### PHYSICIAN ORDERS: HYPOThERMIA AFTER CARDIAC ARREST

**C-290KH**  Orig.  11/2008  Page 1 of 3

**NOTE:** NURSE MUST INITIAL EACH INDIVIDUAL ORDER.

(All orders to be deleted are to be crossed out with a single line and initialed by the physician.)

<table>
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<tr>
<th>DATE/TIME</th>
<th>NURSE INIT</th>
<th>HUS INIT</th>
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1. For assistance with these orders page the HYPOThERMIA SERVICE BEEPER: 2019

2. Admit to ICU

3. Diagnosis: Cardiac Arrest. Other:

4. CONSULTS (optional):
   - [ ] Cardiac Arrest Consult Service (Critical Care: B eeper 2019)
   - Cardiology
   - Neurology
   - Other

5. Continuous blood pressure monitoring via arterial line (Insertion Date/Time: ________________)


### INITIATION OF HYPOThERMIA (Goal temperature = 33°C):

7. Obtain plasma beta Human Chorionic Gonadotropin prior to cooling if childbearing age female.

8. Give Two Liters of Refrigerated 0.9%Normal Saline IV over 30-60 minutes if not completed.

9. Sedation (You Must Select One; Titrate to Richmond Agitation Sedation Scale (RASS) -4)
   - [ ] Propofol IV drip at 25 mcg/Kg/minute
   - [ ] Midazolam IV drip (in 0.9% Normal Saline) at 0.05 mg/kg/hour (max dose: 3 mg/hour)

10. Vecuronium 0.1 mg/kg = ________ mg IV one time dose at start of hypothermia

11. Vecuronium 0.1 mg/kg IV every 30 minutes as needed for temperature control/shivering
   - Goal paralysis is 1 out of 4 on train of four

12. Meperidine 50 mg IV every 30 minutes as needed to prevent shivering

13. Initiate cooling (select one of the following methods)
   - [ ] Arctic Sun: Obtain device; place two pads on patient’s legs and 2 / 4 (obese) pads on torso
     - Insert temperature sensing urinary catheter and connect to device.
     - Set goal temperature to 33°C, mode to automatic and rate as max (default).
     - For technical support call 1-866-840-9776
   - [ ] Cool Guard: Insert Icy intravascular cooling catheter in femoral vein and connect to unit.
     - Set goal temperature to 33°C and rate as max (default).
     - Insert temperature sensing urinary catheter and connect to device.
     - For technical support call 1-877-225-7487 x3
   - [ ] Ice Bags: Pack patient with ice bags wrapped in towels and remove once goal (33°C) reached.
     - Check skin for breakdown or frost bite due at least every 30 minutes while in contact with ice.
   - [ ] Gastric Lavage: Evacuate stomach via naso-gastric tube and instill 250mL ice cold normal saline; suction after 5 minutes to remove; repeat to a maximum goal of 30 mL/kg or 3L (use lesser value as max).

14. Place Bair Hugger (forced air heat), temperature max 43°C on patient chest, arms, hands.

15. Document start time of cooling.

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**Physician’s Signature & I.D. Number:**
(All orders to be deleted are to be crossed out with a single line and initialed by the physician.)

**MONITORING**

16. Record an alternatively measured temperature (rectal, axillary, esophageal) every 4 hours.
17. Train of four to be checked every 2 hours when neuromuscular blockade is given.
18. Document fluid intake and output hourly.
19. Notify physician of shivering or temperature greater than 35°C.
20. Notify physician if water temperature is less than 10°C within 1 hour of reaching goal.
21. 12-lead EKG on presentation and every 24 hours for 3 days.
22. Labs to be drawn post arrest and every 8 hours for 48 hours: CBC, complete metabolic panel, magnesium, phosphate, PT, PTT, fibrinogen, d-dimer, troponin, CK, CK-MB, ABG, lactate.
23. Check blood glucose level every 1 hour for 4 hours, then every 4 hours. **Sliding scale insulin coverage should not be more frequent than every 4 hours** (see below).
24. For external cooling, monitor skin for breakdown at sites of contact with cool surface every 2 hours.
25. EEG now and 24 hours later (during hypothermia and re-warming); page neurology on call unless it is after 4pm and there are plans to transport the patient off unit.

