BC Children's Hospital · BC Women's Hospital + Health Centre · BC Transplant	**Organ Donor Management Recommended PPO PEDIATRIC Brain Death (DNC)**	*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: _____

☑ Confirmation of Death by Neurological Criteria (DNC) has been performed (by 2 attending physicians)
☑ Contact initiated with BC Transplant
☑ Consent for Organ Donation obtained by BCT coordinator
☑ Code Status: Full therapy except cardiopulmonary resuscitation

MONITORING

☑ Complete patient **actual** height and weight. Record on BCT Physical Assessment Form (available on www.transplant.bc.ca)
☑ Urine output q1h
☑ HR, BP, temperature, pulse oximetry q1h
☑ Arterial pressure monitor continuous

General Targets:

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

PATIENT CARE

☑ Central venous catheter
☑ Urine catheter
☑ Maintain head of bed greater than 30 degrees
☑ Targeted temperature management **goal 34-35°C** via Criticool device (after confirmation of death by neurological criteria)
☑ NG/OG on low intermittent suction if feeds contraindicated or not tolerated

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, eGFR, Ca, Mg, PO4, Lactate, 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 BC Transplant if <70 g/L.
☑ Monitor platelet level. Notify physician and BC Transplant if platelet level <10 (consider transfusion)
☑ Urinalysis including specific gravity, routine and micro baseline and Q24h
☑ Urine micro albumin/creatinine (ACR) ratio baseline and prn as requested by BCT

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DIAGNOSTICS

☑ CXR daily
☑ 12-lead ECG, if not performed in previous 12 hours (while heart is under evaluation)
☑ Echocardiogram after declarations, fluids and hemodynamic resuscitation (and repeat if requested by BC Transplant)
☐ CT of chest and abdomen (only if requested by BC Transplant, High resolution – Non contrast)
☐ Bronchoscopy (if requested by BC Transplant)

- complete Bronchoscopy form available on 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

- Optimize PEEP and lung recruitment 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 of IBW OR pressure limit at_____(cm H2O) as applicable
- PEEP 5-8 cmH20 and adjust to meet patient requirements (may require higher PEEP for larger patients)

☑ Adjust FiO2 to maintain SaO2 greater than or equal to 95% Maintain PaO2 greater than 70 mmHg with minimal effective FiO2.
☑ Maintain pH 7.35 to 7.45

☐ Recruitment maneuvers: PRN and after all circuit disconnects (Consult site policy for procedure and BCT for direction on frequency)

☐ O2 challenge: 100% FiO2 on current PEEP for 10 minutes initial and **q6h**

- Recruitment challenge prior to O2 challenge if tolerated

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MEDICATIONS

Hemodynamic Monitoring and Therapy:

Heart Rate

Normal Heart Rate by Age (beats/minute) Reference: PALS Guidelines, 2015

Age	Awake Rate	Sleeping Rate
Neonate (<28 d)	100-205	90-160
Infant (1 mo-1 y)	100-190	90-160
Toddler (1-2 y)	98-140	80-120
Preschool (3-5 y)	80-120	65-100
School-age (6-11 y)	75-118	58-90
Adolescent (12-15 y)	60-100	50-90

Respiratory Rate

Normal Respiratory Rate by Age (breaths/minute) Reference: PALS Guidelines, 2015

Age	Normal Respiratory Rate
Infants (<1 y)	30-53
Toddler (1-2 y)	22-37
Preschool (3-5 y)	20-28
School-age (6-11 y)	18-25
Adolescent (12-15 y)	12-20

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.pedscases.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 cardiac 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: *(MD to confirm diagnosis)*

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

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

If Diabetes Insipidus present without hypotension, titrate vasopressin therapy to urine output less than 3 mL/kg/h

☐ vasopressin_____milliunit/kg/min (0.02-0.05 milliunit/kg/min; max 0.2 milliunit/kg/min) IV infusion

Hormonal Therapy

For organ donor management- Give levothyroxine for cardiac donors (discontinue if heart no longer under evaluation)

☐ levothyroxine 100 mcg IV for 1 dose, then 50 mcg IV q12h (not weight based)

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 with 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 250mg) (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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