
2022

Rationale Document For Organ Donor Management Recommended Pre-Printed Orders

As adapted from “The management of the neurologically deceased organ donor: A Canadian clinical practice guideline”, 2020.



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If you have any questions about the contents of these Provincial Guidelines please call BC Transplant Organ Donation & Hospital Development (ODHD) at 604-877-2240 or 1-800-663-6189.

INTRODUCTION

The purpose of this document is to provide supporting rationale for the currently accepted best practice for organ donor management pre-printed orders (PPO) in British Columbia (BC). The guidelines are based on expert consensus recommendations on multi-organ protective therapy to ensure optimal organ utilization.

The recommended treatments referred to throughout this document are adapted from “The management of the neurologically deceased organ donor: A Canadian clinical practice guideline” (2020) along with consultation and guidance from provincial transplant programs and critical care physicians.

Resuscitation and re-evaluation can improve reversible organ dysfunction and allows for the re-evaluation of organs that at first may seem unsuitable for transplant. This treatment / evaluation period can range from 24-72 hours and should be accompanied by frequent re-evaluation to demonstrate improvement in organ function toward defined targets. It is important to take the time necessary to optimize multi-organ function for the purposes of improving transplant outcomes.

There are no predefined demographic factors or organ dysfunction thresholds that preclude the consent for donation and offering of organs for transplantation

ADMISSION INSTRUCTIONS

- ✓ **Neurological Determination of Death (NDD): has been performed by at least 2 licensed physicians**
 - Under current law, for the purposes of post-mortem donation, death needs to be declared by two physicians with a license to practice independently. This excludes physicians who have an educational license only (i.e. Residents). These determinations may be performed concurrently. If they are performed at different times, a full exam, including the apnea test, must be performed by each physician. Of note, all NDD patients require a documented clinical exam and apnea test unless either cannot be performed due to (1) concerns for patient safety or (2) presence of patient injury/physical anomaly that precludes completion of, or valid conclusion from, the physical exam. Ancillary testing does not remove the requirement for full clinical exam and apnea test. For more information around Neurological Determination of Death, see “Confirmation of Neurological Determination of Death - Adult”, page two:
<http://www.transplant.bc.ca/Documents/Health%20Professionals/ODHD-ODS-04-005.pdf>

- ✓ **Donation after Circulatory Death (DCD): Comfort Care Notes in chart x 2 (by two licenced physicians)**
 - It has been determined by the College of Physicians and Surgeons in BC that two physicians with a license to practice independently must assess all DCD patients for poor prognosis/no chance of meaningful recovery and document their findings before moving forward with DCD organ recovery.

- ✓ **Contact Initiated with BC Transplant**
 - As per the Human Tissue Gift Act, all imminent deaths of patients 75 years and younger must be reported to the donor referral line to assess for solid organ and tissue donation eligibility. BC Transplant will do an eligibility assessment and check the organ donor registry. We encourage early notifications prior to family meetings to assess if the patient has registered their choice to become an organ donor. By following legislation and referring all patients to BC Transplant, we can ensure that organ donation becomes a part of standard end of life conversations and that we are offering all patients and families the opportunity to have their end of life wishes honoured.
 - As donor eligibility guidelines change often, no assumptions should be made that a patient may or may not be eligible without making contact with a BC Transplant coordinator.
 - GIVE trigger: <http://www.transplant.bc.ca/health-professionals/organ-donation-resources/refer-a-donor>

- ✓ **Consent for Organ Donation obtained by BC Transplant Coordinator**
 - Approaching families to consent for organ donation can be a challenging topic and not a subject that is done everyday for critical care staff. Formal consent for donation should be completed by a trained Organ Donation Specialists (ODS) who is well versed in facilitating these discussions. A BC Transplant ODS will review the donation process in detail to ensure family is making an informed decision to consent to organ donation. We also ask a detailed medical-social questionnaire that allows BC Transplant to assess the level of risk when proceeding with organ donation and transplantation.

- ✓ **Code Status: Full therapy except cardiopulmonary resuscitation**
 - To support donor management throughout the workup process, we ask that the patient remain full therapy, which promotes optimal organ function. In the event of a cardiac arrest during the workup process prior to organ recovery, there should be no attempted resuscitation, such as CPR, use of intravenous medication and defibrillation/cardioversion for the purposes of facilitating organ donation.

