

Overview of organ donation and transplant process

This learning resource is meant to give secondary students a general overview of the process of organ donation and transplantation in British Columbia.



Warm-up questions:

- What do you **already know** about organ donation and transplantation?
- What do you **wonder** about organ donation and transplantation?

BC Transplant is responsible for taking care of all aspects of organ donation and transplant throughout BC. This organization coordinates hundreds of live-saving donations and transplants each year. They also manage the **BC Organ Donor Registry**, which keeps track of each person's decision about organ donation: "yes" or "no" (if that person has registered their decision).

Goals of BC Transplant:

1. Increase organ donation
2. Reduce the number of patients on the transplant waitlist
3. Improve care for donor families and transplant recipients

Organ donation and transplant process

1. The decision to withdraw life support is made.

Every day, healthcare professionals work tirelessly to provide life-saving care to patients in Emergency Rooms (ER) and Intensive Care Units (ICU) across BC. These patients are often in “critical condition”, and are being kept alive by machines called **ventilators**. Their brain has died and they have been declared dead, but the ventilator is maintaining their heartbeat and organ function until the family is ready to turn off the ventilator.

When all life-saving treatment options have been exhausted for a particular patient, a decision to withdraw life support is made. This means that a patient will be taken off the ventilator, and their heart will stop beating. If they were not already declared dead by brain death, then they will be declared dead once their heart has stopped beating. Healthcare providers will make sure that patients are comfortable throughout the process.

This decision is typically made when someone is no longer showing any signs of brain function, and they are not breathing on their own. **This decision is only made when healthcare providers are confident that a patient’s condition will not improve.**

To donate organs after death, a person needs to pass away in the hospital under this very specific set of circumstances (such as after an accident or a brain injury). Only 1-2% of people who die in the hospital are eligible to donate their organs.

If someone is going to pass away under these specific circumstances, they are a potential organ donor.

Further inquiry:

- Search “neurological determination of death (NDD)”
- Search “donation after cardiocirculatory (or cardiac) death (DCD)”

Important note: BC Transplant is not involved in the decision to withdraw life support. The option of organ donation is only offered to families and next of kin **after** the decision to withdraw life support has been made by healthcare providers and the patient’s next of kin.

Healthcare professionals provide the same level of care to all patients, regardless of organ donor status. Healthcare providers are **not** aware of whether a particular patient has registered to become an organ donor until **after** the decision to withdraw life support has been made.

Think-Pair-Share:

- Public trust in the organ donation and transplant system is integral to its success. From what you’ve learned so far, what factors or elements of the system do you think help maintain public trust in organ donation?

2. BC Transplant is notified of the death or impending death of a potential organ donor.

The *Human Tissue Gift Act* “Consent to Donation Regulation” states that “a [healthcare] facility must notify [BC Transplant] immediately in the event of the death, or impending death, of a patient ... in its care.”

This means that when a patient has been on life support, and the decision to withdraw life support has been made (after all life-saving treatments have been exhausted), the healthcare facility is legally obligated to tell BC Transplant about this patient (who is a potential organ donor). BC Transplant has coordinators working 24/7 to take calls regarding these potential organ donors.

Once informed of the impending death of a potential organ donor, BC Transplant can search in BC’s Organ Donor Registry to see whether this patient has registered their decision about organ donation (“yes” or “no”). Then, this information is shared with the healthcare facility where the patient is located so that **informed consent** can be obtained from the patient’s family or “next of kin”.

3. BC Transplant discusses organ donation with the patient’s family/next of kin, who decides whether they will move forward with organ donation (obtaining “informed consent” from the family/next of kin).

At this point, an organ donation specialist (ODS) from BC Transplant will speak with the potential organ donor’s family/next of kin to discuss the process of organ donation. This allows the family/next of kin to make an informed decision. Families/next of kin can ask as many questions as they need to, and BC Transplant will respect whatever decision they make.

It is helpful to register your decision about organ donation (“yes” or “no”) so that your family/next of kin knows how you feel about organ donation if you are ever in this situation. If you register your decision, BC Transplant can show your family the actual Registry document (which shows your “yes” or “no”). Otherwise, your family/next of kin will need to make a decision on your behalf (which may be difficult or anxiety-inducing at what may be an emotionally complex moment as they are facing the loss of a loved one).

See the “Medical Ethics: Informed Consent” resource to explore this idea further.

4. If informed consent is obtained, BC Transplant starts working with healthcare professionals at the healthcare facility to determine which organs are suitable for transplant.

