### ICU Post Cardiac Arrest Temperature Control Orders

**ICU Post Cardiac Arrest Temperature Control Orders**

**STATUS INPATIENT:** See *Patient Status-Certification Physician Order*
- [ ] Transfer to SICU
- [ ] Transfer to CICU
- [ ] Transfer to ICU

**DIAGNOSIS:** Post Cardiac Arrest

- [ ] Consult Palliative care re: Goals of Care to see: TODAY
- [ ] Consult Dr. __________________ re: ____________________________ to see: STAT / TODAY / IN AM

**Consult Therapy:**
- Physical
- Occupational
- Wound
- Palliative Care

**ALLERGIES/ PRECAUTIONS:**

If Allergic to PCN/Cephalosporin or carbapenem - Reaction:
- [ ] Anaphylaxis/Breathing difficulties
- [ ] Urticaria
- [ ] Delayed Rash
- [ ] Unknown
- [ ] Other

Reaction investigated & Patient may receive Cephalosporin or Carbapenem:
- [ ] Yes
- [ ] No

**CODE STATUS:**
- [ ] See DNR Order
- [ ] Full Code

**NURSING:**

- **Vital Signs**
  - [ ] Call MD for SBP < (90) _____ or > (180) _____; DBP < (40) _____ or > (100) ______;
  - HR < (50) _____ or > (120) _____; RR > (30) _____;
  - O2 sats < (90%) __________;
  - Urine Output < (1cc/kg/hr) __________

- **Strict I & O**
  - Place Foley Catheter with drainage to gravity

- **Indication:** Critical ill patient

- [ ] Initiate the ICU Pressure Ulcer Prevention Protocol (includes daily weights)

- [ ] OG: [ ] continuous low suction or [ ] clamped/check residuals Q4hr

- [ ] Initiate Gastric Residual Volume Algorithm

**RESPIRATORY**

- [ ] Wean for SpO2 ≥ 92 %

- [ ] Initiate “Bronchodilator Protocol”

**MECHANICAL VENTILATION**

- [ ] ABG 30 minutes after initial settings

- [ ] ABG PRN acute respiratory distress (notify MD of results)

- [ ] Notify MD for: ________________________________

- **Mode**: ______________

- **Rate**: ________ breaths/min

- **TV**: ________ cc

- **PEEP**: ________ cmH2O

- **Pressure Support**: ________ cmH2O

- **FiO2**: ________ _titrate to a SpO2 ≥ 92%

**VTE RISK AND PREVENTION: HIGH RISK**

- [ ] Bilateral Sequential Compression Devices – SCDs (all patients)

- [ ] Lovenox 40 mg SQ Q 24hr (caution in patients with CrCl < 30 mL/min; heparin is preferred agent)

- [ ] Heparin 5000 units SQ Q 8hr

- [ ] Anticoagulation Contraindicated because:
  - High risk of bleeding
  - On therapeutic anticoagulation
  - Other:

- [ ] Consult Hematology: History of HIT: Dr. _____________________

- [ ] Consult Anesthesiology: indwelling/epidural catheter regarding timing of prophylactic anticoagulation

**STRESS ULCER PROPHYLAXIS**

**Enteral feedings:**
- [ ] Pepcid (famotidine) 20mg via GI Tube Q12h (if CrCl <50, Q24h)

- [ ] * Protonix suspension (pantoprazole) 40 mg via OG daily (*PPI)

**No enteral feedings:**
- [ ] Pepcid (famotidine) 20mg IV Q12h (if CrCl <50, Q24h)

- [ ] *Protonix (pantoprazole) 40mg IV daily (*PPI)

*Proton Pump Inhibitors (PPI) carry a greater risk of *C difficile infection*

**MD Signature:**
- [ ] Date: __________
- [ ] Time: __________

**RN Signature:**
- [ ] Date: __________
- [ ] Time: __________
INFORMATION ONLY
FEVER is known to increase secondary brain injury and worsen functional outcome.

