

AI0400 – ORGAN DONATION AFTER NEUROLOGICAL OR CARDIO-CIRCULATORY DEATH

1.0 PURPOSE

To ensure the option of organ donation is available to patients and families when a patient meets the criteria for donation after Neurological Determination of Death (NDD) or donation after Cardio-circulatory Death (DCD).

To support the philosophy of human organ/tissue transplant in partnership with the BC Transplant Agency.

To support the intent of the BC Human Tissue Gift Act

2.0 DEFINITIONS

TERM	DEFINITION
British Columbia Transplant (BCT)	Represents the complete continuum of transplant services. BCT provides services to assist with organ donation, family support, donor management, organ procurement, transplantation and recipient management.
BCT Coordinator	Organ donation specialist who may approach family regarding donation options, obtain consent, coordinate organ donor management and maintenance in collaboration with the hospital attending physician and staff.
Comfort Care	refers to medical care for symptom control, psychological and spiritual support with a palliative approach to care.
Committee of Person (Personal Guardian)	person appointed by the court under Patients Property Act to be the Personal Guardian of an adult.
Death	the irreversible loss of all capacity for integration and coordination of physical and mental bodily functions: <ul style="list-style-type: none"> • The patient's spontaneous cardiac and respiratory functions have irreversibly ceased, leading rapidly to irreversible and complete loss of all brain functions; or • There has been an irreversible cessation of all brain function, even in the presence of artificially maintained cardiac and respiratory function.
Donation after Cardio-circulatory Death (DCD)	the process of solid organ donation after cardio-circulatory death, according to DCD criteria.

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TERM	DEFINITION
Donation after Neurological Determination of Death (NDD)	the process of solid organ donation for patients pronounced dead according to neurological death criteria.
Family Support	the provision of services that are required to meet the emotional, spiritual and physical needs of the family and will be determined on an individual basis. This may include pastoral care services, social work and other clinical staff as appropriate for the patient and their family.
Healthcare Professional (HCP)	HCPs are licensed, certified or registered to provide healthcare, and will include registered nurses, respiratory therapists, physicians, social workers, pharmacists, physiotherapists and dietitians.
Potential Donor	The patient for whom the option of DCD or NDD exists per criteria outlined in this document.
Recovery Team	consists of, but is not limited to, the hospital Department of Surgical Services, BCTS Coordinator, recognized medically credentialed transplant recovery physicians and recovery staff appointed by BCT.
Representative	a person 19 years or older who is named by a capable adult, in a Representation Agreement appointed to make health care treatment decisions and other decisions on his/her behalf when no longer capable of providing consent decisions.
Representative Agreement	is the document in which a capable adult names their representative to make health care treatment decisions and other decisions on his/her own behalf when incapable. Scope of authority is dependent on the type of agreement as well as the scope of decisions laid out by the capable adult.
Substitute decision Maker (SDM)	a capable person with authority to make health care treatment decisions on behalf of an incapable adult. There are three types of substitute decision makers: Committee of Person/Personal Guardian, Representative and Temporary Substitute Decision Maker (TSDM).
Temporary Substitute Decision Maker (TSDM)	a capable adult chosen by the health care provider who is qualified, willing and available to make health care treatment decisions on behalf of the incapable adult when substitute consent is needed.

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TERM	DEFINITION
Withdrawal of Life-Sustaining Therapy (WLST)	discontinuation all life prolonging medical interventions such as mechanical ventilation.

3.0 POLICY

3.1 General Provisions

Organ donation will be carried out in accordance with Interior Health and BC Transplant policies while respecting and honouring the unique needs of potential donors and their families.

Patients in hospitals that do not have the capacity to support NDD may be transferred to a higher level of care site to be evaluated for possible organ donation.

DCD will be supported within Interior Health specifically at Kelowna General Hospital. Expansion of DCD will be considered on a site by site basis as deemed feasible.

Organ donation may occur as a result of a request from the patient through the Organ Donor Registry or other Advanced Directive, upon request of a family member or the patient's Substitute Decision Maker (SDM), or Health Care team referral

3.2 Identification of Donors

Identification of potential organ donation patients includes recognition of severe and irreversible neurological injury with potential brain death.

