Emergency Department/Intensive Care Unit

Physician Order Sheet

This paper order set should ONLY be used as a bedside guide or as a supplement (if desire) to the EMR. It should NEVER be used in place of the electronic order set so long as the electronic order set is available.

All applicable orders have been checked.

ORDERS NOT CHECKED ARE NOT TO BE FOLLOWED

Orders are modified according to the medical condition of the patient. All orders are to be dated, timed and signed by a physician. Additional orders may be entered at the end of the order set. If the orders are transcribed in sessions, the transcriber must date, time, and initial in the section marked order noted.

ALLERGIES: ☐ NKDA

☐ Yes: Drug/RXN _____

Inclusion Criteria:

**See 2013 TUH Hypothermia After Cardiac Arrest Protocol*

*Note: This should be done for ALL patients, even those undergoing emergent coronary intervention

Order #	√	**Hypothermia after Cardiac Arrest** EmergencyKT Orders	Date/ Time	RN
1.	√	**Consult Neurocritical Care Fellow**: -#: 820-0074, or 584-7273 -Reason: Induction of Hypothermia After Cardiac Arrest		
	□	**Activate Cath Lab**: -# 590-5500, Code 9999		
	□	**Consult Cardiology Fellow**: -# 230-0202 -Indication: Possible Coronary Intervention		
2.		**MONITORING – Continuous**		
	√	Recorded Pt Weight: _____ kg		
	√	Vital Signs		
	√	Continuous ECG Monitoring		
	√	Continuous SpO2 Monitoring		
	□	Titrate FIO2 to maintain SpO2 95-98%		
	√	Continuous Temperature Monitoring		
	□	Insert Temperature Management Foley Probe		
	□	Insert Esophageal Probe		
	□	Insert Rectal Probe (ONLY if Esophageal or Foley Probes contraindicated)		
	√	Notify MD if: -Temperature < 32°C for > 30 min -Temperature > 34°C for > 30 min during maintenance phase -Temperature > 37.5°C for > 30 min within 72 hrs post-arrest -Temperature > 34°C for > 30 min > 4 hrs after induction		
	√	Continuous Blood Pressure Monitoring		
	□	Maintain MAP between 70-110 mmHg		
	□	Notify MD if MAP < 70 mmHg or > 110		
	□	Notify MD if SBP > 180 mmHg or < 100 mmHg		

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3.	√	**Initiate Cooling Measures**		
	√	Head of Bed Elevated to 30°		
	√	If initial temp < 32°C, allow to rewarm to 32°C prior to initiation		
	√	Turn room thermostat to "off"		
	√	Expose Patient		
	□	Apply Cooling Fan		
	□	Apply Ice Packs to the Neck, Axilla, Torso, and Groin		
	□	Remove ice packs once temperature is < 34°C		
	□	Apply Cooling Blanket with Blanketrol		
	□	Remove cooling blanket once temperature is < 34°C		
	□	30 mL/kg 4°C Normal Saline IV (100 cc/min using pressure bag)		
	√	Do not administer medications labeled "Do Not Refrigerate"		
	√	Do not administer Mannitol		
	√	Thermogard 3000 Setup		
	√	9.3 Fr, 38 cM ICY Cath Cooling Catheter to Bedside		
	□	Cool-Line Catheter to Bedside		
	√	0.9% Saline Flushes to bedside X 3		
	√	Central Line Accessory Kit to Bedside		
	√	Ultrasound probe cover to bedside		
	√	Set Thermogard 3000 Target Temperature to 33°F		
	√	Set Thermogard 3000 Cooling rate to "Max Power"		
	□	Insert Nasogastric or Orogastric Tube and place to low-wall suction		
	□	Monitor urine output		
	√	Respiratory Care		
	□	Remove humidifier from ventilator		
	√	Decrease ventilator circuit temperature		
	√	Frequent in-line suctioning		
	√	Maintain ETT cuff pressure 20-30		
	√	Titrate FIO2 to SpO2 95-98%		
	□	Titrate FIO2 to PaO2 100-300 mmHg		
4.		**Induction Labs**		
	□	CBC		
	□	PT, PTT, INR		
	√	Serum or Urine Qualitative HCG (if female age < 56)		
	√	Serum Lactate now and q 2 hrs X 2		
	√	Serum Glucose q 1 hr X 4 (via venous or arterial catheter only)		
	√	Arterial Blood Gas now q 2 hrs X 2 Note: must be analyzed at actual body temp		
	√	Basic Metabolic Panel q 2 hrs X 2		
	√	Magnesium, Phosphorous, free calcium q 2 hrs X 2		
	√	Lactate q 2 hrs X 2		
5.		**Imaging**		
	□	Chest X –Ray: Post Arrest		
	√	CT Head without contrast: Altered Mental Status Note: MUST be done prior to ICU arrival		

