COVID-19 IMMUNITY TASK FORCE

GROUPE DE TRAVAIL SUR L'IMMUNITÉ FACE À LA COVID-19

DECEMBER
2022

CITF MONTHLY REVIEW

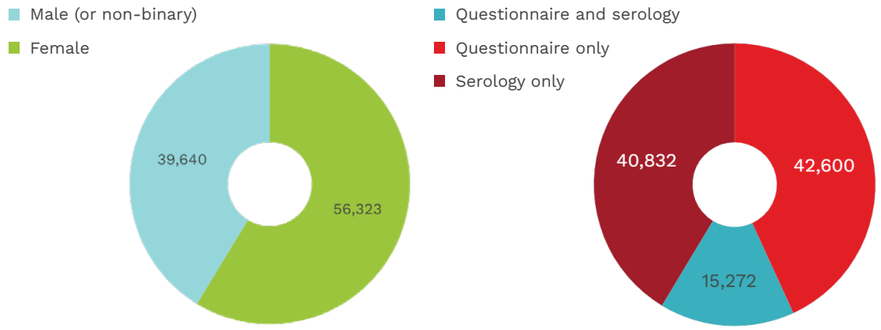
How **social determinants of health** have affected the pandemic

The latest on the **CITF Databank**

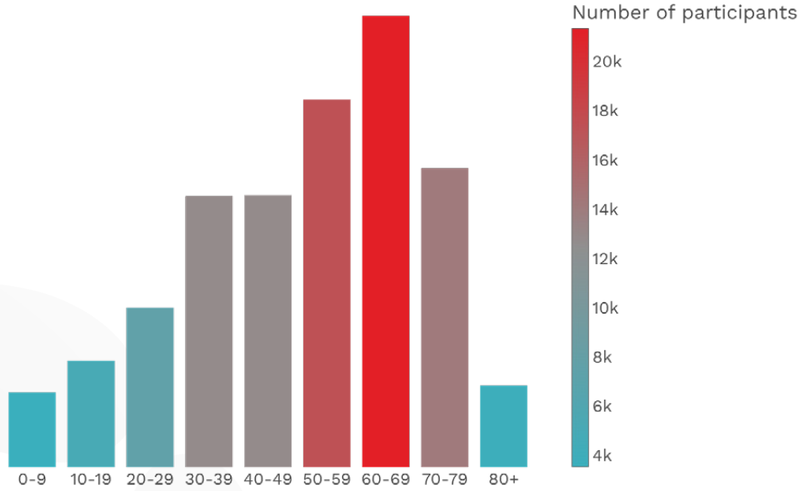
Low risk of **myocarditis and pericarditis** from mRNA vaccines

CITF Databank current participant profile

The CITF Databank currently houses individual level data from 14 studies, covering a wide range of demographics. Presented below are summary statistics about the participants with data in the Databank thus far. As study researchers continue to share data, these numbers will increase.



All age groups are represented, but a larger number of participants are middle-aged adults.



Upon completion, the CITF Databank will include data from over 60 studies.

