

December 18, 2009

To: Contra Costa Emergency Department Medical and Nursing Directors

From: Joseph Barger, MD
EMS Medical Director

Subj: EMS Policy and Procedure Changes Effective January 1, 2010

I want to update Contra Costa Emergency Departments about key changes in our EMS policies, procedures and treatment guidelines that will be put in effect January 1, 2010. This letter is accompanied with a pdf training presentation that can be used for your Emergency Department staff.

EMS Policy 19: *Determination of Death in the Field*, has been modified with regard to traumatic cardiac arrest. In the past, pulseless and apneic patients with a monitored heart rate of less than 20 met criteria for determination of death. The policy now allows for determination of death in pulseless and apneic trauma patients with rates of 40 and below with a widened QRS. The intended goal is to further decrease transport of trauma arrests to Emergency Departments when efforts undoubtedly will be futile.

Procedure Changes:

Spinal Immobilization: Following recommendations of the Prehospital Trauma Life Support curriculum (developed in cooperation with the American College of Surgeons), we will modify indications for spinal immobilization of patients with penetrating wounds. Those patients with penetrating wounds to the head, neck, or torso who do not have neurologic findings or complaints (e.g. paralysis, paresis, numbness, or altered level of consciousness) will not be placed in spinal immobilization.

12-lead ECG/treatment of Right Ventricular MI: For patients with inferior infarct patterns (STEMI's), V4R leads will now be done in an effort to detect right ventricular MI. The cardiac treatment guideline will also direct paramedics to withhold NTG and morphine when RVMI is suspected (ST elevation of 1 mm or more in V4R).

Intranasal Naloxone: Paramedics will now have the option to administer naloxone intranasally in adults with opiate overdose instead of using an IV or IM route. The intranasal route is contraindicated in shock or if copious nasal secretions are present.

Treatment Guideline Changes:

Behavioral Emergency: We have created a new treatment guideline for behavioral emergencies. The guideline includes the use of Midazolam 5 mg IM in cases in which a patient remains extremely combative and physically dangerous to self or others despite use of de-escalation techniques and physical restraints. **Approval for chemical sedation must be given by the base hospital.**



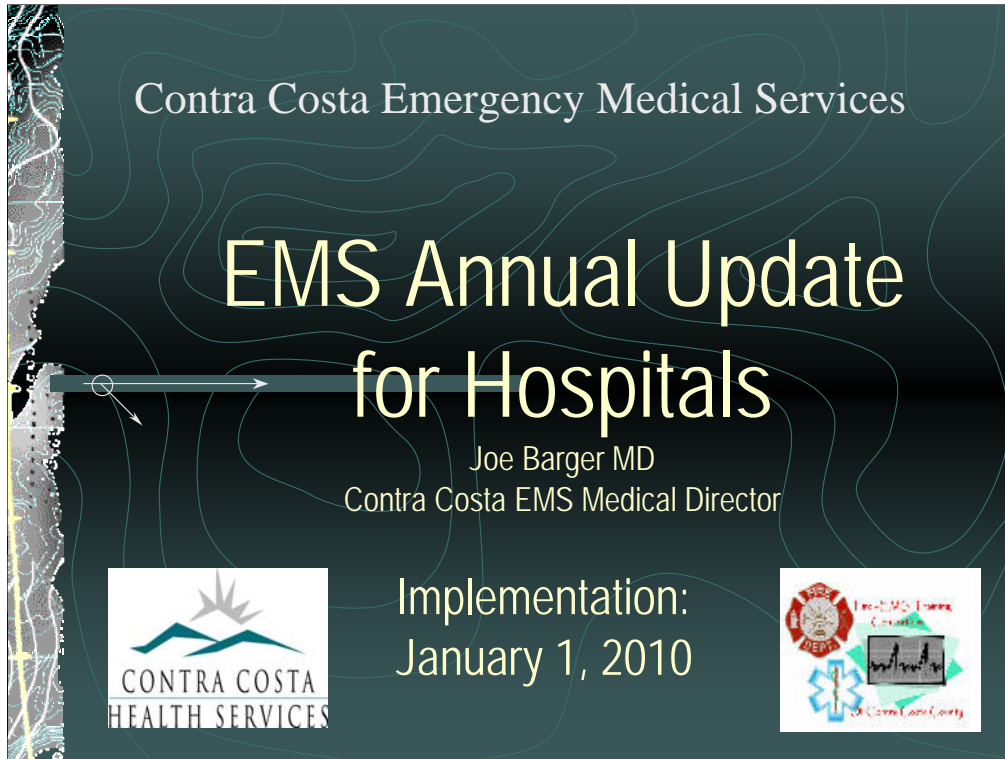
Cardiac Arrest: An added guideline on CPR reinforces the standard that advanced airway control is not an essential element early in resuscitation of cardiac arrest, and that efforts to control the airway can be deferred in most cases. Because early transport of patients may decrease the quality of CPR compressions, we are encouraging that field resuscitation be continued up to 30 minutes. Many patients who do not respond to these concerted resuscitative efforts should not be transported.