MONITORING

- ✓ Complete patient actual height and weight. Record on BC Transplant Physical Assessment Form:
(<http://www.transplant.bc.ca/Documents/Health%20Professionals/Clinical%20guidelines/ODHD-ODS.04.007.pdf>)
 - Accurate height and weight is required for a number of reasons:
 - The lungs need to “fit” the recipient. Height is one measurement, along with weight, to calculate the total lung capacity to determine this fit.
 - Accurate height and weight is also used for determining hemodilution calculations (refer to “Send blood for tissue typing and serology” under Lab Investigations).
- ✓ Urine Output, Heart Rate, Continuous arterial pressure monitoring for blood pressure, and pulse oximetry Q1H
 - While we are evaluating the organs for suitability, it is important to continue monitoring the patient to ensure hemodynamic stability and maintain adequate oxygenation and perfusion to the organs.

PATIENT CARE

- ✓ Central venous catheter (CVC)
 - A CVC is recommended to ensure the patient has IV access for the medications and hemodynamic support they may require. Due to the increased risk of infection with femoral lines, it is preferred to avoid this site if possible.
- ✓ Maintain HOB greater than 30 degrees
 - As per recommendations to reduce ventilator associated pneumonia (VAP) we ask that the HOB be maintained greater than 30 degrees.
- ✓ Targeted temperature management goal 34-35 degrees (for NDD donors ONLY)
 - Mildly reducing the temperature in NDD donors has been shown to reduce the occurrence of delayed graft function for kidney recipients. If kidney donation is ruled out, targeted temperature management can be discontinued and the goal becomes maintaining normothermia.
 - If the patient becomes hemodynamically unstable with cooling, consider discontinuing and maintain normothermia. Consult BC Transplant.
 - For all DCD donors, the goal is to maintain normothermia between 35.5-37.5 degrees.
- ✓ NG/OG to low intermittent suction if feeds contraindicated or not tolerated
 - OG is the preferred route as it reduces the incidences of VAP when compared to NG placement in intubated patients

- Enteric feeding is the first recommendation for organ donors. If a patient does not tolerate this, we recommend low, intermittent suction to decrease gastric residuals that could lead to aspiration and development of a VAP. Follow hospital guidelines for re-starting enteric feeds if feeds have been held.

LABORATORY INVESTIGATIONS

- ❖ To minimize the risk of disease transmission through organ donation, the donor's blood is carefully screened for the presence of transmissible diseases. The information is used to help determine the medical suitability of organs.
- ❖ Note: To address the possible transmission of infectious agents in pediatric donors that have been breastfed in the past 12 months, additional lab testing and screening will also be needed for the birth mother.
- ✓ **Send blood for tissue typing and serology (use BC Transplant 'Red Blood Box')**
 - The "Red Blood Box" in most hospitals is obtained from the lab; however some units may keep a Red Box on the unit. All of the tubes in the box must be drawn and labeled with the same date and time. If the Red Blood Box is kept in the unit, ensure the blood tubes are not outdated.
 - Once the blood has been drawn, the box is sent to the lab and they will package it and send it to the Provincial lab at Vancouver General Hospital (VGH). For cases outside the lower mainland, the sending lab will generate a tracking or waybill number and provide flight details. The BC Transplant coordinator will ask for this tracking number and flight details so the red box can be picked up at Vancouver airport.
 - Processes around collecting and sending red blood boxes may vary from site to site. Consult hospital policy and procedure.
 - There must either be verbal consent or written consent for the unit to draw and send blood for testing. Typically, a BC Transplant coordinator comes on site to explain the donation process and obtain formal written consent from the Temporary Substitute Decision Maker (TSDM). However, because the testing process takes at least 6 hours, once it is evident that the family is interested in donation it is acceptable practice to ask families for verbal permission to send the blood.
 - Every donation holds the risk of disease transmission. Blood tubes in the red blood box are used for:
 - Immunology: Runs the blood for tissue typing, HLA, ABO and Rh factor. They also provide a computer-generated list of possible matching recipients for each organ group.
 - Serology: Tests for infectious diseases such as Hepatitis B + C, HIV, HTLV, Syphilis, Toxoplasma, Cytomegalovirus, Epstein Barr Virus, West Nile Virus (in season)
 - Virology: Runs Nucleic Acid Testing (NAT) for HIV and Hepatitis C and other diseases as requested by transplant programs.

