

# COVID-19 PANDEMIC

## RAEB'S Evidence Update

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

August 9, 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.

#### Understanding the Disease

##### ***Journal of the American Medical Association (JAMA): Self-reported memory problems eight months after COVID-19 infection***

**July 29, 2021.** This study followed 13,001 participants from Norway for eight months to determine the incidence of self-reported memory problems after COVID-19 infection. The study found that eight months after a positive SARS-CoV-2 test, the prevalence of memory problems in the positive test group was higher than in the control group with a negative test or in the untested control population. Most of the SARS-CoV-2–positive participants with memory problems also reported a worsening of their health compared with one year prior. The findings suggest that memory problems may be a part of post-acute sequelae of SARS-CoV-2 infection syndrome (or long COVID), but firmer conclusions should await a longer follow-up period.

[Article.](#)

##### ***JAMA: Cancer clinical trial participation at the one-year anniversary of the outbreak of the COVID-19 pandemic***

**July 29, 2021.** This study found that clinical trial enrollments decreased during the full year of the COVID-19 pandemic. Enrollment reductions were primarily attributed to cancer control and prevention trials, whereas there was not strong evidence of enrollment reductions to treatment trials. This finding suggests that clinical research rapidly adapted to the circumstances of enrolling and treating patients on protocols during the COVID-19 pandemic.

[Article](#).

## Disease Management

### ***Cochrane: Remdesivir for the treatment of COVID-19***

**August 5, 2021.** This review found that remdesivir probably has little or no effect on deaths from any cause up to 28 days after treatment compared with placebo or usual care for adults hospitalized with COVID-19. It is uncertain whether remdesivir improves or worsens patients' condition, based on whether they needed more or less help with breathing. Future studies should provide additional data on efficacy and safety of remdesivir for defined core outcomes in COVID-19 research, especially for different population subgroups. [Article](#).

### ***JAMA: Myocarditis and pericarditis after vaccination for COVID-19***

**August 4, 2021.** This study found that among 2,000,287 individuals receiving at least one COVID-19 vaccination, 20 had vaccine-related myocarditis and 87 had pericarditis. Myocarditis and pericarditis occurred a median of 3.5 and 20 days after vaccination, respectively. It was identified that myocarditis developed rapidly in younger patients, mostly after the second vaccination, while pericarditis affected older patients later, after either the first or second dose. The study concluded that some vaccines are associated with myocarditis, including mRNA vaccines, primarily in younger male individuals within a few days of the second vaccination, at an incidence of about 4.8 cases of myocarditis per one million. [Article](#).

### ***Nature: Antibody responses after first and second COVID-19 vaccination in patients with chronic lymphocytic leukemia (CLL)***

**July 30, 2021.** This study found that spike-specific antibody responses were detectable in 34% of patients with CLL after one vaccine, compared to 94% in healthy donors, with antibody titres 104 times lower in the patient group. Antibody responses increased to 75% after receiving the second vaccine, compared to 100% in healthy donors, although titres remained lower. These findings support the need for optimizing the vaccination strategy for patients with CLL, including the potential utility of booster vaccines. [Article](#).

### ***The New England Journal of Medicine (NEJM): Tofacitinib in patients hospitalized with COVID-19 pneumonia in Brazil***

**July 29, 2021.** This randomized control trial found that, among patients hospitalized with COVID-19 pneumonia, tofacitinib (a Janus kinase inhibitor) led to a lower risk of death or respiratory failure through day 28 than placebo. These effects were consistent regardless of sex, age, duration of symptoms, and use of glucocorticoids at baseline; they were also consistent across different levels of supplemental oxygen use at baseline. [Article](#).

***National Institute for Health and Care Excellence: COVID-19 rapid guideline on vaccine-induced immune thrombocytopenia and thrombosis (VITT)***

**July 29, 2021.** This guideline is for health care practitioners, and those involved in planning and delivering services. It provides guidance on diagnosing and managing VITT, and makes recommendations about care in all settings for adults with suspected or confirmed VITT. [Article](#).

***British Medical Journal (BMJ): Mechanisms, risk factors, and management of long COVID***

**July 26, 2021.** This review summarizes studies regarding the long-term effects of COVID-19 in hospitalized and non-hospitalized patients and describes the possible symptoms they endure, risk factors associated with developing long COVID, and treatment options. A greater understanding of the pathogenesis, risk factors, symptoms, and methods of treating long COVID is required to reduce the strain and demand on those experiencing long COVID and the health care systems that will endeavor to support them. [Article](#).

