



# EMS Best Practices



## Honor...Duty...Sacrifice

The tragic loss of Captain Matt Burton and Engineer Scott Desmond of Contra Costa County Fire Protection District was a reminder of the dangers faced in the line of duty everyday. These dedicated professional firefighters died on July 21st while attempting to rescue two people from a destructive house fire in San Pablo. Here at the Contra Costa EMS Agency we recognize and honor these individuals for their service, dedication and sacrifice. Our deep condolences to all who have been affected by this terrible loss.

### Best Practice Patient Handoffs

Transfer information along with authority and responsibility

Rely on a focused complete patient report between providers with an opportunities to clarify, question and confirm

Allow first responder interventions to be reported as part of the patient history during handoffs in the ED.

Assure the ED staff have all the information needed to care for the patient

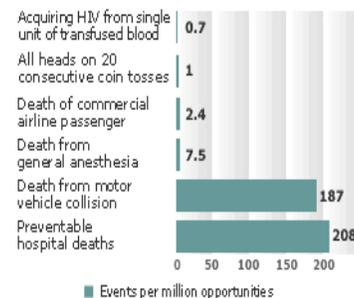
**The Most Important Factor In Patient Safety....Communication!**  
Research in the area of patient and provider safety demonstrates over and over again the importance of communication. Recent data from the Agency for Healthcare Research and Quality and NIOSH indicates that communication plays a significant role in sentinel events over **70%** of the time. In looking at our own county data since January 2007 we found communication a factor in **61%** of our own county unusual occurrences. Statistics in patient and provider safety across industries shows a similar experience. Transitions in care are particularly prone to communication problems. Improving your communication during field and ED handoffs, base contact, and trauma triage can produce significant improvements in patient care and job satisfaction. **Communication counts.**

### Best Practice is about EMS Provider Safety Too...

Emergency Medical Services throughout its history has been shown to be a dangerous profession. Recent events including 9/11, hurricanes Katrina and Rita continue to emphasize the importance of protecting a highly trained EMS workforce. There is limited data to clearly define the risks of performing the functions of EMS. What we do know is that many unnecessary deaths are due to motor vehicle-related collisions. Statistics show that **>20%** of annual firefighter deaths occur on roadways. In a recent study developed and jointly administered by the National Institute for Occupational Safety and Health (NIOSH) and National Registry of EMT's (NREMT) published in JEMS (March 2007); work habits related to injury risk and exposure and safety perceptions were surveyed in 1,773 EMTs and Paramedics. Results revealed that only **12%** of respondents reported using seat belts all or most of the time during emergency transports. **“Safety recommendations to reduce the likelihood of injury concluded that providers and equipment within an ambulance should always be secure.”** EMS ride-alongs noted that this happens in our county too. **Are you doing EVERYTHING you can to keep yourself safe on the road?** EMS Best Practice is committed to safety for BOTH providers and patients. **“Buckle Up”**.

#### Did You Know?

##### Safety Hazards and Everyday Probabilities



Contra Costa County Health Services [www.cchealth.org](http://www.cchealth.org)  
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# Ingestions: Charcoal and ALOC

Joe Barger MD & Pat Frost PNP

Recently we conducted a survey of drug ingestion/poison cases looking at use of activated charcoal. We reviewed 41 ingestion cases over 43 days in May and June 2007. Charcoal was either given or was attempted to be given in **87%** of cases, while **10%** of patients refused the medication. Most patients (**86%**) showed no change or no improvement.

Of those patients receiving charcoal, **40%** either had a GCS less than 15 or showed deterioration after the charcoal was given. Our treatment guideline on Poisons/Drugs (M4) allows for consideration of charcoal, but in patients with narcotic or sedative ingestion, they need to be alert and the ingestion should have been very recent.

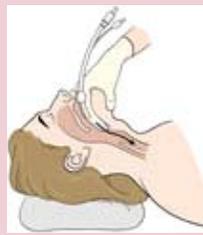
The reason behind our caution is because aspiration of charcoal is a potential complication when patients have altered level of consciousness, and the benefits of charcoal may be far outweighed by the risks in those cases.