The following triggers should be monitored:

- G:** Glasgow Coma Scale less than or equal to 5
- I:** Injury to Brain
- V:** Ventilated
- E:** End of Life Consideration

Identification of potential **DCD organ donation patient** may only occur **after** an independent decision of Withdrawal of Life-Sustaining Therapies (WLST) death by the most responsible physician (MRP), in consultation with the family, has been made.

3.3 Family support during organ donation

- Donor family support means the provision of services that are required to meet the emotional, spiritual and physical needs of the family. The type of supports needed will be determined on an individual basis. They may include spiritual care, social work and other clinical staff as appropriate for the patient and their family.
- The Health Care Team will meet to discuss how they will approach the family about donation and how they will support the family and meet their needs during the donation process.
- The Health Care team must be sensitive to the situation and respect the client's and family culture, beliefs and decisions about organ and tissue donation.

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- Interpreters, if required, must be made available as needed to ensure the family understands the information being provided.
- Procedures and process for NDD organ donation proceed according to existing BCT guidelines and in consideration of patient/ family's interests, needs and desires.
- The donor family may be present in the hospital during the donation process. All members of the Health Care Team and on-site BC Transplant staff will pay on-going attention to the needs of the family.

3.4 Staff support during organ donation

Staff support may vary from site to site and may include:

- BC Transplant Donation Specialist
- In-Hospital Donation Coordinator
- IHA Critical Care Physician Donation Lead
- Tertiary ICU Outreach support for other ICU teams
- Local ICU Outreach team support in the ED

3.5 Role of BCT

BCT was established in 1986 and directs delivers or contracts for all organ transplant services across BC. BCT is funded principally through the Provincial Health Services Authority (PHSA). The role of BCT includes:

- **Family support** during the donation process as well as post donation (for a period of one year).
- **Hospital support** in the form of post case debriefing as required, ongoing education sessions as needed, thank you letter to staff indicating which organs were procured.
- **Data Collection and Evaluation** - all organ donation data is collected in the ICU data base for the purposes of evaluating missed opportunities and compliance and conversion rates. Data is shared with BCT and all data shared meets the requirements of the IHA Privacy and Confidentiality policy
- Regular chart audits are performed by BCT.

4.0 PROCEDURES

4.1 Organ Donation after Neurological Determination of Death (NDD) - see Appendix A

4.2 Organ Donation after Cardio-circulatory Death (DCD) – see Appendix B

5.0 REFERENCES

1. Norris, S. (2009). Organ donation and transplantation in Canada. Parliamentary Information and research Services of the Library of Parliament. Downloaded April 2012. PRB 08-24E.
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4. Wijdicks, E. F. M., Vareelas, P.N., Gronseth, G.S., Greer, D.M. (2010). Evidenced-based guideline update: Determining brain death in adults. *Report of the Quality Standards Subcommittee of the American Academy of Neurology*, 74, 1911.

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APPENDIX A

Organ Donation after Neurological Determination of Death (NDD)

The following is the procedure for organ donation after NDD:

