



**COVID-19 IMMUNITY  
TASK FORCE**

# Spotlight on **CITF-FUNDED RESEARCH**



## **CITF Announcements**

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### **Infection-acquired seroprevalence in Canada decreases slightly at end of 2023**

Our Seroprevalence in Canada page has just been updated with the latest results from nearly two dozen studies. New data up to December 31, 2023, shows that infection-acquired seroprevalence in Canada decreased slightly across all regions compared to the end of November, to 81.4% at year end.

[Read more](#)



## CITF Databank: Improved filters in cohort search

Our CITF Databank dashboard continues to be updated, this time with an advanced search function. As part of the “Cohort Search” tab, researchers can now select up to five categories at a time when filtering for participants’ data. Variables include province, health history, COVID-19 infection status, and many more. There are currently 35 studies in the Databank, 20 of which have harmonized data representing 100,000+ individual-level participant data. We’ve also added a new “Feedback” tab to assess user satisfaction.

[Read more](#)



## CITF-Funded Research Results

**Seroprevalence due to infection was stable around 83% in Canadian blood donors in December, although rising slightly from early fall and summer**

The latest CITF-funded report from Canadian Blood Services suggests that seroprevalence due to infection was 82.68% in December 2023, in line with the 82.97% found in November 2023. Consistent with previous reports, the percentage of younger donors (ages 17-24) who had infection-acquired seroprevalence was the highest of all donor age groups. It was 92.01% by December 31<sup>st</sup>, 2023, down very slightly from 92.46% at the end of November 2023. Self-declared Black, Indigenous, and racialized donors continued to have higher seroprevalence due to infection than self-declared white donors.

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## **One in 10 COVID-19 patients returned to the emergency department within 30 days during the first two pandemic years**

A CITF-funded study, published in *Emergency Medicine Journal*, using data from 47 Canadian Emergency Departments (ED), found that between March 1, 2020 and March 31, 2022, one in 10 patients had an unscheduled ED return visit for COVID-19 within 30 days. The median time to return was four days. Older age, pregnancy, presence of co-morbidities (e.g. cancer, obesity, organ transplant), current/prior substance use, higher temperature, or WHO severe disease were associated with a higher likelihood of ED returns. Return was less likely for females and those who were boosted or fully vaccinated.

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## **Frailty among long-term care residents did not impact SARS-CoV-2 antibody neutralization**

A CITF-funded study, published in the *Journal of the American Medical Directors Association*, found that the frailty status of long-term care residents did not affect serum neutralizing antibodies against either the ancestral or the Omicron strain of SARS-CoV-2.

[Read more](#)

## **Optimization and validation of a cost-effective method for SARS-CoV-2 detection in wastewater**

A CITF-funded study, published in *Water*, reported the development and optimization of a method for SARS-CoV-2 detection in wastewater using moderate-speed centrifuged solids. This method was then compared to an ultrafiltration reference method for detection rate, cost, simplicity, and turnaround times. The study found that the moderate-speed centrifuge, solids-based method had similar sensitivity when compared to the ultrafiltration reference method and had the added advantages of lower costs, fewer processing steps, and a shorter turnaround time.

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## **SARS-CoV-2 wastewater signal to clinical cases ratio could complement clinical case counts and wastewater signals as individual metrics**

A CITF-funded study, published in *Science of the Total Environment*, demonstrated that the ratio of SARS-CoV-2 wastewater signals to clinical case counts (WC ratio) would add more value to the contribution of wastewater-based surveillance (WBS). The WC ratio could serve as an additional diagnostic tool during the COVID-19 pandemic and help in future pandemics. This study strongly suggests that regular, daily monitoring of the WC ratio can reveal and detect the onset of changes in disease transmission patterns, and the arrival/onset and waning of more infectious variants or mutations of a pathogen or disease. The authors suggest the WC ratio should be an additional monitoring metric to identify important epidemiological occurrences, complementing clinical case counts and wastewater signals.

[Read more](#)

## **Understanding human rights legal considerations in vaccination mandates for businesses**

A commentary by a CITF-funded researcher, published by the *C.D. Howe Institute*, discusses the differences in implementing vaccination mandates in businesses vs. in government sectors. The authors highlight the need for businesses to strike a careful balance between accommodating individuals with medical issues and managing potential risks, considering factors such

as workplace conditions and alternative arrangements.

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