

EMS Best Practices

SEPTEMBER 2013

AN UPDATE ON THE EMS SYSTEM STUDY “CREATING THE NEXT GENERATION EMS SYSTEM”

—By Pat Frost EMS Director

Contra Costa County is in the midst of an EMS System modernization study by industry leaders Fitch and Associates. The purpose of the effort is to provide direction in responding to the many challenges facing the healthcare and emergency response providers in the County and address the external changes affecting state and national healthcare systems. Local issues include the fire station closures and subsequent reduction of resources available for medical first response, and health care reform.

The study takes a “white board” approach exploring innovative solutions that will lead to a sustainable and robust EMS service-delivery system. The County is partnering with Fitch & Associates, LLC, to assist

us in developing options for modernizing Emergency Medical Services so we can continue to meet the diverse needs of patients and the community. The process has two overriding objectives:

1. Identify and recommend actions and decisions based on the benefits to the patients and the community, and
2. Define roles and healthcare delivery services based on value—cost versus benefit.

Questions about this project may be directed to the County EMS Office or directly to the Fitch & Associates’ consultants at CCCEMS@fitchassoc.com. If you would like to learn more about the EMS System Study visit the EMS System Review webpage at <http://cchealth.org/ems/system-review.php>. Regular updates are also being provided to the Public Protection Committee and the Emergency Medical Care Committee.

CHANGES COMING TO EMS IN 2014

—By Dr. Joe Barger, EMS Medical Director

For January 2014, there are a few major changes that will be made in our system. As mentioned in our last Best Practices newsletter, our approach to spinal immobilization is changing. Here are a few other key changes on tap:

- We plan to switch to Fentanyl from Morphine for pain relief. Morphine has been a tried-and-true drug, but it does have some issues with histamine release which may also affect blood pressure. Fentanyl does have a shorter duration of action (typically 30-60 minutes IV and 1-2 hours IM versus around 4 hours for morphine), and it is 100 times more potent (50 micrograms of fentanyl is fairly equivalent to 5 mg of morphine). One exciting addition is also the ability to use fentanyl by intranasal route, which may be very helpful, particularly in children who are fearful of needles.
- We are also modifying some of the communication processes with the base hospital. We hope that these changes will help focus both field and base personnel on efficient exchange of the most important information to help make the best decisions when a trauma destination decision is needed. We are also modifying the trauma triage policy to reflect revised call-in criteria and are making a number of other minor changes to the policy.
- For patients who achieve return of spontaneous circulation (ROSC) following cardiac arrest, our policy will change to direct these patients to be transported to our STEMI Receiving Centers. These patients may need intervention in the cardiac catheterization laboratory in addition to hypothermia in some cases. Patients who do not achieve ROSC should be transported to the closest receiving facility (similar to our current policy).

ASK EMS

Do you have questions for EMS? Not quite sure who to ask? This column will help address those questions. As space permits, we will answer questions you submit. As always, for immediate response please contact EMS.

Q: SOMETIMES IT GETS HECTIC IN THE FIELD. HOW CAN I BE SURE I AM GIVING THE RIGHT MEDICATION?

A: There are a couple of tried and true methods for ensuring you are administering medications properly.

The first is **THE FIVE RIGHTS**.

The **RIGHT patient**,
The **RIGHT drug**,
The **RIGHT dose**,
The **RIGHT route**, at
The **RIGHT time**.

You do it each time you give a medication. It will become a habit. No matter how simple it seems. If you repeat this process you are much less likely to make a mistake.

The next method is **THE RULE OF THREE**. There are three times you check the label of the medication.

1. When you take it from the medication bag. Read the label.
2. While preparing it.
You read it again.
3. Before giving the medication to the patient. You read it again.

DON'T THROW the vial/ container away until after you have administered the medication.

THESE ARE SIMPLE, easy to remember rules which can prevent a mistake and keep the patient from harm.

IMPROVING CARDIAC ARREST OUTCOMES DEPENDS ON CPR QUALITY

—By Dr. Joe Barger, EMS Medical Director

It is increasingly realized that the quality of CPR provided is the pathway to improved outcomes in cardiac arrest. A recent consensus statement from the American Heart Association focuses on enhancing the quality of CPR, and states that the key measurements of CPR performance include:

- Chest compression fraction—also referred to as compression ratio or “hands-on” time (ideally 80% or more);
- Chest compression rate (ideally between 100 and 120 per minute)
- Chest compression depth (at least 2 inches in adults and 1/3 chest AP diameter in infants and children)
- Full chest recoil
- Ventilation rate (ideally less than 12 per minute with a goal of visible chest rise)

We now have many tools in our system to measure and improve CPR. Our Life-Pak 12 (AMR) and Life-Pak 15 (fire agencies) monitors can record resuscitation events such as CPR compressions, shocks and ventilations. When this information is transmitted (and all monitors now have transmission capability) it is analyzed by software and a summary report is generated. Our reports don't analyze compression depth or recoil, though some day we may have technology to accomplish this as well. These reports, when reviewed by EMS responders themselves, can help assess the quality of their resuscitations and lead to improvements for subsequent cases.

There are also human factors in CPR quality which include supervision and leadership. Each resuscitation effort needs a leader, and that leader is responsible for assessing the quality of CPR compressions (rate, depth, and chest recoil) as well as the minimization of interruptions in compressions. The leader is also responsible for assuring that defibrillation pads are placed immediately and shocks are delivered promptly once a shockable rhythm is identified. We've been measuring cardiac arrest outcomes in great detail for more than 4 ½ years. Our results have been better than many communities (10–11% overall survival, with 31–32% survival in witnessed arrests that have shockable rhythms). However, our survival rates have not significantly changed during those years, and we believe it's now time to focus much more intently on the quality of CPR and on the leadership during resuscitations in order to improve survival.

In the coming months we will be working with all of our provider agencies to identify the best strategies for improving CPR quality and resuscitation leadership. This is an exciting time in the field of resuscitation, and we have a great opportunity to enhance our success.

Please send questions for future ASK EMS columns to:
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