1. **NDD Criteria** - Patient must meet NDD criteria which includes:
 - Absent respiratory effort based on apnea test. Apnea test requires a period of pre-oxygenation by delivery of 100% oxygen via the trachea upon disconnection from mechanical ventilation.
 - Thresholds at the completion of the apnea test is PaCO₂ greater than or equal to 60 mmHg (and greater than or equal to 20 mmHg above the pre-apnea test level) and pH less than or equal to 7.28.
 - Deep unresponsive coma with bilateral absence of motor responses, excluding spinal reflexes.
 - Absent brain stem reflexes, as defined by absent gag and cough reflexes and the bilateral absence of corneal responses, pupillary responses to light with pupils mid-size or greater, and vestibule-ocular responses.
 - Established etiology of cause of neurological death in the absence of reversible conditions capable of mimicking neurological death.
 - There must be definitive clinical or neuro-imaging evidence of an acute central nervous system event consistent with the irreversible loss of neurological function.
 - Integrity of the cervical spine must be evaluated prior to confirmation of Neurological Determination of Death as this can impact evaluation of motor responses and apnea testing.
2. **Referral** – when GIVE triggers are identified.
 - The patient may be referred for potential organ donation by:
 - Patient self-identification – registered consent on the Organ Donor Registry or other advanced directive
 - Family/substitute decision maker request
 - Health Care team
 - A referral to BCT is to be made by the Critical Care/Emergency Department team as soon as possible after patient screening criteria are met or brain death is determined and prior to withdrawal of life sustaining therapy. The referral line (1-877-DONOR BC) is to be used in accordance with BCT policy and Provincial legislation to report all deaths less than 75 years of age to BCT.
 - The referral and subsequent decision of eligibility by BCT shall be recorded in the patient's chart.
3. **Declaration of NDD**
 - NDD is a separate and distinct process from the decision to donate organs.
 - Absence of confounding factors:
 - Un-resuscitated shock (SBP less than 100)
 - Hypothermia with core temperature less than 34° C
 - Metabolic disorders capable of causing a potentially reversible coma
 - Severe metabolic abnormalities
 - Peripheral nerve or muscle dysfunction

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- Neuromuscular blockade
- Clinically significant drug intoxications
- Acute post-resuscitation phase of cardio-respiratory arrest (within 24 hours)
- Physician qualifications:
 - NDD must be determined by two physicians who have a full and current licensure for independent medical practice in BC. (the organ procurement team is not involved with the NDD declaration or decision to donate organs/tissues).
 - The physicians must have skill and knowledge in management of patients with severe head injury and in NDD.
 - Any physician who has any association with a proposed recipient shall not take part in the declaration of death.
 - NDD may not be a delegated function (i.e. to a resident or fellow).
 - NDD for paediatric patients must be completed by specialists with skill and knowledge in the management of paediatrics and/or adolescents with severe brain injury.
- NDD Declaration process:
 - The first and second physician's declarations may be performed concurrently. If they are performed at different times, a full clinical examination must be performed with each declaration. Apnea testing results supervised by one physician may be used to support the clinical examination of the second physician. To interpret the apnea test correctly, the certifying physician must continuously observe the patient for respiratory effort throughout the administration of the test. Legal time of death is marked by the first determination of death; a death record should be completed at this time.
 - Ancillary testing must be performed when it is impossible to complete the minimum clinical criteria. At a minimum, 2 clinical criteria must be met before ancillary tests are performed. Global absence of intracerebral blood flow is the standard for NDD by ancillary testing.

4. Consent:

- Consent will be obtained in accordance with the BC Public Trustee, Adult Guardianship Legislation (2001) Healthcare Consent Act.
- The BC Organ Donor Registry is accessed by BCT to identify previously registered/documented consent by the individual for organ/tissue donation. If however, the Health Care Team has evidence of opposition for donation from the patient (i.e. Advanced Directive); a request of the next-of-kin will not be made.
- Although consent from the Temporary Substitute Decision Maker (TSDM) is not necessary if a validated document of approval for donation is available, IHA/BCT will obtain consent from the patient's next of kin or TSDM before moving forward with organ donation.
- Family should be approached for consent for donation only after they have had the opportunity to grasp the confirmed or imminent death of their loved one.
- Obtaining consent for and discussion about NDD donation is led by a designate determined by the health care team (MRP, intensivist, spiritual advisor, nurse, social worker, BC Transplant Donation Coordinator). The designate is usually the most skilled, capable and experienced team member but a team member who has a positive relationship with the family should also be considered.

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- Written consent for Donation of Organs and/or Tissues is obtained once NDD has been determined.
- Consent from the Coroner is also required if the patient's death falls within the jurisdiction of the Coroner.

5. Evaluation of Medical Eligibility

Following receipt of the referral, the medical suitability of the patient for donation utilizing the NDD criteria, will be determined by BCT. The following considerations will be utilized:

- Demographic
- Age
- Organ-function criteria
- Social history
- Organ(s) allocation to waitlist recipients according to BCT standard allocation protocols.

