Alameda County Emergency Medical Services Agency Newsletter

EMS NEWS

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Helicopter Use in EMS

Each year about one percent of Alameda County EMS patients benefit from a specialized part of the trauma system–helicopter transport. Helicopters transport trauma patients from outlying areas of the county when ground transportation would take too long and when patients need advanced airway procedures that exceed the ground medic's scope of practice. Helicopter service is provided by three primary organizations (CALSTAR, Life Flight and REACH), and by two supplemental ones. East Bay Regional Park District (EBRPD) and the California Highway Patrol (CHP) are dispatched for select calls or when a primary provider is unavailable.

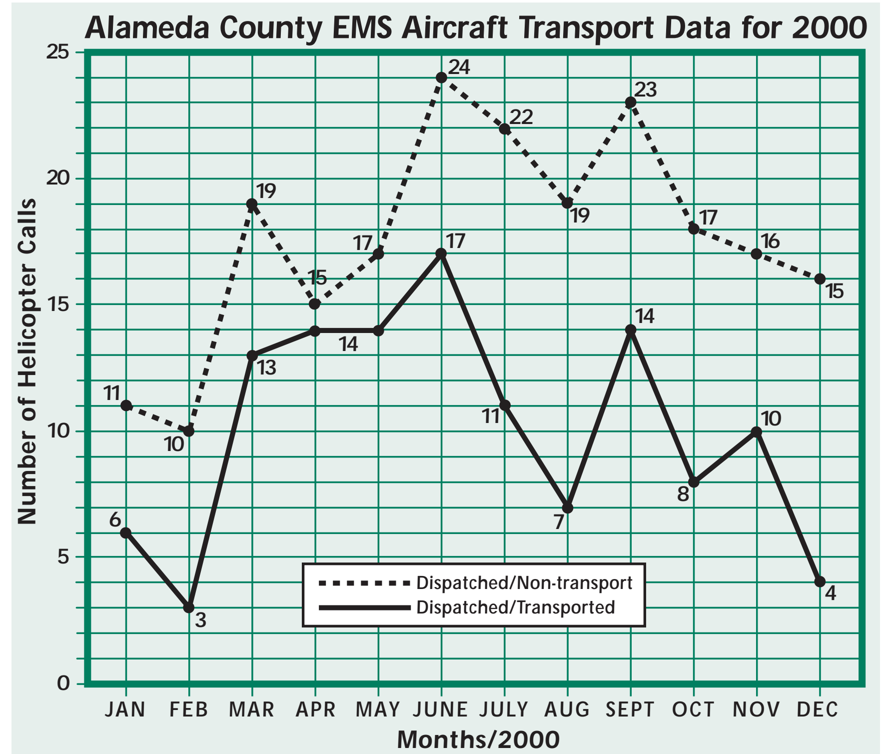
Staffing on the helicopters ranges from two flight nurses (CALSTAR and Life Flight), to one nurse and one paramedic (REACH), to one paramedic and one EMT (CHP). East Bay Regional Parks recently gained approval to upgrade service to Advanced Life Support (ALS), and as of June 1, 2001, will fly with one volunteer paramedic.

Upgrading their service to ALS will enable EBRPD to provide better care to more than 12.5 million annual visitors to the park's 1,745 square miles. "We are thrilled that our helicopter flight medic volunteers will now be able to utilize their ALS skills," says pilot Andy White, Program Coordinator. "With more than 80 percent of helicopter transports needing ALS, this enhancement was important for good patient care." The EBRPD helicopters are first-in only on calls that occur within the park's boundaries. They are also used as backup transport and for multi-casualty events. "We see ourselves as augmenting the services offered by REACH, CALSTAR and Life Flight on calls outside the park boundaries," Andy says. "We are grateful to the Park District's administration and staff for their commitment to EMS," says Pat Bennett, Alameda County EMS Trauma Coordinator. "The EBRPD volunteer paramedics will care for patients in our county that are the most difficult to reach and furthest from a trauma center."

