

COVID-19 PANDEMIC

RAEB'S Evidence Update

Highlights of health research synthesized by the Research, Analysis and Evaluation Branch

August 16, 2021

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Research Evidence and Jurisdictional Experience

The research evidence profiled below was selected from highly esteemed academic journals and grey literature sources, based on date of publication and potential applicability or interest to the Ontario health sector.

Transmission

Nature: Benefit of COVID-19 vaccination accounting for potential risk compensation

August 11, 2021. This modelling study evaluated the benefit of vaccination to the vaccinated (index) person and others exposed to that person, and calculated the amount of risk compensation (where people who have received COVID-19 vaccines may subsequently markedly increase their previously suppressed exposure risk) required to eliminate all the benefits or to halve the benefit. The study found that risk compensation may markedly affect the benefit of COVID-19 vaccination, especially if vaccine efficacy in real-life or specific high-risk populations (e.g., nursing home residents) is not very high. [Article](#).

Understanding the Disease

Nature: More than 50 long-term effects of COVID-19: A systematic review and meta-analysis

August 9, 2021. This systematic review and meta-analysis found that 80% of individuals with a confirmed COVID-19 diagnosis continue to have at least one overall effect beyond two weeks following acute infection. The five most common symptoms were fatigue (58%), headache (44%), attention disorder (27%), hair loss (25%), and dyspnea (24%). The authors concluded that more evidence and research from multi-disciplinary teams are crucial to developing preventive measures, rehabilitation techniques, and clinical management strategies with whole-patient perspectives designed to address long COVID-19 care. [Article](#).

The New England Journal of Medicine (NEJM): Therapeutic anticoagulation with heparin in critically ill patients with COVID-19

August 4, 2021. This randomized clinical trial found that in critically ill patients with COVID-19, an initial strategy of therapeutic-dose anticoagulation with heparin did not result in a greater probability of survival to hospital discharge or a greater number of days free of cardiovascular or respiratory organ support when compared with the usual-care provided using pharmacologic thromboprophylaxis. [Article](#).

Respiratory Medicine: Galectin-3 as prognostic biomarker in patients with COVID-19 acute respiratory failure

August 3, 2021. This study found that patients with serum levels of Galectin-3 above 35.3 ng/ml had increased risk for mortality, Intensive Care Unit (ICU) admission and severe Acute Respiratory Distress Syndrome (ARDS). These findings demonstrate the role of Galectin-3 as a predictor of mortality, ICU admission and ARDS stratification in patients with COVID-19 acute respiratory failure. [Article](#).

Disease Management

Centres for Disease Control and Prevention (CDC): Reduced risk of reinfection with SARS-CoV-2 after COVID-19 vaccination

August 13, 2021. This study found that among Kentucky residents previously infected with SARS-CoV-2, being unvaccinated was associated with 2.34 times the odds of reinfection compared with being fully vaccinated. These findings suggest that among persons with previous SARS-CoV-2 infection, full vaccination provides additional protection against reinfection. To reduce their risk of infection, all eligible persons should be offered vaccination, even if they have been previously infected with SARS-CoV-2. [Article](#).

Journal of the American Medical Association (JAMA): SARS-CoV-2 antibody responses in infection-naïve or previously infected individuals after one or two doses of the Pfizer/BioNTech vaccine

August 6, 2021. This study found higher SARS-CoV-2 antibody levels in previously infected individuals after one dose of the Pfizer/BioNTech vaccine compared with infection-naïve individuals after two doses. In previously infected individuals with positive SARS-CoV-2 spike Immunoglobulin G levels, the second dose did not significantly increase IgG levels compared with the first dose, suggesting that one dose may be acceptable in this group. However, it is important to note that a positive polymerase chain reaction diagnosis alone was not enough to discount the need for a second vaccine dose. These results highlight that even in previously infected individuals, baseline serological testing should be performed prior to deciding whether to forgo a second vaccine dose. [Article](#).

The Lancet: Cerebral venous thrombosis after vaccination against COVID-19 in the UK

August 6, 2021. This study found that cerebral venous thrombosis is more severe in the context of vaccine-induced thrombotic thrombocytopenia (VITT). However, VITT appears to be a very rare side-effect of vaccination with the ChAdOx1 (Oxford-AstraZeneca) vaccine, and the risk of which is likely to be greatly outweighed by the benefit of vaccination against COVID-19 for most people. The study also found that non-heparin anticoagulants and immunoglobulin treatment might improve outcomes of VITT-associated cerebral venous thrombosis. [Article](#).

NEJM: Subcutaneous REGEN-COV antibody combination to prevent COVID-19

August 4, 2021. This randomized trial found that a subcutaneous dose of REGEN-COV (1,200 mg), a combination of the monoclonal antibodies casirivimab and imdevimab, prevented symptomatic COVID-19 and asymptomatic SARS-CoV-2 infection in previously uninfected household contacts of infected persons. Among the participants who became infected, REGEN-COV reduced the duration of symptomatic disease and the duration of a high viral load. [Article](#).

Public Health Measures

BMC Public Health: The effect of COVID-19 school closures on adolescent sleep duration in Shanghai, China

August 10, 2021. Using data collected in six junior and senior high schools between late June to early July 2020, this study identified that overall sleep duration decreased among students from 8.88 hours during school closures to 7.77 hours after school reopening. These results suggest that sleep duration was longer, and that the percentage of sufficient sleep was higher during COVID-19 school closures in adolescent students. [Article](#).

