

ADVANCED EMERGENCY MEDICAL TECHNICIAN (PARAMEDIC) PROTOCOLS

500-B

CYANIDE EXPOSURE

This protocol should be utilized ONLY for the management of critically ill patients with suspected exposure to cyanide.

If operating at a scene with suspected cyanide exposure where the total patient count is greater than 5, a class order¹ is required by an FDNY-OMA Medical Director to utilize this protocol due to the likelihood of a Weapons of Mass Destruction attack. Refer to REMSCO WMD protocol management decisions. The class order may be issued by a FDNY-OMA Medical Director who is on-scene or as relayed through an FDNY-OMA Medical Director through On-Line Medical Control (Telemetry) or through FDNY Emergency Medical Dispatch.

NOTE: The issuance of any class order shall be conveyed to all regional medical control facilities for relay to units in the field.

If operating at a scene with suspected cyanide exposure where the total patient count is 5 or less at one time, the following protocol remains as a Standing Order.

NOTE: Treatment within the “hot” and “warm” zones may be performed only by appropriately trained personnel wearing appropriate chemical protective clothing (CPC) as determined by the FDNY Incident Commander.

NOTE: If providers encounter a patient who has not been appropriately decontaminated from liquid cyanide, the providers should leave the area immediately until such time as appropriate decontamination has been performed.

1. Begin Basic Life Support Procedures.
2. If necessary, perform Advanced Airway Management *.
3. Begin Cardiac & Pulse Oximetry monitoring.
4. Begin two IV infusions of Normal Saline (0.9% NS).
- * *If the patient is alert prior to performing Advanced Airway Management, refer to Prehospital Sedation in General Operating Procedures. Prior Permission from Medical Control Is Required.*
5. Patients with the following symptoms, after exposure to cyanide, should be administered the medications listed in Table 1, if available.
 - Hypotension not attributable to other obvious causes
 - Altered Mental Status
 - Coma
 - Seizures
 - Respiratory arrest
 - Cardiac arrest

NOTE: Prior to administration of Hydroxocobalamin, obtain three blood samples using the tubes provided in the cyanide toxicity kit, if available.

¹ Class Order - A general order given by a FDNY-OMA Medical Director to perform a specific intervention or interventions at a specific location/s during a specified time period. This order is generally reserved for disaster situations.

TABLE 1: One Bottle Kit (5.0gm/200mL/bottle)		
Age Group	Hydroxocobalamin ^A	Sodium Thiosulfate ^B

THE REGIONAL EMERGENCY MEDICAL SERVICES COUNCIL OF NEW YORK CITY

ADVANCED EMERGENCY MEDICAL TECHNICIAN (PARAMEDIC) PROTOCOLS

Infant/Toddler (0-2 years)	¼ bottle	250mg/kg (prepare by mixing 12.5gm of Sodium Thiosulfate with 100mL of D5W, then drawing 3mL/kg of prepared solution) administered over 10 minutes, IV
Preschool (3-5 years)	1/4 bottle	
Grade School (6-14 years)	1/2 bottle	
Adult (≥15 years)	1 bottle	12.5gm (150 mL of a prepared solution) administered over 10 minutes, IV

^A Hydroxocobalamin may be mixed with D5W, Normal Saline, or Lactated Ringers. The vented macro drip tubing that accompanies the Cyanokit, should be used, wide open to ensure correct administration time of approximately 15 minutes for the kit.

^B Sodium Thiosulfate solution should be prepared by adding 12.5gm (50mL) to a 100cc bag of D5W for a total of 150ml.

6. In the event of continued hypotension (SBP <90mmHg):

a. Administer epinephrine 10 mcg IV Bolus. Repeat epinephrine 10 mcg IV Bolus every 5 minutes. Titrate to a systolic BP greater 90mmHg.

OR

a. Administer Norepinephrine 2 mcg/min IV drip. If there is insufficient improvement in hemodynamic status, the infusion rate may be increased until the desired therapeutic effects are achieved or adverse effects appear. Maximum dosage is 20 mcg/min, IV drip.

NOTE: Norepinephrine must be administered via 18 G or larger IV/IO, using an IV drip chamber or other suitable metering device (e.g. Dial a flow, infusion pump).

OR

b. Administer Dopamine 5 mcg/kg/min, IV drip. If there is insufficient improvement in hemodynamic status, the infusion rate may be increased until the desired therapeutic effects are achieved or adverse effects appear. (Maximum dosage is 20 mcg/kg/min, IV drip.)

NOTE: Whenever Hydroxocobalamin is administered, follow with a 20 ml flush of normal saline (0.9% ns) prior to administration of any other medication.

MEDICAL CONTROL OPTIONS:

OPTION A: Transportation Decision.

CYANIDE TOXICITY KIT (if available)

One (1) 5.0 gm bottle of crystalline powder Hydroxocobalamin	One (1) 2 ml fluoride oxalate whole blood tube
One (1) 12.5 gm bottles of Sodium Thiosulfate (50 mL of 25% solution)	One (1) 2 ml K2 EDTA tube
Two (2) 100 mL bag 0.9% NS, D ₅ W, LR	One (1) 2 ml lithium heparin tube
One (1) 100 mL bag D ₅ W	