- Once the Red Blood Box is drawn, the BC Transplant coordinator will obtain a hemodilution calculation from the bedside RN.
 - Dilution of the serum can result in a false negative result of infectious disease or serological testing. Hemodilution calculation ensures the samples tested are not diluted.
 - BC Transplant will ask for the type and volume of crystalloid administered intravenously one hour prior to the blood draw AND the type and volume of blood products and colloids 48 hours prior to the blood draw.

- ✓ **Blood Type/Screen**
 - Hospital ABO is compared to Provincial lab ABO in order to prevent sentinel events.

- ✓ **Goal hemoglobin greater than 70g/L. Notify physician AND BC Transplant if less than 70g/L**
 - A conservative approach to transfusion is suggested due to the lack of observed benefit and potential harm (transfusion reaction, volume overload, cost) with transfusion of red blood cells. Notify the physician if hemoglobin falls below 70g/L.

- ✓ **Monitor platelet level. Consult physician and BC Transplant if platelet level less than 10 (consider transfusion)**
 - Thresholds for platelet transfusions within a critical care setting depend on the patient's overall clinical picture. In the event of clinically significant bleeding, coagulopathy and thrombocytopenia should be managed consistent with current critical care practices.

- ✓ **Urinalysis including specific gravity, routine and micro baseline and Q24H**
 - Urinalysis gives us specific information to rule out any kidney abnormalities. Together with patient history, laboratory and diagnostic testing, the information can determine the need for a renal biopsy.

- ✓ **Urine microalbumin/creatinine (ACR) ratio baseline and PRN as requested**
 - ACR is a sensitive screening tool to assess for kidney disease in patients with diabetes mellitus. It detects albumin excreted by the kidneys, which is associated with diabetic glomerulosclerosis. Kidneys that are transplanted with known diabetic glomerulosclerosis result in inferior graft outcomes.

DIAGNOSTICS

- ✓ **CXR Daily**
 - Initial chest x-rays are requested to rule out any obvious contraindications to the transplant not seen clinically. Subsequent x-rays allow for the assessment of changing patient clinical conditions.

- ✓ **CT of chest and abdomen if requested (high resolution-non contrast)**
 - CT's are requested to rule out contraindications to transplant for any of the organs being evaluated. Early identification of abnormalities can help determine organ suitability and guide further donor diagnostic interventions.

- ✓ **Bronchoscopy (if requested only): Send samples for C&S, AFB, and Fungal)**
 - Bronchoscopies are requested in potential lung donors to thoroughly assess the lungs and to rule out abnormal anatomy, malignancies, and identify/treat any purulent secretions that may suggest an infection. Performing a bronchoscopy as a part of lung assessment is associated with increased lung recovery rates while showing no compromise to transplant outcomes.

Cardiac Assessment for NDD Donors Only:

- ✓ **12 lead ECG**
 - Certain critical illnesses, such as intracranial injury, can result in EKG abnormalities within the organ donor population. Also, vasopressors and hypothermia can cause further abnormalities of ST segments including:
 - Elevation and depression (most common)
 - Atrial arrhythmias
 - Prolonged QT intervals
 - Intraventricular conduction delays
 - Q waves (without enzyme changes) sometimes seen in intracranial hemorrhages
 - It is important to have a baseline 12-lead ECG to assess for any electrical changes upon working the heart up for potential transplant.

- ✓ **Echo after declarations, fluids and hemodynamic resuscitation**
 - 2D echocardiogram is used to evaluate cardiac function and should be performed for purposes of assessment for possible transplant only after hemodynamic resuscitation. This ensures accuracy in the ejection fraction and full cardiac assessment. Repeat echocardiograms may be requested to further assess the cardiac function and suitability of the heart for transplantation. It is preferred that the echo be done off any inotropes to give an accurate representation of the heart function. Bedside echocardiograms should be used as clinically indicated by the ICU team to guide usual care of a critically ill patient.

- ✓ **Coronary Angiogram (if requested only): low-risk radiocontrast agent (non-ionic, isomolar), minimal radiocontrast volume, NO ventriculogram**
 - Coronary angiograms aid in evaluating the coronary vessels for blockages. Careful review of the donor presentation, history and the presence of risk factors is evaluated prior to requesting an angiography. Minimal contrast is requested to minimize the risk of contrast nephropathy.