World Health Organization (WHO): Guidance for surveillance of SARS-CoV-2 variants

August 9, 2021. This document describes a minimum set of surveillance activities recommended at the national level to detect and monitor the relative prevalence of SARS-CoV-2 variants and outline a set of activities for the characterization and assessment of risk posed by these variants. A set of indicators is also provided to standardize monitoring and public reporting of variant circulation. [Article](#).

Canadian Medical Association Journal (CMAJ): Preterm birth and stillbirth rates during the COVID-19 pandemic in Ontario, Canada

August 3, 2021. This study evaluated variations in preterm births and stillbirths during the COVID-19 pandemic. There was no unusual change in preterm birth or stillbirth rates, overall or by subgroups, during the first 12 months of the COVID-19 pandemic (January to December 2020) compared with the previous 17.5 years (July 2002 and December 2020). [Article](#).

WHO: Holding gatherings during the COVID-19 pandemic

August 3, 2021. This policy brief presents WHO's current position on holding gatherings during the COVID-19 pandemic. To prevent and control infection, basic precautionary measures are to be applied at mass gatherings, applied to everyone irrespective of their COVID-19 vaccination status: 1) practice physical distancing by strictly maintaining a minimum distance of one metre between people at all times; 2) cover both mouth and nose with bent elbow or tissue when coughing or sneezing, and avoid touching eyes, nose, and mouth; 3) wash hands regularly, or clean them with an alcohol-based sanitizer (at least 80% ethanol or 75% isopropyl alcohol); 4) stay outdoors and minimize indoor meetings, and avoid crowded or poorly ventilated areas when indoors; and 5) follow advice on use of masks issued by relevant health authorities.

[Article.](#)

Health Equity and Vulnerable Populations

JAMA: Characteristics and outcomes of women with COVID-19 giving birth at US academic centres during the COVID-19 pandemic

August 11, 2021. This study of 869,079 adult women, including 18,715 women with COVID-19, who underwent childbirth at 499 US medical centres between March 1, 2020, and February 28, 2021, found that women with COVID-19 who were giving birth had a statistically significantly higher mortality rate of 0.13% compared with women without COVID-19. The study also found that the need for ICU admission and respiratory failure requiring intubation were statistically significantly higher among women with COVID-19. The study concluded that future research is needed to further understand the pathophysiology of COVID-19 during pregnancy and to better characterize the long-term sequelae. [Article.](#)

CMAJ: Increasing SARS-CoV-2 vaccination rates among Black people in Canada

August 9, 2021. This commentary argues that vaccine hesitancy in African American communities is not merely because of misinformation or gaps in health literacy but is linked to medical distrust and structural racism. The authors propose fostering Black-led partnerships and utilizing the LEAPS of care communication framework (Listen and Learn, Empower and Engage, Ask and Acknowledge, Paraphrase and Provide, Support and Spark) to bridge the barriers in Black communities and improve vaccine uptake in Black patients who are hesitant about receiving vaccines. [Article.](#)

CMAJ: Illuminating and mitigating the evolving impacts of COVID-19 on ethnocultural communities

August 9, 2021. This study collected 773 narratives from members of diverse ethnocultural communities, identifying community social capital and cultural brokering as key assets that

facilitate access to formal health and social system supports. The study concluded that these findings could help inform policy to reduce harm and support community resiliency. [Article](#).

Trusted Resources

The Evidence Synthesis Network (ESN) is a collaborative COVID-19 response initiative by Ontario's research and knowledge production community. The [ESN website](#) is a portal where research evidence requests can be made and includes previously completed ESN briefing notes.

The [Ontario COVID-19 Science Advisory Table](#) is a group of scientific experts and health system leaders who evaluate and report on emerging evidence relevant to the COVID-19 pandemic, to inform Ontario's response to the pandemic.

COVID-19 Evidence Network to support decision-making (COVID-END) in Canada:

- COVID-END is a time-limited network that brings together more than 50 of the world's leading evidence-synthesis, technology-assessment, and guideline development groups to support decision-making. In addition to Living Evidence Profiles, COVID-END hosts an inventory of best COVID-19 evidence syntheses from around the world. An up-to-date and comprehensive list of sources, organized by type of research evidence, is available on McMaster Health Forum's COVID-END [website](#).
- The COVID-19 Evidence Spotlights from COVID-END provide updated information on COVID-19 responses with three types of products from COVID-END in Canada: 1) Canadian spotlights; 2) global spotlights; and 3) horizon scans. To receive an email containing hyperlinks to these products twice a month, [subscribe here](#).
 - During the first half of August, there were 13 newly added evidence syntheses and one update to living evidence synthesis that is already included in the public health measures parts of the COVID-END inventory of 'best' evidence syntheses. Please visit [Canadian Spotlight 8.1](#) to view the evidence, or browse past [Canadian evidence spotlights](#). A complete list of the products is available [here](#).

About RAEB

Through research funding, brokering, translating, and sharing, we promote an enhanced evidence use capacity that supports all aspects of health policy, programming, and investment decision-making. Services include:

- Literature reviews
- Jurisdictional scans
- Economic analysis
- Evaluation planning
- Research fund management

Knowledge translation services

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