Inclusion Criteria
- Post Cardiac arrest with Return of Spontaneous Circulation (ROSC).
- Unresponsive after ROSC
- ROSC < 1 hour “downtime”
- Age ≥ 18 years

Exclusion Criteria
- Temp. < 30°C after cardiac arrest
- Unresponsive for other reasons: seizures, head trauma, overdose, CVA
- Terminal illness or DNR status

Relative Exclusion Criteria:
- Hematological dyscrasias which effect “clotting”
- Peripheral vasospastic disorders
- Sepsis syndrome

SEDATION
- Propofol  continuous IV infusion at 5 mcg/Kg/min
  Titrated by 5 mcg/kg/min every 5 minutes to maintain a goal BIS score of 30-60
  Maximum infusion 50 mcg/kg/min
  Target SBP of > 90 mmHg and/or MAP of > 65mmHg
  If SBP < 90 Notify MD for management - do NOT discontinue Propofol without physician order
  Change tubing every 12 hours
  Serum triglyceride level at start of infusion and Q 72hrs while on Propofol (notify MD if > 300 mg/dl)

ANALGESIA
- Morphine  2 – 5 mg IV intermittent bolus Q1h PRN pain
- Fentanyl IV ____micrograms Q ____ hours PRN pain

TEMPERATURE MANAGEMENT METHOD: External Pads with the Arctic Sun Device
- Apply Arctic Sun Device per manufacturer’s recommendation and refer to hospital policy on temperature management post cardiac arrest.
- Place all 4 pads on the patient with the addition of the 2 universal cooling pads for patients over 100 kg
- Activate the automatic mode on the cooling unit
- Set Target Temperature goal at 36°C Celsius.
- For traveling outside of the unit, purge water (about 30 seconds required) and disconnect tubes from manifold. Leave console ON.

STAT LABS:
- ABG  CBC with diff  CK, CK-MB  Troponin i  PT/INR,PTT  Serum HCG if female pt and <50yr
- BMP  Magnesium  Phosphorus  Amylase  Hepatic panel  Blood Cultures x 2  Lactate level
- Serum Triglyceride Level (Notify MD if > 300 mg/dL)  Other:_____________________________

SERIAL LABS:
- Q8hrs x 3:  CK, CK-MB  Troponin i  12 lead EKG
- AM labs:  ABG  Magnesium  Lactate level  Phosphorus  Ionized Calcium
- CBC with diff  BMP  PT/INR, PTT

PRN Lab:  ABG, Potassium, and Magnesium
Other:________________________________________

MD Signature: __________________________ Date: __________ Time: __________
RN Signature: __________________________ Date: __________ Time: __________
ICU Post Cardiac Arrest Temperature Control Orders

**Imaging/Cardiac:**
- [ ] Portable CXR - Indication: mechanical ventilation, S/P cardiac arrest
- [ ] 2-D echo with color Doppler (read by ________________________)

**AM Imaging:**
- [ ] Portable CXR

**MONITORING:**
- **Water Temperature** Q1hr while Arctic Cooling Device is attached
  Notify MD if < 10° C (50°F) after target temperature (36°Celsius) is achieved
- **Cardiac:** Continuous EKG
- **Vital signs** Q1hr with Continuous Pulse Oximetry
- **Urine Output** Q1hr – Notify MD for UO > 200 mL/hr or < 0.5 mL/kg/hr
- **Core Body Temperature Monitoring:**
  Monitor by a consistent continuous core temperature instrument:
  - Bladder Probe if UO > 30 mL/hr OR PA catheter OR a rectal probe OR esophageal probe
  - Temp Q 15 min until 36°Celsius is reached, then Q1hr
  Notify MD for shivering and begin following shivering treatment algorithm below.
  Notify MD if unable to reach goal temp
- **Neurologic status:** Assess and document Q2hr
  Notify MD for any seizure activity
- **Skin:** Lift device pads to check skin condition Q6hrs
- **Glucose Management:** FSBS on admission and initiate the “ICU Blood Glucose Treatment Protocol”

