



# Target Temperature Management (Optional)

## History

- Non-traumatic cardiac arrests (drownings and hanging / asphyxiation are permissible in this protocol.)
- All presenting rhythms are permissible in this protocol
- Age 18 or greater

## Signs and Symptoms

- Cardiac arrest
- Return of Spontaneous Circulation post-cardiac arrest

## Differential

- Continue to address specific differentials associated with the arrhythmia

Return of Spontaneous Circulation ROSC

Criteria for Induced Hypothermia  
Initial rectal temperature  $\geq 93.2$  F (34C)

YES

NO

Exit to  
Post Resuscitation  
Protocol AC 10

Agencies utilizing cerebral cooling devices are unlikely to see a change in rectal temperature during transport.

Continued temperature assessment not warranted with these devices. Document initial temperature

<b>B</b>	<b>Advanced Airway (includes BIAD) in place with EtCO<sub>2</sub> &gt; 20 mmHg</b>
	Airway Protocol(s) AR 1, 2, 3 <b>as indicated</b>
	Post Resuscitation Protocol AC 910 <b>as indicated</b>
	IV / IO Access Protocol UP 6
	Hypotension / Shock Protocol AM 5 <b>as indicated</b>
	Perform Neurological Assessment
	Expose and apply ice packs to axilla and groin areas

Agency Specific Cooling Device

Stop cooling measures  
Until temperature increases  
  
Reassess temperature every 10 minutes  
  
Continue Post Resuscitation Care

< 89.6° F  
(32° C)

Reassess Rectal Temperature  
Target: 89.6 – 96.8 °F  
( Range 32 – 36C)

≥ 89.6° F  
(32° C)

Continue Cooling  
Exit to  
Post Resuscitation  
Protocol AC 9

Shivering noted

NO

YES

**P**

**Fentanyl 50 – 75 mcg IV / IO**  
Repeat every 5 minutes as needed  
**Maximum 300 mg**

**Versed 2 – 2.5 mg IV / IO**  
Repeat every 5 minutes as needed  
**Maximum 10 mg**

**Vecuronium 10 mg IV / IO**  
If shivering uncontrolled following Opioid and Benzodiazepine Administration

Notify Destination or Contact Medical Control



# Target Temperature Management (Optional)

## Pearls

- **Criteria for Targeted Temperature Management:**
  - Return of spontaneous circulation not related to blunt / penetrating trauma or hemorrhage with ventricular fibrillation / tachycardia and non-shockable arrhythmias.
  - Temperature greater than 93.2°F (34° C).
  - Advanced airway (including BIAD) in place with no purposeful response to verbal commands.
  - Infusion of cold saline is NOT recommended in the prehospital setting.
- **Hyperventilation is a significant cause of hypotension and recurrence of cardiac arrest in the post resuscitation phase and must be avoided. Titrate FiO<sub>2</sub> to maintain SpO<sub>2</sub> of 92 - 98%.**
- **Pain/sedation:**
  - Patients requiring advanced airways and ventilation commonly experience pain and anxiety. Unrelieved pain can lead to increased catecholamine release, ischemia, immunosuppression, and prolonged hospitalization.
  - Ventilated patients cannot communicate pain / anxiety and providers are poor at recognizing pain / anxiety.
  - Vital signs such as tachycardia and / or hypertension can provide clues to inadequate sedation, however they both are not always reliable indicators of patient's lack of adequate sedation.
  - Pain must be addressed first, before anxiety. Opioids are typically the first line agents before benzodiazepines. Ketamine is also a reasonable first choice agent.
- **EtCO<sub>2</sub> Monitoring:**
  - Initial End tidal CO<sub>2</sub> may be elevated immediately post-resuscitation, but will usually normalize.
  - Goal is 35 – 45 mmHg but avoid hyperventilation to achieve.
- **Titrate fluid resuscitation and vasopressor administration to maintain SBP of > 90 mmHg or Mean Arterial Pressure (MAP) of 65 mmHg.**
- **STEMI (ST-Elevation Myocardial Infarction)**
  - Consider placing 2 IV sites in the left arm: Many PCI centers use the right radial artery for intervention.
  - Consider placing defibrillator pads on patient as a precaution.
  - Document and time-stamp facility STEMI notification and make notification as soon as possible.
  - Document the time of the 12-Lead ECG in the PCR as a Procedure along with the interpretation (Paramedic).
- **Consider transport to facility capable of managing the post-arrest patient including hypothermia therapy, cardiology / cardiac catheterization, intensive care service, and neurology services.**
- **Utilization of this protocol mandates transport to facility capable of managing the post-arrest patient and continuation of induced hypothermia therapy.**
- If no advanced airway in place obtained, cooling may only be initiated on order from medical control.
- No evidence suggests improved survival with prehospital cooling.
- The condition of post-resuscitation patients fluctuates rapidly and continuously, and they require close monitoring. Appropriate post-resuscitation management may best be planned in consultation with Medical Control.