

# Organ Donor Management Recommended PPO PEDIATRIC Circulatory Death (DCC)

Patient Addressograph

**Note:** These orders apply to newborn to 16 years; intended for care provided within a Pediatric/Neonatal Intensive Care Unit. Dosages and infusion rates listed below reflect those used at BC Children's Pediatric ICU and apply to children less than or equal to 60 kg, beyond which adult dosing should apply.

Contact BC Children's Hospital PICU 604-875-2133 for any questions.

☒ = Always applicable ☐ = Check if applicable

Date: \_\_\_\_\_ Time: \_\_\_\_\_

## Admission Instruction

- ☒ Comfort Care Note x2 in chart (by 2 attending physicians)
- ☒ Contact initiated with BC Transplant
- ☒ Consent for Organ Donation obtained by BCT coordinator
- ☒ Code Status: Full therapy except cardiopulmonary resuscitation

## SECTION I. GUIDELINE FOR POTENTIAL DCC PATIENT UNTIL WITHDRAWAL OF LIFE SUPPORT

### MONITORING

- ☒ Complete patient actual height and weight. Record on BCT Physical Assessment Form

(Available on [www.transplant.bc.ca](http://www.transplant.bc.ca))

- ☒ Urine output q1h
- ☒ HR, BP, temperature, pulse oximetry q1h
- ☒ Arterial pressure monitor continuous

### PATIENT CARE

- ☒ Central venous catheter
- ☒ Urine catheter
- ☒ Maintain head of bed greater than 30 degrees
- ☒ Targeted temperature management goal 35.5 – 37.5°C
- ☒ NG/OG to low intermittent suction if feeds contraindicated or not tolerated

### General Targets:

- Age-related norms for pulse and blood pressure (BP)
- CVP 6-10 mmHg (fluid resuscitation to maintain normovolemia)
- Urine Output 0.5 to 3 mL/kg/h
- Hemoglobin (Hgb): above 70 g/L

### LABORATORY INVESTIGATIONS

- ☒ Send blood for tissue typing and serology (use BC Transplant "Red Blood Box")
- ☒ Blood Type/Screen

### Initial Bloodwork, then q8h

- ☒ ABG
- ☒ Na, K, Cl, Bicarb, SCr, Urea, Ca, Mg, PO4, Lactate, eGFR, CBC, glucose
- ☒ INR/PTT, AST, ALT, TBil, DBil, ALP, GGT, LDH, Total Protein
- ☒ Albumin, Amylase/Lipase, CK, Troponin (I or T)

- ☒ Goal hemoglobin greater than 70 g/L. Notify physician and BCT if <70 g/L
- ☒ Monitor platelet level. Notify physician and BCT if < 10 (consider transfusion)
- ☒ Urinalysis including specific gravity, routine and micro baseline and Q24h
- ☒ Urine microalbumin/creatinine (ACR) ratio baseline and PRN as requested

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## DIAGNOSTICS

- ☒ CXR daily
- ☐ CT of chest and abdomen (if requested by BC Transplant: High resolution – Non contrast)
- ☐ Bronchoscopy (if requested by BC Transplant)
  - complete Bronchoscopy form available on [www.transplant.bc.ca](http://www.transplant.bc.ca)

## NUTRITION

- ☒ Continue feeds if already initiated. Initiate unless contraindicated. (Hold feed 8 hours prior to recovery surgery)
- ☒ If patient on parenteral nutrition, consult dietician for direction

## INTRAVENOUS

- ☒ Total fluid intake at      mL/h
- ☒ Fluid type:                       
(As per standard fluid management protocols – 80% maintenance)

## RESPIRATORY MANAGEMENT

- Lung recruitments not indicated for spontaneous breathing patients
  - Goal to optimize PEEP for individual patient
  - Pulmonary toileting and chest physio (as per site policy)
- ☒ Continue mechanical ventilation as per previous orders
- \*OR\***
- ☐ Mechanical ventilation as follows:
- Mode
  - Tidal volume 6-8 mL/kg IBW OR pressure limit at              (cm H<sub>2</sub>O) as applicable
  - PEEP 5-8cmH<sub>2</sub>O and adjust to meet patient requirements (may require higher PEEP for larger patients)
- ☒ Adjust FiO<sub>2</sub> to maintain SaO<sub>2</sub> greater than or equal to 95% Maintain PaO<sub>2</sub> greater than 70 mmHg with minimal effective FiO<sub>2</sub>.
- ☒ Maintain pH 7.35 to 7.45
- ☐ O<sub>2</sub> challenge: 100% FiO<sub>2</sub> with current PEEP for 10 minutes initial and **q6h**

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## MEDICATIONS

### Hemodynamic Monitoring and Therapy:

Heart Rate			Respiratory Rate	
Normal Heart Rate by Age (beats/minute) Reference: PALS Guidelines, 2015			Normal Respiratory Rate by Age (breaths/minute) Reference: PALS Guidelines, 2015	
Age	Awake Rate	Sleeping Rate	Age	Normal Respiratory Rate
Neonate (<28 d)	100-205	90-160	Infants (<1 y)	30-53
Infant (1 mo-1 y)	100-190	90-160	Toddler (1-2 y)	22-37
Toddler (1-2 y)	98-140	80-120	Preschool (3-5 y)	20-28
Preschool (3-5 y)	80-120	65-100	School-age (6-11 y)	18-25
School-age (6-11 y)	75-118	58-90	Adolescent (12-15 y)	12-20
Adolescent (12-15 y)	60-100	50-90		

  

