

COVID-19 PANDEMIC

RAEB'S Evidence Update

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

September 13, 2021

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Evidence Products Produced with Our Partners

The COVID-19 Evidence Synthesis Network is comprised of groups specializing in evidence synthesis and knowledge translation. The group has committed to provide their expertise to provide high-quality, relevant, and timely synthesized research evidence about COVID-19 to inform decision makers as the pandemic continues. Please contact [Evidence Synthesis Unit](#) for the full read of these evidence products.

SARS-CoV-2 Transmission among Health Care Workers (HCWs) and the General Population following Vaccination

(Produced in collaboration with the Coronavirus Variants Rapid Response Network and the COVID-19 Evidence Network to support Decision-making [COVID-END])

- There is limited evidence to inform secondary transmission risk from partially and fully vaccinated cases, as well as the factors that may increase that risk. There is also limited evidence for individual-level factors that may reduce a person's protection from vaccination (e.g., age, co-morbid conditions), and the differential risk for secondary transmission from an asymptomatic versus a symptomatic case. There is high heterogeneity across study designs, which may impact overall conclusions; more robust studies are needed.
- Emerging data suggest that vaccination may be associated with the reduction of SARS-CoV-2 infections among vaccinated individuals, as well as reductions in transmission to close contacts (e.g., household contacts). This may be due to a reduction in viral loads or duration of infectiousness in vaccinated individuals infected with SARS-CoV-2.

- There is limited evidence regarding secondary transmission from vaccinated cases to individuals outside of the household setting, such as within health care settings and congregate care settings, where there is a lower risk tolerance for any transmission to vulnerable patients/residents from vaccinated cases.
- Some studies indicate there may be a higher risk of vaccine breakthrough and transmission with the Delta variant compared to other variants of concern (VOC).
- Alberta, British Columbia, Manitoba, Quebec, United States, the European Center for Disease Control and Prevention, United Kingdom, and Australia have maintained public health isolation requirements for fully vaccinated cases, likely due to the uncertainty around the vaccine effectiveness in sub-populations (e.g., elderly, immunosuppressed) and against the emerging VOC with immune escape potential.
 - Germany was the only jurisdiction identified with updated management guidance for fully vaccinated cases, reducing their isolation time to five days if a negative test result is obtained and the case remains asymptomatic. Routine isolation requirements apply if there is a positive test result or the case is symptomatic.

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.

Frontline Workers

Nature: COVID-19 vaccine hesitancy among reproductive-aged female health care workers in a United States medical centre

September 8, 2021. In this February 2021 survey of reproductive-aged female health care workers, participants who were trying to conceive (TTC) or pregnant had significantly higher rates of declining or delaying COVID-19 vaccination compared to other women of reproductive age. The pregnant population was six times more likely to delay vaccination and those TTC were nearly three times as likely to delay or decline the vaccine. The findings highlight the importance of directly addressing vaccine hesitancy in reproductive groups. [Article](#).

Disease Management

Internal Medicine Journal: Characteristics and outcomes of readmitted COVID-19 patients

September 6, 2021. An Australian systematic review of six studies reporting on 547 patients readmitted with COVID-19 found that readmitted patients following hospitalization for COVID-19 were more commonly male with multiple comorbidities. Shorter initial hospital length of stay and unresolved primary illness may have contributed to readmission. [Article](#).

Cochrane Library: SARS-CoV-2-neutralizing monoclonal antibodies (mAbs) for treatment of COVID-19

September 2, 2021. This review considered the current evidence insufficient to draw meaningful conclusions regarding treatment with SARS-CoV-2-neutralizing mAbs (i.e., bamlanivimab, etesevimab, casirivimab, imdevimab, sotrovimab, regdanvimab) in hospitalized and non-hospitalized individuals. Further studies and long-term data from the existing studies are needed to confirm or refute these initial findings, and to understand how the emergence of SARS-CoV-2 variants may impact the effectiveness of SARS-CoV-2-neutralizing mAbs. [Article](#).

The Lancet: Efficacy and safety of baricitinib for the treatment of hospitalized adults with COVID-19 (COV-BARRIER) across 12 countries in Asia, Europe, North America, and South America

September 1, 2021. This phase three randomized controlled trial found that, although there was no significant reduction in the frequency of disease progression overall, treatment with baricitinib in addition to standard of care (including dexamethasone) had a similar safety profile to that of standard of care alone, and was associated with reduced mortality in hospitalized adults with COVID-19. Baricitinib is an oral selective Janus kinase 1/2 inhibitor with known anti-inflammatory properties. [Article](#).

