

(place patient label here)

Patient Name: \_\_\_\_\_



**PROVIDER ORDERS**

**Order Set Directions:**

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Diagnosis: \_\_\_\_\_

Allergies with reaction type: \_\_\_\_\_

## **ICU Targeted Temperature Management Post-Cardiac Arrest Version 2 Approval 1/18/2017**

### **Inclusion Criteria**

- All cardiac rhythms
- Glasgow coma scale less than or equal to 7
- Age greater than or equal to 18
- Pregnancy negative
- No defined neuropathology
- Establish Code status

### **General**

Requires mandatory Intensivist as consult  
Each phase is available for nursing to quickly place MEDITECH orders

## **PHASE 1: ON ADMISSION AND PRIOR TO COOLING**

### ***Nursing Orders***

- Vital signs every 15 minutes x 4 then hourly including temperature from 2 routes (esophageal, rectal and/or bladder)
- Elevate head of bed 30 degrees
- Nasogastric/orogastric tube insert/maintain to low intermittent suction
- Point of Care Capillary Blood Glucose every 6 hours and as needed
- Foley Catheter with urometer insert/maintain

### ***Respiratory***

- Maintain PCO2 35-45 mmHg
- Maintain O2 Sat > 94%

### ***IV/ Line Insert/Maintain***

- Arterial IV insert/maintain
- Peripheral IV insert/maintain
- Central Line insert/maintain

### ***Diet***

- NPO

### ***Laboratory***

Obtain the following STAT labs:

- Blood Gas Study, arterial
- Pregnancy test, serum. Select for women of child bearing age
- Amylase, serum
- Complete blood cell count with automated white blood cell differential
- Comprehensive metabolic panel
- Magnesium (Mg) level, serum
- Phosphorus level, serum
- Creatine kinase, total (CK-total)
- Cortisol, serum
- Calcium level, serum, ionized
- Lactic acid, plasma

Initials \_\_\_\_\_

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- Lipase
- Prothrombin time (PT) and international normalized ratio (INR)
- Partial thromboplastin time (PTT), activated
- Troponin-I
- Type and screen

If fever or evidence of infection present:

- Culture, blood from 2 different peripheral sites
- Culture, sputum
- Culture, urine
- Procalcitonin

**Radiology**

CT Head without Contrast

- STAT. Reason for exam: post cardiac arrest

XR Chest Single AP View Only, portable,

- STAT. Reason for exam: post cardiac arrest

**Diagnostic Tests**

12-lead ECG

- STAT. Reason for exam: post cardiac arrest

Echocardiogram, transthoracic (2D cardiac ECHO)

- Reason for exam: post cardiac arrest (DO NOT DELAY COOLING PROTOCOL IF NOT OBTAINED)

EEG (Electroencephalogram), continuous,

- STAT. Reason for exam: post cardiac arrest (DO NOT DELAY COOLING PROTOCOL IF NOT OBTAINED)

**IV Fluids**

Sodium Chloride 0.9% IV

- 30 milliliter/hour continuous intravenous infusion

**Medications**

**Sedatives /Analgesics/Paralytics**

**Initiate Propofol and Fentanyl together and titrate Propofol to RASS -2 sedation level**

propofol 10 mg/mL intravenous emulsion (DIPRIVAN)

- 5 microgram/kilogram per minute continuous intravenous infusion. Titrate to achieve -2 RASS sedation level (MAX 80 microgram/kilogram per minute)

fentaNYL

- 1 microgram/kilogram intravenous push bolus once (MAX 100 microgram) followed by fentanyl continuous infusion
- 50 microgram/hour continuous infusion following bolus.

**\*\*if RASS -2 not achieved and Propofol infusion is at MAX:**

LORazepam (ATIVAN)

- 2-4 milligram intravenously every 30 minutes as needed if RASS -2 not achieved and Fentanyl and Propofol infusions are at MAX

fentaNYL

- 50-100 microgram intravenous push every 30 minutes as needed if RASS -2 not achieved within 30 minutes of first Lorazepam dose and Fentanyl and Propofol infusions are at MAX

**\*\*For seizures: Contact provider**

LORazepam (ATIVAN)

- 2 milligrams intravenously push every 30 minutes as needed

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**\*\*For shivering: Contact provider**

meperidine (DEMEROL)

- 12.5-25 milligram intravenous push every 4 hours as needed (GIVE FIRST)

vecuronium

- If shivering is unrelieved by Demerol, contact provider for appropriate dosing and RASS score

**Vasopressors: Contact provider if initiating pressor**

**\*\*Initiate norepinephrine (LEVOPHED) first**

norepinephrine bitartrate (LEVOPHED) in NS 4 mg/250 mL IV

- 0.1 microgram/minute continuous intravenous infusion. Titrate to keep MAP greater than 65 mmHg (MAX 30 microgram/minute)

**\*\*If desired MAP not obtained ADD:**

vasopressin in NS 100 unit/250 mL IV

- 0.04 unit/minute continuous intravenous infusion

**\*\*If desired MAP not obtained ADD:**

phenylephrine (NEO-SYNEPHRINE) in NS 20 mg/ 250 mL (80 mcg/mL) IV

- 20 - 180 microgram/minute continuous intravenous infusion . Titrate to keep MAP greater than 65 mmHg begin if desired MAP not achieved with norepinephrine and vasopressin)

**Insulins**

**Insulin Sliding Scales**

- Low
- Medium
- High

If blood sugar is >250, initiate insulin drip. Select Dynamic Insulin Drip orders

- Insulin, regular in NS 250 unit/250 mL (1 unit/mL) IV.