The following call illustrates how helicopters are used. Last summer, an 18-month old girl was found face down in her backyard swimming pool, and the parents called 9-1-1. Firefighters from the Livermore/Pleasanton Fire Department (LPFD Engine Company 1247 and Truck 1270) and ambulance 595 from American Medical Response (AMR) responded. Medics found the child wet and cyanotic. She was apneic and pulseless, with water noted in her oropharynx. Paramedic Mark Caplin from AMR recalls the incident, "We suctioned the water out of her mouth and began ventilating her with 100% oxygen and performing chest compressions. The fire captain and I discussed using a helicopter to transport her to Children's Hospital and agreed that if we could revive her, she'd need care at Children's. As we performed CPR and intubated her, LPFD Truck 1270 set up a helicopter landing zone at a school down the street."

When the CALSTAR helicopter arrived, medics were waiting with the child in the ambulance at the school. The child was soaking wet and the ET tube had slipped out. CALSTAR flight nurse Scott Wallace continues, "On the flight to the hospital, the flight nurse elected to do rapid sequence induction (RSI) due to the child's clenched jaw and inability to control her own airway." The medications given for RSI sedate, temporarily paralyze the patient and relax all their muscles, including the jaw, thus allowing the re-intubation. The child temporarily regained a pulse and then became asystolic again. Fourteen minutes after lift-off CALSTAR 1 landed at Children's Hospital, and the patient was transferred to the Emergency Department (ED), where for the third time, she regained a pulse. After outstanding work in the ED and a one week hospital stay, the toddler was discharged and returned home, healthy. CALSTAR, AMR and LPFD personnel who were on the scene all cite the outstanding teamwork that contributed to the child's recovery.

Another example exemplifying how ground and air personnel work together occurred in Fremont where a 23-year old male riding a BMX bicycle without a helmet was hit by a car. When he regained consciousness, the young man was combative and confused. Medics got him on a back board, established an intravenous line and restrained him. Life Flight crew members who were called to the scene performed RSI to control his airway on the way to Eden Medical Center. "Controlling an airway is crucial in a head-injured patient. Not only does it protect a patient from the risk of aspiration," explains Life Flight Program Director Judi Wilson, "but controlled ventilation helps diminish swelling of brain tissue. This in turn blunts an increase in intracranial pressure."



One MCI that utilized several helicopters occurred on April 25, 2001, when a pickup truck carrying four passengers on the Altamont Pass rolled over. "The vehicle was crushed to about 24 inches tall, and all the passengers had major injuries," said CHP Flight Officer Paramedic Ron Lum. "It took firefighters an hour to extricate the patient we were transporting. REACH, CALSTAR and East Bay Regional Parks were also dispatched. The patients were flown to trauma centers in Alameda County and Contra Costa County." This incident illustrates the value of having multiple air transport providers available to people who live in, work in or travel through Alameda County.

Responding agencies take into account the patient's acuity, ground transport time to definitive care, and available resources when requesting a helicopter. "Some medics are overly cautious about requesting a helicopter," says AMR paramedic Mark Caplin who has also flown as an EBRPD helicopter medic for more than 10 years and is the program's chief flight medic.

(cont. on pg. 3)

WHAT'S INSIDE ▶

Medical Director's Column

ALTE Article by Tom McGuire

EMS Week

Paramedic & EMT of the Year

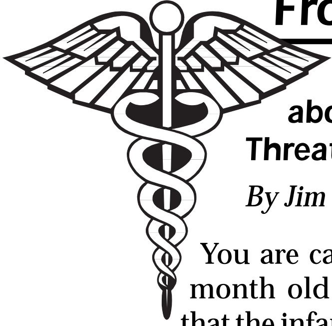
EMS Staff Changes

News & Announcements

Meeting Notes

2001 Policy Review Process

EMS Staff Directory



Do you know about Apparent Life Threatening Events (ALTE)?