	□	Transthoracic Echo: Eval Cardiac Function Post-Arrest		
	□	Continuous Video EEG Monitoring (arranged by Neurocritical Care Fellow)		

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6.		**Medications**		
	□	Acetaminophen: 650mg PFT or PR q 6 hrs X 24 hrs		
	□	Eye Lubricant (Artificial Tears) Oint: 1 drop OU q 2 hrs while paralyzed		
	□	Initiate electrolyte replacement per ICU protocol Goal K > 3.5, Mg > 2.0, Free Calcium > 4.8		
	□	Initiate Other (Physician-Prescribed) Electrolyte Replacement:		
	□	Initiate Insulin Drip per ICU protocol: Goal Blood Glucose: 100-180 mg/dL		
	□	Other Medications (include indication for all PRN medications):		
7.		**Initiate Sedation Protocol**		
	√	Titrate sedation to RAS -4		
	□	Fentanyl drip		
	□	Loading Dose: _____ mcg IV X 1 (1-2 mcg/kg)		
	□	Infusion: _____ mcg/hr (1-4 mcg/kg/hr)		
	□	Propofol		
	□	Initial Infusion: _____ mcg/kg/min (titrate to RAS -4)		
	□	Midazolam		
	□	Loading Dose: _____ mg IV X 1 (2-6 mg)		
	□	Infusion: _____ mg/hr (0.02-0.1 mg/kg/hr)		
	□	Dexmedetomidine		
		Loading Dose: _____ mcg IV X 1 (1 mcg/kg over 10 minutes)		
		Initial Infusion: _____ (0.2 – 0.7 mcg/kg/hr)		

Order #	√	**Hypothermia after Cardiac Arrest** EmergencyKT Orders	Date/ Time	RN
8		**Initiate Anti-Shivering Measures (Choose One Only)**		
	□	Neuromuscular Paralysis		
		Monitor Train of 4		
		Initiate paralysis only once RAS -4		
	□	Cisatricurium		
		Loading Dose: _____ IV X 1 (0.15 mg/kg IV)		
		Infusion: _____ (1-3 mcg/min IV)		
		Titrate to Train of 4 of _____		
	□	Vecuronium		
		Loading Dose: _____ IV X 1 (0.2 mg/kg IV X 1)		
		Infusion: _____ (1 mcg/kg/min)		
	□	Initiate Shivering Assessment and Intervention Protocol Initiate Shivering Assessment q 1 hr (with sedation assessment) 0 (None) = No shivering on palpation of masseter, neck, or chest wall 1 (Mild) = Mild shivering on neck and thorax only 2 (Marked) = Shivering on trunk, upper, and lower extremities P = Paralysis applied		
		For Initial Shivering Scale ≥ 1: Magnesium Sulfate 1 g IV over 1 hr Buspirone 30 mg PO/FT q 8 hrs PRN		
		For Shivering Scale ≥ 1 30 minutes after initial intervention: Fentanyl 50-200 mcg/hr infusion Initiate Surface Counterwarming Warm Blankets to exposed forearms, hands, feet and ankles *Once cooling catheter has been placed, may apply Bair Hugger to skin (43°C)		
		For Shivering Scale ≥ 1 30 minutes after above interventions: Dexmedetomidine Infusion 0.2 – 0.7 mcg/kg/hr		
		For Shivering Scale ≥ 1 30 minutes after above interventions: D/C Dexmedetomidine Propofol infusion 10-75 mcg/kg/min		
		For Shivering Scale ≥ 1 30 minutes after above interventions: Call MD for possible neuromuscular paralysis		