In general, the following organs can be donated in BC:

- Heart
- Lungs
- Liver
- Pancreas (including islet cells)
- Kidneys
- Eyes (corneas and sclera) [through Eye Bank of British Columbia]

See the “Collaborative Inquiry: Organ Structure and Function” resource to explore these organs further.

To ensure that these organs will benefit potential transplant recipients, healthcare professionals must gather specific information that will help them understand the overall health of the organ donor, the cause of their death, as well as the condition of their specific organs. This involves a questionnaire about the patient’s medical and social history, specific medical tests to verify that their organs are functioning properly, blood testing, genetic testing, tests for infectious diseases, etc.

See the “Collaborative Inquiry: Organ Testing” and/or “HLA Typing, Genetics, and Immunology Extension” resources to explore these ideas further.

5. Once a detailed understanding about this donor’s specific organs has been gained (through medical testing), the organs are allocated to potential organ recipients on the waitlist.

See the “Organ Allocation Case Study Activity” to explore this further.

6. Once healthcare providers have determined which organs can be donated, and where they will go (i.e., to which recipients), BC Transplant will set up a time to withdraw life support and go to the operating room (OR) to recover the organs.

Multiple factors are considered to find a time that will facilitate the best outcome for the organ recovery and transplant(s). BC Transplant coordinators need to consider the condition of the organs, the needs of the donor family, and the logistics around recovering and transporting the organs to the transplant recipients.

7. Organs are recovered in the operating room (OR).

BC Transplant has a Mobile Recovery Team of nurses, physicians, and surgical recovery specialists who travel to any hospital in the province where a ventilated organ donor is located. They bring all the equipment that they need to recover the organs from the donor.

Surgical recovery specialists coordinate the recovery of the organs, retrieval surgeons recover the organs for transplant, and OR teams support the organ recovery process.

8. Organs are transported to transplant centres in Vancouver, where transplant teams are waiting to perform life-saving transplant surgeries for the organ recipients.

All transplantation surgeries in BC are done at hospitals in Vancouver (BC Children’s Hospital, Vancouver General Hospital, and St. Paul’s Hospital). BC Transplant works with airlines, local ambulance services (British Columbia Emergency Health Services), and couriers to ensure that organs can be transported to these hospitals in the shortest amount of time.

Further inquiry:

- Search “cold ischemia” to explore how organs are preserved in the period of time between recovery from the donor and transplant into the recipient.

9. Organs arrive at the transplant centre in Vancouver, and surgical teams transplant the organs into recipients.

10. Healthcare professionals care for transplant recipients after their transplant surgery.

Teams of healthcare professionals who specialize in post-transplant care ensure that recipients are recovering appropriately after receiving their organ. For example, pharmacists may provide transplant medication.

A Family Services Coordinator from BC Transplant supports donor families.

Post-transplant clinics in communities throughout BC provide ongoing care for recipients after their transplant. However, some recipients will receive all post-transplant care in Vancouver. This depends on the type of organ transplant that they have received.

Summary

As many as 150 people can be involved in a successful organ donation, recovery, and transplantation process.

It usually takes about 24-72 hours from the time that BC Transplant is notified of a potential organ donor (who is being withdrawn from life support), to the time when that patient is brought to the operating room for organ recovery.

The following steps in the organ donation and transplant process have been **randomized**. Can you place them in the correct order?

<p>Organs are recovered in the operating room (OR).</p>
<p>Organs are transported to transplant centres in Vancouver, where transplant teams are waiting to perform life-saving transplant surgeries for the organ recipients.</p>
<p>Healthcare professionals care for transplant recipients after their transplant surgery.</p>
<p>BC Transplant discusses organ donation with the patient's family/next of kin, who decides whether they will move forward with organ donation (obtaining "informed consent" from the family/next of kin).</p>
<p>If informed consent is obtained, BC Transplant starts working with healthcare professionals at the healthcare facility to determine which organs are suitable for transplant.</p>
<p>Once healthcare providers have determined which organs can be donated, and where they will go (i.e., to which recipients), BC Transplant will set up a time to withdraw life support and go to the operating room (OR) to recover the organs.</p>
<p>Once a detailed understanding about this donor's specific organs has been gained (through medical testing), the organs are allocated to potential organ recipients on the waitlist.</p>
<p>BC Transplant is notified of the death or impending death of a potential organ donor.</p>
<p>The decision to withdraw life support is made.</p>
<p>Organs arrive at the transplant centre in Vancouver, and surgical teams transplant the organs into recipients.</p>

