**Post-Cardiac Arrest Targeted Temperature Management (TTM) Algorithm**

**ED Management**

Initial Assessment (Sedation held for 20 minutes, if possible. If sedation interruption not possible, proceed to TTM): Follows verbal commands?

- **No**
  - Is the MAP <65 mmHg despite two vasopressors OR is there clinically relevant bleeding?
    - **No**
      - Initiate TTM at 33°C
    - **Yes**
      - Initiate TTM at 36°C

- **Yes**
  - TTM not indicated

See Post-CA ED Orderset
1. Goal temperature measured by bladder or esophageal probe is most reliable.
2. ICE packs to axilla and groin + Propofol 20-60 mcg/kg/min, fentanyl 25-200 mcg/hr (titrate to keep SAS <2 and post-neuromuscular blockade BIS ≤50)
3. Place BIS monitor on patient (if available)
4. Administer vecuronium 0.1 mg/kg to facilitate TTM and reduce shivering
5. Apply pads and start Artic Sun (if available)
6. Call Neurological Critical Care for patient assessment (unless STEMI)

**ICU Management**

Complete neurological risk stratification to determine temperature target

- **High** neurological risk with post-NMB BIS suppression ratio ≥70%
- **Moderate** neurological risk with post-NMB BIS suppression ratio 25-69%
- **Low** neurological risk with post-NMB BIS suppression ratio <25%

- **No**
  - Is the MAP <65 mmHg despite two vasopressors OR is there clinically relevant bleeding?
    - **No**
      - TTM at 33°C
    - **Yes**
      - TTM at 36°C

- **Yes**
  - Do they meet TTM2 criteria?
    - **No**
      - Maintain normothermia at 37.8°C;
        - Apply artic sun if temperature > 37.5°C
    - **Yes**
      - Maintain normothermia at 37.8°C;
        - Apply artic sun if temperature > 37.5°C
Premise:

- TTM2 included 44% of screened patients. Only 35% of our patients would have been enrolled; they had fewer markers of severe injury.
- In TTM2, outcomes were identical for TTM33 and Fever Control – both are safe and effective. A criticism of the TTM2 study is that patients did not reach target temperature quickly enough to show a benefit. When TTM is used, reaching target temperature quickly is important from both physiologic and quality of care perspectives.
- TTM33 may be better for moderate to severely injured patients than TTM36.
- Suppression Ratio (SR) is a reliable tool to stratify neurological risk 2-6 hours post-ROSC.
- This guideline was ratified by the Emergency Department faculty at Maine Medical Center in April/2022. It reflects our consensus opinion and is not necessarily applicable to all institutions. It is intended to be a reference for clinicians caring for patients and is not intended to replace providers' clinical judgment. Produced by Teresa May DO, Doug Campbell MD.
- This algorithm is a guideline; bedside clinicians can choose differently if better for their patient. If unsure where to start for any given patient, the default should remain TTM33˚C.