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9.		**Initiate Maintenance Phase**
	√	Once temperature reaches 33°C
	√	Maintain temperature 32-34°C for 24 hours
	√	No change to thermogard 3000 setting
	√	Notify MD if temp < 32°C or > 34°C for ≥ 30 min
	□	Continue as above: -Sedation Protocol -Anti-Shivering Protocol -Medication Administration -Glycemic Control -Electrolyte Replacement
10.		**Maintenance Labs**
	√	Glucose q 1 hr X 24 hrs (via venous or arterial line only)
	√	Arterial Blood Gas q 6 hrs X 4: Note: must be analyzed at actual body temp
	√	Basic Metabolic Panel q 6 hrs X 4
	√	Lactate q 6 hrs X 4
	√	Magnesium, Phosphorous, Free Calcium q 6 hrs X 4 starting at maintenance
	□	Other Labs:
11.		**Initiate Rewarming**
	√	Initiate 24 hours after reaching target temp (33°C)
	√	Continue until temp of 37°C is reached
	√	Change Thermogard Setting to "Rewarm" Change Thermogard Goal Temperature to 37.0°C
	√	Set Thermogard 3000 rewarm rate to 0.25°C/hr
	√	Maintain rewarming rate NO MORE than 0.3°C/hr Notify MD if rewarming occurs at rate faster than 0.3°C/hr

Order #	√	**Hypothermia after Cardiac Arrest** EmergencyKT Orders
12.		**Rewarming Labs**
	√	Glucose now and X 1 once target temperature (37.0°C) reached
	√	Arterial Blood Gas now and X 1 once target temperature (37.0°C) reached: Note: must be analyzed at actual body temp
	√	Basic Metabolic Panel now and X 1 once target temperature (37.0°C) reached
	√	Lactate now and X 1 once target temperature (37.0°C) reached
	√	Magnesium, Phosphorous, Free Calcium now and X 1 once target temperature (37.0°C) reached
	□	Other Labs:
	□	Continue as above: -Sedation Protocol -Anti-Shivering Protocol -Medication Administration -Glycemic Control -Electrolyte Replacement
	√	If paralysis applied, wean paralysis once temp reaches 36.5°C
	√	May NOT wean sedation unless train of 4 = 4/4
	□	May wean sedation once train of 4 = 4/4
13.		**Maintenance at 37°C**
	√	Initiate once temperature has reached 37°C
	√	Set Thermogard 3000 to "Fever" mode once temp reaches 37.0°C Set maximum temp to 37.0°C
	√	Maintain temperature 37.0°C for 44 hrs after target rewarming temp (37°C) reached
	√	Blood Culture, Urine Culture, Sputum Culture (BAL, PAL) at 48 hrs post ROSC
	□	ICU Electrolyte Replacement Protocol
	□	Obtain a second site of IV access (other than cooling catheter)
	√	Once patient has rewarmed to 37°C for 44 hrs (or 72 hrs post-arrest), cooling catheter may be removed
	√	Once patient has rewarmed to 37°C for 44 hrs (or 72 hrs post-arrest), discontinue thermogard
	√	Once patient has rewarmed to 37°C for 44 hrs (or 72 hrs post-arrest), discontinue hypothermia protocol
14.		**Consults**
		Neurology (72 hrs after rewarming): Indication: Neuroprognosis after cardiac arrest
15.		**Miscellaneous Orders**
	□	
	□	
	□	
	□	
	□	

Provider Signature: _____ Date/Time: _____ Contact #:_____