Naloxone Use: Paramedics are being directed to use naloxone **only** when an opiate overdose is suspected and the respiratory rate is below 12. Previously naloxone was given frequently in the presence of altered level of consciousness, even when respiratory function was adequate, and on occasion adverse patient effects were noted (particularly agitation/violent behavior). Paramedics are also being advised to carefully titrate diluted naloxone in patients receiving long-term opiate treatment (e.g. terminal cancer patients and chronic pain patients), again reserving this only for patients with respiratory depression.

New Field Manual: A major revision in the format of patient treatment guidelines and other reference materials has been done. With the exceptions listed above, most treatments remain identical.

EMS policies and procedures are available on our website at www.cccems.org after January 1, 2009. A PowerPoint version of these items will be available on the website as well. Please do not hesitate to contact me if you have any questions.







Contra Costa Emergency Medical Services

EMS Annual Update for Hospitals

Joe Barger MD
Contra Costa EMS Medical Director

Implementation:
January 1, 2010



- The purpose of this update is to provide ED personnel with information and training on changes to Contra Costa prehospital care guidelines (PHCG) and (goldenrod) policy and procedures.
- Updated protocols, policies and guidelines go into effect January 1, 2010 and will be posted on www.cccems.org website at that time.



Changes for 2010

- **Important Policy and Procedure changes**
 - **Policies**
 - Policy 19: Determination of Death in the Field
 - **Procedures:** Spinal immobilization, Intranasal Naloxone, 12 lead and Right Ventricular MI
- **Few new or significantly revised treatment guidelines**
 - Behavioral Emergency- NEW!
 - Others: Cardiac Arrest, Naloxone Use,
- **NEW Field Manual format for treatment guidelines**

- The following will be discussed in this presentation



Determination of Death – Policy 19

- Minor but important change in traumatic arrest cases:
 - Patients who are pulseless and have a wide QRS rhythm at a rate of 40 or below (PEA) qualify in the “Probable Death” category
 - Previously 20 and below

- We have made this change because no patients survive once their heart beat begins to slow with trauma and shock.
- The previous cutoff rate of 20 was not useful because many patients tend to have rates in the 30’s, then rapidly go to zero, so few patients qualified and they were often transported when there was no chance of recovery.
- The new policy also will not require a “wide, bizarre rhythm” – just a widened QRS. Narrow complex QRS with bradycardia still merits resuscitation if encountered as this could potentially represent vagal tone.



Spinal Immobilization Procedure

- Key Change –

- In penetrating trauma to head, neck or torso, if no apparent neurologic deficit/complaint or visible anatomic disruption of the spine, **do not immobilize**
- Changes reflect current recommendations of Prehospital Trauma Life Support curriculum

This is most likely to affect patients transported to the trauma center but may occasionally affect patients going to other receiving facilities.

The slide features a dark teal background with a faint topographic map pattern. On the left side, there is a vertical strip showing a more detailed topographic map with contour lines and a yellow path. The title "Important Guidelines Changes" is written in a light yellow-green font at the top.

Important Guidelines Changes

- New Guidelines

- Behavioral Emergency
- Cardiac Arrest – Initial Care and CPR
- Respiratory Depression or Apnea

- Revised Guidelines

- Chest Pain / Suspected ACS
- Altered Level of Consciousness

Behavioral Emergency



Key Issues:

- Must rule out medical causes of behavioral symptoms
 - (e.g., hypoxia, hypoglycemia, trauma)
- Allows sedation with midazolam (after base contact) for chemical restraint when other techniques have not succeeded
 - Non-pharmacologic approaches to deal with patients (de-escalation and physical restraint) **must** be used/attempted prior to use of midazolam

- Somewhere between 10-15% of calls involve behavioral issues or mental health patients.
- Behavioral patients constitute a high volume high risk population in our EMS System.
- Changes in our policy reflect improved guidance for the protection of both our providers and the patient.

Midazolam for Chemical Restraint

● Indication:

- When calming measures and physical restraint have not adequately addressed physically combative behavior (e.g. continue to struggle strenuously against restraints and may harm self or others)

● Dosage

- 5 mg IM (most instances)
- 1-5 mg IV in 1 mg increments only if patent IV already available (probably rare in these patients)

- Most of the time Midazolam will be given IM.
- The onset may be delayed and it is key that we don't add one layer of sedation over another and end up with respiratory compromise.
- For this reason, repeat dosage is not recommended.