6. **Clinical management and care** of the patient is provided by the health care team and lead practitioner. This management and care continues for potential donors while testing and screening is completed. The donor is supported appropriately until a decision regarding organ donation can be made. Monitoring requirements and intervention needs are implemented as needed. Potential donors have the same clinicians available to manage their care needs as other critically ill patients. In the event the patient does not proceed to organ donation, a plan for End of Life care will be continued.

Once NDD has been determined and consent for donation is obtained, the BCT Organ Donation guideline is followed. Organ retrieval process and access to the OR is coordinated by BCT.

7. Managing Organ Donation outside the ICU

Potential donors are best managed in the Intensive care Unit (ICU) and all efforts should be made to ensure timely admission to the ICU. Potential donors should be given priority access to ICU, when an ICU bed is not available decongestion protocols to decant the ICU should be initiated. These protocols include: pulling of off-service patients, opening overflow beds and the transporting of appropriate ICU patients to other ICU's. In the event an ICU bed cannot be made available the patient will be managed in the ED. ICU Outreach Nurses and the ICU Health Care Team will manage the potential donor in the ED in these cases.

8. Documentation

All aspects of the donor management process are to be documented in the medical record. This includes but is not limited to:

- Client identification as a potential donor
- Family approached for organ and tissue donation
- Family discussion about organ and tissue donation
- Decision about organ and tissue donation
- Referral and subsequent decision of eligibility from BCTS

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APPENDIX B

Organ Donation after Cardio-circulatory Death (DCD)

The following is the procedure for DCD:

1. **Decision**

The decision to withdraw life sustaining therapy must be made before, and independent of, any discussion or decision related to organ donation. The discussion to withdraw life sustaining therapy will be conducted and documented in the patient's record in accordance with current hospital practice. For the purpose of this DCD policy only, a second Critical Care physician/Neurologist/Neuro-surgeon that is not involved in the direct care of the patient will provide a separate opinion to confirm the decision to withdraw life-sustaining therapy. This will be documented in accordance with hospital policy.

2. **Inclusion Criteria**

Patient has a severe and irreversible neurological injury; this may include an injury to the brain stem, whose condition does not decline to neurological death and for whom the family/surrogates have decided to withdraw life-sustaining therapy. The degree of neurologic injury will require the need for mechanical ventilation.

Brain death is not required in order for death to be pronounced, nor is brain death required for the withdrawal of life-sustaining therapy from a patient who is terminal or has an end stage condition. Organ donation may be considered from persons who die from cardiac or respiratory failure.

Not all requests for organ donation will be met merely because a patient or surrogate desires WLST and wishes to be an organ donor.

3. **Referral**

Once the decision to withdraw life-sustaining therapy has been made, the G.I.V.E. triggers will help to identify potential DCD donors. All patients who meet the inclusion criteria are to be referred to BCT. This practice is in accordance with the BCT policy and Provincial legislation to report all imminent deaths.

Referral to BCT must occur after the decision to withdraw life-sustaining therapy but in advance of the actual withdrawal. This will ensure that an assessment of the medical eligibility of the prospective donor can occur and will enable the timely coordination of the resources necessary to facilitate the donation process. BCT will **not** be involved in the decision to withdraw life-sustaining therapy.

There must be two distinct and separate conversations with the family: one regarding the WLST and a second about the possibility of organ donation. The referral and subsequent collaboration with BCT is to be recorded in the patient's chart.

4. **Consent**

- Consent will be obtained in accordance with the BC Public Trustee, Adult Guardianship Legislation (2001) Healthcare Consent Act.
- The BC Organ Donor Registry is accessed by BCT to identify previously registered/documented consent by the individual for organ/tissue donation. If however,

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the Health Care Team has evidence of opposition for donation from the patient (i.e. Advanced Directive); a request of the next-of-kin will not be made.

