



Hazardous Material Exposure

Approval: Troy M. Falck, MD – Medical Director

Effective: 06/01/2023

Approval: John Poland – Executive Director

Next Review: 01/2026

Refer to S-SV EMS Hazardous Material Incidents Policy (836)

Important caveats for medical responders:

- EMS personnel shall not enter or provide treatment in the Contamination Reduction Zone (Warm Zone) or Exclusion Zone (Hot Zone) unless trained, equipped and authorized to do so.
- EMS personnel shall not use Haz Mat specific personal protective equipment (PPE), including self-contained breathing apparatus (SCBA), unless trained, fit tested and authorized to do so.
- Do not transport pts until they have been completely decontaminated. If transport personnel become contaminated, they shall immediately undergo decontamination.
- Do not delay treatment/transport of immediate pts contaminated with radioactive material.
- Early base/modified base hospital contact, and CHEMPACK activation when appropriate (S-SV EMS Nerve Agent Treatment Protocol E-8), will maximize assistance from necessary resources.
- Refer to Hazardous Materials Medical Management Reference as appropriate.

Information that must be obtained by EMS personnel on every hazardous materials incident:

- Number of pts.
- Material involved or DOT 4-digit placard #.
- Route(s) of exposure for each pt.
- Signs & symptoms for each pt.
- Decontamination procedure completed for each pt.
- Procedure utilized to determine effectiveness of decontamination procedure.
- Risk of secondary exposure to rescuers.
- PPE required to transport pt.

BLS



- Establish and secure airway as necessary
- O₂ at appropriate rate
- Contact base/modified base hospital for assistance in determining a decontamination/treatment plan
- After pt is fully decontaminated, cover with blankets and/or sheets as appropriate
- If eye exposure occurs, irrigate each exposed eye with NS – ensure contact lenses are removed

See pages 2 & 3 for additional treatment



Hazardous Material Exposure

Treatment Notes

- Skin exposure to hydrofluoric acid with a concentration >20% can cause fatal hypocalcemia and should be treated. Provide continuous EKG monitoring to look for QT-interval prolongation which is an early sign of hypocalcemia.
- Precautions must be taken to prevent direct contact with secretions of a pt who has ingested organophosphates or carbamate pesticides.

ALS

- Cardiac Monitor
- IV/IO NS TKO in non-burned/non-contaminated extremity (may bolus up to 1000 mL)

Hydrofluoric Acid

- **Calcium Chloride 10%**
- 10 ml slow IV/IO
- May repeat every 5 mins

For hydrofluoric acid burns isolated to the hands, fingers, or toes

- **Calcium Chloride 10%**
- Pour contents of one ampule into a sterile glove and immerse affected area into solution
- If Calcium Gluconate gel has been applied, do not remove - no further treatment is necessary

Organophosphate/Carbamate

- **Atropine**
- 2 mg IV/IO if HR <60
- May repeat every 3 mins to HR >80
- No maximum dose

Refer to Nerve Agent Treatment Protocol (E-8) if additional treatment is necessary



Hazardous Material Exposure

Radiation Emergencies

- Pt care takes priority over radiological concerns - addressing contamination issues should not delay treatment of life-threatening injuries.
- Viable pts are a high priority - rapidly extricate, treat and transport pts who are most critical and likely to survive.
- It is highly unlikely that the levels of radioactivity associated with a contaminated pt would pose a significant health risk to care providers.
- Body substance isolation clothing (gloves, gowns, N-95 masks, protective eyewear, shoe protectors, and head cap) are recommended, including 2-3 pair of disposable gloves.
- Due to fetal sensitivity to radiation, assign pregnant staff to other duties.

Ambulance Preparation

- Avoid using internal and external compartments - work out of mobile kits as much as possible.
- Close all internal compartments prior to loading pt.
- Cover radio communication microphones with a rubber glove.
- Cover floor of ambulance with disposable papers or pads.

Radiation Exposure Haz Mat Pt

- If O₂ is warranted, use a non re-breather mask (if tolerated) to provide protection from inadvertent respiratory contamination hazards - an N95 mask is appropriate to protect pt from inadvertent respiratory contamination hazards when O₂ is not indicated
- Frequent glove changes will reduce the spread of contamination and should be considered prior to handling the pt or pt care adjuncts
- All medical procedures should be utilized to save an immediate pt - if it is medically necessary to intubate a pt that is contaminated, then do so - change gloves prior to intubation, and maintain ET tube sterility if possible

Limited or no field decontamination

- Initiate ALS care as necessary
- Keep pt wrapped (cocoon style) to minimize potential for contamination spread - only expose areas to assess and treat
- If necessary, cut and remove the pts clothing away from the body, being careful to avoid contamination to the unexposed skin - contain all removed clothing by placing in a sealable bag
- Continue to reassess/monitor vitals while transporting pt to the appropriate receiving facility
- Contact with pt may result in transfer of contamination - change gloves as necessary

Field decontamination performed

- Pts with non life-threatening injuries should have field decontamination prior to removal from the Exclusion (Hot) Zone
- Pts condition permits a more thorough radiological survey prior to continued care
- Conduct head to toe assessment as appropriate
- Initiate ALS care as necessary
- If pts clothing has not been removed during decontamination, keep pt wrapped (cocoon style) to minimize potential for contamination spread - only expose areas to assess and treat
- Contact with pt may result in transfer of contamination - change gloves as necessary