

Organ Donation and Transplantation and COVID-19

Prepared by:



UNIVERSITY OF OTTAWA CENTRE FOR

**Droit, politique et
éthique de la santé**

**Health Law,
Policy and Ethics**



The Canadian **DONATION** and
TRANSPLANTATION Research Program

Programme de recherche en **DON**
et **TRANSPLANTATION** du Canada

Content: **March 2022**

TABLE OF CONTENTS

03	INTRODUCTION
03	RESOURCE ALLOCATION
04	RESPONDING TO A PANDEMIC SURGE
05	BALANCING RISK AND BENEFITS
06	CONCERNS OF PATIENTS AND TRANSPLANT
07	SELECTING PATIENTS FOR TRANSPLANTATION THROUGHOUT COVID-19
08	COVID-19 VACCINATION AND ODT
09	ACKNOWLEDGEMENTS
10	REFERENCES

The content of this document was created as part of the **Key Policy Issues in Organ Donation & Transplantation** virtual conference which took place on June 17–18, 2021 at the University of Ottawa, Ontario.

[More info here.](#)

ORGAN DONATION AND TRANSPLANTATION AND COVID-19

INTRODUCTION

The effects of the COVID-19 pandemic on healthcare systems continue to be marked by unprecedented surges in the use of medical resources and the need for rapid decision-making in the face of uncertainty. The organ donation and transplantation (ODT) system has faced challenges both general to all healthcare during this time (e.g., allocation of resources) and specific to ODT itself (e.g., managing the risk of transplantation). The nature and extent of the effects of the pandemic on ODT remain in flux as the virus itself, societal responses, and available knowledge continue to change. The arrival of COVID-19 vaccines in early 2021 greatly affected the ODT-pandemic landscape, while simultaneously creating new issues surrounding vaccine prioritization and mandates.

RESOURCE ALLOCATION

The COVID-19 pandemic placed a tremendous burden on healthcare systems, specifically Intensive Care Unit (ICU) resources. For example, donations from an ideal donor may not be able to be accepted despite long transplant waitlists, when ICUs are over capacity due to the pressure of high numbers of COVID-19 patients. These exceptional circumstances put all life-saving medical needs, such as cancer surgeries, in direct competition with COVID-19 patients over scarce resources. The ODT system demands ventilators and ICU resources to support potential donors, as well as to care for transplant recipients. As of summer 2021, it was predicted that it would take more than 3.5 years to clear the surgical backlog caused by the pandemic in Ontario, costing an estimated \$216 million. (1)

Determining how scarce resources are allocated is not a new issue in the field of ODT, where a limited supply of organs for transplant is common. How such resources are allocated, particularly when healthcare systems are overwhelmed, requires transparency to ensure that principled decisions are being made.

RESPONDING TO A PANDEMIC SURGE

A three-step process can be used to respond to a pandemic surge regarding the allocation of healthcare resources. (2)

1. BUILD SURGE CAPACITY

From the outset, the system needs to build surge capacity. Available hospital resources, including personnel, need to be identified and redeployed to the areas of greatest need. Non-essential care is deferred, and regional load-sharing should be adopted.

2. ADJUST THE STANDARD OF CARE

At this stage, ICU admissions, care processes, and discharge need to be adjusted to limit resource use (e.g., limiting how many people enter a treatment room). Unconventional equipment, medication, and staffing may need to be utilized. ODT demand on ICUs needs to be minimized (e.g., freeing up beds as soon as possible from ODT patients). Outreach to ICU leadership is required to ensure that ODT remains valued.

3. GENERAL CRITICAL CARE TRIAGE

At this stage, the demand for resources can no longer be met, and patients will subsequently die. The goal is to use an accountable, transparent, fair, and rational process for decision-making. If formal triage is not enacted, then informal triage will implicitly take effect based on necessity. Early on, Ontario ICU teams prepared triage protocols (i.e., the process of sorting out classifying patients to determine priority) and ran preparatory exercises, but this stage was fortunately not reached. The implications for ODT are that transplant surgeries could experience prolonged delays or be cancelled altogether if non-ODT patients are felt to have a better chance of survival. Patients could remain on waitlists longer and organ donations may be missed.

