



EMS NEWS

A DIVISION OF THE PUBLIC HEALTH DEPARTMENT



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ALCO EMS CELEBRATES 20 YEARS OF PARAMEDIC SERVICE 1986-2006

A lot has changed in the last 20 years in EMS in Alameda County. Gone are the days of local ambulance companies run by an individual (the proverbial "Mom and Pop") with multiple companies competing to provide services. Fire departments provided, at most, EMT level service and many times didn't hang around once the medics arrived on scene. These were the times when paramedics had to call everything into the base hospital to get permission from the MICN to treat the patient.

Today ambulance companies are multi-million dollar corporations, fire departments provide first response for paramedic service and most patient care is by standing orders.

EMS At The Beginning: 1973-1986

The history of a coordinated EMS system in Alameda County began in 1973. Ben Mathews was appointed to the new position of Coordinator of EMS and Disaster Planning in the county's fledgling Health Care Services Agency.

National attention begun to focus on developing EMS systems by physicians and surgeons, based on the successful trauma care delivered in Vietnam and Korea; cardiologists wanted to test the new miniaturized portable electrocardiographs and two-way radios that were now available; and the public,

inspired by the TV show *Emergency*, wanted paramedics. "That TV show actually had a very significant affect on EMS development," Ben recalls. "The first paramedic programs were started in 1969 in Los Angeles and Florida under special legislation, but after *Emergency* became popular, everyone in the country wanted paramedics."



Oakland Fire (circa 1970) responding to a vehicle accident. Picture courtesy of the ACCMA.

Planning and implementation grants to establish EMS systems around the country had just been made available through the Department of Health Education and Welfare. Alameda County submitted a request for a grant for \$660,500 and was one of three counties in the Bay Area that received funding - the task: develop a countywide

EMS system."

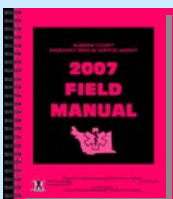
The county had no role in overseeing EMS at that time, and the system was very fragmented. The cities of Berkeley, Albany and San Leandro had ambulance vehicles in their police departments. These ambulances were driven by the station officer on duty that day. Oakland had contracts with six different competing ambulance companies, and three or four competing companies provided service in the South County. Each city oversaw the ambulance companies for the safety of their vehicles, but no agency was responsible for overseeing the quality of medical care delivered.

There were no paramedics or EMTs, and the law only required that one person on the ambulance have a first aid certificate. Most ambulance companies were small operations, and crews stayed in apartments or took the vehicles home for the night. The public had to dial a 7-digit phone number for an ambulance. If there was no ambulance available, they were told to hang up and call another company. When hospitals needed an ambulance, they would rotate among the companies.

Many hospitals did not have a department dedicated to emergency care. The Emergency Room (ER) was originally set up for physicians to meet their own patients or to handle any emergency that might arise. Some ER's were staffed by

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2007 Field Manual Clarifications/Corrections:



Two policies in the 2007 field manual have been identified as inaccurate and need to be revised.

The first is the **adult V-Fib/V-Tach** policy on page 45. A replacement page has been sent to your provider agency that clarifies the defibrillation instructions.

The second, **Receiving Hospitals**, is on the back inside cover. The check mark by San Leandro Hospital indicating they have labor and delivery is incorrect. The check mark should be up one line by Kaiser Oakland. Get out your Sharpie marker to make this change.

We apologize for any inconvenience. Both revised policies can also be found on the EMS Website: acgov.org/ems

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CHILDHOOD OBESITY AND CAR SEAT SAFETY

By Barbara Cheatham, MA
Injury Prevention Program

More than a quarter of a million of US children ages 1 - 6 are overweight and too heavy for standard child restraint systems (car seats). These children tend to be heavier than the weight limits set for standard car seats.