**SHIVERING:** (Administer only after sedation has been achieved)
- Document shiver score Q15min using Shivering Assessment Scale (BSAS), until target temperature of 36°Celsius is reached; then PRN

<table>
<thead>
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<th>Shivering Assessment Scale (BSAS):</th>
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<tr>
<td>0</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>2</td>
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<tr>
<td>3</td>
</tr>
</tbody>
</table>

- **Buspirone** 30 mg (10-mg tablets) OG/PT x1 dose
- **If** shiver score >1, ensure adequate sedation and analgesia

- If shiver score is still >1, give:
  - [ ] Meperidine 12.5 – 25 mg IV Q1H PRN shivering
    *(Avoid in dialysis, history of seizures and/or CrCl < 30 mL/min)*
  - If shiver score is still >1, place a Bair hugger set to max temperature over the patient.
  - If shiver score is still >1 after above measures (including both doses of Meperidine), give one of the following:
    - [ ] Nimbex (cisatracurium) 0.2 mg/kg BOLUS IV Q30 min PRN shivering unresponsive to buspirone ± meperidine
    - [ ] Vecuronium 0.1 mg/kg IV Q1H PRN shivering unresponsive to buspirone ± meperidine

**OTHER MEDICATIONS – Refer to Med Reconciliation form**
- **Lacrilube** to both eyes PRN
- **Intravenous Potassium & Magnesium Replacement Protocol** if creat < 1.5 (if creat ≥ 1.5, call MD for orders)
- **Tylenol** (acetaminophen) 650 mg PR Q6 hrs for 72 hours then PRN Temp > 100.5

**MD Signature:**
**Date:**
**Time:**

**RN Signature:**
**Date:**
**Time:**
ICU Post Cardiac Arrest Temperature Control Orders

RN to Complete:
TIME TEMPERATURE MANAGEMENT IS INITIATED: ________
TIME TARGET TEMP 36°C IS REACHED: _____ + 24hrs = TIME RE-WARMING SHOULD BEGIN: ______

RE-WARMING PROTOCOL

■ Begin 24hrs after target temp of 36°C Celsius is reached.
■ DO NOT re-warm faster than 0.5 degree Celsius per hour to goal of 37.0°C Celsius
  When using the Arctic Sun cooling device the device should be programmed for a controlled re-warm over 2 hrs. The device should be programmed to maintain a target temperature of 37.0°C for the next 48 hrs.
■ If seizure activity present or water temp < 10° C (50°F) ; DO NOT re-warm and notify MD.
■ Leave pads in place and maintain normothermia (37°C) for 72 hrs following the cardiac arrest.
■ Notify MD if Patient Temp > 37°C
■ Continue to maintain sedative, analgesic agents until patients reaches 37.0°C.
  Notify MD when temp reaches 37.0°C for further instructions regarding these medications.

MISCELLANEOUS
☐ See Acute Coronary Syndrome Orders

MD Signature: Date: Time:

RN Signature: Date: Time:
# ICU Post Cardiac Arrest Temperature Control Medication Infusions

## Abbreviations

<table>
<thead>
<tr>
<th>DO NOT USE</th>
<th>USE</th>
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<tr>
<td>Q.D.,QD q.d.,qd</td>
<td>Daily</td>
</tr>
<tr>
<td>Q.O.D. QOD q.o.d., qod</td>
<td>Every Other Day</td>
</tr>
<tr>
<td>U u</td>
<td>Units</td>
</tr>
</tbody>
</table>

### DOBUTamine
- **DOBUTamine** 250 mg/250 mL D₅W
- **max concentrate** to 1000 mg/250 mL D₅W
- **Starting dose** ______ micrograms/kg/min
- **Do not titrate**
- **OR**
- **Titrate** 1 microgram/kg/min q 5 minutes to maintain ______
  - Notify MD if patient requires > 15 micrograms/kg/min
  - Maximum dose 20 micrograms/kg/min

### Milrinone
- **Milrinone** 40 mg/200 mL D₅W
- **Dose** ______ micrograms/kg/min
- **Maximum dose** 0.75 micrograms/kg/min
- **MONITOR FOR HYPOTENSION** (SBP < 90 mmHg)

