

# THE 100<sup>TH</sup> EDITION OF THE COVID-19 EVIDENCE UPDATE

*Meet the team who manages, writes, and supports the Evidence Updates*

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# COVID-19 PANDEMIC

## RAEB'S Evidence Update

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

**February 28, 2022**

### Featured

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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.

### Disease Management

***Journal of the American Medical Association (JAMA): Association of early aspirin use with in-hospital mortality in patients with moderate COVID-19***

**March 24, 2022.** In this study of 112,269 patients with moderate COVID-19, early aspirin use during the first day of hospitalization was associated with lower 28-day in-hospital mortality and pulmonary embolism incidence when compared with patients who did not receive early aspirin. These findings warrant further study in a randomized clinical trial that includes diverse patients with cardiovascular comorbidities. [Article](#).

***Nature: Comparative effectiveness of the Pfizer and AstraZeneca vaccines against COVID-19 in people over 50 years***

**March 21, 2022.** This study found that, compared with one dose of AstraZeneca, vaccination with Pfizer was associated with a 28% decreased risk of SARS-CoV-2 infection. Two doses of Pfizer vs. AstraZeneca conferred 30% and 29% lower risks of both infection and hospitalization during the study period when the Delta variant was dominant. The comparative protection against the infection persisted for at least six months among the fully vaccinated, suggesting no differential waning between the two vaccines. [Article](#).

***Centres for Disease Control and Prevention (CDC): Effectiveness of mRNA vaccination in preventing COVID-19-associated invasive mechanical ventilation (IMV) and death***

**March 18, 2022.** This study found that receiving two or three doses of an mRNA COVID-19 vaccine was associated with a 90% reduction in risk for COVID-19-associated IMV or death. Protection of three mRNA vaccine doses during the period of Omicron predominance was 94%. The study concluded that mRNA vaccines are highly effective in preventing the most severe forms of COVID-19. The CDC recommends that all persons eligible for vaccination get vaccinated and stay up to date with COVID-19 vaccination. [Article](#).

***New England Journal of Medicine: Safety and efficacy of a third dose of Pfizer COVID-19 vaccine***

**March 23, 2022.** This study found that a third dose of the Pfizer vaccine administered a median of 10.8 months after the second dose provided 95.3% efficacy against COVID-19 as compared with two doses of the vaccine during a median follow-up of 2.5 months. [Article](#).

***JAMA: Durability of the single-dose Johnson & Johnson–Janssen vaccine in the prevention of COVID-19 infections and hospitalizations in the US before and during the Delta Variant surge***

**March 17, 2022.** Among 422,034 vaccinated and 1,645,397 matched unvaccinated individuals, vaccine effectiveness was estimated to be 76% for COVID-19 infection and 81% for hospitalizations for at least 180 days after vaccination before and during the Delta variant surge. This study suggests that the Johnson & Johnson–Janssen vaccine was associated with high and durable effectiveness in clinical practice, including against the Delta variant. [Article](#).

## Understanding the Disease

***The Lancet: Risks and burdens of incident diabetes in long COVID***

**March 21, 2022.** In the post-acute phase, this study reported increased risks and 12-month burdens of incident diabetes and anti-hyperglycaemic use in people with COVID-19 compared with a contemporary control group of people who were enrolled during the same period and did not contract SARS-CoV-2, and a historical control group from a pre-pandemic era. This study suggests that post-acute COVID-19 care should involve identification and management of diabetes. [Article](#).

## Data Analytics, Modelling and Measurement

### ***JAMA: Age-varying susceptibility to the Delta Variant of SARS-CoV-2 in Korea***

**March 18, 2022.** This modelling study of 106,866 confirmed COVID-19 infections found that even after adjusting for contact pattern and vaccination status, the Delta variant of SARS-CoV-2 was estimated to propagate more easily among children and adolescents than pre-Delta strains. [Article](#).

### ***JAMA: The fragility of statistically significant results in randomized clinical trials (RCTs) for COVID-19***

**March 18, 2022.** This study found a relatively small number of events (a median of four) would be required to change the results of COVID-19 RCTs from statistically significant to not significant. These findings suggest that health care professionals and policy makers should not rely heavily on individual results of RCTs for COVID-19. [Article](#).

## Health Equity and Vulnerable Populations

### ***JAMA: Neuropsychiatric and cognitive outcomes in patients six months after COVID-19 requiring hospitalization compared with matched control patients hospitalized for non-COVID-19 illness***

**March 23, 2022.** This study found long-term mental health complications in patients who had COVID-19 were significant but seemed not to be unique to COVID-19 because similar complications were observed among individuals hospitalized for non-COVID-19 illness of comparable severity. This finding highlights the importance of including well-matched control groups when investigating post-COVID-19 sequelae. [Article](#).

### ***Nature: COVID-19 mortality in Italy varies by patient age, sex, and pandemic wave***

**March 17, 2022.** An analysis of data from the Italian national database of more than four million SARS-CoV-2-positive cases diagnosed between January 2020 and July 2021 found that age groups older than 65 had mortality risks that were hundreds times greater than a reference group aged 15–44 years. Male sex presented a two-fold higher risk of death than the female sex. The study suggests that elderly age was by far the most significant risk factor for COVID-19 mortality, confirming that protecting the elderly should be a priority in pandemic management. [Article](#).

## Transmission

### ***British Medical Journal: SARS-CoV-2 positivity in offspring and timing of mother-to-child transmission***

**March 16, 2022.** This systematic review and meta-analysis that included over 400 studies (n=28,952 mothers; n=18,237 babies) found that SARS-CoV-2 positivity rates were low in babies born to mothers with SARS-CoV-2 infection. Evidence suggests confirmed vertical transmission (from mother to baby) of SARS-CoV-2, although this is likely to be rare. Severity of maternal COVID-19 appears to be associated with SARS-CoV-2 positivity in offspring. [Article](#).

## Frontline Workers

### ***Journal of Marriage and Family: Romantic partners of frontline doctors and nurses during the New York City COVID-19 outbreak***

**March 10, 2022.** This study on the spouses and romantic partners (n=29) of health care professionals working in hospitals during the first wave of the COVID-19 pandemic (February 29 - June 1, 2020) reported that, in the face of multiple stressors, the crisis unified the partners and frontliners. Partners discussed how they helped frontline doctors and nurses deal with the acute stress of the outbreak, such as providing various kinds of support, writing a will, and discussing the possibility of death. [Article](#).

### ***Journal of Hospice and Palliative Care: Experiences of palliative care (PC) providers and lessons learned during the COVID-19 pandemic in rural communities of Indiana (US)***

**March 10, 2022.** This study examined the impact of COVID-19 on PC services and the various ethical, moral, and practice issues and challenges experienced by rural providers. Providers reported several concerns including: restricted visitation, communication challenges, “hard to say goodbye over iPad”, moral distress among providers, and preference for home hospice services. The findings call for strategies to implement best PC practices and programs to support providers and families in smaller towns and rural communities. [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 March 2022, contributing Canadian evidence synthesis teams shared six newly completed evidence syntheses. All the syntheses provide insight focused on public health measures. Please visit [Canadian Spotlight 15.1](#) 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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