A study conducted by the Center for Injury Research and Policy (CIRP) looked at children who were obese. The study found that car-seat technicians had a difficult time finding car seats to fit these children. It is problematic not only for parents but also for technicians who assist parents in determining a correct fit and installation. An incorrectly sized car seat puts children at risk for injury or death. The heavier the child, the more likely that he or she may not be properly restrained.

Motor vehicle crashes are the leading cause of death among children up to age 14. According to a National Highway Transportation Safety Administration study, a percentage of *these* children killed in crashes were not restrained at all. The first responders arriving on a vehicle crash scene view the crash aftermath but may not be able to immediately determine the reason for the child's injury or death. What they do, however, is surmise whether or not the child was properly secured in a car seat. Current crash scene data does not specifically indicate whether any children were riding unrestrained as a result of being overweight and not in an appropriate child restraint system.

Current California Child Passenger Safety law states that children must be properly restrained in the rear seat unless the child is six years or older, or weighs 60 pounds or more. Infants must remain rear facing until age one and 20-22 pounds. Infants and children must remain in their respective child restraint systems until he/she exceeds the recommended height and weight limits. The CIRP study emphasized that the phenomenon of inappropriate car seats mostly affects youngsters whose weight exceeds the limits of

standard seats with an internal safety harnesses. These internal harness systems are designed to accommodate 1 - 3 year olds weighing up to 40 pounds. Heavier young children are not mature enough for the safety seats that do not have internal harness systems, which are basically recommended for ages four and up. Another important point to know is that when a child outgrows his or her car seat, the child should no longer use it.

The medical system continues to explore the overwhelming implications between obesity and a child's health and well-being. Of late, injury prevention and safety programs are addressing car seat safety and safe transportation of heavier children all the while seeking solutions to the problem. As one would expect, car seat manufacturers such as Britex are beginning to make and test their child restraint systems to better accommodate a heavier child. Below are just a few points to address when selecting car seat systems:



Car seats are available that can accommodate a child up to 105 pounds.

Below are just a few points to address when selecting car seat systems:

- ✓ If you have a heavier child, pay very close attention to weight and height limits of the car seat.
- ✓ Some car seat companies have forward-facing *only* car seats that can be used with the internal harness up to 65 pounds.
- ✓ A front-facing combination seat with a five-point harness might be appropriate for a child under age four who still needs an internal harness. Parents should review the weight limit for use of the harness if the child is over 40 lbs.

Infant and childhood obesity is not only a medical concern. It vehemently asserts itself as an injury prevention, safety and public health issue. Children who are overweight are at greater risk for injury and death when not restrained in appropriate car seats. *If their car seats don't fit, they just won't sit.* For more information about car seat safety, contact Barbara Cheatham at barbara.cheatham@acgov.org or 510-618-2048.

Walk To School Day Held October 4th

Alameda County Safe Kids Coalition hosted Walk to School Day at Hoover Elementary School in West Oakland. Walk to School day is an international school-based pedestrian safety program sponsored by Safe Kids Worldwide and FedEx Express.

The local effort was organized by Barbara Cheatham, Safe Kids Coordinator/EMS-Injury Prevention, Phyllis Hall, Hoover Family Services Coordinator, Cher Woodward, Regional FedEx Manager, Terry Price, Emeryville FedEx hub, and resource materials provided by Oakland Pedestrian Safety Project-City of Oakland. The students, teachers, and parents enjoyed an fun-filled, information-filled morning. The bay area's own Mr. Patches led the kids and volunteers as they marched around the school holding safety signs and banners. Feedback from the principal Barbara Mims and students included the following "great event... it was fun and educational", "loved Mr. Patches."



For information about Safe Kids Alameda County or Walk to School pedestrian projects, contact Barbara Cheatham at bcheatham@acgov.org or 510-618-2048.



FROM THE MEDICAL DIRECTOR

WHY IS DR. POINTER DOING THAT?

