



COVID-19 IMMUNITY
TASK FORCE

Research Roundup

Your weekly review on COVID-related research



Spotlight on CITF-funded Research

Give them an inch, they'll take a mile: SARS-CoV-2 variants of concern in BC, January to April 2021

In a recently published paper in *Emerging Infectious Diseases*, CITF-funded researchers Dr. Agatha Jassem, Dr. Marc Romney, Dr. Mel Krajden and colleagues sought to summarize observations regarding variants of concern (VOCs) in British Columbia over a 16-week period from January to April 2021. On average, for the entire study period, 31.9% of positive tests were identified as VOCs, but monthly, the VOC infection rate increased from 0.93% in early February 2021 to 70% in April 2021.

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From Pre-print to Published

mRNA COVID-19 vaccines are shown to be highly effective after two doses against symptomatic SARS-CoV-2 infection and severe COVID-19 outcomes

Researchers from the Canadian Immunization Research Network (CIRN) assessed the effectiveness of mRNA vaccines against symptomatic COVID-19 infection and severe outcomes and showed promising results. Researchers suggest that while one dose of the mRNA vaccine provides some protection that improves over time, two doses appear to be highly effective against severe outcomes. Their study has now been published in *BMJ*.

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Using a glowing SARS-CoV-2 virus to explain how antibodies protect from infection and severe disease in mice

An international multi-institutional collaboration, including CITF-funded researcher Dr. Andrés Finzi from Université de Montréal, has found proof that antibodies from individuals who have recovered from COVID-19 can block SARS-CoV-2 infection and prevent severe disease in mice. Their study, partially funded by the CITF, has now been published in *Immunity*.

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Publications from our Experts

Hospitalization trends and death rates among Ontario's nursing home residents in 2020

Investigators from the Canadian Immunization Research Network (CIRN), including CITF-funded researchers Drs. Jeffrey Kwong and Kumanan Wilson, provided epidemiological baseline rates of mortality and hospitalization to study COVID-19 outcomes in nursing home residents in Ontario. In a manuscript recently published in *Vaccines*, the researchers noted that the end of 2020 marked the return to pre-pandemic baseline death rates after a major increase in the death rate during wave 1 of the pandemic.

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Males aged between 10-49 years are an underrecognized group at high risk for SARS-CoV-2 infection

In a publication led by Dr. David Fisman from the University of Toronto in the *Annals of Internal Medicine*, CITF-funded researcher Dr. Sheila O'Brien and CITF Testing Working Party member Dr. Steven Drews, both from Canadian Blood Services, worked with colleagues from the University of Toronto and the University of Guelph and found that when accounting for testing rates, younger people in Ontario contracted SARS-CoV-2 more frequently than older people. Their results indicate that after adjustment for testing frequency, the infection rates were lowest in children under 10, and in adults aged 70 years or older. They were however markedly higher in adolescent males (aged 10 to 19 years) and in young adult males (aged 20 to 49 years) compared to the overall population.

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Newly discovered rogue antibodies: why some older adults are at higher risk of severe COVID-19 illness

A collaborative effort of over 150 scientists from over 20 countries, including CITF-funded researcher Dr. Donald Vinh from McGill University Health Centre and the Research Institute of the McGill University Health Centre, has led to the identification of a surprisingly high prevalence of a type of antibody that has been linked to fatal outcomes of COVID-19. These autoantibodies – antibodies that mistakenly target a person's own tissues or proteins – block a key part of the antiviral immune response. In a recent *Science Immunology* article, researchers report that these rogue antibodies,

neutralizing type I interferon, were discovered in almost 20% of all deceased patients – but they were not found in subjects with asymptomatic infections.

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The need to improve vaccine messaging and outreach: COVID-19 vaccine intention among women and gender-diverse individuals living with HIV in British Columbia

In their recent pre-print, not yet peer-reviewed, CITF Leadership Group member Dr. Gina Ogilvie, VSRG Working Group member Dr. Manish Sadarangani and colleagues in British Columbia explored COVID-19 vaccination intention among women and gender diverse individuals living with HIV. The authors report that the intention to get a vaccine in these groups was significantly lower than among their peers, despite the safety and effectiveness of COVID-19 vaccines for people living with HIV (PLWH).

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International Research Review

Administering a third booster shot: an ethical dilemma

While countries around the world are working to get their populations vaccinated, the emergence of SARS-CoV-2 variants of concern (VOCs) has threatened our return to normalcy. With the rise of breakthrough infections associated with the Delta variant, public health agencies in middle- and high-income countries are debating the need for booster shots to ensure enhanced protection against COVID-19. However, this raises an ethical dilemma given the prevailing lack of vaccine access in low-income countries. Editors from major journals such as *Science* and *BMJ* have published editorial

articles discussing how to best navigate the ongoing pandemic in an equitable manner.

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