 years and the three EMT's who have been active in the system for 30 years. A belated "Happy EMS Week" to all the dedicated EMS professionals serving the residents of Los Angeles County!

Russell Chidley P 904
Issued: December 22, 1974

Russ was a medic in Vietnam. After returning, he worked for McCormick Ambulance and attended the first paramedic class taught at Queen of Angels Hospital in 1974. He later worked at Long Beach FD for 27 years and is now with Westmed McCormick as a paramedic doing IFT's.

Richard Houle P 362
Issued: December 21, 1973

Richard worked for McCormick Ambulance and later Los Angeles Fire Department as a "single function" paramedic. He retired in May after 43 years of service.

Gerald Parker P 516
Issued: September 1, 1974

On May 1st, "Jerry" achieved 41 years of service with Santa Monica FD. He completed paramedic training at LAC + USC Medical Center in 1974.

Barbara Garrison MICN 61
Issued: September 1, 1973

Barbara is a "County Grad" who worked at San Dimas Community. At that time RN's rotated thru ER, ICU and Recovery Room. She chose ER and in 1973 passed the County MICN exam. Barbara works in the ER as an MICN at Methodist Hospital of Southern California.

Jean Orellana MICN 105
Issued: March 1, 1973

Jean was working in the ER at Huntington Memorial when the ER nurses began to answer calls from paramedics in the field. It was a "new" thing, so she was told to take a test and has been an MICN ever since. Both of her daughters are also RN's. Jean works as an MICN in the ER at Methodist Hospital of Southern California.

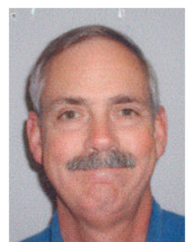
Mary Upham MICN 132
Issued: December 1, 1973

Mary was working in the ICU at Arcadia Methodist Hospital when she was asked to answer the radio when the ER nurse was on a break because she could read EKG's. There was no formal training on how to be an MICN, it was all "on-the-job". Mary works in the ER as an MICN at Methodist Hospital of Southern California.

David Roberts EMT 465

Issued: June 9, 1983

Dave began working as an EMT at Whitlock's Ambulance and in 1984 joined the newly opened Centinela Hospital Airport Medical Clinic. He and his partner were the first EMS personnel on scene at the July 4, 2002 terrorist shooting at the El Al Airline desk at LAX. He worked at LAX for 26 years and recently retired from Centinela Hospital as an ER technician.



Gerald Parker P 516

Issued: May 27, 1983

After receiving EMT training at Pasadena City College, Patrick worked part-time for Med-Evac Ambulance. He maintains EMT certification for his volunteer work with the American Red Cross and National Ski Patrol. An ARC volunteer for over 25 years in disaster operations and communications, he works with 200 volunteer First Responders at the Rose Parade. Reg Green, CEO, ARC - San Gabriel Pomona Valley, describes him as "statesman" and "mentor to young volunteers".

Oscar Romero EMT 259
Issued: May 9, 1983

Oscar has worked his entire career for Schaefer Ambulance Service. He is assigned to the Van Nuys station.

For Your Information

Los Angeles County EMS Agency Pre-hospital Patient Care Operational Analysis Report

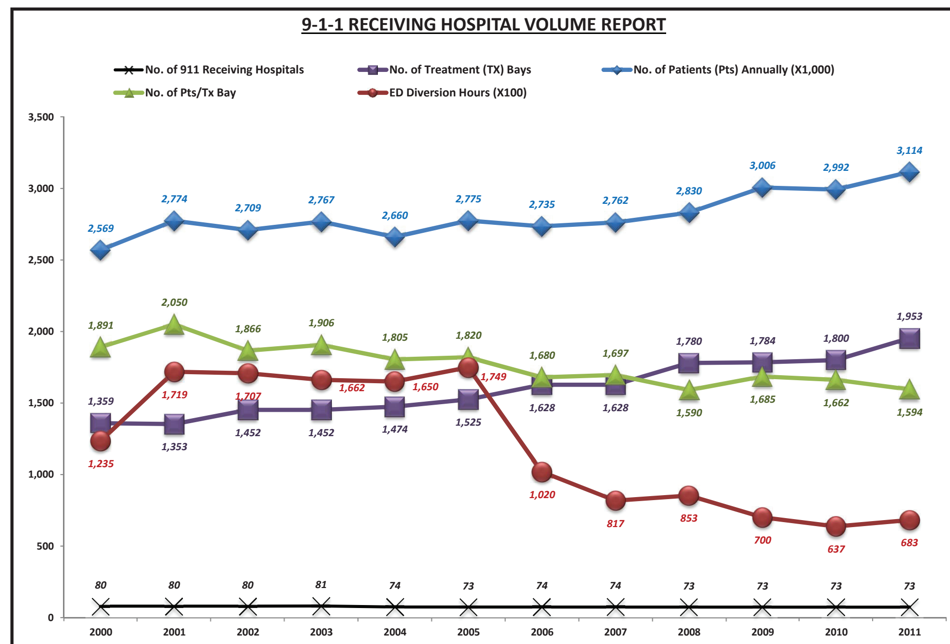
In 2011, Cathy Chidester, Director of the EMS Agency, hired recently retired Fire Chief P. Michael Freeman of the Los Angeles County Fire Department to conduct an operational analysis of the EMS System. Ms. Chidester commissioned the report to document the evolution of pre-hospital patient care, the role of 9-1-1 EMS providers, and the Agency's responsibilities for oversight of the Los Angeles County EMS System. The report identifies six main challenges and key recommendations. These challenges are: 1) Strategic Leadership on EMS Issues; 2) Interagency Trust; 3) System-wide EMS Electronic Data; 4) Affordable Care Act Uncertainties; 5) Pre-hospital Patient Care Medical Studies and 6) A Culture of Collaboration. The report was provided to the LA County Area Fire Chiefs Association and EMS Commission. The full report is available at the EMS Agency's website http://ems.dhs.lacounty.gov/PrehospitalCare/PHPC_OperAnalReport.pdf

Sidewalk CPR 2013

This year's statewide Sidewalk CPR Day was held on June 4th. This now annual event, coordinated in Los Angeles County by the EMS Agency, in collaboration with the American Heart Association, proved to be an even greater success than last year's event! In Los Angeles County, forty-five ambulance companies, fire departments, hospitals and schools participated, training over **7,000** Los Angeles County residents in "Hands-Only CPR" at over 90 venues.

Thanks to everyone who participated in making our community a safer place for those who experience Sudden Cardiac Arrest by training potential bystanders in a simple life-saving procedure. For more information on cardiopulmonary resuscitation visit the American Heart Association's website at heart.org

During the past decade, the number of 9-1-1 receiving facilities decreased by 9% while the number of ED visits increased by 20%. Hospitals handled this significant increase in ED visits by increasing the number of ED treatment bays by 30%, resulting in the number of patients treated per ED treatment bay to decrease by 20% and a 60% decrease in ED diversion hours.



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.

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