This protocol is intended to assist in those instances of cold-related injuries involving long evacuation and transport time. When possible all rewarming treatment should be left for a hospital setting.

A. ACCIDENTAL HYPOTHERMIA

1. Unintentional or accidental hypothermia can occur whenever the ambient temperature is less than the body temperature and the body is not capable of maintaining a normal body temperature. For example, an elderly, debilitated patient sitting overnight in a 66°F room may become hypothermic from that exposure alone. Suspect hypothermia in the injured, elderly, or debilitated patient. Maintain high index of suspicion for neglect and/or abuse.

2. Severe hypothermia (core body temperature <30°C/86°F) is associated with marked depression of critical body functions, which may make the victim appear clinically dead during the initial assessment. Therefore, lifesaving procedures should be initiated unless the victim is obviously dead (e.g., rigor mortis, decomposition, decapitation, etc.)

3. The hypothermic victim in cardiac arrest should be transported to a center where aggressive rewarming during resuscitation is possible.

4. Ventricular dysrhythmias may be difficult to convert without active rewarming. Measures to rewarm should be initiated in any hypothermic patient in cardiac arrest in conjunction with the Cardiac Arrest Protocol. The decision and methods to rewarm should be made in consultation with Medical Control and should consider the following factors:
   a. Method of rewarming available
   b. Time / distance to the hospital
   c. Squad capabilities (BLS vs. ALS)

5. Standard treatment of bradycardia should be avoided in the hypothermic victim.

6. Be careful to prevent / avoid jostling or excessive stimulation of the patient. A cold heart is susceptible to ventricular dysrhythmias.

7. Wet clothing robs heat from the body more than it insulates and should be removed. Attempt to protect the patient from wind and other elements.

B. FROSTBITE

1. Thawing should be done under controlled conditions. It is extremely painful.

2. Complete rewarming requires active heating for a prolonged period. Partial rewarming is worse than none. Therefore, rewarming should rarely be done in the field.
A. **ACCIDENTAL HYPOTHERMIA without Cardiac Arrest**

1. Assess and manage airway. Apply pulse oximeter and provide oxygen per Pulse Oximeter Procedure; use warm / humidified oxygen if available.
2. Move patient to warm environment; remove any wet clothing, cover with blankets and place hot packs in groins and armpits.
3. Evaluate patient’s general appearance, relevant history of condition and determine OPQRSTI and SAMPLE.
4. Assess vital signs, mental status, temperature of patient and environment, and evidence of any injuries.
5. Do NOT allow conscious patients to ambulate, exercise, or move about.
6. Contact Medical Control and advise of patient condition. Transport

B. **ACCIDENTAL HYPOTHERMIA with Cardiac Arrest**

1. If the hypothermic patient shows no signs of life, begin CPR with rewarming and transport.
2. Refer to Cardiac Arrest Protocol.

C. **FROSTBITE**

1. Treat the patient for accidental hypothermia if indicated
2. Protect injured areas from pressure, trauma, and friction. Remove all covering from injured parts. Do NOT rub. Do NOT break blisters.
3. Do not allow patient to ambulate, exercise, or move about.
4. Do not allow frozen limb to thaw if there is a chance that limb may refreeze before evacuation is complete.
5. Maintain core temperature by keeping patient warm with blankets, warm fluids, etc.
6. Contact Medical Control and advise of patient condition. Transport

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A. **ACCIDENTAL HYPOTHERMIA without Cardiac Arrest**

1. During Transport begin IV NS TKO, warmed if available.
2. If patient becomes hypotensive administer IV normal saline fluid bolus:
   a. 250 – 500 ml for adult patient
   b. 20 ml/kg for pediatric patient (to a maximum of 500ml)
   c. Repeat boluses as needed to maintain BP
3. Apply cardiac monitor. Monitor vital signs.

B. **ACCIDENTAL HYPOTHERMIA with Cardiac Arrest**

1. Refer to Cardiac Arrest Protocol

C. **FROSTBITE**

1. During Transport begin IV NS TKO, warmed if available
2. Apply cardiac monitor.
HEAT-RELATED EMERGENCIES

A. Recognize that the very old, very young and patients with a history of spinal injury are high-risk for developing heat-related emergencies.

B. Heat emergencies can occur either due to increased environmental temperatures and/or prolonged exercise. Environments with temperatures > 90°F and humidity > 60% present the greatest risk.

C. Types of Heat-Related Illnesses:
   1. **Heat Stroke** – The most serious type of heat exposure illness, usually due to prolonged exposure to heat, inadequate fluid replacement and deficient thermoregulatory function.
      The patient will experience an altered LOC and/or coma. Seizures may also occur.
      The skin condition is an unreliable indicator of heat stroke. In classic heat stroke, the skin is hot and dry, whereas in heat stroke due to exertion, the skin is hot and moist.
      Cardiovascular collapse is the usual cause of death.
   2. **Heat Exhaustion** – A more moderate form of heat exposure associated with dehydration combined with overexertion.
      The skin is warm. The core temperature is below 105°F. The patient may experience syncope with orthostatic hypotension.
      The skin is moist with muscle cramps, usually affecting the large muscle groups.