- Although consent from Substitute Decision Maker (SDM) is not necessary if a validated document of approval for donation is available, IHA/BCT will obtain consent from the patient's next of kin or SDM before moving forward with organ donation.
 - If the patient is determined to be a suitable candidate for DCD, the health care team in the critical care area or the BCT Coordinator will present the option of donation to the family **only after** the decision to withdraw life-sustaining therapy has been made and documented by the primary team.
- Obtaining consent for and discussion about DCD donation is led by a designate determined by the health care team (MRP, intensivists, spiritual advisors, nurses, social worker, BC Transplant Donation Coordinator). The designate is usually the most skilled, capable and experienced team member but a team member who has a positive relationship with the family should also be considered.
- The family may initiate the discussion of organ donation in advance and all HCPs are encouraged to engage in discussion and notify the medical team in ICU and /or BCT Coordinator to ensure family support.
- There must be a discussion with the next of kin regarding the organ donation process and transparency regarding non-therapeutic interventions such as blood samples and pre-mortem use of anticoagulants. This conversation represents informed consent and must be documented in the patient chart in accordance with hospital policy.
- Consent from the Coroner is also required if the patient's death falls within the jurisdiction of the Coroner.

5. Evaluation of Medical Eligibility

Following receipt of the referral, the medical suitability of the patient for donation utilizing the DCD criteria, will be determined by BCT. The following considerations will be utilized:

- General health status of the patient
 - Evaluation of the likelihood that the patient will expire following WLST within a timeframe consistent to allow for successful donation.
- Discussion with the family regarding end of life considerations and procedures associated with DCD.

6. Withdrawal of Life-Sustaining Therapy and Pre-Mortem Interventions

This policy explicitly prohibits all pre-mortem interventions that are directly injurious or that could potentially shorten the patient's life. Once the decision has been made to withdraw life-sustaining therapy, optimal comfort care becomes and remains the primary goal of patient care. Initiation of comfort care will be conducted in accordance with standard hospital practice.

The MRP or designated intensivist is responsible for prescribing the appropriate pre-mortem interventions after consent for pre-mortem interventions has been documented.

Pre Mortem interventions may include: anticoagulants, antibiotics, and analgesics to ensure comfort. A Do Not Resuscitate (DNR) order must be documented before WLST can proceed.

Opioid analgesics are used to ensure patient comfort in accordance with standard hospital practice and best practice standards. In collaboration with the patient's family, BCT, the hospital,

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and the HCP the time of WLST will be determined. The logistics for the recovery process will be arranged before WLST. The family may be present, if they wish, in the ICU during the WLST process.

7. Post-Withdrawal of Life-sustaining Therapy process

- a. Declaration of Death
For the purpose of DCD, from the onset of circulatory arrest (cessation of spontaneous circulation) there must be a five minute period of continuous observation by a physician according to the following criteria:
 - Continuous absence of pulse by arterial catheter, or lack of palpable pulse.
 - No evidence of spontaneous respiratory effort
 - No pupillary response
 - No response to periodic noxious stimuli
- b. Following this five minute period of continuous observation, the Critical Care physician will declare the death of the patient; a second physician will examine the patient and confirm death. Both physicians must complete and sign the BCT Confirmation of Cardio-circulatory Death (DCD) form.
- c. The declaration of death is placed on the patient's chart. The Critical Care physician will fill out the medical certificate of death.
- d. In instances where death does not occur in a timeframe allowing for the organs to be procured for transplant, comfort care measures will continue until such time that the patient expires.
- e. All DCD cases will be reviewed during Critical Care/ICU Morbidity & Mortality rounds.
- f. No HCP shall be required to participate in the procedures related to DCD if it is against their personal, religious or ethical beliefs. However, if such person is the attending Critical Care physician or staff nurse, there is an expectation to transfer the patient's care and management to another physician or nurse.

8. Documentation

All aspects of the donor management process are to be documented in the medical record. This includes but is not limited to:

- Decision to withdraw life-sustaining therapy by two physicians.
 - Client identification as a potential donor after decision made and documented to withdraw life-sustaining therapy.
 - Family approached for organ and tissue donation.
 - Family discussion about organ and tissue donation.
 - Decision about organ and tissue donation.
 - Referral and subsequent decision of eligibility from BCTS.

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