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Consequences of significant decrease in cardiac procedures during the pandemic: Canadian study

In the Ontario healthcare system fewer patients were referred for heart disease procedures, and wait list mortality increased during the COVID-19 pandemic, researchers report in the Canadian Journal of Cardiology

Philadelphia, September 29, 2021 – An analysis of healthcare data in Ontario, Canada found a significant decline in referrals and procedures performed for common cardiac interventions after the onset of the COVID-19 pandemic. Patients awaiting coronary bypass surgery or stenting were at higher risk of dying while waiting for their procedure compared to before the pandemic, although wait times were not longer. The [study](#) underscores the importance of timely recognition of symptoms and treatment in patients at high risk for cardiovascular disease, researchers observed in the [Canadian Journal of Cardiology](#), published by Elsevier.

“In the first wave of the COVID-19 pandemic, we kept hearing stories from patients and other doctors that there were delays in care for patients with heart disease,” explained lead investigator Harindra C. Wijeyesundera, MD, PhD, Institute of Health Policy, Management and Evaluation, University of Toronto; ICES; and Division of Cardiology, Department of Medicine, Schulich Heart Program, Sunnybrook Health Sciences Centre, University of Toronto, Toronto, Canada. “We decided to look into these claims using the Ontario database that keeps track of wait lists and wait times for individuals with heart disease who require a procedure or surgery.”

Wait lists for procedures are not unusual in publicly funded healthcare systems. Canadian provinces routinely monitor and publish waiting times for cardiac care. The researchers were able to link multiple population-based administrative data sources and clinical registries housed at ICES, Canada’s largest health services research institute. The study looked at patients over the age of 18 who were referred for four commonly performed cardiac procedures: percutaneous coronary intervention (PCI); isolated coronary bypass grafting (CABG); valve surgery (aortic, mitral, or tricuspid); or transcatheter aortic valve implantation (TAVI) from January 1, 2014 to September 30, 2020. For the purposes of the study, the onset of the COVID-19 pandemic was defined as March 15, 2020, when Ontario health authorities issued

a directive that cancelled elective surgical procedures. Outcomes were defined as death while awaiting procedure and hospitalization while waiting for procedure.

A total of 584,341 patients were identified, of whom 37,718 were referred during the pandemic. As expected, a decline in referrals was observed at the outset of the pandemic, although those numbers steadily increased throughout the pandemic period. Similarly, researchers observed an initial decline in the number of procedures performed. Individuals waiting for coronary bypass surgery or stenting were at higher risk of dying while waiting for their procedure compared to before the pandemic. Surprisingly, mortality rates increased even though wait times did not during the pandemic, suggesting patients may have delayed in presenting to their doctors with symptoms.

“We found that the increase in wait list mortality was consistent across patients with stable coronary artery disease, acute coronary syndrome, or emergency referral,” said Dr. Wijeyesundera. “Coupled with reduced referrals, this raises concerns of a care deficit due to delays in diagnosis and wait list referral.”

The researchers suggest a number of potential explanations for the decline in referrals during the pandemic, from patient factors such as fear of contracting COVID-19 in the hospital or concerns about missing work, to system factors including delays in testing and hospital bed and staffing pressures.

In an [accompanying editorial](#), Michelle M. Graham, MD, and Christopher S. Simpson, MD, Division of Cardiology and Department of Medicine, University of Alberta and Mazankowski Alberta Heart Institute (MMG), and the Division of Cardiology and Department of Medicine, Queen’s University (CS), Edmonton, and Kingston, Canada, stressed that moving outpatients on a wait list system should not be dependent on patient self-reporting a change in symptoms. In contrast, patients in hospital are continuously monitored and evaluated, allowing deterioration to be detected in a timelier way.

“When patients are at home,” they said, “nobody is watching. ‘The Missing Patient’ must be recognized now by policy makers, decision makers, and health system funders.”

This research suggests that any reduction in cardiac procedural capacity to accommodate critically ill COVID-19 patients must be balanced against the real risk for wait list mortality observed in this study. “We believe this is highly relevant to the recovery phase of the pandemic,” commented Dr. Wijeyesundera. “Efforts must target not only increasing capacity to treat patients on the wait lists, but also efforts must be made to identify upstream barriers that have prevented patients from getting on the wait list.”

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Notes for editors

The article is “The Impact of the COVID-19 Pandemic on Cardiac Procedure Wait List Mortality in Ontario, Canada,” by Derrick Y. Tam, MD, PhD, Feng Qiu, MSc, Ragavie Manoragavan, BSc, Stephen E. Fremes, MD, MSc, Ansar Hassan, MD, PhD, Dennis T. Ko, MD, MSc, Sandra B. Lauck, PhD, David Naimark, MD, MSc, Maral Ouzounian, MD, PhD, Beate Sander, PhD, Louise Sun, MD, MSc, and Harindra C. Wijeyesundera, MD, PhD (<https://doi.org/10.1016/j.cjca.2021.05.008>). Openly available at [www.onlinecjc.ca/article/S0828-282X\(21\)00284-1/fulltext](http://www.onlinecjc.ca/article/S0828-282X(21)00284-1/fulltext).

This study was supported by a COVID-19 research grant from the Canadian Cardiovascular Society (CCS-C3I initiative).

The editorial is “The Indirect Impact of COVID-19 on Cardiac Care and Outcomes: Lessons from a Stretched System,” by Michelle M. Graham, MD, and Christopher S. Simpson, MD (<https://doi.org/10.1016/j.cjca.2021.06.002>). Openly available at www.onlinecjc.ca/article/S0828-

[282X\(21\)00299-3/fulltext](#).

Both articles appear online ahead of the *Canadian Journal of Cardiology*, volume 37, issue 10 (October 2021) published by [Elsevier](#).

Full text of the articles is also available to credentialed journalists upon request. Contact Eileen Leahy at +1 732 238 3628 or cjcmedia@elsevier.com to obtain copies. Journalists wishing to speak to the study's authors should contact Communications & Stakeholder Relations, Sunnybrook Health Sciences Centre, at +1 416 480 4040. To reach the editorial's authors for comment, contact Michelle M. Graham, MD, at mmg2@ualberta.ca.

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The [Canadian Journal of Cardiology](#) is the official journal of the [Canadian Cardiovascular Society](#). It is a vehicle for the international dissemination of new knowledge in cardiology and cardiovascular science, particularly serving as a major venue for the results of Canadian cardiovascular research and Society guidelines. The journal publishes original reports of clinical and basic research relevant to cardiovascular medicine as well as editorials, review articles, case reports, and papers on health outcomes, policy research, ethics, medical history, and political issues affecting practice. www.onlinecjc.ca

About the Editor-in-Chief

Editor-in-Chief Stanley Nattel, MD, is Paul-David Chair in Cardiovascular Electrophysiology and Professor of Medicine at the University of Montreal and Director of the Electrophysiology Research Program at the Montreal Heart Institute Research Center.

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