## Public Health Measures

***Nature: Behavioral nudges increase COVID-19 vaccinations***

**August 2, 2021.** This study investigated the impact of text-based reminders on COVID-19 vaccine uptake. Reminders were delivered to patients of a Californian health care system one day and eight days after notification of vaccine eligibility. The first reminder boosted appointments and vaccination rates within the health care system by 6.07 (84%) and 3.57 (26%) percentage points, respectively; the second reminder increased those outcomes by 1.65 (53%) and 1.06 (17%) percentage points, respectively. The first reminder was more impactful when it made patients feel the vaccine was already theirs, though the study found no evidence that combining it with an information intervention addressing vaccine hesitancy heightened its effect. [Article](#).

***Centres of Disease Control and Prevention (CDC): Outbreak of SARS-CoV-2 infections, including COVID-19 vaccine breakthrough infections and association with large public gatherings***

**July 30, 2021.** This report noted that 469 COVID-19 cases were identified among Massachusetts residents who had traveled to a town during July 3-17, 2021 following multiple large public events; 346 (74%) occurred in fully vaccinated persons. Testing identified the Delta variant in 90% of specimens from 133 patients. The CDC suggests that jurisdictions consider expanded prevention strategies, including universal masking in indoor public settings, particularly for large public gatherings that include travelers from many areas with differing levels of SARS-CoV-2 transmission. [Article](#).

## Frontline Workers

### ***JAMA: Variation of national and international guidelines on respiratory protection for health care professionals during the COVID-19 pandemic***

**August 4, 2021.** This systematic review of 59 guidelines on respiratory infection prevention in hospital settings during the COVID-19 pandemic identified four strategies regarding the use of respirators: 1) systematic (recommended for care of COVID-19 patients); 2) flexible (recommended with use of medical face masks in the absence of available respirators); 3) unit based; and 4) recommended exclusively during aerosol-generating procedures. These discrepancies may reflect controversies related to SARS-CoV-2 transmission routes. More evidence is still needed to clearly define what aerosol-generating procedures are and the level of risk associated with different procedures. [Article](#).

## Health Equity and Vulnerable Populations

### ***JAMA: Comparison of medication prescribing before and after the COVID-19 pandemic among nursing home residents in Ontario, Canada***

**August 2, 2021.** This study found that the emergence of the COVID-19 pandemic was associated with statistically significant increases in the use of antipsychotics, benzodiazepines, antidepressants, anticonvulsants, and opioids among all nursing home residents from 630 surveyed facilities. The study found no meaningful changes in the use of antibiotics, angiotensin receptor blockers (ARBs), or angiotensin-converting enzyme (ACE) inhibitors. Studies are needed to monitor whether changes in pharmacotherapy persist, regress, or accelerate during the course of the pandemic and how these changes affect resident-level outcomes. [Article](#).

### ***Nature: Comparing COVID-19 risk factors in Brazil using machine learning***

**August 2, 2021.** This study found that socioeconomic, geographical, and structural factors increase one's risk of mortality from SARS-CoV-2 more than individual comorbidities. Particularly important factors include level of education, state of residence and its development index, distance to the hospital, and hospital funding model. Ethnicity is also confirmed to increase risk more than comorbidities, but less than the aforementioned factors. These findings highlight that socioeconomic and structural factors are as important as biological factors in determining the outcome of COVID-19. [Article](#).

### ***JAMA: Association between mood disorders and risk of COVID-19 infection, hospitalization, and death***

**July 28, 2021.** This systematic review and meta-analysis, which included 21 studies involving over 91 million individuals, found significantly higher odds of COVID-19 hospitalization and

death among persons with pre-existing mood disorders compared with those without mood disorders. These results suggest that individuals with mood disorders, like persons with other pre-existing conditions (e.g., obesity), should be categorized as an at-risk group on the basis of a pre-existing condition. There was no association between pre-existing mood disorders and COVID-19 susceptibility or severe events (e.g., intensive care unit admission, mechanical ventilatory support). [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 July, Canadian evidence synthesis teams completed 11 new evidence syntheses. Please visit [Canadian Spotlight 7.2](#) to view the evidence, or browse [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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