The Lancet: Reactogenicity and immunogenicity after a late second dose or a third dose of ChAdOx1 nCoV-19 (AstraZeneca) in the UK

September 1, 2021. This study assessed the persistence of immunogenicity after a single dose of AstraZeneca, immunity after an extended interval (44-45 weeks) between the first and second dose, and response to a third dose as a booster given 28-38 weeks after the second dose among adults aged 18-55 years. The study found that immunity induced by the vaccine is maintained for long periods after a first dose, with greater boosting of effects after the second dose after a longer interval between doses than shorter intervals. As such, a single dose of the vaccine with a second dose given after an extended period might be an effective strategy in settings where vaccine supplies are scarce in the short-term. A third dose resulted in a further

increase in immune responses, including increased neutralization of variant SARS-CoV-2 viruses, and could be used to increase vaccine efficacy against variants in susceptible populations.

[Article](#).

Data Analytics, Modelling and Measurement

medRxiv: Mitigating the fourth wave of the COVID-19 pandemic in Ontario

September 5, 2021. This preprint study projected the number of COVID-19 cases and demand for acute hospital resources for Fall of 2021 in a representative mid-sized community in southwestern Ontario. Maintaining contact reductions at the current level, estimated to be a 17% reduction compared to pre-pandemic contact levels, resulted in COVID-related admissions exceeding 20% of pre-pandemic critical care capacity by late October, leading to cancellation of elective surgeries and other non-COVID health services. At high levels of vaccination and relatively high levels of mask wearing, a moderate additional effort to reduce contacts (30% reduction compared to pre-pandemic contact levels), was necessary to avoid re-instating intensive public health measures. [Article](#).

Health Equity and Vulnerable Populations

***PLOSOne*: COVID-19 prevalence, symptoms, and sociodemographic disparities in infection among insured pregnant women in Northern California**

September 3, 2021. This study of 19,458 members of large health provider in Northern California who were pregnant between January 2020 and April 2021 reported that the prevalence of COVID-19 was 2.5% according to self-report and 1.4% according to health records. The prevalence of self-reported COVID-19 was higher among women who were aged <25 years, Hispanic, affected by personal or partner job loss, and living in areas of high neighbourhood deprivation. These differences underscore social and health inequities among reproductive-aged women. [Article](#).

***Aging Research Reviews*: Underrepresentation of older adults in clinical trials on COVID-19 vaccines**

September 3, 2021. A European systematic review including 10 randomized clinical trials evaluating the efficacy of COVID-19 vaccines found that only 9.83% of participants were older than 65 years of age, 1.66% were 75 years or older, and 0.55% were more than 85 years of age. There is a need to promote the inclusion of all relevant groups of people in which medications and vaccines are used, including older adults. [Article](#).

Public Health Measures

Journal of the American Medical Association (JAMA): Surveillance for adverse events after COVID-19 mRNA vaccination

September 3, 2021. By analyzing surveillance data from 6.2 million persons who received 11.8 million doses of an mRNA vaccine, this study found that event rates for 23 serious health outcomes were not significantly higher for individuals at one to 21 days after vaccination, compared with similar individuals at 22 to 42 days after vaccination. This current surveillance complements other vaccine safety monitoring systems in the US. [Article](#).

Israel Journal of Health Policy Research: Physical activity (PA), resilience, emotions, moods, and weight control, during the COVID-19 global crisis

September 2, 2021. This study of 1,855 Israeli adults found that routine PA was reported by 76.3% of the participants before the lockdown, 19.3% stopped exercising during this period, and 9.3% began exercising during the lockdown. Continuous PA before and during the COVID-19 lockdown were associated with higher resilience and positive emotions, and depressive symptoms. PA may contribute to improving mental health and a sense of self-efficacy, as well as to weight maintenance during a crisis. [Article](#).

Health Systems Impact

JAMA: The association between school closures and child mental health during COVID-19

September 3, 2021. This study found a small association between school closures and worsened child mental health outcomes, with older children and children from families with lower income experiencing more mental health problems associated with school closures. Children from families with lower income and those belonging to minority racial/ethnic groups were most likely to experience school closures. Findings suggest older and Black and Hispanic children, as well as children from families with lower income who attend school remotely, may experience disproportionate mental health difficulties. [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 second half of August, there were 13 newly added evidence syntheses. Two of these syntheses provide insights across all domains of the COVID-END taxonomy (public health measures, clinical management, health-system arrangements, and economic and social response) and the remaining focus on public health measures (n=8), and clinical management (n=3). Please visit [Canadian Spotlight 8.2](#) 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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