

COVID-19 PANDEMIC

RAEB'S Evidence Update

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

April 11, 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

Nature: Course of post-COVID-19 disease symptoms over time in the ComPaRe long COVID prospective e-cohort in France

April 5, 2022. This study found, among 968 adults symptomatic after two months, 85% still reported symptoms one year after their symptom onset. Evolution of symptoms showed a decreasing prevalence over time for 27/53 symptoms (e.g., loss of taste/smell); a stable prevalence over time for 18/53 symptoms (e.g., dyspnoea); and an increasing prevalence over time for 8/53 symptoms (e.g., paraesthesia). The disease impact on patients' lives began increasing six months after onset. [Article](#).

Archives of Disease in Child: Post-COVID-19 condition in children (11-17 years)

April 1, 2022. This study derived a research definition for the post-COVID-19 condition in children and young people to allow comparisons between research studies. Based on expert consensus, the research definition was proposed as follows (which aligns to the WHO's clinical case definition for adults). Post-COVID-19 condition occurs in young people with a history of confirmed SARS-CoV-2 infection, with at least one persisting physical symptom for a minimum duration of 12 weeks after initial testing that cannot be explained by an alternative diagnosis.

The symptoms have an impact on everyday functioning, may continue or develop after COVID infection, and may fluctuate or relapse over time. The positive COVID-19 test referred to in this definition can be a lateral flow antigen test, a PCR test, or an antibody test. [Article](#).

Disease Management

New England Journal of Medicine (NEJM): Protection by a fourth dose of Pfizer against Omicron in Israel

April 5, 2022. This study found rates of confirmed SARS-CoV-2 infection and severe COVID-19 were lower after a fourth dose of Pfizer vaccine than after only three doses in persons aged 60 years or older. Protection against confirmed infection appeared short-lived, whereas protection against severe illness did not wane during the study period. [Article](#).

Nature: Outcomes of COVID-19 and risk factors in patients with cancer in India

April 4, 2022. This study of 1,253 patients with cancer, who were diagnosed with COVID-19 at a tertiary referral cancer centre, found that most patients had mild disease, and that recent cancer therapies did not impact COVID-19 outcomes. Advancing age, smoking history, concurrent comorbidities, and palliative intent of treatment were independently associated with severe COVID-19 or death. [Article](#).

Metabolism: Preadmission use of antidiabetic medications and mortality among patients with COVID-19 having type 2 diabetes

March 31, 2022. This meta-analysis compared the effects of the preadmission use of antidiabetic medications on the in-hospital mortality of COVID-19 patients with type 2 diabetes. The medications Metformin, GLP-1RA, and SGLT-2i were associated with lower mortality rates in patients with COVID-19 having type 2 diabetes. However, DPP-4i and insulin were linked to increased mortality. Sulfonylurea, thiazolidinedione, and alpha-glucosidase inhibitors were mortality neutral. [Article](#).

NEJM: Effect of early treatment with ivermectin among patients with COVID-19 in Brazil

March 30, 2022. This study examined the efficacy of ivermectin to prevent outpatients (n=3,515) with acute COVID-19 from being hospitalized or being placed under extended observation in an emergency setting. COVID-19 patients who had had symptoms of COVID-19 for up to seven days, and had at least one risk factor for disease progression, were randomly assigned to receive ivermectin (400 µg per kg of body weight) once daily for three days or placebo. Results suggested that treatment with ivermectin did not result in a lower incidence of medical admission to a hospital or of prolonged emergency department observation. [Article](#).

NEJM: Pfizer vaccine protection against the Omicron variant in children and adolescents in the US

March 30, 2022. This study examined the immunity and the duration of protection from vaccines in children and adolescents, and found that Pfizer vaccination reduced the risk of Omicron-associated hospitalization by two-thirds among children five to 11 years of age. Although two doses provided lower protection against Omicron-associated hospitalization than against Delta-associated hospitalization among adolescents 12 to 18 years of age, vaccination prevented critical illness caused by either variant. [Article](#).

Case Testing and Screening

Journal of the American Medical Association (JAMA): Association between SARS-CoV-2 viral load in wastewater and reported cases, hospitalizations, and vaccinations in Milan (March 2020 to November 2021)

April 1, 2022. This study found high wastewater SARS-CoV-2 loads when vaccination coverage was high and traditional surveillance indicators suggested limited SARS-CoV-2 prevalence. These results suggests that there was significant circulating virus in the population during this period, including among vaccinated individuals. The SARS-CoV-2 circulation among vaccinated individuals may create modest evolutionary pressure toward resistance to the host's immune response, making variants with significant transmission advantages more competitive. [Article](#).

Data Analytics, Modelling and Measurement

JAMA: Projecting COVID-19 mortality as US states relax non-pharmacologic interventions (NPIs)

April 1, 2022. This modeling study found that lifting NPIs was likely to result in rebounding epidemics regardless of the delay in lifting. The degree of population-level immunity was associated with the size of the rebounding peak in incident deaths. Overall, the study found no path to the end of the COVID-19 pandemic that avoided difficult trade-offs between prolonged NPIs and increased COVID-19 mortality following their removal. [Article](#).

Nature: A dataset of NPIs on SARS-CoV-2 in Europe

April 1, 2022. This study describes a new dataset designed for the accurate recording of NPIs in Europe's second wave (Aug 2020 to Jan 2021) to allow precise modelling of NPI effectiveness. The dataset includes interventions from 114 regions in seven European countries. The dataset has considerable potential for use in determining the effectiveness of NPIs and comparing the impact of interventions across different phases of the pandemic. [Article](#).

The Lancet: Screening and vaccination against COVID-19 to minimize school closure in France

April 1, 2022. This study indicates that regularly screening the school population is efficient in preventing infections while reducing absence from school, especially in settings where the school population is not yet vaccinated, coverage is low to moderate, or vaccine protection has largely waned. [Article](#).

Health System Impacts

Nature: Housing environment and mental health of Europeans during the COVID-19 pandemic

April 4, 2022. Using data from European cohorts (Denmark, France, and the UK), this meta-analysis found living alone was associated with higher levels of loneliness and lower life satisfaction, compared to living with others. Not having access to an outdoor space and household crowding were suggestively associated with worse outcomes. Living in crowded households, living alone, or lacking access to outdoor facilities may be particularly important in contributing to poor mental health during a lockdown. [Article](#).

American Journal of Emergency Medicine: Opioid usage and COVID-19 prognosis

March 27, 2022. This systematic review and meta-analysis demonstrated that opioids have a significant association with intensive care unit admission for COVID-19 patients. Use of opioids was also associated with higher mortality among patients with COVID-19 compared to non-users, while use of opioids was not significantly associated with need for mechanical ventilation. Future studies are required to confirm these findings. [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 second half of March 2022, contributing Canadian evidence-synthesis teams shared seven newly completed evidence syntheses, focusing on public health measures and clinical management. Please visit [Canadian Spotlight 15.2](#) to view the evidence, or browse past [Canadian evidence spotlights](#). A complete list of the products is available [here](#).

About RAEB

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- Jurisdictional scans
- Economic analysis
- Evaluation planning
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Contact RAEB

- [Robert Francis](#), RAEB Director (A)
- [Andrea Proctor](#), Evidence Synthesis
- [Emre Yurga](#), Economic Analysis and Evaluation
- [Hadi Karsoho](#), Research Planning and Management