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Public Health
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Inside This Edition:

Health Clubs & AEDs	2
Safe House Update	3
2009 Draft Policies	3
RFP...where are we?	3
EMS Staff Directory	4
STEMI Success Story	4
News & Announcements	4

ASSESSING DIFFICULT AIRWAYS

By Joshua English, EMT-P
Alameda County EMS - PHCC

For a little more than a year now, we have collected system wide data on advanced airway management. The data collection tool was designed to glean information from our providers dealing with everything from tube and stylet shaping to the "grade" of the patient's airway according to the Cormack-Lehane scale.

While there are many exciting data that have been collected, the most telling items dealt with overall success as it relates to the Cormack-Lehane grade. During last November's update training, field personnel watched the video lecture from Dr. Richard Levitan's advanced airway management course. As you know, Dr. Levitan is one of the world's leading experts on emergency

airway management. He has done extensive research into techniques and equipment for airway management, and he has contributed greatly to the medical literature on the subject.

Dr. Levitan's concept of epiglottoscopy before laryngoscopy lends structure as well as finesse to an otherwise chaotic procedure. By following these landmarks to the "goal," we can all but ensure that we can be successful on our first pass. Dr. Levitan stresses the importance of appropriately choosing which patients are good candidates for endotracheal (ET) intubation as a means of improving success rates. The data collected from the study sheets overwhelmingly support this notion.

Here is what the data shows:

Cormack - Lehane Grade		
Grade	#	Success Rate
1	63	57 (90%)
2	54	45 (83%)
3	39	15 (38%)
4	15	4 (27%)
unknown	77	43 (56%)
Total	248	164 (66%)

The Cormack-Lehane scale is often overlooked as the tool of choice for assessing difficult airways. Unlike the often used Mallampati scale used on awake patients, the Cormack-Lehane grade can be used on an unresponsive patient. Since the vast majority of our patients who receive airway management are unresponsive,

(Continued on page 2)

Remembering Ben Mathews

Ben Mathews, the first director of EMS in Alameda County, died May 31st at his home in Montclair. When Ben was appointed director in 1973 there was no organized system of providing emergency care. Ambulance service was provided by police departments or competing private ambulance companies, there were no emergency departments, and no 911. By the time he retired in 1994, Alameda County had a high-performance EMS system with countywide paramedic level service, three trauma centers and was fully funded by an innovative property tax assessment.

EMS honors Ben Mathews each year during EMS week by presenting the *Ben Mathews Lifetime Achievement Award* to individuals who meet the same high standards that he exemplified. In 2006, he was presented with the Founder's Award for his many contributions in building the foundation of the EMS system that we now maintain.

Ben leaves behind his wife of over 50 years, Misato, two sons, one grandson, and his extended family at EMS and the County.

"Many of the changes were only possible because of the coordinated systems approach provided by the county...with every system upgrade many lives have been saved. We are all very proud of our EMS system and are committed to continuing its standards of excellence in caring for the people of Alameda County."

Ben Mathews, 1994



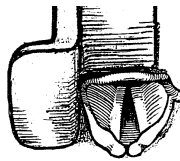
Difficult Airways (Continued from page 1)

the Mallampati scale is frequently not usable.

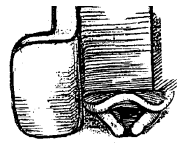
A patient with a grade-4 Cormack-Lehane would be much harder to successfully intubate than a patient with a grade-1. As the table on page 1 shows, there was a 90% success rate for patients with a grade 1 airway, while those with a grade 4 had a 27% success rate. Keeping this in mind, we should always err on the side of caution during emergency airway care since the data are unforgiving regarding missed intubations (nearly 0% survival rate). Since the goal is ventilating the patient, we should choose the tool that is best suited for the situation.