By Jim Pointer, MD

You are called to the home of a 10-month old female. Parents tell you that the infant stopped breathing three times for two seconds each time. These "spells" were accompanied by limpness and choking. The parents are young and new, and they are very concerned. Your assessment reveals a very healthy appearing infant female. Vital signs, pulse oximetry, primary, and secondary exams are totally within normal limits. You elicit no past medical history and the birth was full term and normal. Because the baby looks so good, both you and the parents agree that transport is not necessary. After a compulsive explanation of the risk, parents sign a Refusal of Care form.

The baby in this case meets the definition for Apparent Life Threatening Event (ALTE). Tom McGuire's accompanying article describes an actual legal action involving a patient who is a little older than the typical ALTE patient (up to 12-months old), but nevertheless, the case is very instructive. ALTE is defined as "an episode that is frightening to the observer and is characterized by some combination of apnea (central or occasionally obstructive), color change (usually cyanotic or pallid, but occasionally erythematous or plethoric), marked change in muscle tone (usually marked limpness), and choking or gagging. In some cases the observers fears that the infant has died." ALTE is not well known to out-of-hospital providers and many hospital providers. Originally, ALTE was thought to be related to Sudden Infant Death Syndrome. More recently, a plethora of diagnoses have been associated with ALTE. These include infection, gastroesophageal reflux and other causes of laryngeal chemoreceptor stimulation, seizures and other neurologic disorders, child abuse and idiopathic causes. What is important about ALTE is that more than half of the patients who exhibit the symptom complex later exhibit significant pathology. In most centers, all children who meet the definition of ALTE are admitted for a 24-48 hour workup which can include apnea monitoring.

The EMS Agency is undertaking a study to look at the prevalence and outcome of ALTE in out-of-hospital medicine. Our goal is to make sure that all of you, our providers, are familiar with ALTE and make every possible effort to ensure that the ALTE patient is transported to a hospital.

Several guidelines may be helpful in assessing the potential ALTE patient. First, ask if the patient exhibited any of the symptoms of ALTE by using terms understandable to the caregivers. For example: *Did the baby stop breathing? Did she shake all over?* Second, ask very specific questions if you determine the patient meets the case definition of ALTE. For example, if an infant is described as "turning blue," you should ask, "how blue?" Compare that color to specific colors in the room, define exactly the distribution of the cyanosis, and ask whether the color of the lips and tongue was observed. Third, inquire about the infant's past history, any recent infections, and any other medical problems. Inform the caregivers that the majority of patients with ALTE may have a treatable medical condition. Last, perform a complete physical examination with emphasis on the neurologic component. Measure the vital signs and compare them with normal levels on the Broselow Tape. Assess level of consciousness using the Glascow Coma Scale or the Children's Modified Glascow Scale. Carefully observe the child's response to the environment with particular attention to the eyes. One trick to remember is that a child older than one month should be able to track a moving object held near his/her face.

In the ALTE patient, you should obtain base hospital consultation if the caregivers do not wish the child to be transported.

You may wish to read more about ALTE in "Apparent Life Threatening Events," John G. Brooks, MD, *Pediatrics in Review*, Vol. 17, No. 7, July 1996 or "Apparent Life Threatening Events: Recognition, Differentiation, and Management," Ronald M. Perkin, MD, James T. Swift, MD, Howard Barren, MD, and Ralph Downey, PhD, *Emergency Medicine Reports*, Vol. 3, No. 11, Nov. 1998. ALTE is not only an interesting entity but also one which you all should recognize. As usual, please contact me if you need further information.

Ball vs. Hamilton County EMS: No-Transport and Death of a Young Child

By Tom McGuire

Apparent life threatening events (ALTEs) set a trap for EMS providers because the infants may look quite well to EMS yet are at risk for further critical episodes or death. The following case concerns a patient with a specific respiratory diagnosis who is older than the typical ALTE patient, yet emphasizes the fragility of pediatric patients. This lawsuit was filed in Tennessee.