The role of activated charcoal in the prehospital setting is being challenged by state and national poison experts. Many believe the risks are high, and some advocate elimination of charcoal use altogether in the field. Reasons include:

- The death rate from acute toxic ingestions is less than 1 percent. Charcoal has NOT been clearly effective in decreasing death or morbidity in ingestions.
- Many ingestions are several hours old when they present. Charcoal is most effective early on, particularly if given within 1 hour, but picking out those cases to treat may be hard to determine since histories are notoriously inaccurate in many ingestions.
- Airway complications (primarily aspiration) are the main cause of death and morbidity with charcoal use. In the ED, paralyzing agents (RSI) are often used to control airways, but we do not have those options in the field.
- Patient cooperation and stable medical status are important in terms of administering charcoal. Charcoal is not tasty and in the ED a nasogastric tube is often used – again this is a procedure we do not perform in the field. Frequently the dose of charcoal able to be administered in the field is not adequate because the patient will not take the entire dose.

Our local findings have led us to review our current treatment guideline. A revision will be issued in December, and will have significant changes. **The important issue for now is that patients who are not alert, who do not have a GCS of 15 or have slurred speech, lethargy, or other signs of effects of the ingestion should NOT receive charcoal.** If there is any question, it should be withheld – the risks may outweigh the benefits.

If you have questions or want to give input to us about this topic, send your comments to [pfrost@hsd.cccounty.us](mailto:pfrost@hsd.cccounty.us).



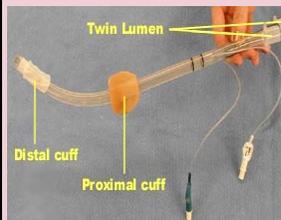
# Tube Talk

Joe Barger MD EMS Medical Director

Perhaps the most challenging and dangerous EMS procedure is advanced airway management, and data we gather from electronic PCR's helps us understand how we are doing and what we may need to do differently. Review of our intubation and airway management data gives us some statistics to ponder.

Overall, we “successfully” intubate just over three-fourths of patients (**77%**) with an endotracheal tube, but that success is measured by confirmation of the tube in the right place, not the outcome of the patient. The highest level of success is in patients with cardiac arrest. This is not a surprise. Airways of patients in a full arrest are easier to manipulate. The patient is not fighting and the airway is normal in most cases. **Unfortunately when intubation takes several minutes and numerous attempts without good ventilation, it can be a false victory.** Assuming PCR documentation reflects actual care, at least **41%** are not successfully intubated after two attempts. Further tries at intubation “succeed” in placement in just **40%** of those remaining patients. The result is that **23%** overall do not have an advanced airway via ET tube no matter how many tries are done.

Despite most Combi-tubes being used after ET intubation failure, our Combi-tube success rate is around **85%**. In one-half of the uses of Combi-tube, three or more intubation attempts are documented prior to use of Combi-tube. So what is better if the first two ETT attempts have failed, an **85%** success rate with a Combi-tube or a **40%** success rate with an endotracheal tube? All of us want to believe an ET is a better tube because it isolates and protects the airway better. But is the cost of prolonged hypoxia worth the effort? It is clear that prolonged efforts to get an ET tube have diminishing returns.



It is reasonable to move to Combi-tube even when 1 or 2 attempts at ET have been unsuccessful, or in some cases, without any ET attempts. Some EMS systems are recommending use of a rescue airway like Combi-tube in all cardiac arrests instead of ET, and while it is not a requirement here, it is certainly acceptable. Another device known as the bougie is an ET introducer (ETI) that can increase success rates with the first attempt. In our next pre-hospital care manual update the ETI will be mandatory item for use when a first attempt has not succeeded. Each agency should be preparing for implementation of the ETI by December 2007. We are planning comprehensive training on airway management in the near future. **We all know there is a lot of pride in getting an ET tube, but the real reward is a good patient outcome, and Combi-tube or other rescue airways may in the end serve us better.**

Please contact us with your comments or concerns. Visit our website @ [www.cccems.org](http://www.cccems.org)