» DISCOVER

Contents of the CITF Databank by province of residence

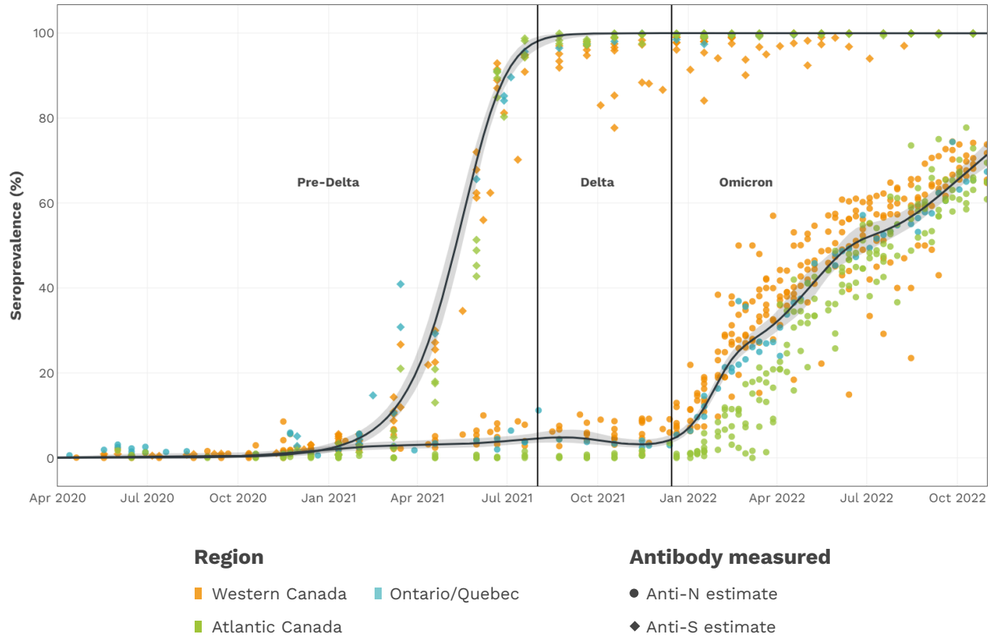
We can further break down the contents of the Databank by province of residence. Manitoba and Saskatchewan studies affiliated with provincial laboratories have contributed significant amounts of serology data to date.

In future issues of the magazine, we will provide different dimensions of the data such as the timing of study visits and serology collections, as well as the number of follow-up visits completed by participants.

» STUDIES IN THE DATABANK

SEROPREVALENCE IN CANADA | END OF OCTOBER RESULTS

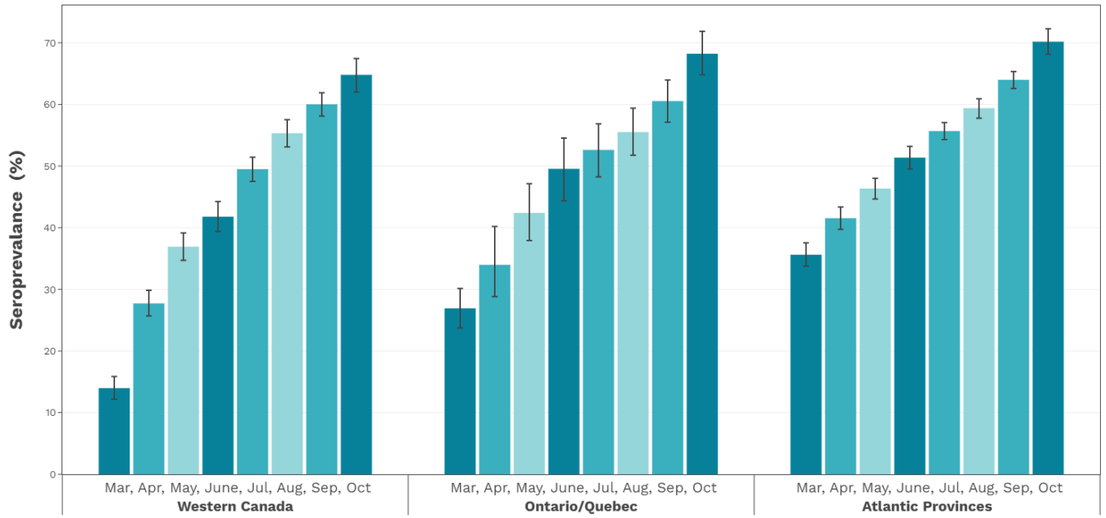
Percentage of Canadians with infection-acquired antibodies exceeds 70%



Infection-acquired seroprevalence in Canada increased significantly between August 2021 and October 31, 2022: from 4.5% (95% credible interval [CrI]: 3.5 to 5.7) in the pre-Delta wave to 71.4% (95% CrI: 68.6 to 74.2) by the end of October 2022 – after 10 months with circulating Omicron variants.