Facts: Sixteen-month old Miranda developed a deep, hacking cough. Ms. Ball, the mother, took Miranda to the emergency room where nasal congestion and an ear infection was diagnosed. The next morning Miranda had difficulty breathing, was choking, and her lips turned blue. The ED physician again treated the child, called a colleague at a nearby pediatric hospital, and instructed Ms. Ball to take Miranda there for a second opinion. The pediatric physician saw the child, diagnosed croup and treated her. She was alert, breathing normally, and had no stridor at rest. Ms. Ball testified that she was told the condition was not life-threatening and that, "Kids don't die from croup these days." That night, Miranda turned blue and stopped breathing briefly. Ms. Ball called 9-1-1. EMTs detected pulmonary congestion, but the child was not in respiratory distress. They suggested Ms. Ball see the pediatrician in the morning and call 9-1-1 if Miranda got worse. Miranda was playful and smiling when they left, and according to Ms. Ball, "flirting with the paramedics." Miranda stopped breathing four hours later. The same EMTs responded. Miranda suffered a cardiac arrest and died.

The court's findings: Ms. Ball contended EMS was negligent 1) in not transporting Miranda on their first visit, and 2) in failing to advise her of the risks. The court found no duty to transport in a "non-emergency" situation, nor a failure to advise Ms. Ball of a life-threatening condition given the child's presentation and prior diagnosis of croup. Sharply conflicting testimony was presented at trial about what information Ms. Ball received from EMS prior to signing a generic refusal of transport form. The prehospital report included no refusal narrative.

Message to prehospital providers: Despite this court's findings, EMTs must show a high level of concern on such calls. Don't minimize recent medical history or parental reports and maintain a high level of caution. Encourage transport for these children or seek base physician advice. Document transport refusals scrupulously.

Paramedics, EMTs and Dispatcher of the Year

The 2001 awards for AMR and Fire Department Paramedic and EMT of the Year go to four deserving professionals. This year's criteria stipulated that the actions of the paramedic or EMT needed to result in the resuscitation or unanticipated survival of a medical or trauma patient in year 2000.

The Paramedics of the Year were Fred Little, Alameda County Fire Department and Lee Siegal, American Medical Response. EMTs of the Year were: Tyre Mills III, Berkeley Fire Department, and Peter Sugiutan of American Medical Response. All four were cited for their exceptional patient care, service above the call of duty and dedication to the community.

A new category was added this year for Dispatcher of the Year. Ophelia Valesquez, who was a dispatcher for the Oakland Fire Department for nearly 22 years, was chosen to receive this year's award. Ophelia died in December and is being recognized posthumously. Her daughter, Shannon Lockhart, accepted the award in her honor.

The honorees were recognized at the Third Annual EMS Week Awards Presentation held on May 23rd at the Oakland City Center.

EMS Week

EMS Week was observed May 20-26. This year's theme was "Answering the Call." Every year in Alameda County, paramedics and first reponders answer more than 105,000 calls for emergency medical services.

Key Facts on the Alameda County EMS System for the Year 2000		
Accreditation/Certification		
87	Paramedics accredited	
304	EMTs certified	
378	EMTs recertified	
Trauma Center Transports		
533	Children's Hospital	
1452	Eden Medical Center	
1644	Highland Hospital	
Causes of Injury		
50%	Motor Vechicle Accidents	
23%	Assaults	
20%	Falls	
6%	Other Causes	
	9-1-1 Responses	**Transports**
Albany Fire	1044	606
Alameda City Fire	3730	3132
AMR	101,006	72,231
Berkeley Fire	7,650	5801
Piedmont Fire	958	840

Helicopter Transport *(cont. from pg. 1)*

"The agencies that provide air ambulance service in Alameda County have made the commitment to respond when they are called, even if they are canceled en route," says Pat Bennett, EMS Trauma Program Coordinator. The decision to send the patient by air versus ground is made by the transport paramedic in consult with the Incident Commander. To ensure judicious helicopter use and appropriate care, Pat monitors every call. This retrospective review includes the dispatch record, the paramedic's patient care record (PCR), the air ambulance PCR and finally the outcome data from each trauma center. A paramedic at the monthly Trauma Audit Committee meeting further reviews these records on the patients with a low injury score.

