

## **T. ENVIRONMENTAL EMERGENCIES: COLD EMERGENCIES (FROSTBITE)**

### **1. Inclusion Criteria**

Exposure to cold environment (not necessarily outdoors). Frostbite usually affects the feet first, followed by the hands, face, and/or ears. The skin initially appears reddened, then turns mottled, bluish, white and/or gray with continued freezing of the flesh. Pain persists during initial stages, followed by numbness.



### **2. Treatment**

- a) Remove patient from cold environment.
- b) Handle potential frostbitten areas gently.
- c) Cover lightly with gauze.
- d) Protect from further heat loss.



DO NOT RUB THE AFFECTED AREAS, AS THIS WILL CAUSE MORE DAMAGE TO THE FROZEN TISSUE.



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- e) Establish IV access with LR.
  - f) Administer opioid per Pain Management Protocol.

**PEDIATRIC SECTION ON NEXT PAGE**

## T. ENVIRONMENTAL EMERGENCIES: COLD EMERGENCIES (FROSTBITE) (Continued)



- g) Remove patient from cold environment.
- h) Handle potential frostbitten areas gently.
- i) Cover lightly with gauze.
- j) Protect from further heat loss



- k) Establish IV/IO access with LR, if appropriate.
- l) Administer opioid per Pain Management Protocol.

## U. ENVIRONMENTAL EMERGENCIES: COLD EMERGENCIES (HYPOTHERMIA)

### 1. Inclusion Criteria

#### a) Mild to moderate hypothermia (90°–95° F)

Core body temperature (if available) less than 95° F but greater than 90° F. Patient may present with a history of exposure to cold, altered level of consciousness, shivering, stiffness of muscles, stumbling or staggering gait, cool or cold skin, mottled or pale skin, absent or difficult to detect respiratory effort and/or peripheral pulses, respiratory, and/or cardiac arrest.

#### b) Severe hypothermia (less than 90° F)

Core body temperature (if available) less than 90° F. Patient may present with any of the symptoms listed above except shivering.



HANDLE ALL HYPOTHERMIC PATIENTS CAREFULLY. ROUGH HANDLING MAY PRECIPITATE CARDIAC ARREST.

IF HYPOTHERMIA IS SUSPECTED AND THE PATIENT DOES NOT HAVE INJURIES INCOMPATIBLE WITH LIFE, THE PATIENT SHOULD BE RESUSCITATED.



### 2. Treatment

#### a) Remove the patient from the cold environment.

#### b) Avoid further heat loss by removing wet clothing, replacing with dry blankets and insulating material. Use a thermal type blanket and special attention to covering the patient's head.

#### c) PASSIVELY rewarm patient within a warm environment.

#### d) If available, administer warmed oxygen.



ADMINISTER SHOCK(S) WITH THE AED IF INDICATED.



#### e) For further AED shocks, obtain medical consultation.

## U. ENVIRONMENTAL EMERGENCIES: COLD EMERGENCIES (HYPOTHERMIA) (Continued)



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- f) Monitor EKG closely.
  - g) Establish IV access with LR, if appropriate.
  - h) Identify rhythm and treat according to appropriate algorithm.



CONSIDER, WITH MEDICAL CONSULTATION, CONTINUED CARDIOPULMONARY ARREST PROTOCOLS WITH LONGER MEDICATION INTERVALS.

## V. ENVIRONMENTAL EMERGENCIES: DEPRESSURIZATION

### 1. Inclusion Criteria

History of SCUBA, breathing in a pressurized environment, or altitude chamber usage with sudden depressurization. Patients may present with any of the following symptoms: fatigue and itching, pain, vertigo, focal weakness, visual disturbances, speech difficulty, marbled rash, numbness, tingling, confusion, seizure, and/or cardiac arrest.



CONSIDER TRANSPORT TO HYPERBARIC MEDICINE SPECIALTY CENTER.

AEROMEDICAL TRANSPORT MAY BE APPROPRIATE FOR PATIENTS WITH BAROTRAUMA.

FOR ADDITIONAL INFORMATION CONCERNING SCUBA INJURIES, CONTACT THE DIVING ALERT NETWORK VIA EMRC 1-800-648-3001.



### 2. Treatment

- a) Remove patient from water.
- b) Protect patient from and/or treat for hypothermia.



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- c) Establish IV access with LR.

## W. ENVIRONMENTAL EMERGENCIES: HAZARDOUS MATERIALS EXPOSURE

### 1. Inclusion Criteria

Exposure to a known or unknown hazardous material. Patient may present with a wide array of signs and symptoms due to the variables of substance exposure. Any patient who is exposed to a hazardous material is considered contaminated until the patient is decontaminated thoroughly.

### 2. Treatment



DO NOT ENTER THE SCENE UNLESS PROPERLY TRAINED AND EQUIPPED TO DO SO.

PROPER LEVELS OF PERSONAL PROTECTIVE EQUIPMENT (PPE) ARE TO BE WORN BY ALL PERSONNEL, DEPENDING ON THE MATERIAL INVOLVED AND THE ZONE OCCUPIED.

IT IS ESSENTIAL TO HAVE THE EMS CLINICIAN IN CHARGE NOTIFY EMRC AND POTENTIAL RECEIVING HOSPITALS OF A HAZARDOUS MATERIALS EVENT IN WHICH THEY MAY BE CONSULTED. NOTIFY EMRC/RECEIVING HOSPITALS ABOUT THE FIRST PATIENT'S ETA, THE NUMBER OF VICTIMS, AND THE TYPE OF HAZARDOUS MATERIAL AS SOON AS INFORMATION BECOMES AVAILABLE.

