

# Critical Pathway for the Organ Donor

Patient name: \_\_\_\_\_

ID number: \_\_\_\_\_

Collaborative Practice	Phase I Referral	Phase II Declaration of Brain Death and Consent	Phase III Donor Evaluation	Phase IV Donor Management	Phase V Recovery Phase
<p>The following professionals may be involved to enhance the donation process.</p> <p><i>Check all that apply.</i></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Physician</li> <li><input type="checkbox"/> Critical care RN</li> <li><input type="checkbox"/> Organ Procurement Organization (OPO)</li> <li><input type="checkbox"/> OPO coordinator (OPC)</li> <li><input type="checkbox"/> Medical Examiner (ME)/Coroner</li> <li><input type="checkbox"/> Respiratory</li> <li><input type="checkbox"/> Laboratory</li> <li><input type="checkbox"/> Pharmacy</li> <li><input type="checkbox"/> Radiology</li> <li><input type="checkbox"/> Anesthesiology</li> <li><input type="checkbox"/> OR/Surgery staff</li> <li><input type="checkbox"/> Clergy</li> <li><input type="checkbox"/> Social worker</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Notify physician regarding OPO referral</li> <li><input type="checkbox"/> Contact OPO ref: Potential donor with severe brain insult</li> <li><input type="checkbox"/> OPC on site and begins evaluation Time _____ Date _____</li> <li><input type="checkbox"/> Ht _____ Wt _____ as documented</li> <li><input type="checkbox"/> ABO as documented _____</li> <li><input type="checkbox"/> Notify house supervisor/charge nurse of presence of OPC on unit</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Brain death documented Time _____ Date _____</li> <li><input type="checkbox"/> Pt accepted as potential donor</li> <li><input type="checkbox"/> MD notifies family of death</li> <li><input type="checkbox"/> Plan family approach with OPC</li> <li><input type="checkbox"/> Offer support services to family (clergy, etc)</li> <li><input type="checkbox"/> OPC/Hospital staff talks to family about donation</li> <li><input type="checkbox"/> Family accepts donation</li> <li><input type="checkbox"/> OPC obtains signed consent &amp; medical/social history Time _____ Date _____</li> <li><input type="checkbox"/> ME/Coroner notified</li> <li><input type="checkbox"/> ME/Coroner releases body for donation</li> <li><input type="checkbox"/> Family/ME/Coroner denies donation—stop pathway—initiate post-mortem protocol—support family.</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Obtain pre/post transfusion blood for serology testing (HIV, hepatitis, VDRL, CMV)</li> <li><input type="checkbox"/> Obtain lymph nodes and/or blood for tissue typing</li> <li><input type="checkbox"/> Notify OR &amp; anesthesiology of pending donation</li> <li><input type="checkbox"/> Notify house supervisor of pending donation</li> <li><input type="checkbox"/> Chest &amp; abdominal circumference</li> <li><input type="checkbox"/> Lung measurements per CXR by OPC</li> <li><input type="checkbox"/> <i>Cardiology consult as requested by OPC (see reverse side)</i></li> <li><input type="checkbox"/> <i>Donor organs unsuitable for transplant—stop pathway—initiate post-mortem protocol—support family.</i></li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> OPC writes new orders</li> <li><input type="checkbox"/> Organ placement</li> <li><input type="checkbox"/> OPC sets tentative OR time</li> <li><input type="checkbox"/> Insert arterial line/ 2 large-bore IVs</li> <li><input type="checkbox"/> Possibly insert CVP/Pulmonary Artery Catheter</li> <li><input type="checkbox"/> See reverse side</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Checklist for OR</li> <li><input type="checkbox"/> Supplies given to OR</li> <li><input type="checkbox"/> Prepare patient for transport to OR <ul style="list-style-type: none"> <li><input type="checkbox"/> IVs</li> <li><input type="checkbox"/> Pumps</li> <li><input type="checkbox"/> O<sub>2</sub></li> <li><input type="checkbox"/> Ambu</li> <li><input type="checkbox"/> Peep valve</li> </ul> </li> <li><input type="checkbox"/> Transport to OR Date _____ Time _____</li> <li><input type="checkbox"/> OR nurse <ul style="list-style-type: none"> <li><input type="checkbox"/> reviews consent form</li> <li><input type="checkbox"/> reviews brain death documentation</li> <li><input type="checkbox"/> checks patient's ID band</li> </ul> </li> </ul>