BALANCING RISK AND BENEFITS

Due to safety and capacity issues, many deceased and living donor transplantation programs temporarily closed during the pandemic. In Europe, 33.3% of programs shifted to transplanting only in urgent cases or their sickest patients. (3) Programs in Quebec adopted a similar approach. (4) During the first wave in the U.S., approximately 90% of living donor kidney transplantations ceased. (5) Deceased donor procurement rates and transplantations decreased, and waitlists saw a reduction of 50% in new registrations. (6) High COVID-19 infection rates occurred in solid organ transplant recipients, with high mortality rates. (7) The full impacts of the COVID-19 pandemic on ODT systems are not yet fully understood or felt, but it is likely that the mortality rate among waitlisted patients increased.

RISKS AND BENEFITS FOR TRANSPLANT RECIPIENTS AND ORGAN DONORS

The risk of COVID-19 transmission during donation and transplantation procedures must be balanced with risk of waitlist mortality for candidates. The exact effects of COVID-19 on ODT processes are mixed and ODT programs must move forward with caution. Clear and regular communication of the risks and benefits associated with ODT during a pandemic is required to ensure that decision-making is as informed as possible.

Infection control measures, such as isolation, Personal Protective Equipment (PPE), and grouping patients into cohorts are needed to combat risks. Public health measures, such as masks, physical distancing, and work from home mandates can help keep patients safe. Options for home-based treatments, such as peritoneal dialysis, further support recipients' safety.

The standard of care in ODT may not be optimal as standards are adapted to meet the demands of pandemic surges. ICU capacity for ODT will be lost, resulting in reduced donation, the potential exclusion of patients at the highest risk of death in triage situations, reductions in scheduled care, and limited post-transplant care beds. In some cases, lung transplant candidates are already in the ICU and transplanting them may allow their ICU bed to be freed for another.

RISKS AND BENEFITS FOR HEALTHCARE PROVIDERS

Clinicians face an increased risk to their safety. Shortages of PPE occurred earlier in the pandemic due to prioritized allocation to COVID-19 hotspots. Transplant teams required to travel to transport organs enter several environments with potential risks of COVID-19 exposure, ranging from hospitals to airports and airplanes. Clinicians with exposure to COVID-19 must self-isolate, creating staff shortages. Decreased staffing can also be the result of redeployment, change fatigue, and burnout.

The availability of COVID-19 vaccines modified the extent of these risks for all parties. The Canadian Society of Transplantation has endorsed the vaccination of healthcare providers working with ODT patients not just to protect healthcare providers but in recognition of the vulnerability of their patients due to immunosuppression. (8) It also notes the importance of vaccinating patients prior to transplant, where possible.

CONCERNS OF PATIENTS AND TRANSPLANT

Many transplant candidates do not possess the ability to wait for a safer time to proceed with a transplant; however, some kidney transplant candidates can be supported on dialysis until the immediate threat of COVID-19 subsides. While attitudes do vary, research into the views of kidney transplant candidates suggests that the suspension and resumption of kidney transplant programs during the pandemic created feelings of disappointment, devastation, helplessness, vulnerability, and stress from uncertainty. (9) Candidates felt additional pressure to sustain their health to protect their eligibility and experienced additional burdens (e.g., incurring extra financial costs). (10)

In the U.K., 87% of kidney transplant candidates wanted to be reactivated on waitlists as soon as programs re-opened, and 68% of participants felt ready to give consent for transplantation immediately. (11)

COVID-19 CREATED CONCERNS FOR BOTH LIVING DONORS AND RECIPIENTS

Recipients' Concerns (12)	Living Organ Donors' Concerns (13)
<ul style="list-style-type: none"> • Risks of COVID-19 transmission • Psychological impacts of receiving a transplant in a high stress context • Exposing their household to an increased risk of infection • Lack of social support due to self-isolation and social distancing • Chances of being transplanted and fears of waitlists not being reactivated 	<ul style="list-style-type: none"> • Risks of COVID-19 transmission • Worries about damaging kidney through COVID-19 infection • Increased need to be hyper-vigilant about health • Mental health issues and stress • Availability of medical care • Difficulties making decisions given quantity of information and misinformation available

Informed consent processes need to be adapted in both content and form (e.g., held virtually) to address the concerns expressed by patients and to reduce uncertainty.