D. When altered mental status is present consider other causes such as hypoglycemia, stroke and/or shock.

 Basic EMT

A. Assess and manage the airway
   1. Administer oxygen as needed
   2. Apply pulse oximeter and treat per pulse oximeter procedure

B. Move patient to cool environment, remove any tight clothing.

C. Evaluate patient’s general appearance, relevant history of condition and determine OPQRSTI and SAMPLE.

D. Assess vital signs and mental status every 5 minutes for an unstable patient and every 15 minutes for a stable patient.

E. Contact Medical Control and advise of condition. Transport.

F. If patient has altered LOC:
   1. Apply cold packs to axilla, groin, and neck. Avoid shivering.
   2. Check blood sugar and treat accordingly.
A. During Transport begin IV NS TKO.

B. If patient becomes hypotensive administer IV normal saline fluid bolus:
   1. 250 – 500 ml for adult patient
   2. 20 ml/kg for pediatric patient (to a maximum of 500ml)
   3. Repeat boluses as needed to maintain BP

C. Apply cardiac monitor. Treat Dysrhythmias as indicated.

D. Treat seizures per Seizure Protocol.

**NEAR DROWNING / DROWNING**

A. The key to success is the provision of early, effective pulmonary support.

B. It is essential that the EMT exercise caution and take steps to insure their own safety while retrieving the victim from the water.

**Basic EMT**

A. Assess and manage the airway with cervical spine immobilization.
   1. Administer oxygen as needed to treat shock and/or respiratory distress.
   2. Apply pulse oximeter and treat per pulse oximeter procedure.
   3. If patient has agonal respirations or apneic begin ventilations by two-person BVM with oral airway and 100% oxygen, warm and humidified if possible. Refer to Respiratory Distress – Apneic Patient Protocol.

B. If patient is pulseless begin chest compressions as soon as the victim is removed from the water and onto a hard surface. Refer to Cardiac Arrest Protocol.

C. Patient may show signs of hypothermia. Warm patient by removing wet clothes and cover with blankets. Refer to Environmental Emergencies – Cold-Related Emergencies Protocol.

D. Contact Medical Control and advise of patient condition. Transport patient to a center where aggressive rewarming during resuscitation is possible.

**Advanced EMT / Paramedic**

A. During Transport begin IV NS TKO, warmed if available.

B. Apply cardiac monitor. Monitor vital signs.
A. Although rare, lightning strikes account for several hundred injuries or deaths in the United States. Priority for responders is safety of scene prior to administering any treatment.

B. Victims of lightning strikes have the potential for sustaining serious injuries including significant burns and possibly cardiac arrest. If a victim of a lightning strike is found in cardiac arrest, treatment of the patient should be focused on current advance life support protocols. Refer to Cardiac Arrest Protocol.

C. When encountering a scene of a lightning strike with multiple victims, the patients in respiratory and cardiac arrest should be given the highest priority.
COLD EMERGENCIES
ACCIDENTAL HYPOTHERMIA

- Assess and manage airway
- Maintain O2 Sats >95% - use warm / humidified O2 if available
- Move patient to warm environment; remove wet clothing, keep warm
- Evaluate patient condition
- Monitor vital signs
- Obtain medical history
- Reassure patient
- Do not allow patient to ambulate, exercise or move about
- Transport in position of comfort

If hypothermic patient shows no signs of life, begin CPR with rewarming measures and refer to cardiac arrest protocol

- IV NS (run to maintain perfusion)
- Monitor ECG
COLD EMERGENCIES
FROSTBITE

- Assess and manage airway
- Maintain O2 Sats >95% - use warm / humidified O2 if available
- Move patient to warm environment; remove wet clothing, keep warm
- Evaluate patient condition
- Monitor vital signs
- Obtain medical history
- Reassure patient
- Remove all clothing from injured areas and protect from pressure, trauma, and friction.
- Do not break blisters or rub injured areas
- Do not allow patient to ambulate, exercise or move about
- Transport in position of comfort

- IV NS (run to maintain perfusion)
- Monitor ECG
- Consider pain management protocol
HEAT EMERGENCIES

- Assess and manage airway
- Maintain O2 sats > 95%
- Move patient to cool environment; remove tight clothing
- Evaluate patient condition
- Monitor vital signs
- Obtain medical history
- Reassure patient
- Transport in position of comfort
- If patient has altered LOC
  - Apply ice packs to axilla, groin, and neck. Avoid shivering.
  - Check blood sugar and treat accordingly

- IV NS (run to maintain perfusion)
- Monitor ECG
- Treat seizures per seizure protocol
NEAR DROWNING / DROWNING

- Assess and manage airway consider C-spine control
- Maintain O2 SATS >95% - Use warm / humidified O2 if available
- Move patient to warm environment; remove wet clothing, keep warm
- Evaluate patient condition
- Monitor vital signs
- Obtain medical history
- Reassure patient
- Transport

If patient shows no signs of life, begin CPR with rewarming measures and refer to cardiac arrest protocol

- IV NS (run to maintain perfusion)
- Monitor ECG
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