We need to be prepared to go to plan “B” at all times in EMS and we should sometimes even have a plan “C”! When managing an advanced airway, a paramedic should have at the ready two devices: an ET tube and a rescue airway such as a Combitube™ or King-LTD™. If during visualization the patient has a grade 1 or 2 airway, make an attempt at ET intubation. If a grade 3 or 4 airway is visualized, abandon ET intubation and go straight for the rescue airway. Doing this will have a dramatic effect on overall advanced airway success rates. For more information contact Joshua English (joshua.english@acgov.org) at 510.667.7753.

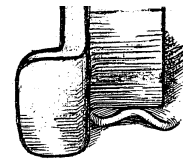
Cormack-Lehane Scale



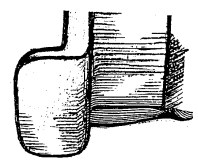
Grade 1



Grade 2



Grade 3



Grade 4



Medical Director's Note

The use of the Cormack-Lehane scale to make a decision regarding primary use of a “rescue airway” is sound advice. Have both the endotracheal tube and the rescue airway, King or Combitube, at hand.

If the epiglottis is not, or is barely visible, go straight to the rescue airway. Our own paramedics’ data show that you will have made the best patient decision. Consult Dr. Levitan’s airway manual for further details.

Jim Pointer, MD

HEALTH CLUBS AND AEDS

Over the past months, there have been a number of medical events at health clubs where citizens used an AED on a health club member. Club Sport in Pleasanton had two AED uses last December, 24 Hour Fitness in Newark had one in February, and the Sports Center in Hayward had one in July. In addition, there were two health club AED uses last summer. Contra Costa has had seven AED uses at health clubs in the past year. Contrast that with one AED use in the past year in Alameda County in a non-health club setting. Some were successful saves, others were not.

As of July 2007, AEDs were required in all health studios. Many have complied and informed us of their AEDs. Others either have an AED but have not given us their information, as required by law, or they have not installed an AED. EMS staff will follow-up with these health clubs. The 13 health club uses in Alameda and Contra Costa in the past year show the importance of all health clubs having an AED.

The California Health and Safety Code § 104100-104140 defines health studio as, “... any facility permitting the use of its facilities and equipment or access to its facilities and equipment, to individuals or groups for physical exercise, body building, reducing, figure development, fitness training, or any other similar purpose, on a membership basis. ‘Health studio’ does not include any hotel or similar business that offers fitness facilities to its registered guests for a fee or as part of the hotel charges.” This definition leaves open to interpretation whether martial arts, karate, and gymnastics studios; and tennis, swim, rowing, and boxing clubs; must have AEDs. The state has indicated it is up to the club/studio to decide whether they fit the definition and to what degree they are willing to being open to potential liability for not having an AED.

If you are a member of a health club, ask to see their AED. If you are on a call in which a citizen has used an AED, please make sure its use is documented on your PCR, and if you have a moment, give the EMS office a call. Questions can be directed to John Vonhof (john.vonhof@acgov.org) at 510.618.2038.



Safe House Update

By Jocelyn Freeman Garrick, MD, MS
Assistant EMS Medical Director

Safe House, Alameda County's 50 bed sobering center, began serving clients in February 2008. Their mission is to provide inebriates with a safe environment to sober versus the streets, jail, or a local hospital emergency department. Safe House is located on Fairmont's campus in San Leandro, less than 100 yards from Cherry Hill, a detox facility for alcohol and drugs.

Since its opening, Safe House has served over 230 inebriates from the cities of Alameda, Berkeley, Castro Valley, Fremont, Hayward, Oakland, San Leandro, and San Lorenzo. When the Sobering Center initially opened, clients were referred from APMC-Highland Hospital, Alta Bates-Summit or John George Psychiatric Pavilion. In April, Alameda, Eden, San Leandro, St. Rose, Summit, and Washington hospitals were oriented to the protocols and began to send inebriates. Kaiser Permanente will begin referring clients later this summer. Additionally, clients can arrive from the Sheriff's Department or city police departments.

