COVID-19 IMMUNITY TASK FORCE

Spotlight on CITF-FUNDED RESEARCH

CITF Announcements

Infection-acquired seroprevalence in Canada: new data on children and teens

Our Seroprevalence in Canada page has just been updated and results from more than 20 studies show infection-acquired seroprevalence in Canada was stable at the end of August at 77.4%. New estimates from the CITF-funded EnCORE study, measuring seroprevalence in children and adolescents in the Montreal region, show that overall infection-acquired seroprevalence in children (2-19) was observed to rise from 58.1% at the end of September 2022 to 79.4% at the end of June 2023, with children aged 12-19 having the highest level of seroprevalence at 82.2%.

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CITF Databank: new harmonized data now available

The CITF Databank contains data from 23 studies, and harmonized data is now available for 12 of these studies. All CITF-funded studies were asked to implement Core Data Elements (CDE), a set of standardized survey questions and laboratory measurements intended to capture essential

information related to COVID-19 epidemiology and immunity. Access to the Databank is free and open to researchers from around the world to support their own research work.

Explore

CITF-Funded Research Results

Seroprevalence due to infection continued to be stable near the 80% mark in August

The latest CITF-funded report from Canadian Blood Services suggested that seroprevalence due to infection was 79.03% among Canadian blood donors in August 2023. This was similar to the 79.94% seroprevalence observed in July 2023 (the difference could be due to sampling variation and was not statistically significant). The percentage of younger donors (ages 17-24) who had infection-acquired seroprevalence was 87.87% by August 31st, 2023, rather similar to the 90.00% observed at the end of July 2023. Self-declared Indigenous and racialized donors continued to have higher seroprevalence due to infection than self-declared white donors.

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Pfizer (BA.4/BA.5) and Moderna (BA.1) bivalent vaccines induce similar neutralization against Omicron subvariants

A CITF-funded study, published in *Nature Communications*, found that Pfizer (BNT162b2 (BA.4/BA.5)) and Moderna (mRNA-1273 (BA.1)) bivalent vaccines induced similar neutralization against Omicron subvariants BA.1, BA.5, BQ.1.1, and XBB.1.5 in patients on dialysis or with a kidney transplant, despite being antigenically divergent from strains circulating at the time.

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COVID-19 was the primary cause of hospitalization for half of hospitalized patients who tested positive for SARS-CoV-2

A CITF-funded study, published in *PLoS One*, found that among patients admitted to hospital who tested positive for SARS-CoV-2 during the Omicron wave, 52% had a primary diagnosis of COVID-19 and the others had incidental SARS-CoV-2 infections. Patients admitted for COVID-19 were more likely to require intensive care unit (ICU) admission and to die than patients admitted with incidental SARS-CoV-2 infection. Compared to case classification by clinicians, an algorithm from the Centers for Disease Control was more specific and sensitive but underestimated COVID-19 attributable hospital days, while a Massachusetts classification had lower sensitivity and specificity, underestimating hospital and ICU bed days and overestimating intubations, ICU admissions, and deaths.

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COVID-19 vaccination does not increase risk of adverse events or healthcare use in people with rheumatoid arthritis

A CITF-funded study, published in *Journal of Rheumatology,* provides reassurance that COVID-19 vaccination in individuals with rheumatoid arthritis (RA) does not increase overall risk of adverse events of special interest (AESI). In fact, vaccination was associated with fewer emergency department visits and hospitalizations.

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Omicron breakthrough infection instills higher and more broadly neutralizing immune responses against SARS-CoV-2 variants than a booster dose alone

A CITF-funded study, published as a preprint and not yet peer-reviewed, found that individuals with two vaccine doses and an Omicron breakthrough infection produced higher salivary SARS-CoV-2 IgA antibodies against Spike and RBD than individuals with three vaccine doses and no breakthrough infection. SARS-CoV-2 IgA antibodies produced after breakthrough infection also cross-reacted with other variants, including the ancestral SARS-CoV-2 strain and even SARS-CoV-1.

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CITF-funded findings on vaccine safety and effectiveness

CITF-funded studies show the important role that vaccines have played in protecting Canadians and people worldwide from severe COVID-19. Here, we summarize results from the five presentations given during the breakout session “Vaccine safety and effectiveness” at the CITF Scientific Meeting in Vancouver, March 8-10, 2023. Some study teams presented vaccine safety through the identification of potential side effects, while others addressed vaccine efficacy and the protection conferred by subsequent doses, including the bivalent booster vaccines.

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CITF-funded findings on Post-COVID Conditions

It is now estimated that nearly 1 in 10 people who have a SARS-CoV-2 infection (whether hospitalized or not) may develop Post-COVID Condition (PCC), also known as Long COVID, which amounts to a global burden of over 16 million people. While the underlying cause of Long COVID remains largely unknown, it is evident that this condition can affect individuals of all ages and is not predicated on how severe the initial COVID-19 case was. Here, we summarize results from the five presentations given during the breakout session “Post-COVID Conditions” at the CITF Scientific Meeting in Vancouver, March 8-10, 2023. The study teams presented findings on the prevalence of PCC in Canada, Long COVID patient characteristics, and the impact of vaccination after Long COVID.

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CITF-funded findings from studies of diverse populations

Many CITF-funded studies focus on Canadian populations as diverse as people experiencing homelessness, incarcerated individuals, people admitted to emergency units, and 2SLGBTQQIA+ (Two-Spirit, Lesbian, Gay, Bisexual, Transgender, Queer, Questioning, Intersex, Asexual, and additional sexual orientations and gender identities) communities. Here, we summarize results from the five presentations given during the breakout session “Responding to diverse populations” at the CITF Scientific Meeting in Vancouver, March 8-10, 2023. The study teams presented findings to better understand the different risks faced by specific populations and identify some explanatory factors for their SARS-CoV-2 infections.

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