Chemical Exposure

Purpose: To provide specific criteria for the treatment of chemical exposure of patients.

Note: **This protocol may be used in conjunction with the General CBRNE/Identification of Agent Protocol**.

Assessment/Management – Chemical Agents

MFR/EMT/SPECIALIST/PARAMEDIC
If there is a confirmation of, or symptoms indicative of, a chemical incident, utilize appropriate PPE as outlined in the General CBRNE Protocol.

1. **Nerve Agents & Cyanide Compounds – refer to appropriate protocol**
2. **Choking Agents**
   A. Phosgene, Chlorine, Chloropicrin
   B. Routes: Inhalation
   C. Signs and symptoms:
   D. Cough, dyspnea, irritation of mucous membranes, pulmonary edema
   E. Patients should be immediately removed from the area to a clean atmosphere.
3. **Treatment**
   A. Respiratory chemical PPE
   B. Assist ventilations, as necessary
   C. 100% Oxygen
   D. Symptomatic treatment per protocol
   E. Eye irrigation
      a. Remove contact lenses
      b. Flush with 1000cc of NS each eye
      c. Flush from nose-side outward

PARAMEDIC

      d. If available, use Tetracaine hydrochloride 1-2 drops in each eye.
      e. Ensure that patient does not rub eyes after administration of Tetracine as injury may result.
      f. For severe exposure consider early intubation and aggressive ventilatory support. (Evidence of non-cardiogenic pulmonary edema)
         - Albuterol 2.5mg via nebulizer or 2-3 puffs from metered dose inhaler, if wheezing (May repeat x 1).
4. **Vesicant Agents (Blister agents)**

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   A. **Examples**: Sulfur Mustard (HD), Nitrogen Mustard (HN), Lewisite, Phosgene Oxime (CX) Vesicant agents are named for their tendency to cause blisters.

B. **Decontamination:** Patients suspected to be contaminated should be decontaminated by removing clothing and using soap (if available) and water. Medical providers will require the proper protective equipment as determined by unified command, for patient management. Decontaminate by blotting and cleansing with soap (if available) and water. Avoid scrubbing and the use of hot water.

Note: Latex and rubber will absorb Mustard. Remember that time is critical for effective mustard decontamination because blister agents become "fixed" to tissue components within two minutes after deposition.

5. **Management/Treatment**
   A. Immediate attention should be directed toward assisted ventilation, administration of 100 % oxygen, insertion of intravenous lines and institution of cardiac monitoring, if available.
      - Symptomatic treatment per protocol.
6. **Lacrimator Agents (Tear Gas)**
   A. **Information:** Lacrimator (tearing) agents are widely used by law enforcement, the military, and widely available to the public.
   B. **Signs and Symptoms**: The most common effects are nasal and ocular discharges, photophobia, and burning sensations in the mucous membranes.
   C. **Decontamination:** Patients suspected to be contaminated should be decontaminated with soap and water. Medical providers require protective masks and clothing for patient management since lacrimator agents are transmitted by physical contact. Decontaminate by blotting and cleansing with soap and water.
   D. **Treatment**
      a. High flow oxygen for all symptomatic patients.
      b. Symptomatic treatment per protocol (no specific antidote).
      c. Eye irrigation
         - Remove contact lenses
         - Flush with 1000cc of NS each eye
         - Flush from nose-side outward
         - If available, use Tetracaine hydrochloride 1-2 drops in each eye.
         - Ensure that patient does not rub eyes after administration of Tetracine as injury may result.