What is BLS Airway Best Practice?

A recent email from an EMS Virtual Advisor asked, “Are we focusing on a higher level of care while not spending enough time on the basics?” 92% of EMS providers ranked themselves as being expert or competent in their ability to perform BVM and CPR in our 2008 training needs survey. This is as it should be... but standards for BVM and CPR have changed dramatically in the last 10 years. Unlearning old BLS practices without sliding back into what we “used to do” is a challenge. Even though our brain knows better, our bodies seem to be “hard-wired” in the old ways. A good example of that is what has happened with BLS airway.

Hyperventilation and high-volume ventilation used to be the standard of care, but now have been clearly shown to have adverse effects on patient outcome. Hyperventilation causes decreased blood flow to the brain by driving off too much carbon dioxide. High-volume ventilation contributes to that problem by decreasing blood return to the heart (which may compromise blood flow with a beating heart or during CPR). Gastric distention also worsens when too much air is delivered by BVM, and increases the chance of vomiting. Even though we have all been trained in the new standards, studies show that provider “adrenaline” in arrest situations affects performance, and hyperventilation and high-volumes continue to be a problem. Some EMS agencies have changed to smaller-volume BVM devices for adults to help decrease the tendency to overdo it, and we will be evaluating the possibility of doing this.

New technologies are also being developed to measure the ways we perform BLS airway management. End-tidal carbon dioxide measurement, originally used as a tool to assure placement and guide ventilation in patients with advanced airways, can also be used to evaluate BVM ventilation. Why all this focus on the basics? ALS depends on effective BLS. We still have much to learn about new technologies and how they can help us improve outcomes. Best practice BLS airway management is dependent on proper positioning and airway patency. Dr. Levitan dramatically demonstrated this with video images at his recent Advanced Airway Class. The sniffing position, ramping of obese patients (to elevate the head), and jaw thrust really work!

Based on what we know right now, best practice includes: (1) Proper positioning of the patient; (2) Good mask seal; (3) Jaw thrust technique which is best done with two-person technique; (4) Ventilation sufficient for chest rise: (5) Limiting adult ventilation rates to one breath every 6-8 seconds. Pediatric ventilation rates are 20 per minute, and for infants less than 1 year, 30 per minute. For more information on best practice BLS ventilation, see your clinical educator.

Levitan “Best Practice Prehospital Advanced Airway” Training Huge Success!

On July 14th the Fire-EMS Training Consortium and EMS Agency sponsored an outstanding advanced airway training program with Dr. Richard Levitan. 42 paramedics and flight nurses from across the county participated and at the end of the day raved about the program. Comments included:

♦ I relearned everything I knew about advanced airway!
♦ Expert speaker was outstanding. Fantastic class!
♦ Dr. Levitan’s teaching style was awesome!
♦ Hands on was great. Loved the tips.
♦ Very very important class for ALL county medics.
♦ Great video and slides.

If you missed out you can catch Dr. Levitan on November 11 & 12, 2008 for an Advanced Airway and Cadaver Workshop sponsored by the San Francisco Paramedic Association where he sometimes speaks. Register online at www.sfparamedics.org.

Best Practice is assuring your equipment and supplies are ready!

- Check defibrillators, suction and monitors at specified intervals.
- Report equipment problems or concerns to appropriate parties.
- Identify potentials for confusion between medications due to labeling.
- Seek opportunities to practice equipment skills.
- All of the above

New Bariatric Unit available through AMR

Special equipment is needed to provide for the safe transport of patients with morbid obesity. Statistics project that by 2010 over 31 million people in the US will be morbidly obese (body weights 100 lbs or more greater than their ideal body weight). To serve these special needs patients AMR now has a Bariatric Ambulance Unit. The unit is available for interfacility transports and 911 response. The unit can support patients up to 1200 lbs and can be requested thru AMR operations. Request early when needed. For more information contact AMR.
Share information with those who may not read our newsletter. All editions of EMS Best Practices are on our EMS website at www.cccems.org. If you have missed one….catch up! EMS Best Practices is the primary tool to communicate with the field! Support getting the word out!

It’s HOT! Heat Related Illness: A Quick Review

Heat-related emergencies such as heatstroke and heat exhaustion increase significantly in the summer months. Hot weather increases the likelihood of problems especially for vulnerable groups such as young children and the elderly.