<b>Labs/Diagnostics</b>		<ul style="list-style-type: none"> <li><input type="checkbox"/> Review previous lab results</li> <li><input type="checkbox"/> Review previous hemodynamics</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Blood chemistry</li> <li><input type="checkbox"/> CBC + diff</li> <li><input type="checkbox"/> UA</li> <li><input type="checkbox"/> C &amp; S</li> <li><input type="checkbox"/> PT, PTT</li> <li><input type="checkbox"/> ABO</li> <li><input type="checkbox"/> A Subtype</li> <li><input type="checkbox"/> Liver function tests</li> <li><input type="checkbox"/> Blood culture X 2 / 15 minutes to 1 hour apart</li> <li><input type="checkbox"/> Sputum Gram stain &amp; C &amp; S</li> <li><input type="checkbox"/> Type &amp; Cross Match _____ # units PRBCs</li> <li><input type="checkbox"/> CXR</li> <li><input type="checkbox"/> ABGs</li> <li><input type="checkbox"/> EKG</li> <li><input type="checkbox"/> Echo</li> <li><input type="checkbox"/> Consider cardiac cath</li> <li><input type="checkbox"/> Consider bronchoscopy</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Determine need for additional lab testing</li> <li><input type="checkbox"/> CXR after line placement (if done)</li> <li><input type="checkbox"/> Serum electrolytes</li> <li><input type="checkbox"/> H &amp; H after PRBC Rx</li> <li><input type="checkbox"/> PT, PTT</li> <li><input type="checkbox"/> BUN, serum creatinine after correcting fluid deficit</li> <li><input type="checkbox"/> Notify OPC for ____ PT &gt;14 ____ PTT &lt; 28 ____ Urine output ____ &lt; 1 mL/Kg/hr ____ &gt; 3 mL/Kg/hr ____ Hct &lt; 30 / Hgb &gt;10 ____ Na &gt;150 mEq/L</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Labs drawn in OR as per surgeon or OPC request</li> <li><input type="checkbox"/> Communicate with pathology: Bx liver and/or kidneys as indicated</li> </ul>
<b>Respiratory</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Pt on ventilator</li> <li><input type="checkbox"/> Suction q 2 hr</li> <li><input type="checkbox"/> Reposition q 2 hr</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Prep for apnea testing: set FiO<sub>2</sub> @ 100% and anticipate need to decrease rate if PCO<sub>2</sub> &lt; 45 mm Hg</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Maximize ventilator settings to achieve SaO<sub>2</sub> 98 - 99%</li> <li><input type="checkbox"/> PEEP = 5cm O<sub>2</sub> challenge for lung placement FiO<sub>2</sub> @ 100%, PEEP @ 5 X 10 min</li> <li><input type="checkbox"/> ABGs as ordered</li> <li><input type="checkbox"/> VS q 1<sup>st</sup></li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Notify OPC for ____ BP &lt; 90 systolic ____ HR &lt; 70 or &gt; 120 ____ CVP &lt; 4 or &gt; 11 ____ PaO<sub>2</sub> &lt; 90 or ____ SaO<sub>2</sub> &lt; 95%</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Portable O<sub>2</sub> @ 100% FiO<sub>2</sub> for transport to OR</li> <li><input type="checkbox"/> Ambu bag and PEEP valve</li> <li><input type="checkbox"/> Move to OR</li> </ul>
<b>Treatments/Ongoing Care</b>		<ul style="list-style-type: none"> <li><input type="checkbox"/> Use warming/cooling blanket to maintain temperature at 36.5° C - 37.5 °C</li> <li><input type="checkbox"/> NG to low intermittent suction</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Check NG placement &amp; output</li> <li><input type="checkbox"/> Obtain actual Ht _____ &amp; Wt _____ if not previously obtained</li> </ul>		<ul style="list-style-type: none"> <li><input type="checkbox"/> Set OR temp as directed by OPC</li> <li><input type="checkbox"/> Post-mortem care at conclusion of case</li> </ul>
<b>Medications</b>			<ul style="list-style-type: none"> <li><input type="checkbox"/> Medication as requested by OPC</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Fluid resuscitation—consider crystalloids, colloids, blood products</li> <li><input type="checkbox"/> DC meds except pressors &amp; antibiotics</li> <li><input type="checkbox"/> Broad-spectrum antibiotic if not previously ordered</li> <li><input type="checkbox"/> Vasopressor support to maintain BP &gt; 90 mm Hg systolic</li> <li><input type="checkbox"/> Electrolyte imbalance: consider K, Ca, PO<sub>4</sub>, Mg replacement</li> <li><input type="checkbox"/> Hyperglycemia: consider insulin drip</li> <li><input type="checkbox"/> Oliguria: consider diuretics</li> <li><input type="checkbox"/> Diabetes insipidus: consider antidiuretics</li> <li><input type="checkbox"/> Paralytic as indicated for spinal reflexes</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> DC antidiuretics</li> <li><input type="checkbox"/> Diuretics as needed</li> <li><input type="checkbox"/> 350 U heparin/kg or as directed by surgeon</li> </ul>
<b>Optimal Outcomes</b>	The potential donor is identified & a referral is made to the OPO.	The family is offered the option of donation & their decision is supported.	The donor is evaluated & found to be a suitable candidate for donation.	Optimal organ function is maintained.	All potentially suitable, consented organs are recovered for transplant.