### EPINEPHrine
- **EPINEPHrine** 4 mg/250 mL 0.9%NaCl
- **double concentrate** to 8 mg/250 mL 0.9%NaCl
- **Starting dose** ______ micrograms/kg/min
- **Do not titrate**
- **OR**
- **Titrate** 0.1 microgram/kg/min q 5 min to maintain SBP > _____ mmHg or MAP > _____ mmHg
  - Notify MD if patient requires > _____ micrograms/kg/min
  - Maximum dose 0.5 micrograms/kg/min

### DOPIamine
- **DOPIamine** 400 mg/250 mL D₅W
- **max concentrate** to 1600 mg/250 mL D₅W
- **Starting dose** ______ micrograms/kg/min
- **Do not titrate**
- **OR**
- **Titrate** 2 micrograms/kg/min q 5 min to maintain SBP > _____ mmHg or MAP > _____ mmHg
  - Notify MD if patient requires > _____ micrograms/kg/min
  - Maximum dose 20 micrograms/kg/min

### Norepinephrine
- **Norepinephrine** 4 mg/250 mL 0.9%NaCl
- **double concentrate** to 8 mg/250 mL 0.9%NaCl
- **Starting dose** ______ micrograms/min
- **Titrate** 2 micrograms/min q 5 min to maintain SBP > _____ mmHg or MAP > _____ mmHg
  - Notify MD if patient requires > 50 micrograms/min
  - Maximum dose 80 micrograms/min

### Phenylephrine
- **Phenylephrine** 20 mg/250 mL 0.9%NaCl
- **max concentrate** to 80 mg/250 mL 0.9%NaCl
- **Starting dose** ______ micrograms/min
- **Titrate** 10 micrograms/min q 5 min to maintain SBP > _____ mmHg or MAP > _____ mmHg
  - Notify MD if patient requires 180 micrograms/min and unable to meet goal BP parameters
  - Maximum dose 180 micrograms/min

### Vasopressin
- **Vasopressin** 100 units/250 mL 0.9%NaCl
- **Starting dose** _____ units/min
- **Do not titrate**
- **OR**
- **Titrate** 0.005 units/min q 10 min to maintain SBP > _____ mmHg or MAP > _____ mmHg
  - Maximum dose is 0.04 units/min for hemodynamic support
  - Maximum dose 0.8 units/min for GI bleed

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**MD Signature:**

**Date:**

**Time:**

**RN Signature:**

**Date:**

**Time:**

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Origin: 4/13
Revised: 7/15; 4/16
### ICU Post Cardiac Arrest Temperature Control Medication Infusions

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<tr>
<td>U</td>
<td>Units</td>
<td>u</td>
</tr>
<tr>
<td>No Trailing Zero</td>
<td>2 mg</td>
<td></td>
</tr>
<tr>
<td>Lack of Leading Zero</td>
<td>0.2 mg</td>
<td></td>
</tr>
<tr>
<td>MS</td>
<td>Morphine Sulfate</td>
<td>Magnesium Sulfate</td>
</tr>
<tr>
<td>MSO₄</td>
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</tr>
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#### Nitroglycerin 50 mg/250 mL D₅W
- Starting dose _____ micrograms/min
- Titrate 5 micrograms/min q 3-5 min to maintain:
  - SBP < _____ mmHg
  - Chest pain relief (notify MD if chest pain not relieved or SBP < 90 mmHg)
- Notify MD if patient requires > _____ micrograms/min
- Maximum dose 200 micrograms/min

#### NiCARdipine 25 mg/250 mL 0.9%NaCl
- Starting dose 5 mg/hr
- Titrate 2.5 mg/hr q 15 min to maintain SBP < _____ mmHg or MAP < _____ mmHg
- Notify MD if patient requires 15 mg/hr and unable to meet BP goal parameters
- Maximum dose 15 mg/hr

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**MD Signature:**

**Date:**

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**Date:**

**Time:**