

COVID-19 PANDEMIC

RAEB'S Evidence Update

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

May 24, 2022

Featured

[Research Evidence and Jurisdictional Experience
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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.

Understanding the Disease

Ecotoxicology and Environmental Safety: Air pollution might affect the clinical course of COVID-19 in pediatric patients

May 17, 2022. This study examined the association between the clinical manifestation of COVID-19 in unvaccinated pediatric patients hospitalized in Poland (n=766) and levels of particulate matter 2.5 and benzo(a)pyrene (B(a)P) within a week before hospitalization. The study findings suggest that worse air quality, particularly reflected in increased B(a)P levels, might affect the clinical course of COVID-19 in pediatric patients and adds to the disease burden during a pandemic. [Article](#).

Journal of the American Medical Association (JAMA): Association of congenital and acquired cardiovascular conditions with COVID-19 severity among pediatric patients in the US

May 17, 2022. In this study of 171,416 individuals aged two months to 17 years with SARS-CoV-2 infection, cardiac arrest, cardiogenic shock, heart surgery, cardiopulmonary disease, heart failure, hypotension, nontraumatic cerebral hemorrhage, pericarditis, and biventricular defects were associated with increased COVID-19 severity. [Article](#).

The Lancet: Health outcomes in people two years after surviving hospitalization with COVID-19 in China

May 11, 2022. This study found that regardless of initial disease severity, COVID-19 survivors had longitudinal improvements in physical and mental health, with most returning to their original work within two years; however, the burden of symptomatic sequelae remained fairly high. COVID-19 survivors had a remarkably lower health status than the general population at two years. These findings indicate that there is an urgent need to explore the pathogenesis of long COVID and develop effective interventions to reduce the risk of long COVID. [Article](#).

Transmission

Canadian Medical Association Journal (CMAJ): Systematic on-site testing for SARS-CoV-2 infection among asymptomatic essential workers in Montréal

May 16, 2022. This study found that on-site saline gargle sampling of essential workers for SARS-CoV-2 testing was acceptable and of modest cost, and appears most useful in the context of outbreaks. This sampling strategy should be evaluated further as a component of efforts to prevent SARS-CoV-2 transmission. [Article](#).

Occupational & Environmental Medicine: Incidence of outbreak-associated COVID-19 cases by industry in Ontario (April 2020 – March 2021)

May 12, 2022. This study found that workplace outbreak-associated cases accounted for 12% of all cases and 7% of all hospitalizations in the working-age population (15-69 years) across the study period. When broken down by industry, incidence rates were highest in health care and social assistance, food manufacturing, agriculture, other manufacturing, educational services, and transportation and warehousing. This reflects only cases linked to identified and reported workplace outbreaks and does not account for non-outbreak cases in workers or further spread within households related to index cases associated with workplace outbreaks; as such, the total number of cases resulting from workplace outbreaks is likely to be larger than what is presented in this study. [Article](#).

Disease Management

JAMA: COVID-19 vaccination preferences of university students and staff in Hong Kong

May 17, 2022. In this study that included 3,423 university students and staff, seven attributes of COVID-19 vaccination (i.e., risk of a mild or moderate adverse event after vaccination, risk of a severe adverse event after vaccination, efficacy against COVID-19 infection, efficacy against severe manifestation of COVID-19 infection, duration of protection after vaccination, incentive

for completing vaccination, and out-of-pocket costs) were assessed. Preferences on all attributes were found to be significant, with quarantine-free travel and vaccine efficacy against COVID-19 infection the most preferred factors; participants were less concerned about duration of protection and risk of potential mild to moderate adverse events. The results of this study could support and promote COVID-19 vaccination through a better understanding of the perceived barriers and preferences among university students and staff. [Article](#).

CMAJ: Risk of death or unplanned readmission after discharge from a COVID-19 hospitalization in Alberta and Ontario

May 16, 2022. This study found that death or readmission after discharge from a COVID-19 hospitalization is common and had a similar frequency in Alberta and Ontario. Risk stratification and interinstitutional comparisons of outcomes after hospital admission for COVID-19 should include sex, discharge locale, and socioeconomic measures, in addition to the LACE variables (i.e., length of stay, acuity, Charlson Comorbidity Index, and number of emergency visits in previous six months). [Article](#).

Nature: Post-COVID-19 conditions in children and adolescents diagnosed with COVID-19

May 14, 2022. This study demonstrated that the prevalence of the post-COVID-19 condition in children and adolescents (n=6,568) in Germany was rare (1.7%). Patients aged 13-17 years were more likely to be diagnosed with post-COVID-19 condition compared with those five years or under. Anxiety disorders, somatoform disorders, and allergic rhinitis were also significantly associated with post-COVID-19 condition. [Article](#).

New England Journal of Medicine: Evaluation of Moderna vaccine in children (six-11 years)

May 11, 2022. This study reported that nearly 4,000 six-to-11-year-olds received two doses of vaccine or placebo in part two of the trial and were followed for a median of 82 days after the first injection. The vaccine had mainly mild adverse effects and was immunogenic in 99%, similar to the results in those aged 18-25 years. Vaccine efficacy during a Delta-variant period was 88%. [Article](#).

Health Equity and Vulnerable Populations

Pediatrics: Intimate partner violence and the COVID-19 pandemic (April 2020 - February 2021)

May 12, 2022. This study examined the effects of the pandemic on consultation and referral patterns of an intimate partner violence program at a large urban children's hospital. There were significant decreases in face-to-face consults after COVID-19 emergence alongside significant increases in the total number of consults as compared with prior to the pandemic,

primarily for emotional abuse. Psychoeducation referrals also increased significantly, whereas referrals to community resources decreased significantly. Even during a shift away from face-to-face care, there was an increase in intimate partner violence referrals after the start of the pandemic. [Article](#).

Data Analytics, Modelling and Measurement

Nature: Effectiveness of testing, vaccinations, and contact restrictions for containing the pandemic

May 16, 2022. This modelling study, using data for the second and the third wave of the COVID-19 pandemic in Germany, found that during a period where vaccination rates rose from five to 40%, seasonality and rapid testing had the largest effect on reducing infection numbers. The study suggests that frequent large-scale rapid testing should remain part of strategies to contain COVID-19; it can substitute for many non-pharmaceutical interventions that come at a much larger cost to individuals, society, and the economy. [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](#).

In the first half of May 2022, contributing Canadian evidence-synthesis teams shared six newly completed syntheses focusing on public health measures (n=4) and clinical management (n=2).

Please visit [Canadian Spotlight 17.1](#) 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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