Shaded areas indicate Organ Procurement Coordinator (OPC) Activities.

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## Cardio-Thoracic Donor Management

1. **Early echocardiogram for all donors** — Insert pulmonary artery catheter (PAC) to monitor patient management (placement of the PAC is particularly relevant in patients with an EF < 45% or on high dose inotropes.)
  - use aggressive donor resuscitation as outlined below
2. **Electrolytes**
  - Maintain Na < 150 mcq/dl
  - Maintain K<sup>+</sup> > 4.0
  - Correct acidosis with Na Bicarbonate and mild to moderate hyperventilation (pCO<sub>2</sub> 30-35 mm Hg)
3. **Ventilation** — Maintain tidal volume 10-15 ml/kg
  - keep peak airway pressures < 30 mm Hg
  - maintain a mild respiratory alkalosis (pCO<sub>2</sub> 30-35 mm Hg)
4. **Recommend use of hormonal resuscitation as part of a comprehensive donor management protocol** — Key elements
  - **Tri-iodothyronine (T3)**: 4 mcg bolus; 3 mcg/hr continuous infusion
  - **Arginine Vasopressin**: 1 unit bolus; 0.5 - 4.0 unit/hour drip (titrate SVR 800-1200 using a PA catheter)
  - **Methylprednisolone**: 15 mg/kg bolus (Repeat q 24<sup>o</sup> PRN)
  - **Insulin**: drip at a minimum rate of 1 unit/hour (titrate blood glucose to 120-180 mg/dl)
  - **Ventilator**: (See above)
  - **Volume Resuscitation**: Use of colloid and avoidance of anemia are important in preventing pulmonary edema
    - albumin if PT and PTT are normal
    - fresh frozen plasma if PT and PTT abnormal (value ≥ 1.5 X control)
    - packed red blood cells to maintain a PCWP of 8-12 mm Hg and Hgb > 10.0 mg/dl
5. **When patient is stabilized/optimized** repeat echocardiogram. (An unstable donor has not met 2 or more of the following criteria.)
  - Mean Arterial Pressure ≥ 60
  - CVP ≤ 12 mm Hg
  - PCWP ≤ 12 mm Hg
  - SVR 800-1200 dyne/sec/cm<sup>5</sup>
  - Cardiac Index ≥ 2.5 l/min/M<sup>2</sup>
  - Left Ventricular Stroke Work Index > 15
  - dopamine dosage < 10 mcg/kg/min

HIV = human immunodeficiency virus; VDRL = Venereal Disease Research Laboratory; CMV = cytomegalovirus; CVP = central venous pressure; CXR = chest x-ray; CBC = complete blood count; UA = urinalysis; C & S = culture and sensitivity; PT = prothrombin time; PTT = partial thromboplastin time; RBCs = packed red blood cells; ABGs = arterial blood gases; H & H = hemoglobin and hematocrit; BUN = blood urea nitrogen; Rx = prescription; Bx = biopsy; FiO<sub>2</sub> = fraction of inspired oxygen; PCO<sub>2</sub> = partial pressure of carbon dioxide; NG = nasogastric tube; EKG = electrocardiogram; SaO<sub>2</sub> = arterial oxygen saturation; PEEP = positive end-expiratory pressure; VS = vital signs; BP = blood pressure; HR = heart rate; PaO<sub>2</sub> = partial arterial oxygen pressure; DC = discontinuous.