NUTRITION

- ✓ Continue feeds if already initiated. Initiate unless contraindicated (hold feeds 8 hours prior to recovery surgery)
 - We recommend continued feeding for NDD and DCD donors. Critically ill patients have high metabolic demand and early nutrition is recommended. This applies to potential organ donor patients as well. Preclinical studies that have been done recommend enteric feeding in NDD donors as it may reduce graft damage and improve graft functioning in recipients.

- ✓ If patient on parenteral nutrition, consult dietician for direction
 - Evidence from the literature is limited for parenteral nutrition recommendations. If enteric feeding is not tolerated and the patient is on parenteral nutrition, the dietician should be consulted.

INTRAVENOUS

- ✓ Total fluid intake at ____ ml/hr (recommended 1 to 2 mL/kg/hr)
- ✓ Consider maintenance IV fluids based on sodium level (Ringers lactate recommended unless sodium level 130 or less)
 - Crystalloid infusions are recommended over colloid infusions, for the benefit of volume expansion. When compared to normal saline, resuscitation with ringers lactate is preferred as it is a more balanced solution in terms of pH, where normal saline is more acidic.
 - Ensuring that the patient is adequately volume resuscitated is important as hypovolemia can be one of the most common problems associated with blood pressure control and poor urine output and can be due to:
 - Hemorrhage
 - Deliberate volume depletion during cerebral resuscitation
 - Increased intravascular space due to loss of sympathetic tone
 - Third Spacing
 - Diabetes insipidus

RESPIRATORY MANAGEMENT

Oxygenation is essential to organ and tissue viability. Although the kidneys are more resistant, extra-renal organs are very susceptible to damage caused by hypoxia. Do not continue to hyperventilate a NDD donor as it may compromise the hemodynamic status (especially in the hypovolemic individual).

- ✓ **Minimum PEEP of 10cmH2O or appropriately optimized PEEP**
 - PEEP levels of 10 or greater help to prevent atelectasis by ensuring alveolar recruitment
- ✓ **Pulmonary toileting and chest physio**
 - Maintenance of airway secretion clearance, or airway hygiene, is important for the preservation of airway patency and the prevention of respiratory tract infections.
- ✓ **Continue mechanical ventilation as per previous orders OR Mechanical ventilation ordered as per MD**
 - Lung protective strategies (ventilating with low lung volumes) is the standard treatment in many critical care patient populations as it is supported with physiological rationale from research. Maintaining these standards for the donor population (alongside PEEP of 10 or greater and recruitment maneuvers), especially when lung donation is being considered, can help ensure adequate ventilation to avoid further damage to the lungs.
- ✓ **Adjust FiO2 to maintain SaO2 greater than or equal to 95%. Maintain PaO2 greater than 70mmHg with minimal effective FiO2.**
 - Maintaining adequate oxygenation status is critical to ensure the organs are being optimally oxygenated and not compromised prior to transplant. Unnecessarily high levels of FiO2 should be avoided to prevent pulmonary oxygen toxicity.
- ✓ **Maintain pH 7.35-7.45**
 - Normalize physiological pH
- ✓ **O2 Challenge: 100% FiO2 with current PEEP for 10 minutes**
 - We ask for O2 challenges to be done initially and then Q6H. This allows us to assess the trends and relay this information to our transplant program. During oxygen challenges, we are looking for an arterial PaO2 of greater than 300 mmHg. An arterial PO2 of less than 300 mm Hg is generally considered evidence of inadequate pulmonary function that could indicate the lungs may be unsuitable for transplantation. Challenge gases alone do not determine acceptance of lungs for transplant. Our transplant team looks at a combination of patient history and presentation, CT chest, bronchoscopy, ventilation, oxygenation status and challenge O2 results as well as potential recipient factors.
 - **NDD patient ONLY: Recruitment maneuver prior to challenge ABG as tolerated**

NDD patients only:

- ✓ **Recruitment maneuvers: Consult site policy for procedure and BC Transplant for frequency**
 - Prolonged mechanical ventilation with patients in the supine position can result in microatelectasis and decreased alveolar expansion. Combined with lung protective strategies, performing recruitment maneuvers periodically and after all circuit disconnects is an appropriate form of alveolar recruitment.
 - Recruitment maneuvers for DCD patients are not recommended. Placing the patient on the levels of PEEP required for a recruitment maneuvers could cause harm to the lungs as DCD patients have the potential to initiate a breath during treatment.

