

**Cyanide Exposure (Adult and Pediatric)****CFR AND ALL PROVIDER LEVELS**

1. ABCs and vital signs.
2. Airway management.
3. Administer oxygen.
4. Treat any burns according to the Burns (Adult and Pediatric) protocol.

● **CFR STOP****EMT**● **EMT STOP****Paramedic**

*This protocol should be utilized ONLY for the management of critical 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 order is required. Refer to GOP 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 Online Medical Control (Telemetry) or through FDNY Emergency Medical Dispatch.

**NOTE: The issuance of any class order shall be conveyed to all regional Online 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 appropriate decontamination has been performed.**

5. Perform Advanced Airway Management, if necessary.
6. Begin cardiac monitoring.
7. Begin pulse oximetry monitoring.
8. Begin SpCO monitoring, if available.
9. Obtain at least two (2) sites of intravascular access.
10. Administer Hydroxocobalamin and Sodium Thiosulfate IV for patients with any of the following symptoms according to Table 1, if available:
  - a. Cardiac arrest
  - b. Respiratory arrest
  - c. Altered mental status
  - d. Seizures
  - e. Hypotension not attributable to other obvious causes

**NOTE: Prior to administration of Hydroxocobalamin, obtain three blood samples using the tubes provided in the cyanide toxicity kit, as soon as possible.**

TABLE 1::Cyanide Toxicity Kit (Hydroxocobalamin 5 g in 250 ml bottle, Sodium Thiosulfate 12.5 g in 50 ml vial)		
Age Group	Hydroxocobalamin <sup>A</sup>	Sodium Thiosulfate <sup>B</sup>
Pediatric (0 - 14 years)	75 mg/kg (3 ml/kg of the prepared Hydroxocobalamin solution) IV over 15 minutes Maximum dose 5 g If needed may repeat 75 mg/kg IV over 15 minutes	250 mg/kg (3 ml/kg of the prepared Sodium Thiosulfate solution) IV over 10 minutes.
Adult (≥ 15 years)	5 g (250 ml of the prepared Hydroxocobalamin solution) IV over 15 minutes. If needed may repeat 5 g IV over 15 minutes	12.5 g (150 ml of the prepared Sodium Thiosulfate solution) IV over 10 minutes

- Hydroxocobalamin solution is prepared by adding 200 ml of NS / D<sub>5</sub>W to Hydroxocobalamin 5 g powder in the bottle provided. Due to the volume of Hydroxocobalamin powder, the total volume of Hydroxocobalamin solution will be 250 ml. The vented macro drip tubing that accompanies the Cyanokit<sup>®</sup> should be used to administer the Hydroxocobalamin solution in the wide open position to ensure the correct administration time of approximately 15 minutes.
- Sodium Thiosulfate solution is prepared by adding Sodium Thiosulfate 12.5 g (50 ml) to a 100 ml bag of NS or D<sub>5</sub>W for a total volume of 150 ml.

**NOTE: In the event that only one intravascular access line is established, administer Hydroxocobalamin BEFORE Sodium Thiosulfate as Sodium Thiosulfate will inactivate Hydroxocobalamin.**

**NOTE: Whenever Hydroxocobalamin is administered, follow with a 20 ml flush of crystalloid fluid prior to administration of any other medication.**

- For patients who remain in shock after the administration of a crystalloid bolus, administer vasopressors per the Shock/Sepsis (Adult) protocol.

**● Paramedic STOP**

**Key Points / Considerations**

- 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.
- If the patient is alert prior to performing Advanced Airway Management, refer to the General Operating Procedures – Prehospital Sedation.
- Vasopressor infusions should be administered, preferably via an 18 gauge or larger IV catheter, or an IO, using an an IV flow regulating device. Standard IV administration sets are not considered IV flow regulating devices.

CYANIDE TOXICITY KIT (if available)	
One (1) 5 g bottle of crystalline powder Hydroxocobalamin	One (1) 2 ml fluoride oxalate whole blood tube
One (1) 12.5 g bottle of Sodium Thiosulfate (50 ml of 25% solution)	One (1) 2 ml K2 EDTA tube
Three (3) 100 ml bag 0.9% NS, D <sub>5</sub> W	One (1) 2 ml lithium heparin tube
20 ml syringe	Three way stopcock connector