

M11**POISONING**

At a scene of a potential poisoning EMS personnel must ensure appropriate safety precautions are used to avoid becoming exposed to toxic, noxious, or hazardous substances.

GENERAL

- personal protective equipment should be utilized as appropriate
- body substance isolation techniques and equipment should be utilized as appropriate
- scene assessment
 - assess environmental concerns for possible contaminants or hazards
 - locate a safe environment to which the patient could be brought
 - ensure safety for all EMS personnel and bystanders
 - ensure the scene is safe prior to entering
 - specialized rescue crews and equipment may be required to secure the scene and remove the patient from a contaminated area
 - remove patient or have patient removed from the potentially hazardous environment
 - don protective clothing and equipment as appropriate prior to coming into contact with the patient
 - continuously monitor the scene and be prepared to load and go immediately
- primary survey
 - assess level of consciousness
 - assess and manage ABCs
 - protect the patient if seizure activity is present
- secondary survey
- perform glucometry if EMS personnel are certified to do so and the patient has an altered mental status
 - initiate treatment as indicated
- obtain a pertinent history
 - name of product or substance
 - method and duration of contact
 - length of time since contact
 - amount ingested, injected, absorbed, inhaled
 - any antidotes given to patient, and their response
 - changes in the level of consciousness
 - vomiting
 - relevant medical history
 - allergies
 - physical responses to poison – e.g. burns, diarrhea, changes in level of consciousness

- call Poison Control Centre, if required, at **1-204-787-2591 or 911 (if available)**
 - record and document the information received from the Poison Control Centre and the name of the doctor providing the information and direction
 - do not administer anything by mouth unless indicated by a Treatment Protocol or by physician online medical control
- consider load and go based on the patient condition
 - maintain high concentration oxygen delivery to the patient
 - assist ventilations if required
 - on scene times should be kept to a minimum
 - treat other life-threatening conditions en route
- transport the patient to the nearest appropriate health care facility
 - notify the receiving health care facility of the patient's status as soon as possible
 - monitor and treat the patient en route
 - additional surveys and treatments should be conducted en route
 - transport patient in a position of comfort, injuries permitting
- depending on the nature and extent of the patient's exposure to the hazardous materials and the patient's contamination status, surveys may need to be delayed until the patient has received further decontamination procedures at the receiving facility
- document all actions including the decision to initiate load and go
- report all findings to the receiving facility staff, and document on the patient care report
- the receiving facility should be kept informed if there are delays in initiating transport due to extrication of the patient from the hazardous environment or on scene decontamination procedures are initiated

SPECIAL CONSIDERATIONS

Care of the poisoned patient is similar in many ways. The above section outlines these similarities. In all cases, the primary survey should identify and manage immediate threats to life. Certain poisoned patients require particular attention for successful management by EMS personnel.

Ingested Poisons

- identify substance ingested
- estimate quantity ingested
- bring with the patient any vomitus, containers, tablets or capsules, liquids, syringe(s) or other items that could assist the medical staff to identify the substance that the patient may have taken
- do not gather, handle, or transport any potentially hazardous or harmful substance

Inhaled Poisons (including carbon monoxide)

- ensure safety for EMS personnel
 - if there is any question regarding the presence of a potential hazard, EMS personnel should not enter the environment until declared safe
- remove patient to fresh air
- administer high concentration oxygen
- keep patient calm and resting
- identify substance inhaled
- estimate duration and exposure
- ambulance exhaust fan should be operated to vent any toxic fumes

Injected Poisons

- ensure safety for EMS personnel
 - if there is any question regarding the presence of a potential hazard, EMS personnel should not enter the environment until declared safe
- attempt to estimate the type(s) and amount(s) of material injected
- administer high concentration oxygen
- keep patient calm and resting
- be prepared for signs and symptoms of anaphylaxis
- be prepared to support respirations or initiate CPR
- if the injection occurred in the hand or finger, elevate the affected limb and remove all jewelry on the limb
- treat as per Soft Tissue Injuries/Wounds, External and Internal Bleeding Guidelines