MEDICATIONS

Hemodynamic Monitoring and Therapy:

*Multi-organ donor management involves maintaining end organ perfusion and oxygenation
AND ongoing organ specific evaluation*

Goals of Therapy (Notify physician if outside of
parameters)

- ✓ HR 60 to 120 beats/min
- ✓ MAP > 65 mmHg

Management of Hypotension: If SBP less than 90 mmHg and/or MAP less than 65 mmHg, initiate:

1. Vasopression
2. NORepinephrine
 - Potential organ donors are likely to need vasoactive support during their critical care illness, especially NDD donors with induced neurohormonal changes. BC Transplant recommends vasopressin as the first line choice as it is associated with a reduction of norepinephrine requirements and increased cardiac index. The use of vasopressin has been associated with increased liver, lung and overall total organ recovery.
 - Norepinephrine is the second line choice when vasopressin alone is ineffective; however medication choice remains at the discretion of the intensivist. High doses of norepinephrine may cause excessive vasoconstriction and could be more harmful than beneficial for organ perfusion. If norepinephrine requirements are increasing, notify the intensivist and BC Transplant.
 - Management guidelines suggest against the use of dopamine at any dose. There is high quality indirect evidence that dopamine increases the risk of dysrhythmias compared with norepinephrine and might increase mortality in hypotensive critically ill patients.

Management of Hypertension: If SPB greater than 180 mmHg sustained for longer than 5 minutes, wean vasopressors and inotropes. If necessary, administer:

1. hydrALAZINE
2. labetalol
 - Potential NDD organ donors can develop significant hypertension as a result of the catecholamine storm that takes place during brain death. It is important to treat sustained hypertension before it leads to end-organ injury. Routine administration of anti-hypertensives is not recommended and BC Transplant recommends short acting anti-hypertensives to prevent end-organ damage. In the event of sustained hypertension, it is important to be assessing for signs of hypertension induced end-organ damage. Hydralazine or Labetalol are the short-acting agents of choice, depending on the patient's heart rate upon administration.

Management of Bradycardia and Tachycardia: Manage as any critically ill patient. Ensure patient is euvolemic. Consult critical care MD for further direction.

- If the heart rate is less than 60 BPM and BP is greater than 90 mm Hg systolic, then the potential donor may be able to maintain an adequate BP at a lower rate and there may be no need for therapeutic intervention. If bradycardia is sustained or accompanied by hemodynamic instability and intervention is needed, consult with the intensivist for the best line of treatment.
- **Note: Atropine is not effective in NDD patients due to loss of vagal nerve function**
- Prolonged periods of tachycardia at rates greater than 150 beats/minute are frequently seen when cerebral herniation is taking place. This tachycardia is generally transient, requiring no treatment. If tachycardia persists, ensure that the patient is adequately volume resuscitated and consult with the intensivist for the best line of treatment.

Hormonal Therapy (for NDD donors ONLY):

- ✓ **For organ donor management - Give levothyroxine for cardiac donors (discontinue if heart no longer under evaluation)**
 - Endogenous catecholamine release is increased during neurological death as well as critical illness causing systemic vascular resistance to increase. With NDD, pituitary failure results in decreased thyroid hormone and can compromise cardiac output. We therefore recommend the use of Levothyroxine when the heart is being evaluated for organ donation.

Diabetes Insipidus (DI): (MD to confirm diagnosis) Monitor for signs of DI (i.e. urine output greater than 200 ml/hr.) Titrate therapy to urine output of 3 mL/kg/h or less.

1. vasopressin
2. desmopressin (DDAVP)
 - Diabetes insipidus (DI) leads to a loss of free water, causing depletion of total body water and hypernatremia. It is common in NDD donors. There is no good data to suggest the use of vasopressin over desmopressin, and it is recommended to consider the patient's hemodynamic status when deciding which agent to use. We recommend the use of Vasopressin when patients are also hypotensive.
 - If the patient is in DI, monitor electrolytes and follow hospital protocol to maintain within normal range.

