



Monroe Livingston Region Program Agency

Division of Prehospital Medicine, University of Rochester

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To: All ALS Providers and Agencies

From: Jeremy T. Cushman, MD, MS, EMT-P 
Regional Medical Director

Date: December 19, 2013

Re: Advisory 13-13: Smoke Inhalation Protocol and Hydroxocobalamin

Smoke inhalation is the leading cause of fire death, not burns. Although we often treat for carbon monoxide poisoning with high flow oxygen, we have previously been helpless in treating for an equally fatal toxin found in fire smoke: cyanide. Through grant funds, the Rochester Fire Department (RFD) and Monroe County recently took delivery of 8 Cyanokits[®] (Hydroxocobalamin) and Livingston County is currently procuring 2.

Our cyanide protocol (2.39) has since been updated and replaced by a “Smoke Inhalation” protocol by the same number. This protocol (attached) outlines the care for victims of smoke inhalation and is effective immediately. A smoke inhalation training program, lasting 60-90 minutes in length and covering both carbon monoxide and cyanide is available through the Division of Prehospital Medicine. Division staff can work with your agency to provide the training, or if providers have attended the train-the-trainer program, they may utilize these educational resources. Please contact our office for further information on this educational program.

Cyanokits[®] will be located on the following vehicles and may be administered by ANY system cleared paramedic that has taken the smoke inhalation training program: Rural Metro Supervisor (Car 4), RFD Battalion Chief 1, RFD Battalion Chief 2, RFD Safety Officer (Car 99), Car 901 (J Jordan), Car 910 (R Campbell), 6M-10 (R Allen), and Car 906 (J Cushman). Livingston County EMS will have two kits available from Hampton’s Corners. The purpose of this deployment model is to optimize geographic distribution and attempt to have these expensive resources at the scenes of significant fire events. Individual agencies may certainly acquire and carry their own Cyanokits[®] and we will continue to search for grant and other funds to help offset this expensive antidote.

With any questions, please do not hesitate to contact our office.

2.39 SMOKE INHALATION

CRITERIA

- Known or suspected smoke inhalation
1. Remove patient from hazardous environment, remove clothing/protective gear, and decontaminate as appropriate.
 2. Airway management as appropriate.
 3. Administer high flow oxygen via non-rebreather mask.
 4. If available, apply Masimo RAD-57 per Carbon Monoxide Evaluation Using Handheld Co-Oximetry Policy (9.7). A potentially pregnant patient should be transported with high flow oxygen regardless of SpCO reading.

Any symptomatic patient must be transported regardless of SpCO reading.

Any patient with SpCO reading >12% SHOULD be transported to an emergency department. If the patient declines transport, serial SpCO readings should be obtained and transport initiated if CO levels are not decreasing.

Any patient with SpCO reading >25% MUST be transported to an emergency department.

5. If suspected cyanide poisoning with mild symptoms, rapid transport with ambulance windows open and good ventilation after necessary decontamination completed.

EMT STOP

6. Establish IV Access if potentially unstable; see Vascular Access Protocol (2.34).
7. Treat blood glucose as appropriate.
8. If suspected HCN poisoning with **cardiac/respiratory arrest, SBP <80 with signs of hypoperfusion, or seizures** administer (if available):

5 g hydroxocobalamin (Cyanokit) IV/IO over 15 minutes through a dedicated IV line.

 70 mg/kg hydroxocobalamin IV/IO (max 5 g) over 15 minutes through a dedicated IV line.

NOTE: Each vial must be reconstituted with normal saline using the supplied sterile transfer spike. Following reconstitution, the vial should be repeatedly inverted or rocked for at least 30 seconds prior to infusion. DO NOT SHAKE. If the reconstituted solution is not dark red or if particulate matter is visible after appropriately mixed, the solution should be discarded.

9. Provide supportive care directed to the patient's symptoms:
 - a. Hypotension – Refer to Hypotension/Shock Protocol (2.18).
 - b. Seizures – Refer to Seizures Protocol (2.31).