Thirty-three clients were referred to Cherry Hill and admitted for initial detox. Safe House is looking forward to more inebriates who will arrive directly from sheriff and police departments. This option allows law enforcement to take clients to Safe House for public intoxication instead of our crowded jails. The county is proud of this joint venture between HEPPAC (HIV Education and Prevention of Alameda County) and American Medical Response under the direction of the Alameda County's EMS Agency. HEPPAC maintains the program while EMT's from AMR provide 24 hour medical support.

2009 Policy Review Process Underway

The draft 2009 policies have been released for written public comment. Please send your comments to Joshua English (joshua.english@acgov.org) no later than 5:00 pm **August 11, 2008**. Your feedback is greatly appreciated as it helps to ensure the policies are free of errors and provides a last opportunity for written input. A public forum will be held to discuss the proposed protocol changes on **Thursday, August 21, 2008 at 11:30 am.** at the EMS Office, 1000 San Leandro Blvd., 2nd floor, San Leandro.

Some of the highlights include:

- Expand the Crush Injury protocol (#7102) to include the special circumstance of dialysis patients with s/s of hyperkalemia to receive albuterol, sodium bicarbonate and CaCl to calcium chloride.
- Expand the Smoke Inhalation protocol (#7152) to include indications and use of a carbon monoxide Monitor.
- Remove Lasix from Alameda County EMS formulary [affects policy #7212].
- Replace dextrose 25% with dextrose 10% for neonates. Update to include dextrose 50% for children over the age of 2 years [affects policy #7310].
- Add information regarding the standardized Physician Orders for Life-Sustaining Treatment (POLST) form as the preferred "DNR" document.
- Move waveform capnometry to be the first end tidal carbon dioxide confirmation method. Add King Tube to advanced airway procedures (this device replaces the Combi-Tube) [affects policy #10102, section 4].
- Add Boussignac to CPAP procedure as an approved device [affects policy #10100].

To view all draft policies, go to the EMS website.

Ambulance Transport RFP... Where are we?

The Request for Proposal (RFP) for ambulance transportation is due for release in August. This is the culmination of a process that began more than a year ago.

Fitch and Associates was hired by EMS to review our current system, make recommendations for improvement and develop an RFP for the upcoming 911 contract.

The report on the assessment results was presented to the Alameda County Board of Supervisors in February, and several public meetings have been held to present and discuss the findings.

Since then, Fitch has reviewed comments submitted regarding the report and developed the RFP. Once released, responses to the RFP are due by the bidders in November. The Board of Supervisors is expected to award the contract in early 2009.

For a revised timeline and to view the complete RFP when released, visit the EMS website.

Did you know . . .

Traffic crashes are the leading cause of death for teenagers in America. Mile for mile, teens are involved in three times as many fatal crashes as all other drivers.

Research shows which behaviors contribute to teen-related crashes. Inexperience and immaturity combined with speed, drinking and driving, not wearing seat belts, distracted driving (cell phone use, loud music, other teen passengers, etc.), drowsy driving, nighttime driving, and other drug use aggravate this problem.

Research clearly shows what reduces teen crashes

- Increasing seat belt use
- Implementing graduated driver licensing
- Reducing teens' access to alcohol

- www.NHTSA.gov

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Anthony Iton, MD, JD, MPH, Director/Health Officer

WHAT'S NEW ON THE WEB

- 2009 draft policies
- New EKG of the Month
- EMSC conference brochure

EMS WEBSITE: acgov.org/ems

STEMI Success Story

By Damien Burnett, EMT-P

In April my partner Melanie Jensen and I responded to a residence in Dublin to find a 49 year old male at home lying on the floor at the top of the stairs with a complaint of substernal, 7/10 chest pain. His BP was 96/60 and his pulse rate was 44. He had a history of high cholesterol and hypertension. We took one look at the rhythm/waveform on the monitor and immediately decided to do a 12-lead EKG. Alameda County Fire engine 3457 was also on-scene.