**Other**

Refresh Lacri-Lube 56.8 %-42.5 % eye ointment (Lacri-Lube)

- 0.5 inch in each eye every 12 hours as needed while sedated

aspirin

- 300 milligram suppository rectally once a day
- 325 milligram tablet by nasogastric tube once a day

**PHASE 2: COOLING PHASE (goal temperature 32-36 C within 6 hours post arrest)**

**Cooling process:**

**IV Fluids**

Sodium Chloride 0.9% IV - CHILLED

- 1000 milliliter intravenously Rapid Bolus (< 15 min), may repeat x 1 to obtain \_\_\_\_\_ goal temperature (DO NOT give via jugular or subclavian line)
- Other \_\_\_\_\_

**Nursing Orders**

- Turn down room thermostat to 60 degrees F
- Utilize fan if needed
- Privacy linen only
- Cooling Blanket to 36 degrees C (anterior and posterior)
- Instill 250 milliliter iced water via NG/OG and retain for 30 minutes, remove and repeat until goal temperature is reached

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**PROVIDER ORDERS**

- Ice packs to groin, under arms and sides of neck, continue until goal temperature is reached
- Skin assessment hourly
- Vital signs every 15 minutes x 4 then hourly including temperature from 2 routes (esophageal, rectal or bladder)
- Document negative shivering assessment (absence of artifact on monitor, jaw vibration, pectoralis fasciculation)
- Electrolyte replacement for first 18 hours of cooling.
- Notify provider for:
  - HR < 40 OR > 140 bpm or symptomatic bradycardia;
  - MAP < 60 or > 150 mmHg;
  - Uncontrolled shivering;
  - Change in cardiac rhythm or new ECG changes;
  - Urine output less than 30 milliliter/hour;
  - Inability to reach goal temperature within 4 hours after arrest;
  - QTC > 500

**Respiratory**

- RT to remove heated circuit from ventilator

**Laboratory**

AFTER GOAL TEMPERATURE OF 32-36 C IS REACHED, obtain the following labs every 6 hour x 24 hours

- Blood Gas Study, arterial
- Amylase, serum
- Complete blood cell count with automated white blood cell differential
- Comprehensive metabolic panel
- Magnesium (Mg) level, serum
- Phosphorus level, serum
- Creatine kinase, total (CK-total)
- DIC Screen
- Calcium level, serum, ionized
- Lactic acid, plasma
- Troponin-I

**Medications**

**Electrolyte Replacement**

The following are to be administered via central line only during the first 18 hours of the cooling phase; Do not replace 6 hours prior to rewarming  
Monitor for arrhythmia changes during all electrolyte replacement therapy

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**PROVIDER ORDERS**

<b>Magnesium Replacement</b>	
<b>Mg Level</b>	<b>Replacement</b>
< 1.6	4 gram in NS IV over 4 hour
≥ 1.6 - 2.0	2 gram in NS IV over 2 hour

  

<b>Potassium Replacement</b>	
<b>K Level</b>	<b>Replacment</b>
≤ 2.5	80 mEq KCL: 40 mEq/100 ml NS IV over 2 hours x 2
2.6 - 2.9	60 mEq KCL: 30 mEq/100 ml NS IV over 2 hours x 2
3.0 - 3.4	30 mEq KCL/100 ml NS IV over 1 hour
3.5 - 3.9	20 mEq KCL/100 ml NS IV over 1 hour

  

<b>Phosphorus Replacement</b>	
<b>Phos Level</b>	<b>Replacement (Use Sodium Phosphate)</b>
< 1	0.75 millimoles/kg IV pharmacy to dose/renally adjust (infuse no faster than 7.5 millimoles/hour)
1 - 1.5	0.5 millimoles/kg IV pharmacy to dose/renally adjust (infuse no faster than 7.5 millimoles/hour)
1.6 - 2.0	0.25 millimoles/kg IV pharmacy to dose/renally adjust (infuse no faster than 7.5 millimoles/hour)

  

<b>Calcium Replacement</b>	
<b>Ionized Ca+ Level</b>	<b>Replacement</b>
< 0.9	1 gram Calcium Gluconate/100 ml NS IV over 30 minutes

**PHASE 3: PASSIVE REWARMING PHASE (goal temperature is 36 C)**

**Nursing Orders**

- Begin passive rewarming 24 hours after goal temperature was achieved (should take 6-8 hours)
- Maintain temperature less than 37.5 C for the first 48 hours POST rewarming
- Turn up room thermostat to 70 degrees F
- Discontinue Cooling Blankets
- Use regular blankets (DO NOT USE heated or warm air blanket)
- When patient temperature of 36 C is achieved, DC prn vecuronium if ordered
- 2 hours after patient temperature of 36 C is achieved wean sedation to RASS level of 0

**Respiratory**

- RT to add heated circuit to ventilator

**Medications**

- acetaminophen (TYLENOL) Place on hold until goal temperature is reached. Notify pharmacy to initiate order.
- 650 milligram orally every 6 hours for 72h
  - 650 milligram rectally every 6 hours for 72h

Provider Signature: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_