

9.0 Hazardous Material Exposure

Purpose

The goal of the hazardous materials exposure protocol is to prepare the EMS provider for the potential risks that may be encountered and to provide guidelines to mitigate the effects of a hazardous exposure incident. The EMS provider may reference additional protocols for the management of specific hazardous materials exposure in dealing with known chemicals.

Successful management of a hazardous materials exposure depends on effective coordination between EMS, local hazardous materials teams, fire and police departments, the Poison Control Center, and appropriate state and federal agencies.

Identification

- Identification of the exposed material should be made at the earliest convenient time possible.
- Proper chemical name and spelling will be necessary for identification of procedures for Poison Control (1-800-222-1222) and receiving hospitals.
- Utilization of shipping papers, waybills, and Safety Data Sheets (SDS) may assist in identifying chemical hazards, safety precautions, personal protective equipment, and treatments.

Note: Many household chemicals may not require activation of a hazardous materials team. Utilize manufacturer's recommendation for decontamination and treatment, or contact Poison Control for treatment and decontamination procedures.

Personal Safety

- Personal protection is the highest priority when responding to an incident where hazardous material exposure is suspected. DO NOT ENTER THE HOT ZONE. Only HazMat Teams should enter the hot zone.
- If there is a major hazardous materials release:
 - Request specific staging information and be alert for clusters of injured patients.
 - Maintain safe location upwind and uphill of the site (at least 300 ft.).
 - Observe strict adherence to hot, warm, and cold-zone areas for personal safety, decontamination, and treatment.
 - Activate the HazMat Response/Incident Command System.
 - Incident Command to notify NH Bureau of Emergency Management (603-271-2231) to request additional resources including law enforcement and pharmaceutical supply.

Hospital Notification

- Receiving hospitals should be notified as soon as it is determined you have contaminated patient(s) to ensure the facility is capable and prepared to receive a potentially contaminated patient. Communication with the hospital should include such information as covered under the documentation and treatment section.

Patient Decontamination

Only properly trained and protected personnel should conduct patient decontamination. The decontamination system is established by the appropriately trained fire department/HazMat Team. EMS personnel will work cooperatively with them during the decontamination process.

Patient decontamination is necessary to minimize injury due to exposure, as well as to mitigate risk of secondary exposure.

Protocol Continues 

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Mass/Gross Decontamination

- Mass Decontamination (Large-scale Multiple/Mass Casualty) involves the effective dilution of a chemical or hazardous substance utilizing large quantities of water. This process should be supervised by the appropriately trained local fire department or HazMat Team.
- This process is necessary due to the involvement of an overwhelming number of patients, the severity of symptoms, and where technical or fine decontamination cannot be utilized due to time and personnel.

Technical Decontamination

- Technical Decontamination involves a multi-step process, supervised by the appropriately trained fire department or HazMat Team.
- This decontamination process is dependent on the type of chemical hazard present, and may require different methods such as:
 - Dilution.
 - Absorption.
 - Neutralization.
 - Chemical degradation.
 - Solidification.

Each method of decontamination has specific uses. Ascertain from the HazMat Team which method was used, if there are any hazards associated with the decontamination process, and if further definitive decontamination is required at the hospital.

Definitive/Fine Decontamination

- Usually completed at the hospital, it involves additional washing and rinsing to further dilute and finally remove any contaminants. Definitive decontamination should be performed in an authorized decontamination facility and with appropriately trained personnel.

Decontamination of Special Populations

- Children and their families, the elderly/frail, and patients with medical appliances will require more EMS personnel and time for general assistance and may also require simultaneous basic life support assistance during decontamination. An individual patient requiring special needs decontamination may take 10 – 15 minutes to complete.

Although the principles of decontamination are the same, certain precautions may need to be taken, depending on the patient.

- These patients may have the inability to give history or describe symptoms and physical complaints.
- Typical stress response of children is to be highly anxious and inconsolable, making assessment difficult.
- Small children are more difficult to handle while wearing personal protection equipment (PPE).
- Attempt to keep children with their families, as the decontamination process is likely to be frightening and children may resist.

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- Keep patients with existing medical conditions together with their caregivers, if feasible.
- Children and elderly, and possibly special needs patients, are inherently unable to maintain body temperature and quickly become hypothermic. Utilize water warmed to 100°F, if available, keep warm after drying procedure.

Use low-pressure water and soft washcloths and protect the airway and eyes throughout the decontamination process.

Treatment during Decontamination

- If medication is required, limit administration route to intramuscular or medi-inhaler.
- Intravenous therapy and advanced airway interventions should be delayed until after gross decontamination.
- Specific individual treatment should be referenced from Poison Control or MSDS sheets.

Document Exposure and Treatment Information

- Name of chemical(s).
- Amount, time, and route of exposure.
- Decontamination information.
- Treatment/antidotes administered.

Transport

- EMS personnel transporting potentially contaminated patients (e.g., patients who have received gross decontamination) must have appropriate PPE.
- Lining of the interior of the ambulance and further use of PPE may be necessary, dependent upon the level of completed decontamination.
- If an ambulance has transported a contaminated patient, it can only be used to transport similarly contaminated patients until proper decontamination of the vehicle is complete.
- Contaminated patients will not be transported by helicopter.