Advisory 26-05 Exertional Heat Emergencies Guidance and Training

To: All Agencies and Personnel

From: Jeremy T. Cushman, MD, MS, EMT-P, FACEP, FAEMS
Regional Medical Director

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State Protocols identify the importance of recognizing and treating exertional heat emergencies, however they fall short on how to do so. The Monroe-Livingston REMAC approved guidance on best practices to manage exertional heat emergencies last fall, and that guidance is attached and available on the Policies page of www.mlrems.org.

To facilitate common understanding of the pathophysiology and management of exertional heat emergencies, there are now two training videos available that are also accessible under the Shock and Resuscitation Tab on the Training page of MLREMS.org:

> https://youtu.be/QerlZfCneKs Reviews the clinical application of various cooling techniques and the approach to the patient with an exertional heat emergency. (~26 minutes)
>
> https://youtu.be/wZ01GNSUa3Y Provides additional understanding of the pathophysiology through a recorded presentation entitled: *Environmental Heat Emergencies: Prevention, Triage, Management for Heat Illnesses* (~53 minutes)

The Fire service should take particular note of this training given their critical role in providing the large water volumes necessary to achieve effective cooling. This training is not required, but strongly encouraged and offered to facilitate common understanding of the management of this life-threatening condition.

With any questions, please do not hesitate to contact this office.

web www.mlrems.org
phone (585) 463-2900
fax (585) 473-3516

office
44 Celebration Drive, Suite 2100
Rochester, NY 14620

mailing
601 Elmwood Avenue, Box 655P
Rochester, NY 14642

MANAGING EXERTIONAL HEAT STROKE

PURPOSE

This policy outlines how EMS clinicians can effectively cool patients on scene with exertional heat stroke consistent with New York State EMS Protocols.

GUIDANCE

The immediate and definitive management of a patient with exertional heart stroke (EHS), defined as one with altered mental status and an elevated skin temperature with a history of heat exposure or exertion, is critical to their clinical management. Cooling should be initiated without delay and transport may be delayed if active cooling can be provided. In most cases, requesting additional resources such as the jurisdictional fire department to the suspected EHS case based off dispatch information or once on scene is prudent given the personnel and resources (water) needed to effectively cool a victim.
This document outlines best practices for performing immediate and effective cooling on scene.

WHOLE BODY COOLING

Whole-body cooling strategies for patients with EHS can be performed with resources commonly available on scene. In decreasing order of preference, they are:

- Ice water immersion, defined as cold water and ice in a vessel capable of accommodating a supine patient immersed up to their neck to include upper and lower extremities.
- Cold water immersion, defined as cold water alone in a vessel capable of accommodating a supine patient immersed up to their neck to include upper and lower extremities.
- TACO (Tarp-Assisted Cold water with Oscillation) defined as the use of a tarp or mega-mover to contain water around the patient while providing water and, if available, ice, to immerse as much of the torso, groin, and extremities as possible while circulating the water as able.
- Cold water dousing, defined as free-flowing water applied to the whole body – extremities, torso, hands, feet, neck, and head (while maintaining the airway).
- Ice/Cold water-soaked towels with ice packs, defined as the application of towels placed in cold or ice water, subsequently wrung and placed on the limbs (including feet and hands), trunk, and head and exchanged rapidly. Ice packs should simultaneously be placed in the groin, axilla, and neck.

Hydrant water (~40°F) is preferred over tank water (~60°F) when available. In all cases, water should be circulated whenever possible and ice (if available) added as it melts. If hose lays are already charged, they should be run until cool water exits the nozzle. If available, fans will increase the cooling effect of cold water dousing and cold towel methods.

CLINICAL MONITORING

- Continuous clinical monitoring of the mental status of heat emergency patients is essential:
  - Establish dedicated monitoring of the patient by a single individual to monitor their mental status and clinical changes.
  - Improvement in mental status is sufficient to discontinue active cooling using any of the above techniques.
  - Shivering (or the absence thereof) should not be used as a sole indicator to discontinue cooling measures.
- Cardiac and blood pressure monitoring should be used cautiously to prevent submersion of electrodes, blood pressure cuffs, and pulse oximeters; reinforcing the importance of a single clinician to monitor the patient.
- $EtCO_2$ may be a valuable tool to monitor the respiratory effort for a patient being treated for EHS where direct visualization of their chest for respiratory rate and effort is limited by the means being used to cool them.

TEMPERATURE MONITORING

- The only reliable core temperature monitoring in the field is using a rectal thermometer inserted at least 13cm/6in into the rectum or an esophageal probe in an intubated patient. As the core temperature nears 102^{o}F, crews should prepare to remove the patient from whole-body cooling. If whole-body cooling continues beneath 102^{o}F, there is an increased risk of hypothermia.
- Tympanic, infrared, or sublingual thermometers are not reliable measures for heat emergency patients, especially when they are receiving whole-body cooling and should not be used.

SPECIAL CONSIDERATIONS

- Sedative or neuromuscular blocker medications may reduce core temperature, so rebound hypothermia is another risk for heat emergency patients.
- If patients are already intubated or had seizure-terminating interventions, monitor vitals and exam findings, with preference for close temperature monitoring with rectal or esophageal probe.

PLANNED EVENTS

- Events where physical activity and/or environmental conditions increase the likelihood of EHS should have in place a plan to provide on-site cooling using any of the techniques noted above, with preference for whole body ice-water immersion through the use of kiddie pools, body bags, tarps or other device, along with ready access to large amounts of cold water and ice.

Approved by the Monroe-Livingston REMAC 8/18/2025