We estimate this rise in seroprevalence during the Omicron phase of the pandemic corresponds to at least **25 million Canadians** (95% CrI: 24.4 to 26.6) being infected between December 1, 2021, and October 15, 2022. The actual number of newly infected (or reinfected) Canadians may have been higher because some people infected early in the Omicron phase of the pandemic may no longer have detectable anti-N antibodies. The infection rate over this 11-month period is equivalent to about **84,000 infections per day**.

Seroprevalence due to infection continues to increase across all provinces



Western Canada: Manitoba, Saskatchewan, British Columbia, Alberta, Territories.
Atlantic Provinces: New Brunswick, Nova Scotia, Newfoundland, Prince Edward Island.

Seroprevalence due to infection during the Omicron waves (between December 15, 2021 and October 31, 2022) continued to increase across all provinces of Canada. The findings from several seroprevalence studies showed that in the last week of October:

- **Western Canada**'s estimated seropositivity due to infection ranged from 71.5% (95% CrI: 67.6 to 75.6) in British Columbia to 73.7% (95% CrI: 69.4 to 78.2) in Alberta.
- Seropositivity rose to 70.5% (95% CrI: 66.5 to 74.5) in **Ontario** and 72.5% (95% CrI: 64.8 to 81.5) in **Quebec**.
- Although **Atlantic Canada** had maintained the lowest seropositivity due to infection in Canada through most of the pandemic, the increases since the spring of 2022 have put Atlantic Canada on par with other regions at 66.5% (95% CrI: 62.6 to 70.7) seropositivity due to infection. Their rate of increase during the early Omicron waves was much higher than in other jurisdictions.

» READ MORE

Though rare, cases of myocarditis (inflammation of the heart muscle) and pericarditis (inflammation of the heart's lining) have been reported following the administration of COVID-19 vaccines. Importantly, there is a more significant association between COVID-19 disease and both conditions. Two recent vaccine surveillance studies funded by the CITF have confirmed the infrequency of this side effect and reaffirmed the overall safety of being vaccinated.

Study confirms risk of myocarditis/pericarditis after a second dose of COVID-19 vaccine is rare

In a paper published in the *Journal of the American College of Cardiology*, CITF-funded researchers from the Canadian Immunization Research Network (CIRN), including Drs. Naveed Janjua and Zaeema Naveed (British Columbia Centre for Disease Control), and Jeff Kwong (University of Toronto), analyzed a sample of more than 3 million people who received two doses of either the Pfizer or Moderna vaccines. They observed a total of 59 cases of myocarditis and 41 pericarditis events, affirming the rarity of this particular side effect.

» READ MORE

The risk of myocarditis after COVID-19 vaccination remains low

In a study published in the *Canadian Medical Association Journal* (CMAJ), Dr. Naveed and colleagues from CIRN found 99 cases of myocarditis in BC within seven days of a COVID-19 vaccination (or 0.97 cases per 100,000 vaccine doses), and 1.37 cases per 100,000 vaccine doses (or 141 cases in total) when surveillance was extended to 21 days post-vaccination. Though rates have been low, adult males, between the ages of 18 and 29, who received the Pfizer vaccine were the most at risk.

» READ MORE

Most children in a Montreal serosurvey had antibodies against COVID-19

The latest results from CITF-funded EnCORE (Children and COVID-19 Montreal Seroprevalence Study), led by Dr. Kate Zinszer (Université de Montréal), which looks at seroprevalence among children and adolescents in Montreal, found that 58% of young children and teens had infection-acquired antibodies (between May and September 2022). Moreover, 38% of the cohort had received a positive COVID-19 diagnosis since January 2022, during the Omicron era. Overall, more than 96% of children had either infection-acquired or vaccine-induced antibodies.

» READ MORE

The CITF Databank

Fulfilling its mandate to “establish an ethos for the rigorous gathering, and rapid sharing, of data to inform Canadians and to advance the broad public interest,” the CITF launched its Databank to the public last month. To explain its contents and to encourage researchers to utilize the wealth of CITF-funded information collected on COVID-19, we hosted a seminar featuring Dr. David Buckeridge, Scientific Lead, Data Management and Analysis and his team.