I have been asked to elaborate upon several changes in our protocols that go into effect on December 1, 2006. In this issue, I will focus on the changes in the **Pulmonary Edema/CHF Policy (#7212)**.

As recently as five years ago, the first line treatment for pulmonary edema included furosemide (Lasix), morphine, and nitroglycerin. Recently the use of these drugs and their relevant importance has dramatically changed. Let's take a look at each and their effects on the cardiovascular system.

Morphine: We were taught that morphine causes venodilation with a subsequent reduction in preload. Recent studies have demonstrated that the venodilation probably results from the drug's histamine effect. Of course, this is a side effect and one that is of minimal importance. Morphine's other side effects, nausea, vomiting, and urticaria, all increase catecholamine release, a negative factor in a pulmonary edema patient. At common doses, the drug causes respiratory depression and myocardial depression. Recent studies show that it increases rates of intubation, admission to the ICU, and development of shock and mortality.

Bottom line: morphine should probably not be used at all in the treatment of acute pulmonary edema.

Furosemide: Again our teaching in the past emphasized preload reduction through diuresis and vasodilation. Diuresis can occur only if patients are fully hydrated and exhibit normal renal blood flow. In most patients with pulmonary edema this is not the case. The studies that demonstrate furosemide's vasodilatory effect come from papers measuring the drug's effect on forearm and wrist veins, not central veins. The drug produces initial harmful hemodynamic effects including an increase in afterload and reductions in stroke volume and cardiac output. Its positive effects occur after diuresis, 60-90 minutes after administration.

Bottom line: furosemide is, at best, a third line treatment for acute pulmonary edema.

Nitroglycerine: This drug is by far the drug of choice for preload reduction in acute pulmonary edema. It is superior to morphine and furosemide in double blind, controlled studies. It can be given aggressively, although, of course, it should be avoided in patients with hypotension, tachycardia, mitral regurgitation, and in patients on erectile dysfunction medications.

Bottom line: nitroglycerine is better and safer than morphine and furosemide. It should be used aggressively as a first line therapy for acute pulmonary edema.

CPAP: The use of continuous positive airway pressure (CPAP) prevents collapse of stents and opens fluid filled alveoli. Our own data shows that, the work of breathing, need for intubation, hospital stay, and physiological parameters all improve with CPAP.



Bottom line: CPAP is an important component in the treatment of acute pulmonary edema. It is the only available treatment that has been demonstrated to improve mortality in this condition.

I hope this has provided a bit more understanding to the reasoning behind the changes in this year's pulmonary edema policy. Morphine is only administered with base hospital approval, and furosemide is administered only to a patient who is both currently taking furosemide and is showing obvious signs of acute pulmonary edema. As always you can contact me with any comments or suggestions at (510) 618-2022 or james.pointer@acgov.org.

If you would like to add information to Part 2 of the History of Alameda County EMS, contact Kris Helander-Daugherty at kris.helander@acgov.org or (510) 618-2032.

20 Years (Continued from page 1)

local physicians working a second job. There was no requirement that these physicians have any special training in emergency care. Some ER's were not staffed round the clock, and staffing patterns varied widely. As late as 1973 ambulance drivers still had to knock on doors at some hospitals to have someone come and open the ER.

In 1975 the State of California passed regulations requiring that one person on an ambulance received EMT training. This made it impractical for cities who operated ambulances out of their police departments to continue the service, and the responsibility shifted to those city's fire departments. The fire departments had not had a role in EMS prior to this time.

In 1978 the 9-1-1 system was implemented. The county had received a grant that allowed each local jurisdiction to receive its own emergency calls. Sixteen 9-1-1 Public Safety Answering Points were established.

Paramedic Service Begins

The county's original timetable called for an upgrade from EMT-I to paramedic in 1978. However, Proposition 13 passed that year, and the funding to implement the program was no longer available. Supervisor Fred Cooper put forth the idea to form a special assessment district to pay for the upgrade and training.

