COVID-19 IMMUNITY TASK FORCE

Research Roundup

Your weekly review on COVID-related research

CITF Event

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

Event Series | Research Results & Implications

Risks and impacts of the COVID-19 pandemic on Canada's kids, their parents, and teachers: Latest research results and policy implications

September 29, 2021 | 1 p.m. to 2:30 p.m. EDT

New series with CanCOVID

Canadian children have just headed back to school as the pandemic continues, now in its fourth wave. What risks do they face as the under-12s remain unvaccinated? What are the longer-term impacts of school closures, mitigation measures, and uncertainty on children, school staff, parents, and caregivers across Canada? Join us for the first event in this series for an overview of CITF's COVID-related work and for a presentation from six CITF funded teams, as they will unveil their latest results. Stay for a frank

discussion regarding the potential policy implications and to participate in a question-and-answer period.

Registration link and more information to follow soon

Spotlight on CITF-funded Research

Older adults likely remain at higher risk for COVID-19 - particularly infections caused by variants of concern - even after vaccination

In a recent CITF-funded pre-print, therefore not yet peer-reviewed, Drs. Mark Brockman and Zabrina Brumme from Simon Fraser University and Dr. Marc Romney from the University of British Columbia studied immune responses following COVID-19 vaccination in over 150 adults aged 24-98 years. They found that although two doses of the mRNA vaccines provide excellent protection against SARS-CoV-2, significantly weaker vaccine-induced immune responses were recorded among older adults. They also found that immune responses waned in everyone, regardless of age, after only three months following the second vaccine dose.

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Prevalence of SARS-CoV-2 antibodies in Alberta, pre-vaccine roll out

In this study partially funded by the CITF and published in *Microbiology Spectrum*, researchers from Alberta Precision Laboratories collected blood samples from June 2020 to January 2021 to determine the prevalence of SARS-CoV-2 antibodies in Alberta, by assessing a total of 93,993 individual patient samples. While the prevalence of antibodies in June 2020 was very low (0.92%), prevalence increased to 4.63% in January 2021. As many as

53.7% of individuals who had positive antibodies did not know that they had previously been infected.

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Publications from our Experts

Poor antibody response to the first dose of the Pfizer-BioNTech vaccine for patients with chronic kidney disease

Patients with chronic kidney disease, including those on dialysis, have been prioritized for vaccination due to increased risk of severe COVID-19 outcomes such as hospitalization and death. In a study now published in *JAMA Network Open*, several CITF and VSRG-affiliated researchers, including Drs. Michelle Hladunewich and Matthew Oliver report that many dialysis patients have weak antibody responses after the first dose of the Pfizer-BioNTech vaccine; a second dose however induces a more robust response, suggesting that the second dose should not be delayed in these at-risk individuals. The study also found the Pfizer vaccine to be safe among all participant groups.

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Increasing evidence regarding antibodies in saliva following COVID-19 infection or vaccination

Individuals who have recovered from COVID-19 or who have received SARS-CoV-2 vaccines (mRNA or adenovirus-based) have been shown to have virus-neutralizing activity in their saliva. These results appeared in a recent pre-print, therefore not yet peer reviewed, directed by scientists from Stanford University School of Medicine, with contributions from CITF-funded

researchers Drs. Jennifer Gommerman, Allison McGeer, Anne-Claude Gingras, and Sharon Straus.

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International Research Review

The two new SARS-CoV-2 variants scientists are tracking

The World Health Organization (WHO) has recently introduced a new Variant of Interest (VOI) titled Mu or B.1.621. This new variant is becoming increasingly prevalent in parts of South America, namely Colombia and Ecuador. South African scientists are also closely monitoring the development of another new variant in the region called C.1.2, which has not yet been classified as a VOI. Both new variants have shown some signs of possible resistance to vaccines.

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Review of host factors highjacked by SARS-CoV-2

A recent state-of-the-art review in *Nature Microbiology* summarizes the latest evidence regarding the molecules in our cells that allow SARS-CoV-2 to infect us and how these may give us clues to discover new anti-viral drugs.

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Increase in SARS-CoV-2 seroprevalence in the U.S. from July 2020 to May 2021

The proportion of people in the U.S. with SARS-CoV-2 antibodies remains uncertain. A new study published in *JAMA* used a sample of 1.44 million blood samples from July 2020 through May 2021 to estimate the SARS-CoV-2 seroprevalence in the general US population aged 16 years and older. Findings indicate that the estimated SARS-CoV-2 seroprevalence increased over time and varied by age, race, and ethnicity, as well as by geographic region.

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Concerns about legal challenges to COVID-19 public health orders

The field of public health has never been without critics. Globally, public health officers wield varying amounts of power, with the North American court systems historically respecting and upholding public health order. In this article published in the *New England Journal of Medicine*, Mello and colleagues voice their concerns about the increasing number of legal challenges in the US to COVID-19 public health orders.

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