The 12 lead showed a fairly significant elevation in leads II, III, and aVF (the machine read, "Acute MI suspected"). The ALCO paramedic had already started an I.V. so I called for the application of the pacer.

During the call, we turned the milliamps up to a significant level (40-50) without any capture. I didn't want to use atropine because of the increase in myocardial oxygen demand. The patient was not given aspirin because he claimed an allergy to it. I later learned that his reaction to aspirin was shaking. If I had known this at the time, I would have given him the aspirin anyway.

Because of our short ETA I decided to call Valley Care Medical Center to have the team ready. I spoke with Dr. Cindy

The 11th Annual EMS for Children Conference takes place October 8, 2008 in Sacramento at the Doubletree Hotel. This year's theme is "Little Patients Big Concerns." Seven hours of CE are offered for RNs, EMTs and paramedics. Additional information can be found on the EMSA website, www.emsa.ca.gov.

Study Finds Higher Job Risks for EMS Providers - A study appearing in the December 2007 *American Journal of Industrial Medicine* found that around eight of every 100 U.S. EMS providers each year suffer job-related injuries or illnesses that cause them to miss work - a rate more than six times the national average. Work conditions that appear linked to injuries, according to researchers from Ohio State, included responding to a high volume of calls, working in bigger cities, and having a history of back problems. Common injuries involved needle-sticks, exposure to bloodborne pathogens, musculoskeletal injuries, wounds inflicted by violent patients and injuries caused by traffic accidents involving ambulances. The study also found that at any given time, 9.4% of providers are injured or ill.

New IT Guy Joins EMS - Wilman Woo has joined EMS as an information systems specialist. He will be responsible for desktop IT support and video conferencing. Wilman comes to EMS with a wealth of IT knowledge and experience, most recently from the Dublin Unified School District, and previously, with Bechtel Corporation. He can be reached at (510) 618.2029 (wilman.woo@acgov.org)

EMS Staff Directory 2008
(510)

Campbell	Colleen	557-3535
Campos	Erica	618-2059
Clark	Rebecca	618-3033
Cortes	Carmen	618-2024
Daugherty	Kris	618-2032
Derevin	Leo	618-2046
English	Josh	667-7533
Fanning	Dale	618-2030
Frankel	Cynthia	618-2031
Garrick	Jocelyn	618-2044
Gutierrez	Rosemary	618-2021
Haskins	Francell	618-2027
Jacobs	Mike	618-2047
King	Michael	667-7739
Lee	Sonya	618-2034
Mena	Mona	618-2035
Morrissey	Jim	618-2036
Pagán	Adele	618-1924
Pointer	Jim	618-2022
Scott	Tina	618-2045
Street	Valerie	618-2048
Sugiyama	Bill	618-2033
Villegas	Veronica	618-2039
Vonhof	John	618-2038
Voos	Michelle	667-7984
Wilson	Godfrey	618-2028
Woo	Wilman	618-2029
Wrather	Bathhius	618-2025
Young	Robert	618-2003

Penn-Duecker and told her what we had. Alameda County Fire truck 3477 arrived to help us move the patient down the stairs. Once in the ambulance, we started a second I.V.

When we arrived at Valley Care, a Cardiac Receiving Center, the whole team (including Mike Costello, another emergency physician) was waiting for us. I showed him the three 12 leads we had run and he confirmed we did have a STEMI. Fourteen minutes after our arrival at the ER, the patient was on his way to the cath lab.

The patient had a 100% occlusion of the right coronary artery; after intervention, he had 100% reperfusion. His ST segment returned to baseline, his pulse increased to the 70's, and he was resting comfortably in intensive care.

There is a television ad for a medication that claims, "... because you're no match for a dangerous clot." I would add, "A dangerous clot is no match for the Alameda County EMS system."

Dr. Pointer adds: "If the pacer isn't functioning, you don't have a lot of choices, so if the patient has chest pain, shock, etc. (see AHA guidelines), use atropine if you believe that the issue is rate-related. If not, do nothing. EMS and the hospital team did a great job."