snake bites

- ensure safety for EMS personnel
 - if there is any question regarding the presence of the snake, EMS personnel should not enter the environment until declared safe
 - EMS personnel should not place themselves at risk in attempting to identify the type of snake
- as early as possible in the incident inform the receiving health care facility of the nature of the incident, the type of snake involved, and location(s) of bites so treatment preparations can be initiated
- do not place cold packs over injury site
- treat for shock, if required
- if an extremity is involved
 - place a wide non-constrictive band proximal to the injection site
 - the band's purpose is to impede lymphatic flow; it should not impede blood flow
 - place the band approximately 5 cm (2 inches) proximal to the injection site
 - do not place a band over a joint
 - ensure the band is loose enough so that the EMS personnel can slide one finger under the band

animal and human bites

- treat as per Soft Tissue Injuries / Wounds, External and Internal Bleeding Guidelines

insect stings

- ensure safety for EMS personnel
 - if there is any question regarding the presence of the stinging insect, EMS personnel should not enter the environment until declared safe
 - EMS personnel should not place themselves at risk in attempting to identify the type of stinging insect
- care must be taken to ensure no stinging insects remain in the patient's clothing or hair
 - EMS personnel must take precautions to ensure they are not stung during assessment of the patient
- identify all injection sites
- where applicable, remove stinger(s) or attached venom sac(s) gently, without squeezing
- monitor vital signs
 - be prepared for possible respiratory difficulty
- be prepared for signs and symptoms of anaphylaxis
 - treat as per anaphylaxis treatment protocols, as required

Poisons that Contact or are Absorbed by the Skin

- ensure safety for EMS personnel
 - if there is any question regarding the presence of a potential hazard, EMS personnel should not enter the environment until declared safe
- attempt to estimate the type(s) and amount(s) of material topically absorbed, and the duration of exposure
- remove the patient to fresh air
- administer high concentration oxygen
- remove contaminated clothing including shoes, watches, and jewelry
- brush off dry chemicals before irrigating with water
- flood exposed areas with water for at least twenty minutes
 - ensure the patient and EMS team members are not contaminated by clothing or waste water containing the poisonous material
- keep patient calm and resting
- be prepared for signs and symptoms of anaphylaxis
- be prepared to support respirations or initiate CPR
- treat as per Soft Tissue Injuries / Wounds, External and Internal Bleeding Guidelines

Hazardous Material Exposure

- hazardous materials can include nuclear, biologic, or chemical substances
- when called to an accident involving hazardous material, safety concerns are the **FIRST** priority
- contact the following agency for any hazardous materials response
 - Manitoba Conservation Department - Environmental Operations: Dangerous Goods Emergency Response
 - **1-204-944-4888 (Nine-triple four-triple eight)**
 - they provide advice and guidance on how to approach a particular situation, including
 - protective gear requirements
 - decontamination requirements and procedures
 - specific patient care details
 - they will also dispatch the appropriately trained and equipped emergency response personnel to secure the scene and extricate any patients
 - staff will provide approximate response times for support agencies and will be part of an incident command process
- upon arrival at the scene
 - secure a safe environment up wind from the incident and maintain an appropriate distance from the source of hazardous material (see Scene Assessment and Triage Guidelines)
 - **additional information on safety perimeters and procedures can be found in the book North American Emergency Response Guidebook - A Guidebook for First Responders During the Initial Phase of a Hazardous Materials / Dangerous Goods Incident (published by Transport Canada)**
 - every ambulance should have a copy of this book in the vehicle
 - all EMS personnel should be familiar with the contents and use of this book
- inform the receiving health care facility of the hazardous material and the patient's condition so preparations for containment, decontamination, and treatment can be initiated

- decontamination should take place prior to transport if possible
- additional ambulance(s) and additional EMS staff may be required to transport the patient if the initial EMS personnel or their ambulance become contaminated
- while the patient is being removed from the contaminated site, prepare the ambulance to minimize the possibility of contamination
 - ensure safety of EMS personnel
 - only appropriately trained and equipped personnel should be used to move the patient to an uncontaminated area
 - appropriately trained and equipped personnel should perform the initial decontamination of the patient
 - when it is safe to attend to the patient
 - all EMS personnel must use appropriate protective equipment including gloves, gowns, masks and eye protection
 - remove the patient's contaminated clothing including shoes, watches, and jewelry if this has not already been done
 - place the patient's belongings into a container designed to hold hazardous material
 - conduct a primary survey and manage ABCs
 - administer high concentration oxygen
 - consider load and go
 - perform secondary survey, en route if necessary
 - treat the patient as per the patient's presenting injuries as per appropriate Guidelines
- a second EMS crew may be required to undertake transport of the patient if the initial EMS crew are required to remain at the scene while they undergo decontamination procedures
- depending on the nature and extent of the patient's exposure to the hazardous materials and the patient's contamination status, surveys may need to be delayed until the patient has received further decontamination procedures at the receiving facility
- the receiving facility should be kept informed if there are delays in initiating transport due to extrication of the patient from the contaminated environment and/or on scene decontamination procedures are initiated
- once at the receiving health care facility
 - remove gloves, masks, gowns and protective clothing following appropriate technique
 - place all contaminated materials into proper disposal containers
 - follow personal decontamination procedures
 - reapply clean protective clothing, mask and gloves to decontaminate the ambulance and equipment
 - remove gloves, masks, gowns and protective clothing following appropriate technique
 - place all contaminated materials into proper disposal containers
 - follow personal decontamination procedures
 - care should be taken to avoid contaminating the receiving facility and recontaminating the ambulance(s) once decontaminated