Cardiac Arrest – Initial Care & CPR

● Intent of guideline:

- To reinforce importance of initial care in cardiac arrest
 - Uninterrupted CPR
 - Much less emphasis on advanced airway early
 - To encourage longer field resuscitation
 - Up to 30 minutes (“Stay and Play”)



- We have introduced a Cardiac Arrest – Initial Care guideline because many of the critical steps that save lives happen in the first few minutes.
- There is little evidence that medications, IV's, or intubation lead to better survival – it is CPR and defibrillation, and if CPR is not done well, defibrillation may not work.

A topographic map of a coastal region, showing landmasses, water bodies, and elevation contours. The map is oriented vertically on the left side of the slide, with the coastline facing right. The background of the slide is a dark teal color with faint, light-colored topographic contour lines.

Cardiac Arrest – Advanced Airway

- Is not necessary in the first 2-3 cycles of CPR (approximately the first 5 minutes)
- Some patients, particularly those who have return of pulses, may not have an advanced airway placed during field care

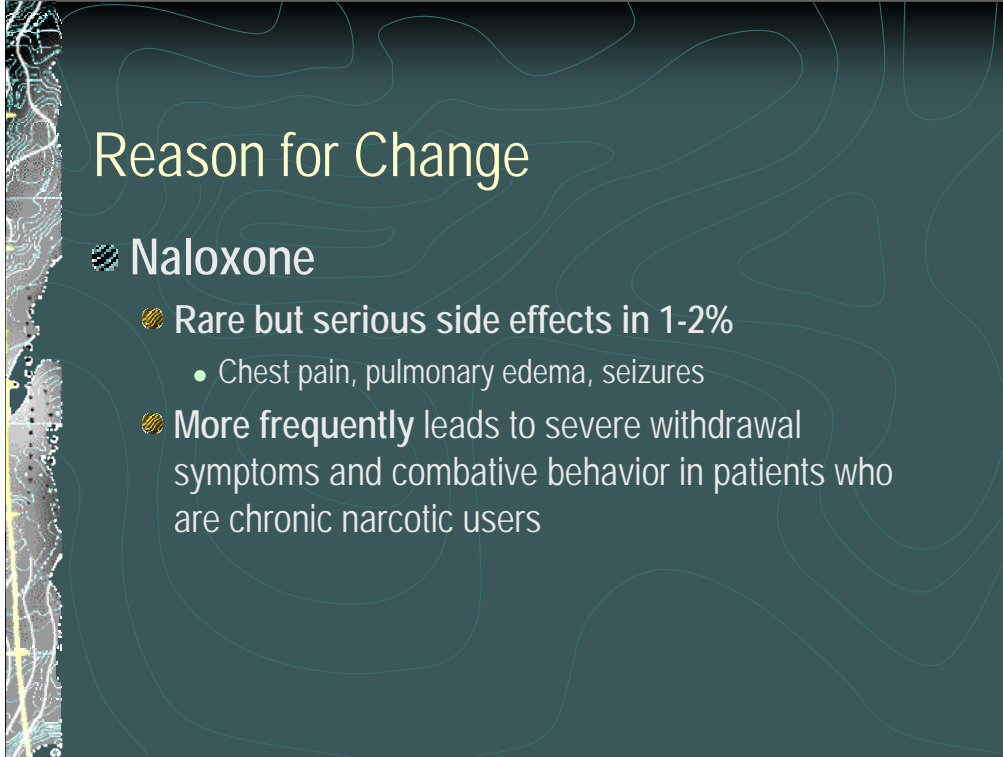
• Interruption of CPR to pass an endotracheal tube isn't a worthwhile tradeoff early in resuscitation of true cardiac arrest (as opposed to respiratory failure/drowning, etc.)

The slide features a dark teal background with faint, light-colored topographic contour lines. On the left side, there is a vertical strip showing a detailed topographic map with white contour lines and yellow/orange lines representing roads or paths.

Respiratory Depression or Apnea

• Naloxone

- Has been removed from the Altered Level of Consciousness treatment guideline and is now addressed in a new guideline:
 - Respiratory Depression or Apnea

A topographic map of a coastal region, likely the Pacific Northwest, is shown on the left side of the slide. The map features contour lines and a network of roads. The main content of the slide is on a dark teal background with faint, light-colored contour lines.

Reason for Change

- **Naloxone**
 - Rare but serious side effects in 1-2%
 - Chest pain, pulmonary edema, seizures
 - More frequently leads to severe withdrawal symptoms and combative behavior in patients who are chronic narcotic users

- On occasion, we see problems after naloxone administration for both prehospital and hospital personnel – it happens often enough that we would not call it a rare occurrence.
- There are true safety considerations for staff as well as the patient.