Blood Pressure			
Normal Blood Pressure by Age (mm Hg) Reference: PALS Guidelines, 2015			
Age	Systolic Pressure	Diastolic Pressure	Systolic Hypotension
Birth (12 h, <1000 g)	39-59	16-36	<40-50
Birth (12 h, 3 kg)	60-76	31-45	<50
Neonate (96 h)	67-84	35-53	<60
Infant (1-12 mo)	72-104	37-56	<70
Toddler (1-2 y)	86-106	42-63	<70 + (age in years x 2)
Preschooler (3-5 y)	89-112	46-72	<70 + (age in years x 2)
School-age (6-9 y)	97-115	57-76	<70 + (age in years x 2)
Preadolescent (10-11 y)	102-120	61-80	<90
Adolescent (12-15 y)	110-131	64-83	<90

Reference: from <https://www.pedscales.com/pediatric-vital-signs-reference-chart>

Notify physician if outside of general target parameters

**Management of Hypotension:** Target BP: \_\_\_\_ / \_\_\_\_

Pediatric patients will often be on epinephrine due to hemodynamic instability. The cardiac transplant programs preference is for this to be transitioned to alternative agents for maintaining normal blood pressures.

- ☐ vasopressin \_\_\_\_\_ milliunit/kg/min (0.3 to 2 milliunit/kg/min) IV infusion Max. dose: 40 milliunit/min
- ☐ NORepinephrine \_\_\_\_\_ mcg/kg/min IV infusion (0.01 to 0.2 mcg/kg/min);  
caution with doses greater than 0.2 mcg/kg/min; max 2 mcg/kg/min)

**Management of Hypertension:** Target BP: \_\_\_\_ / \_\_\_\_

### Age-related Treatment Thresholds for Arterial Hypertension:

- Newborns to 3 months greater than 90/60
- 3 months to 1 year greater than 110/70
- 1 year to 12 years greater than 130/80
- 12 years to 18 years greater than 140/90

a. If necessary start:

- ☐ nitroprusside \_\_\_\_\_ mcg/kg/min (0.5 to 5 mcg/kg/min) **OR**
- ☐ esmolol \_\_\_\_\_ mcg/dose (500 mcg/kg/dose) IV bolus over 1-2 min

Followed by \_\_\_\_\_ mcg/kg/min (50 to 300 mcg/kg/min) IV infusion

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## **Diabetes Insipidus (DI)** (MD to confirm diagnosis, less common in DCC patients)

Defined as urine output greater than 3 mL/kg/h associated with:

- increasing serum sodium greater than 145 mmol/L and/or
- increasing serum osmolality greater than 300 mosM, and/or
- decreasing urine osmolality less than or equal to 200 mosM

If Diabetes Insipidus present, titrate therapy to urine output less than 3 mL/kg/h

☐ vasopressin \_\_\_\_\_ milliunit/kg/min (0.02-0.05 milliunit/kg/min) IV infusion

Max. dose: 0.2 milliunit/kg/min

## **INFECTION SURVEILLANCE AND TREATMENT**

Examine patient each shift for new skin lesions suggestive of viral, fungal or bacterial infection

- On daily rounds review for potential new infection.
- Treat any new suspected or confirmed viral, fungal or bacterial infection and notify BC Transplant
  - Influenza test (Flu A/B/RSV) **all donors** (during flu season only, typically Dec 1 to Mar 31.
  - COVID-19 test (requires dual source – NP swab and ET specimen test as indicated by BC Transplant). Must be completed within 5 days of recovery surgery.
  - Oral and genital swabs of any potential viral lesions, consult BC Transplant for recommended testing

☒ Cultures - all cultures to be done at baseline and then q24h

- Sputum gram stain and culture
- Blood culture (*Refer to current BCCH Pediatric Blood Culture Guide for appropriate collection quantities*)
- Urine culture
- Culture all drain sites

☒ MRSA and VRE screens (also screen all drain sites for MRSA) as per hospital policy

## **Antifungals and Antibiotics**

- Consult pharmacy for renal dosing of all antibiotics in presence of impaired renal function
- If lungs **not** considered, treat any known or suspected infections as per ICU direction
- If lungs are being considered treat with the following:

☐ fluconazole 6 mg/kg/dose (max 400 mg) IV q24h

☐ vancomycin (15 mg/kg) \_\_\_\_\_ mg IV q6h

(\*round to nearest 250 mg) (consult pharmacy for renal dosing in presence of AKI)

**And one** of the following:

☐ piperacillin-tazobactam 75 mg/kg/dose of piperacillin component (max 4 g/dose) IV q6h

**\*OR\***

☐ meropenem 20 mg/kg/dose (max 2 g/dose) IV q8h (If documented or suspected penicillin anaphylaxis or history of Extended Spectrum Beta-Lactamase (ESBL) organisms)

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**SECTION II. WITHDRAWAL OF LIFE SUPPORT**

- Consult ICU for Comfort Care orders**

☐ Heparin 400 units/kg \_\_\_\_\_ units IV

push when SBP less than 60 mmHg at impending death (RN to consult with ICU attending for timing of administration)

**Symptom Management**

**Pain/discomfort**

☐ Morphine \_\_\_\_\_ (0-20 mcg/kg/hour) IV infusion

☐ Morphine \_\_\_\_\_ (0.05-0.1 mg/kg) IV q30min prn

☐ Midazolam \_\_\_\_\_ (0-100 mcg/kg/hour) IV infusion

☐ Midazolam \_\_\_\_\_ (0.05-0.1 mg/kg) IV q30min prn

☐ Other \_\_\_\_\_

☐ Other \_\_\_\_\_

☐ Other \_\_\_\_\_

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