Roland Guy, a nurse who flies with REACH, outlines the criteria to use when determining the best site for a landing zone. He explains, "We use the acronym HOTSAW. That stands for:

- Hazards on the ground;
- Obstacles above the ground;
- Terrain (eg. asphalt, dirt);
- Slope;
- Animals in the area; and
- Weather (wind direction & speed, fog).

This is the primary information we are looking for." Pilots prefer a 75'x 75' site for daytime landings and 100'x100' at night. They also want large or easily identifiable landmarks such as a freeway intersection, road or street names or a Thomas Brothers map page to guide them. Finally, they need to know who they will be speaking with on the radio and on what frequency.

Echoing the sentiments of all the helicopter providers and the philosophy of the EMS Agency, Roland continues, "We like to be called out early. Precious minutes can be saved if a helicopter is called for as soon as they think it might be needed. We don't mind getting canceled. We'd rather get the patients we do transport to definitive care that much sooner."

If the patient's condition deteriorates before the helicopter arrives, the medic must decide whether to wait for the helicopter or immediately begin transporting. "When that occurs," Mark explains, "we go by a simple rule of thumb. If we can see the helicopter we wait. If the patient is going down and we cannot see the aircraft, we start transporting, even if a landing zone has already been set up."

Communication between the medics on the ground and helicopter personnel is essential. "We rely heavily on what the medics at the scene tell us," says Roland. "Because they've already spent time with the patient they've seen subtle things that we don't know about that can help us treat the patient more effectively." A fundamental component of an effective trauma system is the prehospital phase of the patient's care. The dispatchers, first responder medics, transport medics and flight crews work as an efficient team on a daily basis in Alameda County.

EMS Staff Changes

Kathryn Chester, RN, whom we introduced to readers in the last issue of the *EMS News*, retired in May from the county after more than 22 years. O.D. Ford, the EMS Agency receptionist, has decided to relocate to St. Louis, Missouri. We'll miss his friendly personality.

Marlene Rivers, RN, who was a fire liaison nurse for the EMS Agency from January 1996 to October 1998, is joining us again. She will now be responsible for the EMS for Children program as well as a new program, Non-Emergency Paramedic Interfacility Transports.

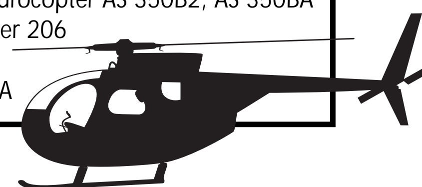
Jim Morrissey, EMT-P, is now the EMS dispatch liaison. Jim comes to us from Maine where he was a paramedic, climbing ranger and Wilderness Rescue educator. He currently is the medic for the San Francisco FBI SWAT Team and a medical specialist for the Oakland FEMA Team. He also works with the San Francisco Paramedic Association as an instructor for most of the classes they offer. He will work with the dispatch centers on implementing the MPDS EMD Program. He will also teach hands-on training in earthquake preparedness. Jim's emphasis will be on answering such questions as: ***What do I do when the big one strikes and I'm sitting at my desk? How do I protect myself, my coworkers and any disabled people who work near me?*** These classes will eventually be offered to all public health staff and community health teams.

Fred Claridge, EMT-P, joins us from the Mountain Valley EMS Agency. Fred worked for Allied Ambulance and American Medical Response in the late 1980s to the early 1990s, and then an EMS Agency in Idaho prior to Mountain Valley EMS. Fred will oversee EMT certifications, monitor some contracts, and coordinate a master CE calendar for the county. He will also assist EMS Acting Director Cindy Abbissinio with Medicare mitigation changes being required by the federal government.

Charlie Selhorst, RN, who was the base coordinator at Highland Hospital, is also working with the EMS Agency as a Consulting Project Manager for the EMS Data Collection Project. The goal of this project is to enable the EMS Agency to collect, validate, and analyze data from all of the various EMS providers. Charlie is working with Lancet to implement the new data management system.

"I'm very excited about the new staff we are bringing on," Cindy says. "These program managers will enable us to expand in some new areas and offer additional services to our constituents. I welcome each of them."

