



EMS BEST PRACTICES

EMS Best Practice Is...

- ✓ FULLY participating in EMS Update Training and routinely checking out the Contra Costa EMS website for information and resources
- ✓ REVIEWING EMS literature and staying up to date with evidence-based prehospital care
- ✓ ASKING questions and pointing out discrepancies when new information is encountered!
- ✓ READING EMS Best Practices and STEMI News available 24/7 at www.cccems.org.
- ✓ CONNECTING to CA EMSA facebook and Twitter. Visit [Http://www.emsa.ca.gov/](http://www.emsa.ca.gov/)

New EMS Guidelines for the New Year!

Making changes is always challenging, and this year it was no different. During 2009, EMS Medical Director Dr. Barger worked with our Medical Advisory Group to morph our prehospital treatment guidelines into a lean and mean “field-friendly” format. To do that the guidelines had to be consolidated and refined. While on the surface the changed appearance may seem dramatic, the protocols themselves have not substantially changed. The consolidation has reduced the number of protocols allowing EMS to merge or eliminate redundant protocols and to create five new guidelines that are important to highlight.

Adult Patient Care (A1) was created in order to group those basic items that we use on all calls (e.g. airway, positioning, spinal precautions) in a single guideline so that we are not repeating those in every guideline. Similarly, we revised our Pediatric Patient Care guideline to do the same.



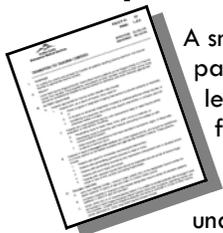
Behavioral Emergency (G3) is one of the key new guidelines. For several years, we have had a small number of cases in which chemical restraint was necessary and requests for this were made to the base without a treatment guideline. The new guideline still requires base approval for the medication, but also outlines those steps that are important prior to consideration of chemical restraint. With this guideline, both the base and field will have a standardized guideline from which to practice.

Respiratory Depression or Apnea (G12) is another important new guideline. Use of naloxone (Narcan) is directed by this guideline. We believed it was important to separate use of naloxone from the Altered Level of Consciousness guideline because its use should be for respiratory depression, not for ALOC (and naloxone has been removed from the ALOC guideline as well). We are also introducing administration of intranasal naloxone, something that many other agencies have implemented in recent years – and that we believe will be helpful in terms of patient and provider safety.



The other two new treatment guidelines involve **CPR and initial care** for adult and pediatric patients (**A3 and P2**). The most important part of care in cardiac arrest in adults is provision of nearly continuous compressions and timely defibrillation, and avoidance of hyperventilation is also important. Advanced airway has been moved further down the line because it can interfere with compressions. In the guideline we also want to encourage treatment on scene instead of early transport in order to maximize the best compressions and best chance of survival.

Policy 19 Change – Determination of Death



A small but important change has been made in Policy 19, *Determination of Death in the Prehospital Setting*. For patients with traumatic arrest who are pulseless and apneic, the presence of a wide complex QRS at a rate of 40 or less meets criteria for determination of death. Previously we had been using a rate of 20 or less as our cut-off, but few patients maintained a rate in that range. Many traumatic arrests will maintain a rate of around 30 for a while, then dwindling to asystole, and research has shown that those patients do not respond to resuscitative efforts. In the past four years, our system has had no survival for patients with traumatic arrest when the rate of PEA is under 40 and has a wide QRS complex. This change is supported by national studies demonstrating consistently poor outcomes in traumatic arrest.

Transport of traumatic arrest patients commonly grinds hospital emergency departments to a halt while all efforts are placed on a patient with no chance of survival. From a safety perspective, code 3 transport and increased exposure to blood and body fluids can also be avoided. We know there will still be some transports because of scene safety or scene circumstances, but our hope is that we can eliminate transport in a number of these cases.

The Field Manual Project by Dr. Barger, EMS Medical Director

The field manual project had been considered for a number of years, but in order to create a readable document that would fit in a 4" X 6" format the way the content was displayed had to change. This gave EMS the opportunity to streamline our protocols reducing the number of pages while emphasizing valuable reference materials and key field policy summaries to refer to in the pocket-sized manual.



Overall, the number of treatment guidelines has been reduced from 59 to 34. We decreased the number of categories of guidelines to three – Adult, Pediatric, and General Guidelines. The Adult and Pediatric Guidelines are for the conditions (primarily cardiac and shock) in which treatments have significant differences between those two age groups. In the General Guidelines, we consolidated several adult and pediatric guidelines that were nearly identical carefully differentiating between adult and pediatric medication doses (with pediatric dosing indicated in red). We believe the new organization of our guidelines is simple and straightforward from both a training and operational perspective.

We realize that this change will require some adjustment to the new manual format and that with any new change there is also always room for improvement. Comments or criticisms are important and we welcome your valuable feedback. The new field manuals are available from your EMS Provider Agency and are not for sale. If you are unable to get a field manual and want an alternative there are mobile applications you can download to your PDA or iPOD for personal use. Contra Costa EMS is not affiliated with these applications but medics in our county have found them useful.

Chemical Restraint

by Dr. Barger, EMS Medical Director

For a number of years, we have recognized that a small number of patients are so unmanageable in the field because of combative behavior that they require medication for the safety of the patient and



EMS personnel. From 2006-2008 we were able to identify 14 cases in which midazolam was used for sedation because of combative behavior.

Of the 14, ten patients were noted to be improved after midazolam, which we assume means that they were less combative. Four exhibited no change, and none were documented as having worsened. Intravenous medication was given in four of the cases, with two successful, while 8 of 10 IM uses improved. None of the patients had an adverse reaction to the medication noted in terms of respiratory depression or hypotension.

These numbers are small, and one should not assume that midazolam is completely safe, nor that IM use is better than IV (although it is much more practical). But what it tells us is that chemical sedation appears to be effective for some patients, and our suspicion is that there are probably more patients who might benefit from its use in order to lessen the potential for patient or provider injury. All patients in whom chemical restraint is contemplated should have as thorough an assessment as possible, knowing that in some cases it is suboptimal because of the patient's behavior. Verbal de-escalation techniques are at times useful with patients, but there will be some who simply remain dangerous no matter what we try.

Hypoxia and hypoglycemia should be ruled out, and the patient should be evaluated for signs of shock or trauma (especially to the head). If a patient remains incredibly combative despite physical restraints, chemical restraint should be considered. If given, close observation is critical to assure adequate airway and respiratory status.

Along with the introduction of new behavioral emergency guidelines specific training processes to address the full spectrum of management techniques with patients are available through the Fire EMS Training Consortium. These include strategies for verbal de-escalation, physical restraint, as well as chemical sedation. Patient safety and crew safety are paramount issues and we believe appropriate use of chemical restraint will have a good risk: benefit ratio for both these groups.



Dr. Joe Barger accepts the 2009 EMS Medical Director of the Year award from the State EMS Authority—December 2009

Please contact us with your comments or concerns—visit our website at www.cccems.org