SELECTING PATIENTS FOR TRANSPLANTATION THROUGHOUT COVID-19

Risks, benefits, and resource availability will inform the selection of patients for transplantation during each phase of the pandemic, but several ethical issues have been raised about how this selection is determined. One approach when the healthcare system is overwhelmed is to give some priority to transplant candidates who will not need long hospital stays and require little rehabilitation post-transplantation. (14) Another strategy argues for selecting candidates with a lower risk of COVID-19 infection over those candidates with higher risks (e.g., someone living with unvaccinated people). (15)

ODT systems must remain cognizant that such approaches would tend to advantage younger and healthier transplant candidates. Existing inequities against disadvantaged groups and health disparities could be reinforced (e.g., if patients whose socioeconomic position allowed them to better self-isolate were preferred over those in more crowded conditions). If a compatible match for a candidate is found during the pandemic, programs should consider the likelihood of finding another match in the future in their decision to de-prioritize a patient for transplant.

COVID-19 VACCINATION AND ODT

COVID-19 VACCINE PRIORITIZATION

Governments and healthcare administrations faced immense pressures to prioritize different groups for vaccination against COVID-19. Decisions about how priorities should be set are reflections of choices amongst competing values. The objectives of the vaccination program should be used to inform these decisions. Potential vaccination program objectives include preventing mortality or hospitalizations, preventing infection and transmission, reducing economic and social deprivation, or maintaining social order, among others. (16) Vaccination prioritization should be informed by available evidence regarding the vaccines' capabilities. This evidence base continues to change as new variants of the COVID-19 virus emerge and as further research is conducted.

Initially, all Canadian provinces, with the exceptions of Manitoba and Nova Scotia, prioritized organ transplant recipients for vaccines. In its guidance of late 2020, the National Advisory Committee on Immunization did not explicitly recommend transplant recipients as a priority group. (17) In the provinces that prioritized transplant recipients, these individuals tended to be grouped in the same risk category as 60–69-year-olds to receive their first doses around April 2021. Ontario and Alberta also prioritized solid organ transplant recipients for second doses, shortening the national recommendation of a 16-week interval between doses. Transplant recipients were largely viewed as a priority group due to their potential for:

- Greater risk of exposure due to more frequent interactions with the healthcare system;
 - Greater infection risk due to immunosuppressive drugs;
 - Greater risk of transmission due to higher viral loads; and
 - Greater risk of severe outcomes due to immunosuppression or other comorbidities.
-

Vaccine prioritization (e.g., the order in which groups of people receive the vaccine) in a pandemic requires balancing speed with equity. Vaccinating populations at greater risk of mortality earlier can be effective in preventing undesirable outcomes. However, if there is no evidence-based reason for prioritizing one group and not another, then the distinction is arbitrary and unfair. Prioritization of certain groups can also reinforce the idea that some groups are at higher risk for severe outcomes. The issue of vaccine prioritization continues to be a live question as new variants emerge and boosters are rolled out.

REQUIRING VACCINATION FOR TRANSPLANT RECIPIENTS

Whether a transplant recipient refusing a COVID-19 vaccine affects access to the waitlist for a transplant varies with location. (18) Vaccine refusal creates risk for the recipient themselves, other patients, clinicians and their institutions, and transplant centres who could potentially be shut down or held liable in the case of an outbreak. (19) It also raises the risk that a scarce resource – organs for transplant – may be wasted if the recipient becomes seriously ill due to COVID-19. Some patients possess a historical mistrust in healthcare systems stemming from past abuses. Therefore, vaccine requirements need to balance autonomy with justice. (20) Public uptake in vaccines is needed to provide greater protection to transplant recipients as well as other groups who are immunosuppressed or unable to be vaccinated.

ACKNOWLEDGEMENTS

This document was produced by Kaitlyn Wong, Amy Kallio, Marie-Chantal Fortin, Simon Oczkowski, Sean Delaney, Maxwell J Smith, Pascal Thibeault, Mélanie Dieudé, Jennifer Chandler, and the Canadian Donation Transplant Research Program (CDTRP) team.