**OTHER MEDICATIONS**

26. 0.9% normal saline IV infusing at ____ mL/hour.
27. Esomeprazole 40 mg IV every 24 hours.
28. Heparin 5000 Units subcutaneous every 8 / 12 (circle one) hours.
29. Sliding scale regular insulin to be given subcutaneously every 4 hours based on blood sugar
   • Less than 70 mg/dL D50 25mL IV push, recheck in 30 minutes
   • 150-189 mg/dL ______ units subcutaneously
   • 190-229 mg/dL ______ units subcutaneously
   • 230-269 mg/dL ______ units subcutaneously
   • 270-310 mg/dL ______ units subcutaneously
   • Greater than 310mg/dL: Consider insulin drip and call physician for orders

**MAINTENANCE OF HYPOTHERMIA:**

30. If using device, leave it in automatic mode at goal temperature for 24 hours after cooling is initiated.
31. Acetaminophen 650mg every 6 hours via oro- or naso-gastric tube.
32. Temperature control methods (select as desired; recommended in descending order)
   - Magnesium sulfate IV infusion (12g mixed in 1L 0.9% Normal Saline) at 83 mL/hour (1 g/hour)
   - Check magnesium level every 4 hours.
   - Titrate to serum magnesium level of 3 mg/dL (max dose 3g/hour).
   - Fentanyl 50 mcg IV every hour as needed for shivering.
   - Vecuronium 0.1 mg/kg IV every 30 minutes as needed for temperature control/shivering.
   - Meperidine 50 mg IV every hour as needed for shivering.

**REWARMING (To begin 24 hours after cooling initiated):**

33. Set target temperature to 36.5°C and rewarming rate to 0.25°C/hour.
34. Call physician if shivering observed or temperature increase exceeds 0.5°C / hour.
35. Call physician for any temperature greater than 37°C in the next 48 hours.
36. Maintain target temperature of 36.5°C until 72 hours after cooling initiated.
37. Discontinue vecuronium once patient is rewarmed to 36.5°C.
For Assistance with these orders, page the HYPOTHERMIA SERVICE: BEEPER 2019

Inclusion Criteria:
- Non traumatic cardiac arrest with return of spontaneous circulation (ROSC - blood pressure maintained > 90 either with fluid and/or vasopressors).
- Resuscitation time should be less than 1 hour (Time of collapse to return ROSC).
- Time of initiation of hypothermia should be less than 6 hours from ROSC.
- Men and Women age 18 years or older. Women of childbearing age must have a negative pregnancy test.
- ET intubation with mechanical ventilation.
- Coma after return of spontaneous circulation (Not following commands, no speech, no eye opening, and no purposeful movements to noxious stimuli)

Exclusion Criteria:
- Do not resuscitate (DNR) or Do not Intubate (DNI) code status
- Major surgery within 14 days or active bleeding
- Pregnancy
- Systemic infection/sepsis
- Known terminal illness preceding the arrest
- Temperature less than 30°C
- Another reason for coma (head trauma, stroke, overt status epilepticus, intracranial hemorrhage)
- Cardiac arrhythmias with hemodynamic instability

Neuro Assessment (to be documented before giving sedatives/paralytics):
Date _______ Time ________
Glasgow Coma Scale Motor Score: _____ (must be ≤5 to initiate hypothermia)
(1=no movement; 2=extension to painful stimuli; 3=flexion to painful stimuli; 4=flexion/withdrawal to painful stimuli; 5=localizes painful stimuli; 6=following commands)

Oculocephalic intact (by head positioning unless collared): Yes ☐ No ☐
Gag Reflex: Yes ☐ No ☐
Muscle Tone Increased: Yes ☐ No ☐
Myoclonus: Yes ☐ No ☐
Plantar Reflex: Absent ☐ Up ☐ Down ☐
Cough: Yes ☐ No ☐
Corneal Reflex: Yes ☐ No ☐
Pupil Size
Pupil Sizes: Left _____mm Right _____mm
Symmetric: Yes ☐ No ☐
Pupil Reactivity: Brisk ☐ Sluggish ☐ Fixed ☐

Physician’s Signature & I.D. Number