2024 Pediatric Guideline: **Environmental Hypothermia Arrest**

Exposure to very cold water, ice, snow, or wind.

Start → Pediatric cardiac arrest because of drowning or cold exposure

- Confirm pulselessness
- Initiate resuscitation and CPR
- Assess core temperature

Assumed Temp <30° C

Assess transport time to PED1 by ground
< 30 min

- Rapid transport to PED1
- *Notify PED1 ED that the patient meets ECMO criteria
- NO ACTIVE EXTERNAL WARMING (maintain temp < 30° C)

Assess transport time to PED1 by air
>30 min

- Rendezvous with flight team for rapid transport to PED1
- *Notify flight team that the patient meets ECMO criteria and to prevent rewarming above 30° C
- NO ACTIVE EXTERNAL WARMING (maintain temp < 30° C)

> 30 Minutes transport or no air transport available

Assumed Temp > 30° C

- Transport to the nearest ED
- Early notification to PED1 ED

Patient may not meet ECMO criteria, but advanced care may be needed.

***Pediatric ECMO Criteria**

1. 17 years or younger
2. Pulseless
3. Core temp < 30° C
4. K+ below 9

This algorithm does not replace clinical judgment and is not intended to be prescriptive for all patients.

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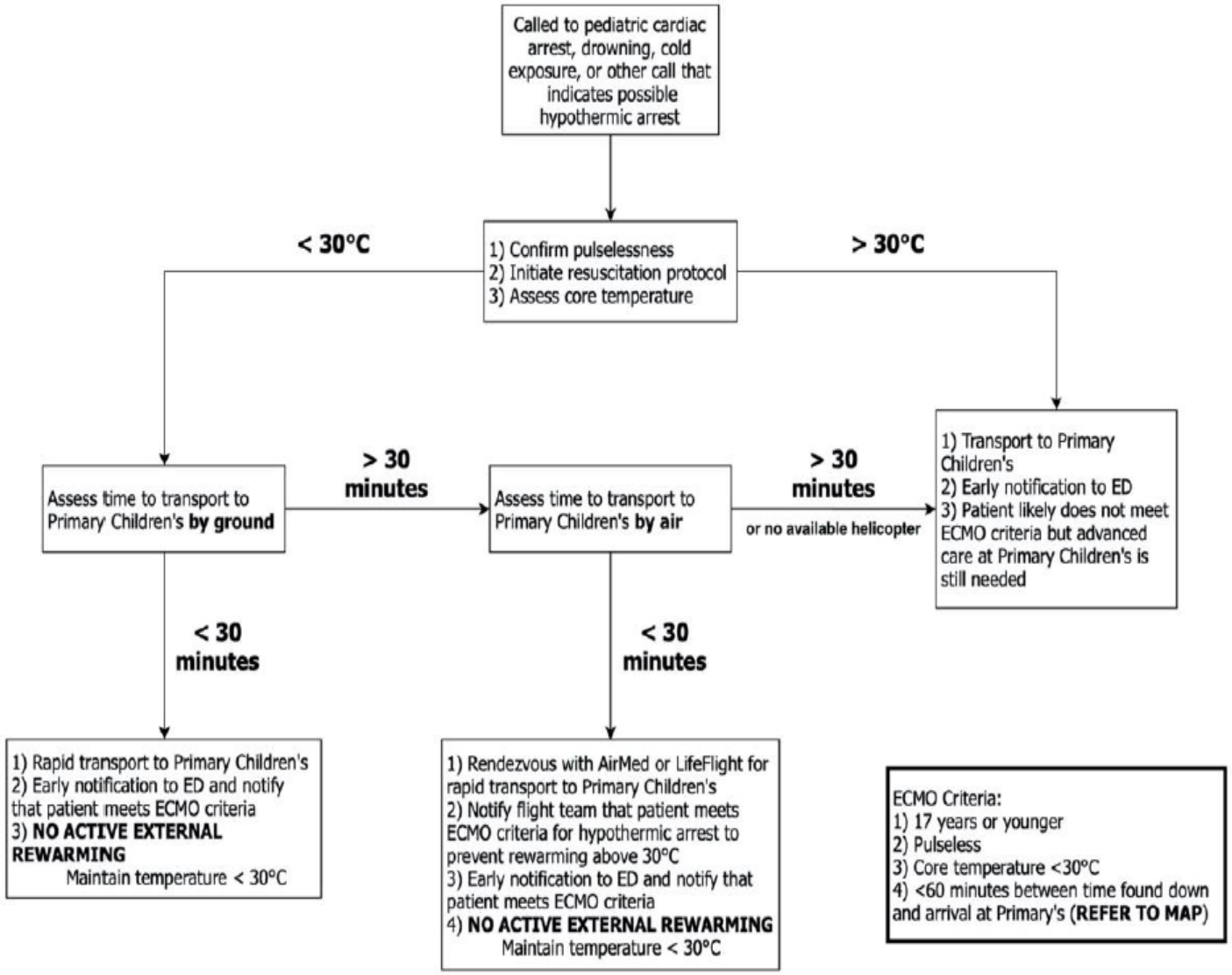
EMS scene algorithm and protocols

Temperature and Environmental Emergencies

Cold Related

- Protect the patient from further heat loss (e.g., apply blankets, remove wet clothing, create a warm environment).
- Suspicion of cardiac arrest in a cold environment; assess for 30-45 seconds to confirm pulselessness.
- Measure body temperature and treat accordingly
- Severe:
  - Use active external rewarming (heated oxygen, warm packs to neck, armpits, groin, etc.)
  - Administer warm IV fluids (AEMT/PM only)
  - Cardiac arrest: Chest compressions and ventilations. Limit defibrillation attempts to 3 and no external pacing. The likelihood of successful defibrillation improves as the patient is warmed. For pediatric cardiac arrest due to hypothermia, consider direct transport to Primary Children's Medical Center for ECMO and do NOT rewarm this patient



Source: 2023 Utah EMS Protocol Guidelines

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A New Protocol for First Responders for Hypothermic Pulselessness in Pediatric Patients

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STAGE	CLINICAL SYMPTOMS	CORE TEMPERATURE	TREATMENT
HT I	Conscious, shivering	32-35° C	Warm environment and clothing, warm sweet drinks, active movement
HT II	Impaired consciousness, not shivering	<28- 32° C	Cardiac monitoring, minimal movements to avoid arrhythmias, horizontal position and immobilization, full-body insulation, active external and minimally invasive internal rewarming
HT III	Unconscious, not shivering, vital signs present	<24-28° C	HT II management plus airway management as required; ECMO in cases with cardiac instability that is refractory to medical management
HT IV	No vital signs	<24° C	HT III management plus CPR and up to three doses of epinephrine per ACLS or PALS guidelines, and limited defibrillation; rewarming with ECMO or CPR with active external and alternative internal rewarming

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