NOTE

- **always treat the patient, not the poison**
- when treating patients of inhaled or contact poisoning or any hazardous material, precautions should be taken to protect EMS personnel from exposure
 - specially trained and equipped response personnel may be required to extricate or rescue the patient from the scene
 - initial decontamination of the patient may also require specially trained and equipped personnel
 - always wear gloves, gown, mask, and protective equipment and clothing when
 - dealing with pesticide poisoning
 - the type of chemical is unknown
 - the poison could be absorbed or inhaled
 - indicated in the North American Emergency Response Guidebook - A Guidebook for First Responders During the Initial Phase of a Hazardous Materials/Dangerous Goods Incident
 - directed by
 - rescue or hazardous materials personnel
 - Conservation Department personnel
 - CANUTEK personnel

poison is in the patient's eye(s)

- remove contact lenses if appropriate
- flood the eye(s) with lukewarm water for at least twenty minutes
- have the patient blink frequently during irrigation

contaminant on the patient's skin

- remove all contaminated clothing
- if the contaminant is dry powder, brush as much powder off the skin as possible
- flush the skin with water for at least twenty minutes
- EMS personnel should prepare for possible contamination of the EMS team and other responding agencies when hazardous materials are present
 - additional appropriate resources should be requested as soon as the nature of the incident is determined
- when possible, provide the health care facility staff with information on what substance or hazardous material the patient was exposed to
- although many products provide information regarding antidotes, do not administer product antidotes in the field
 - product label antidotes are sometimes incorrect
 - the only exceptions to this are specific antidotes described in EMS treatment protocols

Table 1

The signs and symptoms exhibited by a patient who has been poisoned or exposed to a hazardous substance depend on the type of poison or hazardous substance, the amount of poison or hazardous substance, and the length of contact.

Common Signs and Symptoms of Poisoning

- altered mental state, including
 - restlessness
 - delirium
 - hyperactivity
 - lethargy
 - seizure
 - coma
- headache
- irritated eyes
- burning mouth and throat (corrosives)
- coughing
- dyspnea
- nausea, vomiting, diarrhea
- abdominal pain, cramps
- dilated or constricted pupils
- odors on breath
- increased or decreased pulse or respiratory rate
- decreased blood pressure
- cardiorespiratory arrest

Signs and Symptoms of Carbon Monoxide Poisoning

- headache
- dizziness
- nausea, vomiting
- incontinence
- lethargy, stupor, or unconsciousness
- cardiorespiratory arrest
- bounding pulse
- normal to elevated respiratory rate
- possible cyanosis or pallor
- possible cherry red lips and skin (a very late sign)
- dilated pupils

Signs and Symptoms of Snake Bite

- sharp pain (often stinging) in area of bite
- nausea, vomiting
- weakness
- discoloration and swelling
- puncture mark(s) in area of bite
- weak and rapid pulse
- dyspnea or respiratory distress
- decreased blood pressure or shock
- cardiorespiratory arrest

Signs and Symptoms of Insect Bites and Stings

- stings or bites on the skin
- local irritation and pain
- severe itching
- nausea, vomiting
- presyncope or syncope
- rapid, weak pulse
- dyspnea or respiratory distress
- decreased blood pressure or shock
- swelling of face and neck
- airway obstruction (partial or complete)
- generalized urticaria
- body rash

Signs and Symptoms of Poisons that Contact or are Absorbed by the Skin

- inflammation and irritation of the skin
- severe itching
- chemical burns
- blisters
- tissue destruction

NOTES :