

SIERRA-SACRAMENTO VALLEY EMS AGENCY PROGRAM POLICY

REFERENCE NO. 1105

SUBJECT: CO-OXIMETER DEVICES

PURPOSE:

To define the indications and use of CO-Oximeter devices in the prehospital setting by paramedic personnel.

AUTHORITY:

Health and Safety Code 1797.220 and 1798

California Code of Regulations, Title 22, Division 9, Section 100146 & 100169

OVERVIEW:

As carbon monoxide (CO) is considered the “silent killer”, its presence should be considered on the fire ground, in confined spaces, when multiple unexplained illnesses occur within the same occupancy, or when a CO detector has alarmed.

CO is only slightly lighter than air and usually rises to the ceiling with the warm currents of air blown into a house. Because its specific gravity is so close to that of air, it blends quickly with a home’s atmosphere and is quite pervasive. A typical home can be charged within minutes with lethal levels of CO by a malfunctioning forced air furnace. This silent killer is particularly adept at killing those in their sleep, as they tend to succumb without any waking symptoms.

CO has an affinity with hemoglobin, the oxygen carriers of the blood, which is 250 times greater than that of oxygen. The hemoglobin becomes saturated with CO, like a magnet, replacing oxygen molecules and greatly reducing available oxygen to the cells of the body – particularly the brain.

INDICATIONS:

The use of CO-Oximeters to measure CO exposure is an advanced life support skill because it is considered a laboratory test rather than a measurement of vital signs.

S-SV EMS paramedic personnel may utilize an approved CO-Oximeter as a laboratory testing device on any patient (adult and pediatric) with suspected carbon monoxide (CO) exposure.

Effective Date: 12/01/2010

Date last Reviewed / Revised: 10/10

Next Review Date: 06/2013

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Approved:

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S-SV EMS Medical Director

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Signs & Symptoms of Possible CO exposure

The initial symptoms of CO exposure are insidious, similar to the flu and thus seemingly benign. These symptoms increase in severity as the SpCO level rises and may include:

1. Dizziness / vertigo
2. Headache
3. Shortness of breath
4. Nausea / vomiting
5. Fatigue
6. Confusion / altered judgment
7. Syncope
8. Tachycardia
9. Cardiac arrhythmias
10. Seizures
11. Shock
12. Coma
13. Apnea

PROCEDURE:

- A. All persons entering areas of suspected elevated CO levels should don appropriate PPE, including, but not limited to SCBA.
- B. Remove all ambulatory persons / patients to fresh air as soon as safely permitted. Remaining patients should be triaged and extricated according to START-TRIAGE procedures.
- C. Secondary triage including application of the CO-Oximeter away from the CO source in accordance with the accompanying algorithm will allow for determination of further treatment and transport considerations.
- D. Approved triage tags should be used when necessary with CO level, time measured, and time O₂ applied recorded on the triage tag along with standard information.
- E. Use of the CO-Oximeter should not interfere with treatment or transport of any other suspected or identified injury or illness nor does it negate the need for further management and investigation of the symptomatic patient as other medical conditions may still be present.
- F. The following guidelines should be utilized regarding placement of the CO-Oximeter finger sensor:
 1. Sensor should be placed on the middle or ring finger. Index finger may be used, but as a last choice.

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2. Thumb placement may be utilized for patients 10 – 50 kg.
3. Sensor should not be below heart level.
4. Insert finger until the tip of finger hits the “Stop Block”, LED’s (red light) should pass through mid-nail, not cuticle.

CONTINUOUS QUALITY IMPROVEMENT

A copy of the completed PCR for any patient on whom a CO-Oximeter monitoring device is utilized must be forwarded to the S-SV EMS Agency within 30 days for Continuous Quality Improvement purposes.

CARBON MONOXIDE (CO) EXPOSURE ASSESSMENT AND TRIAGE ALGORITHM:

