Consensus guidance for organ donation and transplantation services during COVID-19 pandemic

The most current version of this document will reside on the Organ and Tissue Donation and Transplantation professional education website.

Background

On March 12, an urgent teleconference meeting of the Organ Donation and Transplantation Expert Advisory Committee (ODTEAC) was held, bringing together donation and transplantation leaders from across the country. The aim of the meeting was to develop a consensus which can be used by provincial organ donation organizations and regional transplant and donation programs to guide the administration of organ and tissue donation and transplantation services in light of the COVID-19 pandemic. It is understood that each organization, program and jurisdiction will develop their own policies.

Because the situation is rapidly evolving, going forward, a teleconference will be held at least once a week to discuss and update the consensus guidance. These discussions and the consensus itself will continue to be informed by recommendations from Canadian Blood Services' advisory committees, Health Canada, Public Health Agency of Canada, WHO, provincial agencies, and international partners (including UK and Spain).

This document was updated March 24, 2020, based on guidance established on a teleconference on March 23, 2020, and will be updated after each national call as required.

Key Considerations

Guiding principles

- Organ donation and transplantation is an essential life-saving and life-preserving medical intervention.
- Transplant recipients are, or are likely to become, immunocompromised, and may be at increased risk of more severe outcomes related to COVID-19, although data are lacking.
- Recommendations must balance the incidence trends in provinces and territories, the risk posed to potential recipients who will become immunocompromised, and the risks of suspending or delaying transplantation.
- A consistent and principled approach for all jurisdictions is preferred.

Current level of risk

The public health risk associated with COVID-19 is variable for the general population in Canada. Increasing community transmission is being observed at the time of this update.

There is likely an increased risk of more severe outcomes for Canadians:

- aged 65 and over
- with compromised immune systems
- with underlying medical conditions

People who are most likely to transmit COVID-19:

1. Those who live or have visited countries outside of Canada within the previous 14 days and show clinical symptoms compatible with COVID-19. However, the case epidemiology is now shifting towards local transmission. Asymptomatic or mildly symptomatic carriers are likely also serving as a source of community spread.
2. Confirmed donor or potential recipient cases of COVID-19 (for recovered patients, 2 negative swabs 24 hours apart confirms clearance).
3. Donors and potential recipients who have been exposed to a confirmed case within the previous 14 days and show clinical symptoms compatible with COVID-19. Exposure includes: having shared the ICU or any other hospital unit with a confirmed case of COVID-19 when appropriate infection control precautions were not used.

Modes of transmission:

1. Donor to recipient
    a. droplet/respiratory spread
    b. +/- viremia (unknown but presumed likely; viremia reported in up to 15% of cases but in a recent study of 300 patients, the viremia incidence is 1% (Wang et al., JAMA, 2020). Most viremic patients also have detectable virus in the respiratory tract.
    c. Virus present in organ (lung especially; but other organs possible).
2. Nosocomial
    a. other patients, visitors, health care staff
    b. droplet spread and potential surface contamination; the role of aerosolization is uncertain.
3. Community-acquired
    a. as described above in 2b.

Testing

1. COVID-19 nasopharyngeal PCR assay is reasonably sensitive in most settings, although there is no clear gold standard for comparison of swab efficacy. Oropharyngeal swab likely has less sensitivity. PCR of BAL fluid has greater sensitivity in cases of pneumonitis.
2. Clearance of confirmed cases = 2 negative NP PCR swabs that are 24 hours apart.
3. No practical viremia assay currently available for clinical use, but may be available imminently. The clinical utility is uncertain, since it is expected that most or all viremic donors will have a positive respiratory sample.

Consensus guidance (as of March 24, 2020, 14:30 EDT)

Recommendations for ICU, OR and transplant services

Decision to proceed with organ donation and transplantation is predicated on hospital capacity and resource considerations, and it is understood that it may be affected by provincial and facility incidence and severity of COVID-19.

1. Adult and pediatric intensive care units are asked to test all patients that meet the following criteria:
    a. They are admitted to intensive care;
    b. The presenting condition is an acute community-acquired respiratory infection of any kind OR a febrile illness, regardless of known or suspected causative pathogen and clinical features. This includes ECMO active or eligible cases.
2. All health care personnel involved in organ donation and transplantation services should be fit-tested for masks and have personal protective equipment training.
3. N95 masks should be required for all ICU and OR staff, when deemed appropriate by hospital safety protocols (e.g., procedures that may lead to aerosolization of the virus such as intubation or bronchoscopy), and are not expected to be required for general care. For general care, droplet / contact precautions are currently thought to be adequate.

Recommendation for living donor programs

Based on a March 13 meeting of the chairs and co-chairs of the Kidney Transplant Advisory Committee and the Living Donation Advisory Committee and Canadian Blood Services OTDT leadership, it is recommended that:

- All living donor kidney transplant programs in Canada should consider postponing living donor transplants for a minimum of six weeks on a case-by-case basis and/or until this issue has resolved.

- Living donor liver transplantation generally caries greater urgency. Living donor liver transplantation should continue on a case-by-case basis, taking into account recipient medical need and hospital resource utilization depending on the severity of the pandemic in the local jurisdiction.

Recommendations for transplant programs

Effective March 24, it is recommended:

- All transplant programs should consider suspending deceased kidney transplants, except for highly sensitized recipients (PRA>=99%) or because of an urgent medical need due to a lack of access to dialysis.

- All transplant programs should consider avoiding the use of lymphocyte depleting therapies. However, choice of immunosuppression remains with transplant programs.

- All transplant programs should, whenever possible, recover organs locally and ship them. For those centres that cannot recover organs locally, the decision to send a surgical team can be assessed on case-by-case basis, relative to recipient urgency.

- If surgical recovery teams travel, the teams should be as small as possible. Every effort should also be made to minimize the team's potential exposure to COVID-19. For example, upon arrival in locality, teams should go directly to the OR, they should avoid the emergency department whenever possible, and they should return directly to the plane as soon as they are able.

Recommendations for donor criteria

CRITERIA FOR DECEASED DONORS

1. Organs from donors with active COVID-19 should not be used.
2. Donors with a previous diagnosis of COVID-19 require two negative tests before being considered for donation and another negative test at the time of donation.
3. All potential donors must be swab tested for COVID-19. The optimal choice of specimen for testing is unknown but options include NP swab, BAL, or endotracheal aspirate or a combination of above. Concerns about aerosolization with BAL sampling should also be taken into account.

4. All potential deceased donors who have travelled outside Canada within the prior 14 days should be considered higher risk and caution should be exercised. Negative testing is essential before proceeding. More than one sample type may be needed (eg.NP swab and BAL).
5. A symptoms screening tool should be applied to all donors. All donors with a suspicious symptom complex should be considered high risk. They must have negative test results before proceeding but programs should still proceed with caution. Testing of more than one site may be needed (e.g. NP swab plus BAL) before proceeding.
6. ICU/OR capacity allowing, a negative COVID-19 result must be available prior to proceeding (except in exceptional circumstances).
7. All organ offers from programs such as in the United States where testing of donors has not occurred, should not be accepted.

CRITERIA FOR LIVING DONORS (IF TRANSPLANT IS NOT SUSPENDED)

1. All potential living donors should undergo a symptom screen prior to donation. Any donor with compatible symptoms should be deferred but should also be tested to allow for future planning.
2. All potential living donors must be tested for COVID-19 with the testing occurring as close as possible prior to donation (within 24–48 hours). Current data suggests the optimal test type in this setting is a nasopharyngeal swab. Appropriate technique is important to ensure test reliability.
3. All potential living donors who travelled outside Canada must wait at least 14 days before donating (as per Health Canada's *Measures to Address the Potential Risk of Transmission of the novel coronavirus responsible for COVID-19 by Human Cells, Tissues and Organ Transplantation)*. Current public health guidelines require all returned travelers to self-isolate for 14 days.
4. All potential living donors should be advised to practice significant social distancing for 21 days prior to surgery. All living donors should not travel and be very careful to avoid contact with others who have respiratory or flu like symptoms in the 21 days prior to donation.
5. A living donor is eligible to donate only if they have tested negative for COVID-19 with the testing taking place within 24–48 hours prior to surgery, AND have a negative symptom screen AND have not travelled outside of Canada in the previous 21 days.
6. All living donors with a previous diagnosis of COVID-19 require two negative tests before being considered for donation and another negative test at the time of donation.
7. Living donor transplants are considered deferable (especially kidney), if it is in the best interest of the donors and patients except in the case of medical urgency for a transplant candidate.

Recommendations for recipient criteria

CRITERIA FOR RECIPIENTS OF DECEASED DONATION

1. All recipients of deceased donation should undergo a symptoms screen and a screening NP swab at the time they are called in for transplant. Those with a positive symptom screen should be deferred.
2. In patients with a negative symptom screen, whenever possible, an attempt should be made to have the screening swab result available prior to proceeding with surgery. It is recognized that this may not be possible in all situations, given current constraints on test-turnaround time.

CRITERIA FOR RECIPIENTS OF LIVING DONATION (IF TRANSPLANT IS NOT SUSPENDED)

1. All recipients of living donation should undergo a screening NP swab in the 24–48 hours prior to surgery and should not proceed if positive.

Impacts to Canadian Blood Services Kidney Paired Donation and Highly Sensitized Patient Programs

In light of the current COVID-19 pandemic concerns, Canadian Blood Services leadership and the chairs and co-chairs of the Kidney Transplant Advisory Committee and the Living Donation Advisory Committee have assessed the current evidence and information available in this rapidly changing environment. With the goal of ensuring the safety of both living donors and transplant recipients the following decisions have been made:

1. Highly Sensitized Patient (HSP) Program:
   The HSP registry will continue to operate and be available to the country. The decision to proceed with accepting a kidney offer will be made by local/provincial programs based on their hospital's current policies and processes for deceased donor organ transplantation during the COVID-19 situation.

2. Kidney Paired Donation (KPD) Program:
   All donation and transplant surgeries currently scheduled in KPD chains (effective Monday March 16th) will be postponed effective for a minimum of 6 weeks. This action will minimize the possibility of exposing living donors, transplant candidates, and recipients to the COVID-19 virus during travel and in public places such as hospitals. Transplant programs are advised to **release all scheduled KPD surgeries** and inform donors and transplant candidates of the surgery postponements. Canadian Blood Services will provide programs with messaging that should be used when sharing this information with transplant candidates. The current situation will be monitored daily and emerging decisions/recommendations will be discussed with program medical advisors on a weekly basis and updated accordingly.

Update on Impact to Blood Supply

Blood components are a vital resource supporting health care in Canada. Canadian Blood Services operates a national blood inventory and, in collaboration with our provincial and territorial partners, continues to monitor the impact of COVID-19 on the supply of these resources and will continue to keep the community apprised of the blood situation as it evolves.

Additional resources

1. As they become available, we will share additional resources related to the COVID-19 pandemic on *Organ and Tissue Donation and Transplantation professional education website*. Additionally, a google doc and dropbox folder has been established for ease of sharing documents requiring limited access.