Alameda County EMS System Provider Helicopters	
CALSTAR	BO 105 CBS, BO 105 LS, BELL 222 UT
EBRPD	American Eurocopter AS 350B2, AS 350BA
CHP	Bell Jetranger 206
Life Flight	BK 117
REACH	Agusta 109A



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The EMS News is published bi-monthly to inform and educate its readers about the Alameda County EMS system and issues affecting prehospital medical care.

Your questions and comments are welcome and should be addressed to Kris Helander-Daugherty, 267-3227.

For change of address or number of copies, contact Sonya Lee, 267-3233.

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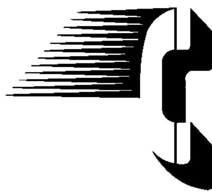
PLEASE NOTE: The EMS Agency Staff Directory will only be printed in the EMS News twice a year, in June and December. Staff contact information is accessible on the EMS Agency web site.



Alameda County EMS Staff Directory

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Sonya Lee, *(solee)* Support Services **267-3233**
Tom McGuire, EMT-P, *(tmcguire)* Quality Coordinator **267-3228**
Jim Morrissey, EMT-P, *(jimorri)* EMD, Earthquake Prep Training **267-3234**
Jim Pointer, MD, *(jpointer)* Medical Director **267-3242**
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An EMS staff person is on-call 24-hours a day for urgent matters.
Page through Lawrence Livermore Lab **925-422-7595**

EMS News and Announcements

Policy Review Process Date Change–Several dates in the 2001 Policy Review Process have been changed. Policies were sent out for public comments on May 4. Written comments are due back to the EMS Agency on Tuesday, July 3. Final drafts will be mailed out by August 3 for discussion at the August EMOC meeting.

Statewide Disaster Drill–The Third Annual Statewide Disaster Drill will be held on Thursday, November 15. This year's scenario is a weapons of mass destruction incident. Hospitals and health care providers throughout the state will be participating. In Alameda County, more than 300 organizations are expected to participate. Contact Cynthia Frankel if you are interested in being an evaluator/controller.

Mark Your Calendars–A conference for health care professionals on preparing to deal with a terrorist incident will be held on October 10 in San Ramon at the PG&E Conference Center. This conference is for all northern California health care managers with responsibility for disaster response. The conference will be a great preparation for the statewide drill. For information, contact Cynthia Frankel at 267-3224.

AMR Announces New Medical Director–Dr. Gary Tamkin has been named as AMR's new Bay Operations Medical Director. Dr. Tamkin is an attending physician in the Highland Hospital Emergency Department and the Base Hospital Medical Director at North Bay Medical Center in Fairfield. He is also an Assistant Clinical Professor of Medicine at the University of California, San Francisco.

Emergency EMT-I Regulation–The State EMS Authority has issued emergency EMT-I regulations which remove endotracheal intubation from the EMT-I optional scope of practice. As a result, Hayward Fire Department's EMTs are no longer authorized to perform intubation in Alameda County. Many thanks to Chief Larry Arfsten, Bob Negri, RN, and Hayward's EMTs for operating a successful program with a high success rate.

2001 POLICY REVIEW PROCESS DATES

DEADLINE FOR POLICY IDEAS	PUBLIC DRAFT OUT	PUBLIC COMMENTS DUE	PUBLIC HEARING AT EMOC	FINAL POLICIES SENT OUT	UPDATE TRAINING	POLICIES IMPLEMENTED
FEBRUARY 23	MAY 4	JULY 3	AUGUST 16	SEPTEMBER	SEPT. –NOV.	DECEMBER 1

Meeting Notes

EMOC–Thurs., August 16, 9:00-10:30am at the EMS District Office.

Research Committee–Thurs., Aug. 16, 11:00am-1:00pm at the EMS District Office. Lunch will be provided. Please RSVP to Tom McGuire at 267-3228 or *tmcguire@co.alameda.ca.us.*

Bay Area Paramedic Journal Club–Check the Alameda County EMS web site for dates and times of next meeting.