The Canadian Donation and Transplantation Research Program (CDTRP) is a national research initiative designed to increase organ and tissue donation in Canada and enhance the survival and quality of life of Canadians who receive transplants.

REFERENCES

- (1) The Canadian Press, (2021, May 10). Ontario's Surgical Backlog will take more than 3.5 Years to Clear: Fiscal Watchdog. CP24. www.cp24.com/mobile/news/ontario-s-surgical-backlog-will-take-more-than-3-5-years-to-clear-fiscal-watchdog-1.5421262?cache=/feed/
- Rodrigues, Gabby. (2021, July 28). COVID-19: Ontario Government to Spend \$216M in Effort to Address Surgical Backlog by Spring. Global News. <https://globalnews.ca/news/8066434/covid-ontario-surgeries-procedures-backlog/>
- (2) Oczkowski, Simon, [University of Ottawa Centre for Health Law, Policy and Ethics]. (2021, July 5). If You Choose Not to Decide, You Still Have Made a Choice: Pandemic Resource Allocation and ODT at 00h:25m:07s. [Video]. YouTube. www.youtube.com/watch?v=HZ59GOBHwIw
- (3) Kniepeiss, Daniela et al. (2021) Framework for Solid-Organ Transplantation During COVID-19 Pandemic in Europe. Risk Management and Healthcare Policy, 14, 2421-2433 at 2431.
- (4) Transplant Québec, Communiqué, (2020, March 26). Dans le Contexte de la Coronavirus (COVID-19): Suspension Temporaire de l'activité de Transplantation Rénale et Rein/Pancréas au Québec. Transplant Québec. https://www.transplantquebec.ca/sites/default/files/covid19_-_communiqu_e_arret_rein_et_pancreas_transplantation.pdf.
- (5) Goff, Rebecca R. et al. (2021) Navigating the COVID-19 Pandemic: Initial Impacts and Responses of the Organ Procurement and Transplantation Network in the United States Am J Transplant, 21, 2100-2112 at 2110.
- (6) Goff et al, see note 5 at 2102, 2110.
- (7) Azzi, Yorg et al. (2021) COVID-19 and Solid Organ Transplantation: A Review Article. Transplantation, 105(1), 37-55 at 39-44.
- (8) Canadian Society of Transplantation (2022, January 9). National Transplant Consensus Guidance on COVID-19 Vaccine. https://www.cst-transplant.ca/_Library/Coronavirus/National_Transplant_Consensus_Guidance_on_COVID_Vaccine_2022_1_final_1_.pdf
- (9) Guha, Chandana et al. (2020) Suspension and Resumption of Kidney Transplant Programmes During the COVID-19 Pandemic: Perspectives from Patients, Caregivers and Potential Living Donors – A Qualitative Study. Transplant International, 33(11), 1481-1490 at 1487.

REFERENCES

(10) Guha et al, see note 9.

(11) Thind, Amarpreet K. et al. (2021) Resuming Deceased Donor Kidney Transplantation in the COVID-19 Era: What do Patients Want?" *Transplantation Direct*, 7(4) 1 at 3.

(12) Thind et al, see note 11.

(13) Zaidi, Hasan et al. (2021) Living Organ Donor Health Care Priorities During the COVID-19 Pandemic. *Kidney Int Rep*, 6(4) 1151-1155 at 1151-52.

(14) Goff et al, see note 5 at 49.

(15) Goff et al, see note 5 at 49.

(16) Williams, Jane H. & Dawson, Angus. (2020) Prioritising Access to Pandemic Influenza Vaccine: A Review of the Ethics Literature. *BMC Medical Ethics*, 21(1), 40-47 at 43.

(17) Government of Canada. (2020, December 18). Guidance on the Prioritization of Initial Doses of COVID-19 Vaccine(s). www.canada.ca/en/public-health/services/immunization/national-advisory-committee-on-immunization-naci/guidance-prioritization-initial-doses-covid-19-vaccines.html

(18) Azzi et al, see note 7 at 3.

(19) Olivia S Kates et al, "The Limits of Refusal: An Ethical Review of Solid Organ Transplantation and Vaccine Hesitancy" (2021) *OO Am J Transplant* 1 at 3.

(20) Kates et al, see note 19 at 4.