Paramedic level service was started in 1982 as a small pilot program. Later that year, the county went to the voters to ask if they would be willing to support a property tax assessment of not more than \$10 to establish paramedic service countywide. The measure was passed by more than 80% of the voters.

In 1984 the Alameda County EMS District was created to oversee and coordinate the EMS system. By 1986 paramedic level service was available countywide, and four Base Hospitals were designated to provide online medical control of paramedics in the field. The first base hospitals were Eden, Highland, Kaiser-Hayward and Providence.

To be continued... In the next edition of the EMS News, 1986-2006.

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What's New on the Web



- New look for the EMS website.
- On-going information on the EMS system assessment process



The ReddiNet System is a flexible emergency medical communications network linking local hospitals, paramedics, dispatch centers, law enforcement, public health officials and regional EMS Directors. The ReddiNet system has been available for use in Alameda County since 1999.

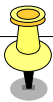
ReddiNet provides tools for managing MCI's, communicating hospital diversion status, providing census data and sending secure messages to multiple network facilities. It also provides an optimal channel for EMS, public health, law enforcement and homeland security agencies to communicate time-sensitive information to front line health care professionals.

Currently in Alameda County the ReddiNet system is installed in twelve hospitals; however, is not being used to its full capacity. EMS staff coordinated a policy workgroup to look at challenges and barriers to current use, and to make recommendations for increased utilization. The receiving hospital staff, who participated in the workgroup, should be congratulated on developing a user friendly policy for software application and daily operations. The anticipated roll-out date for the new policy will be in the new year.

New policy highlights:

- ✓ ReddiNet should be used daily, including updating census information
- ✓ Alert status updates are needed for diversion requests
- ✓ BLS, ALS run information is to be updated by AMR dispatch
- ✓ Facilities will be responsible for maintaining a trained workforce
- ✓ Personnel will participate in training and exercising where appropriate

For additional information, provide comments, or to receive a copy of the proposed draft policy, please contact Marla Blagg at marla.blagg@acgov.org or 510-667-7984.



NEWS & ANNOUNCEMENTS . . .

2007 Field Manuals are available from your provider agency, or at the EMS office for \$8.00. Please note that a replacement page for the Adult V-fib/Vtach algorithm is also available on the EMS website.

NREMT Exam Goes Computer-Based
Starting January 1, 2007, the new computer-based NREMT exam replaces the old pencil and paper written exam. The computer-based exam will be required for new EMT students and EMTs who allow their EMT certificates to lapse beyond one year. The exam is provided at selected Pearson-Vue testing centers across the state. More information can be found at www.nremt.org or by contacting John Vohnhof at 510-618-2038 or john.vohnhof@acgov.org.

CE available December 18th Dr. Jim Pointer, EMS Medical Director will

conduct a three hour **Hot Topic on 12 Lead EKGs**. AMR hosts their popular *Hot Topics in EMS* every third Monday of the month from 9:00 am to 12:00 pm. These free classes are held at the Alameda County Operations Center at 640 143rd Avenue in San Leandro. Three hours of CE are available, and food and drinks are provided at each event.

An RFP for an EMS Consultant to evaluate the Alameda County EMS system has been released. For more information on the upcoming assessment or to download the RFP, go to the EMS website.

EMS website:
www.acgov.org/ems

**Safe Kids -
Special Needs
Starter Kit**

Alameda County EMS, Safe Kids, Children's Hospital of Oakland and Kohl's Corporation hosted a reception on October 5th to formally introduce the **Safe Kids Special Needs Starter Kit**.



A comprehensive resource document created to become an interactive tool for parents and agency professionals. More information on the *Special Needs Starter Kit* will be covered in the February 2007 edition of the EMS News.

For question on this program contact Barbara Cheatham at 510-618-2048 or barbara.cheatham@acgov.org, or Bonnie Lovette, CHRCO, at 510-428-3045.