- a) Transport of patients even after decontamination will be by ground units only.



THE USE OF AEROMEDICAL TRANSPORT IS CONTRAINDICATED FOR ANY POTENTIALLY CONTAMINATED PATIENT



- b) Triage and decontaminate if indicated.

- c) Protect the patient from the environment and ensure the patient is not/does not become hypothermic.



- d) Establish IV access with LR in a clean area if medication administration is anticipated.



- e) Consider antidote to specific agent if available.



- f) Consider antibiotic specific to agent in mass casualty incident, if available.

## **W. ENVIRONMENTAL EMERGENCIES: HAZARDOUS MATERIALS EXPOSURE (Continued)**

### **g) Medical Follow-Up**

All public safety personnel who come into close contact with hazardous materials should receive an appropriate medical examination, post-incident, based on information from the designated poison control center. This should be completed within 48 hours of the incident and compared with the findings of any recent pre-incident examination. Personnel who routinely respond to hazardous materials emergencies should have periodic pre-incident examinations. Personnel should be advised of possible latent symptoms at the time of their exams.

## X. ENVIRONMENTAL EMERGENCIES: HEAT-RELATED EMERGENCIES

### 1. Inclusion Criteria

- a) **Heat Cramps:** Moist, cool skin, cramps, normal to slightly elevated temperature
- b) **Heat Exhaustion:** Moist, cool skin, cramps, weakness, dizziness, normal to elevated temperature, nausea
- c) **Heat Stroke:** Hot, dry skin (25% of patients will still be moist), seizures, altered mental status, dilated pupils, rapid heart rate, or arrhythmia



### 2. Treatment

- a) Remove patient from hot environment.
- b) Cool patient as appropriate.
- c) If patient is conscious and alert, without nausea, give electrolyte-rich fluid by mouth, if available.
- d) If **heat stroke**, aggressively cool patient and place patient in semi-Fowler's position.



IF ACTIVE COOLING IS IN PROGRESS BY A TEAM/EVENT PHYSICIAN OR ATHLETIC TRAINER, ALLOW COOLING TO CONTINUE PRIOR TO MAKING AN ATTEMPT TO TRANSPORT UNTIL THE PATIENT HAS AN IMPROVED MENTAL STATUS OR THE TEMPERATURE HAS DECREASED TO 102 DEGREES F OR LESS. IF ANY DISAGREEMENT IN THE PATIENT CARE PLAN OCCURS, CONTACT A BASE STATION FOR AN ONLINE MEDICAL CONSULTATION. **(NEW '20)**



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- e) Establish IV access with LR.
  - f) Administer fluid bolus, if appropriate.  
20 mL/kg of LR IV  
Titrate to a systolic pressure of 90 mmHg.



## Y. ENVIRONMENTAL EMERGENCIES: NEAR-DROWNING

### 1. Inclusion Criteria

Confirmed or suspected near drowning, altered level of consciousness, dyspnea, cyanosis, vomiting, seizures, or cardiopulmonary arrest.



### 2. Treatment

- a) Remove patient from water.



ABDOMINAL THRUSTS ARE CONTRAINDICATED, UNLESS THE PATIENT HAS A FOREIGN BODY AIRWAY OBSTRUCTION.

ALL NEAR-DROWNING VICTIMS SHOULD BE TRANSPORTED EVEN IF THEY APPEAR UNINJURED OR APPEAR TO HAVE RECOVERED.

ENTER WATER ONLY IF TRAINED AND AS A LAST RESORT.  
(REACH, THROW, ROW, GO WITH ASSISTANCE)

- b) Protect from and/or treat for hypothermia.



- c) Establish IV access with LR.

- d) Identify rhythm and treat according to appropriate algorithm.



- e) Protect from and/or treat for hypothermia.



- f) Establish IV/IO access with LR.

- g) Identify rhythm and treat according to appropriate algorithm.



IF THE PARENT OR GUARDIAN REFUSES MEDICAL CARE OR TRANSPORT, CLINICIAN SHALL CONTACT A **PEDIATRIC BASE STATION** PHYSICIAN.

## Z. ENVIRONMENTAL EMERGENCIES: OVERPRESSURIZATION

### 1. Inclusion Criteria

History of SCUBA, breathing in a pressurized environment and altitude chamber or exposure to blast concussion waves. Patients may present with any of the following symptoms: fatigue and itching, pain, vertigo, visual disturbances, dyspnea, bleeding from any body orifice, hearing difficulty, speech difficulty, numbness, tingling, confusion, seizure, and/or cardiac arrest.



ASSOCIATED INJURIES MAY MAKE ASSESSMENT AND COMMUNICATION DIFFICULT. SYMPTOMS MAY BE SLOW TO PRESENT.

AEROMEDICAL TRANSPORT MAY BE APPROPRIATE FOR PATIENTS WITH BAROTRAUMA.

FOR ADDITIONAL INFORMATION CONCERNING SCUBA INJURIES, CONTACT THE DIVING ALERT NETWORK VIA EMRC 1-800-648-3001.



### 2. Treatment

a) Treat associated trauma.



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b) Establish IV access with LR.

c) Administer fluid bolus, if appropriate.  
20 mL/kg of LR IV  
Titrate to a systolic pressure of 90 mmHg.