The CITF Databank has begun housing results and will ultimately include harmonized individual-level data from over 60 CITF-funded research studies undertaken across Canada. It is a repository for scientifically valuable content, including individual-level data sets and statistical aggregates of self-report questionnaire responses and laboratory results.

While statistical aggregates are openly available through our **Seroprevalence in Canada** web page, individual-level data will be provided to researchers who submit a request through our portal and meet criteria for access. An independent Data Access Committee will review the request to ensure the research is in accordance with the CITF’s Guiding Principles and whether the proposal is feasible.

The objective is to keep the CITF Databank operative for as long as possible, preserving the data as a public good. We wish to acknowledge those studies that have already contributed to this effort. A list of studies that are currently in the Databank can be found **here**.

“Researchers are still deriving insights by studying the 1918 flu pandemic,” Dr. Buckeridge pointed out. It is reasonable to expect that the CITF Databank will serve as an important resource well into the future.

» **WATCH THE VIDEO**

» **DOWNLOAD SEMINAR PRESENTATION**

» **DISCOVER THE CITF DATABANK**

Populations expected to be represented in the CITF Databank once complete

How social determinants have affected people in Canada during the COVID-19 pandemic

Social and economic inequities play a critical role in understanding why numerous diseases disproportionately burden certain communities in Canada and around the world. COVID-19 has not been an exception. Some people have been more likely to get infected by SARS-CoV-2 and/or suffer severe outcomes such as hospitalization and death from COVID-19. This higher risk is often linked to social determinants of health, which include income or material deprivation, employment, education, and racialization, among others. Social determinants have also had a measurable effect on access to vaccines and vaccine uptake in Canada.

Several CITF-funded studies have focused on specific populations that have been found to be at higher risk of infection with SARS-CoV-2 and/or who have suffered more severe outcomes due to the intersection of health and social factors. They have also looked at vaccine access and uptake, as well as barriers to vaccination. Casting light on these issues can guide policies and practices which can contribute to overcoming these challenges.

In this month's research synthesis, we surveyed CITF-funded research, complementing it with other findings, to respond to the following questions:

1. How have social determinants of health (income, occupation, culture, bedroom density, and language) impacted SARS-CoV-2 infection rates, severe COVID-19 cases, hospitalizations, and deaths in Canada?
2. How have the social determinants of health impacted access to vaccines and vaccine uptake in Canada?
3. What measures are being recommended to better reach priority populations most at risk of COVID-19?

» READ MORE

COVID-19 IMMUNITY TASK FORCE | GROUPE DE TRAVAIL SUR L'IMMUNITÉ FACE À LA COVID-19

Seminar Series | Research Results & Implications

How social determinants of health affected the COVID-19 pandemic in Canada

REGISTER NOW

Wednesday, January 25, 2023
12:30 p.m. to 2 p.m. EST

Social and economic inequities have contributed to how certain communities in Canada have been disproportionately affected by COVID-19. For our 12th *Research Results & Implications* seminar we have gathered CITF-funded experts to present their findings on how those factors – income or material deprivation, employment, education, and racialization, among others – have led to a higher likelihood of becoming infected and/or suffering more severe outcomes (hospitalization and death) from COVID-19. Furthermore, these social determinants have had a measurable effect on access to vaccines and vaccine uptake across the country.

Casting light on these social drivers of COVID-19 disease risk and vaccine coverage clarifies the urgent need for policies and practices to redress these inequities.

Panelists

Upton Allen
O.Ont., MBBS, MSc, FAAP, FRCPC, Hon FRCP (UK), FIDSA

Sonia Anand
MD, PhD, FRCPC, FRSC

Simona Bignami
PhD

Host

Jack Jedwab
PhD

Sheila O'Brien
PhD

Timothy Evans
MD, DPhil

covid19immunitytaskforce.ca