Hyperthermia is a high core temperature above 101F (38 C). When the body mechanisms to regulate temperature become overwhelmed heat related illness develops. High environmental temperature, excessive exercise and over-bundling can rapidly result in either: Heat cramps, heat exhaustion or heat stroke... it is all a matter of degree! All forms of heat illness may be present in the same patient and untreated heat exhaustion can progress to life-threatening heat stroke.

Heat cramps are painful muscle spasms that occur after vigorous exercise and can be seen in even well-conditioned athletes. Cramps are thought to be due to electrolyte imbalances produced with sweating during exercise. Prehospital management focuses on placing the patient in a shady cool area, resting cramping muscles and replacing fluids orally. Use water or balanced electrolyte solutions eg: Gatorade.

Heat exhaustion is the most common heat-related illness. Heat, exposure, stress and fatigue produce hypovolemia and electrolyte imbalance. Signs and symptoms include dizziness, weakness, faintness accompanied by nausea or headache. Cold clammy skin with ashen pallor, dry tongue and thirst, with elevated pulse and low diastolic pressure may be present. Body temperature may be as high as 104F (40C). Treatment is focused on removing excess clothing, moving patient to a cooler environment and providing oxygen. If the patient is fully alert encourage fluids by mouth. However fluids should never be forced. IV fluids are indicated along with patient transport. In most cases symptoms of heat exhaustion will improve within about 30 minutes of proper treatment.

Heat stroke results when heat exposure overwhelms the body’s ability to regulate itself. Body temperature rises rapidly to the level where tissues are destroyed. Infants and children in locked cars are particularly at risk. Patients will have hot, dry, flushed skin with minimal sweating. Body temperature can rise up to 106F (41C) or more. The first sign of heat stroke is a change in behavior. The victim progresses to unresponsive-ness and the initial rapid strong pulse becomes weaker and blood pressure falls. Aggressive measures to cool the patient may include cool packs to the neck, groin and armpit areas along with cool mist. Wet towels and fanning in adults to promote cooling can also be used. Avoid cooling so rapidly that shivering occurs, particularly in children. Cooling measures, oxygen, vascular access and fluids with immediate transport are the mainstays of therapy.

Contra Costa EMTs & Medics Weigh In On Training!

During April-June 2008, the Fire-EMS Training Consortium conducted its annual prehospital provider survey on training needs. This year over 217 EMTs and paramedics participated; 21% of our workforce! The survey provides valuable input and focus for our Fire-EMS training in the county for the upcoming year.

Top-ranked skills identified as needing practice included:
- Pediatric assessment
- ePCR
- Needle thoracostomy
- CPAP
- King Tube
- Trauma assessment
- 12 Lead EKG
- Pain assessment
- Vascular access

61% indicated that they had a good or excellent experience with simulation training using Meti-Man and Pedi-Sim. Recommendations for improvement of the program included more realism and more frequent opportunities to train.

Top-ranked topics of interest for EMS providers included:
- Pediatric emergencies
- Burns
- Rhythm interpretation
- OB/GYN emergencies
- Cardiac
- Trauma
- Environmental emergencies
- Drug overdose & ingestions
- Respiratory topics
- Advanced difficult airway

81% indicated that the Fire-EMS Consortium Quarterly Training Modules have been very well received. Over the last year these training modules included topics such as COPD, MCI, Pediatric Airway, EMS Update and Advances in Airway Management using many of Dr. Levitan’s videos and airway management tips. If you have not had a chance to benefit from these trainings talk to your Fire-EMS clinical educator about opportunities to review this information.

EMS Best Practices was also evaluated in the survey, and of the 76% who read this newsletter 88% felt that it “informed me about issues I need to do my job.” This was very important feedback for us here at EMS as we are committed to keeping the newsletter a relevant “must read”, helping our EMS providers make a difference!

The results also showed that EMS Best Practices may not be reaching up to a quarter of our prehospital providers. This is an area where EMS needs your help. Share information with those who may not read our newsletter. All editions of EMS Best Practices are on our EMS website at www.cccems.org. If you have missed one….catch up! EMS Best Practices is the primary tool to communicate with the field! Support getting the word out!