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**
 - Potential infections in organ donors are the same as any critically ill patient. The treatment goal is to prevent transmission of infection from donor to recipient.
 - Isolated organ infection does not necessarily preclude donation. Suitability of each organ is determined by each transplant program and in consultation with the Medical Director and Infectious disease Physicians of BC Transplant; and in consultation with the ICU team.
 - BC Transplant takes direction for infection surveillance from Canadian Blood Services and Health Canada
- ✓ **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)**
 - Influenza may rule out lungs for donation, therefore it is essential that we test every suitable and consented organ donor to determine their influenza status.
- ✓ **COVID-19 test (National recommendation requires dual source NP swab and ET specimen test as indicated by BC Transplant).**
 - Nasopharyngeal (NP) swabs are likely to be positive early in the disease course. Deep endotracheal (ET) aspirates are a higher sensitivity test for patients that may have a lower respiratory tract infection. For these reasons, both tests need to be completed on every potential donor. Of note, patients with a positive COVID-19 test should still be referred to BC Transplant to be assessed for potential donation opportunity.
- ✓ **HSV/VZV (oral and genital) swabs of any potential herpetic lesions, as appropriate**
 - Swabbing any suspicious lesions for HSV/VZV provides us with results prior to the OR so we can be fully aware of what may be passed on to potential recipients. Recipient may be monitored or treated prophylactically in the presence of known suspicious lesions.
- ✓ **Cultures - all cultures to be done at baseline and then q24h (Sputum, Blood x 2 via peripheral, urine and any drain sites)**
 - Routine cultures within the donor population can detect unexpected potential pathogens that may put recipients at risk post-transplant. Transmission of infection from donor to recipient can have detrimental results leading to graft dysfunction and is associated with mortality and morbidity. Having the results of these cultures allows transplant programs to tailor antibiotic therapy to appropriately cover the immunocompromised recipients.

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 following:
 1. Fluconazole
 2. Vancomycin
 3. Piperacillin-tazobactam OR meropenem
- Mechanically ventilated patients are at particularly high risk for colonization and subsequent infection transmission. Research supports that even lung donors who are not suspected of having infection have high rates of positive bronchial cultures at the time of organ recovery. Prophylactic broad spectrum therapy for potential aspiration with or without subclinical ventilator associated pneumonia may prevent infection post-transplant.

ELECTROLYTE MANAGEMENT

- ✓ Use local electrolyte orders – refer to internal hospital protocol
 - Maintaining electrolyte balance is an important part of optimizing donor management and to avoid arrhythmias that could result in cardiovascular instability. Electrolytes are a part of the q6h blood work so we can monitor the trends and we ask that they be replaced as per hospital policy to ensure they remain within normal limits.

GLYCEMIC CONTROL

- ✓ Use local glyceemic control orders – refer to internal hospital protocols (goal 7-10 mmol/L)
 - Hyperglycemia may be multi-factorial and could be a result of peripheral resistance to insulin, resuscitation or infusions with dextrose containing fluids, endogenous catecholamine secretion during herniation, corticosteroid administration, hypothermia, or more. Hyperglycemia can result in a hyperosmolar state causing metabolic acidosis, polyuria and intracellular dehydration. Correction of hyperglycemia is important and it is suggested to maintain serum glucose levels between 6-10mmol/L, if necessary using an intravenous insulin sliding scale to maintain these levels. There is limited data available to support tighter controls in the donor population.

GLOSSARY

ACR	Albumin Creatinine Ratio: a sensitive screening tool to assess for kidney disease; particularly in patients with diabetes mellitus
DCD	Donation after Circulatory Death
Hemodilution	This is a calculation done by the ODS to ensure that the blood samples drawn from the red blood box are not diluted
HSV	Herpes simplex virus
Human Tissue Gift Act	An legislative act in BC that requires all imminent deaths to be referred to BC Transplant to assess for organ and tissue donation potential
Medical Social Questionnaire	The ODS will ask a detailed questionnaire to the family regarding the patient's medical, infectious, travel, sexual and behavioural history. This allows for BC Transplant to assess the level of risk for transmission of communicable diseases. Additionally, it provides a full picture into the patient's medical and behavioural history, which assists the transplant programs in determining organ suitability.
NDD	Neurological Determination of Death
NP	Nasopharyngeal
ODS	Organ Donation Specialist: the BC Transplant coordinator who will take the referral, approach a family in the ICU, assist with donor management and organize logistics around deceased donation.
Red Blood Box	A box with laboratory tubes that need to be drawn in order to proceed with organ donation. This is either kept within the ICU or the hospital lab, depending on protocol. These tubes test for tissue typing and communicable diseases.
TA	Tracheal aspirate specimen from the endotracheal tube.
VZV	Varicella zoster virus

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