The slide features a dark teal background with a faint topographic map pattern. The map shows contour lines and some geographical features, with a vertical strip of more detailed map on the left side. The text is overlaid on this background.

Naloxone and Respiratory Depression

- Give naloxone only to patients who have suspected narcotic overdose and respiratory depression or apnea
 - Respiratory Depression is a rate less than 12
- Should not be giving naloxone simply because the patient has altered level of consciousness



Naloxone Administration

- We are introducing intranasal naloxone as another route for naloxone administration
- Purpose: To decrease potential for needle-related events from IV or IM use

- Many other agencies have successfully implemented use of intranasal naloxone.
- This is being done in great part to enhance provider safety by avoidance of needles in many of these patients.

Intranasal Naloxone

- Administered by a mucosal atomizer device (MAD)
- Well absorbed by nasal mucosa, rapid onset of action
- Effective in around 80-85% of cases so needle use on patient can be avoided

•The mucosal atomizer device is key to aerosolizing the medication so that it can be effectively absorbed.

Mucosal Atomizer Device (MAD)



This demonstrates the fine mist or atomization of the medication that allows for rapid uptake from the nasal mucosa. So it is an important part of the therapy. After drawing up 2 ml of naloxone, you will give 1 ml in each nostril. The little white flange blocks the nasal passage



- For now, we will not be using this device in pediatric patients (very few qualify for naloxone anyway) but this shows how the device is used.

A topographic map of a coastal region, showing landmasses, water bodies, and elevation contours. The map is positioned on the left side of the slide, with the title and text overlaid on a dark teal background that features faint, light-colored topographic contour lines.

Intranasal Naloxone

- **Indications:** Respiratory depression or apnea in adult patients with suspected narcotic overdose
- **Contraindications:** Shock or copious nasal secretions (blood or mucus), age 14 or below, or respiratory rate 12 or above

• We are using this in adult patients only as little data exists on pediatric use

Naloxone Dosage / Route

● Adult Dosage

- 2 mg intranasally (IN) – 1 mg each nostril
- 1-2 mg IM
- 1-2 mg IV or diluted IV when indicated

● Pediatric dosage

- 0.1 mg/kg IM or IV (can repeat)

- So there are a variety of ways that naloxone can be given.
- Repeat doses may be needed in some cases.

Changes to Chest Pain / ACS

- Field Treatment Guideline will now direct performance of ECG with V4R lead when inferior MI is noted to detect Right Ventricular MI (RVMI)
- If RVMI detected, paramedics will not administer NTG or morphine



- Previously we have treated chest pain patients with MI in a similar fashion no matter what type of MI they have.
- With the 12-lead, we can detect right ventricular MI, which has a significantly different treatment approach.

New Field Manual

- Pocket-sized Field Manual for EMS providers
- Major revision in format
- Guidelines consolidated to decrease duplication (34 new vs. 59 old)



A2 ADULT	CHEST PAIN SUSPECTED ACUTE CORONARY SYNDROME
OXYGEN	Low flow
PRECAUTION	Caution: Do not administer or allow patient to take Nitroglycerin if patient has taken erectile dysfunction meds (Viagra or Levitra) within 24 hrs or Cialis within 36 hrs. In these situations, severe hypotension may occur as a result of NTG administration.
Nitroglycerin	RLS Permitted. Allow patient to take own if BP greater than 90.
CARDIAC MONITOR	
12-LEAD ECG	STEMI Alert if appropriate. Perform right-sided lead (V4R) if inferior MI noted. Repeat ECGs are encouraged.
ASPIRIN	325 mg po to be chewed by patient - DO NOT administer if patient has allergies to Aspirin or salicylates or has apparent active gastrointestinal bleeding.
IV	TKO
NITROGLYCERIN	0.4 mg SL if systolic BP above 90. May repeat every 5 minutes until pain subsides, maximum 6 doses or BP less than 90 systolic. Do not administer Nitroglycerin if Right Ventricular MI suspected.
Consider	2-20 mg IV in 2-4 mg increments for pain relief if BP greater than 90 and NTG not effective. Consider earlier administration to patients in severe distress from pain.
MORPHINE SULFATE	Titrate to pain relief, systolic BP greater than 90, and adequate respiratory effort. If persistent pain, continue NITROGLYCERIN to maximum of 6 doses. Do not administer Morphine Sulfate if Right Ventricular MI suspected.
Consider	250 ml NS if BP less than 90, lungs clear and unresponsive to positioning. May repeat x 1. Patients with Right Ventricular MI may require multiple fluid boluses.

- The field manual is now a compact size that will hopefully be more convenient for field providers as a real-time reference.
- Most actual treatments haven't changed but the format of the manual is markedly different.
- We are arranging to have at least one copy of the manual available for each Emergency Department.



If you have any questions please contact us at Contra Costa EMS.