

COVID-19 PANDEMIC – RAEB'S EVIDENCE UPDATE

Highlights of health research evidence synthesized by the
Research, Analysis and Evaluation Branch (RAEB)

• May 3, 2021 •

FEATURED

- Evidence products produced with our partners
- Evidence products from our Evidence Synthesis Network partners
- Research evidence and jurisdictional experience
- Trusted resources

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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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.

- **Long COVID-19 Clinics**

(Produced in collaboration with Ontario Health [Cancer Care Ontario] and McMaster Health Forum)

- Long COVID clinics were identified in the United States (i.e., 80 clinics in 31 states), the United Kingdom (68 clinics in England; 12 more sites were to launch in January 2021), and Italy. A survey of 64 funded US clinics reported that they had seen a combined total of nearly 10,000 patients. In the UK, NHS England and NHS Improvement provided two funding investments to support the establishment of long COVID assessments clinics that will support the anticipated demand in England in 2021/2022: CAD \$17.42 million in October 2020; and CAD \$41.81 in March 2021.
- Long COVID clinics identified in the US, UK, Italy, and Canada are providing multidisciplinary rehabilitation teams that include: internists; cardiologists; rehabilitation, respiratory and cardiac consultants; physiotherapists; occupational therapists; psychologists; neurologists; nutritionists; and nephrologists.
- There is currently limited published information on the administration of long COVID rehabilitation clinics. Information about governance structures and outcomes of such models continues to emerge and should be monitored.

* Figures in the header: Transmission electron microscope image shows SARS-CoV-2, the virus that causes COVID-19, isolated from a patient in the United States. Virus particles are emerging from the surface of cells cultured in the lab. The spikes on the outer edge of the virus particles give coronaviruses their name, crown-like. *National Institutes of Health's National Institute of Allergy and Infectious Diseases – Rocky Mountain Laboratories*

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EVIDENCE PRODUCTS FROM OUR EVIDENCE SYNTHESIS NETWORK PARTNERS

Ministry research partners are actively working with leading agencies and organizations on COVID-19 topics and tools. The following tools have been developed to provide risk assessments based on users' occupations, activities, location, and other relevant factors. COVID-END in Canada, through the McMaster Health Forum, recently completed an updated version of their Living Evidence Profile #2:

- [What Is Known About Preventing and Managing COVID-19 Outbreaks and About Supporting Renewal in Long-Term Care Homes?](#)

The Living Evidence Profile on managing COVID-19 in long-term care homes is updated each month, adding new highly relevant information; this update identified an additional 19 highly relevant guidelines, systematic reviews, and other evidence (for a total of 147 highly relevant documents), and contains an updated jurisdictional scan.

RESEARCH EVIDENCE/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.

HEALTH EQUITY AND VULNERABLE POPULATIONS

- ***JAMA: Caregiver perceptions of children's psychological well-being during the COVID-19 pandemic***
[Apr 29, 2021](#). In this study of 32,217 caregivers of public school students, endorsement of child mental health concerns was significantly higher and endorsement of positive adjustment characteristics was significantly lower after the end of in-person instruction compared with before. After accounting for covariates, child mental health concerns increased in probability and positive adjustment characteristics decreased in probability as COVID-19 exposure and family stressors increased. These findings suggest that COVID-19 was associated with negative caregiver perceptions of children's psychological well-being, requiring a comprehensive public health strategy. [Read](#).
- ***JAMA: Association of maternal SARS-CoV-2 infection in pregnancy with neonatal outcomes***
[Apr 29, 2021](#). In this nationwide study that included 88,159 infants from Sweden, SARS-CoV-2 infection in pregnancy was significantly associated with higher risk of any neonatal respiratory disorder (2.8% vs 2.0%) and some other neonatal morbidities, but not neonatal mortality (0.30% vs 0.12%). These findings suggest that maternal SARS-CoV-2 infection in pregnancy was significantly associated with small increases in the absolute risk of respiratory disorders and some other neonatal morbidities. [Read](#).

RESEARCH EVIDENCE/JURISDICTIONAL EXPERIENCE cont'd

- ***NEJM: Preliminary findings of mRNA COVID-19 vaccine safety in pregnant persons***
[Apr 21, 2021](#). From December 14, 2020 to February 28, 2021, researchers used data from the “v-safe after vaccination health checker” surveillance system, the v-safe pregnancy registry, and the Vaccine Adverse Event Reporting System (VAERS) to examine the safety of delivering mRNA COVID-19 vaccines to pregnant women in the United States. Among 3,958 participants enrolled in the v-safe pregnancy registry, 827 had a completed pregnancy, of which 115 (13.9%) resulted in a pregnancy loss and 712 (86.1%) resulted in a live birth. Preliminary findings did not show obvious safety signals among pregnant persons who received mRNA COVID-19 vaccines. More longitudinal follow-up is necessary to inform maternal, pregnancy, and infant outcomes. [Read](#).
- ***Journal of Health Psychology: Perceived “risky” sexual behaviour during COVID-19 pandemic***
[Apr 15, 2021](#). This study surveyed adults in the United States ($N=333$) to determine individuals’ risk perceptions related to sexuality during the COVID pandemic. Participants defined risky sexual behaviour as: 1) COVID-19-related; 2) STI/pregnancy; 3) relationship-related; 4) physical boundaries; 5) drug or alcohol; and 6) multiple risks. Sexual risk perceptions shifted from traditional “risky” sexual behaviours, such as sex with little known partner, to viewing sex with anyone as risky. The study suggests that conventional public health messaging may need to incorporate changing risk definitions to address sexual health during the pandemic. [Read](#).

PUBLIC HEALTH MEASURES

- ***JCPP Advances: Prevalence of clinical level emotional/behavioural problems in school children during the COVID-19 pandemic***
[Apr 28, 2021](#). This study investigated pandemic-related emotional/behavioural problems and their risk factors among 4,800 school children in Japan during wave one (March 4-8, 2020) and wave two (May 15-18, 2020). The proportions of clinical-level problems were higher in wave two (emotional symptoms, 24.8%; conduct problems, 22.7%; hyperactivity/inattention, 36.8%; peer relationship problems, 36.2%; and lack of prosocial behaviour, 23.5%) compared to wave one. Lower grade-level and lower annual family income predicted the increased proportions of children's clinical-level emotional symptoms, hyperactivity/inattention, and prosocial behaviour in wave two. The total length of school closure was not a significant predictor of subsequent emotional/behavioural problems and the highest proportion of clinical-level problems in wave two was observed in children with neurodevelopmental disorders. [Read](#).
- ***Asia Pacific Journal of Public Health: Perceptions about mask use among Australians amid the COVID-19 outbreak***
[Apr 24, 2021](#). This study analyzed mask-wearing perceptions, barriers, and predictive factors among Australians as part of the [COLLATE](#) project. Data collected in June 2020 suggested that there was greater endorsement for mask-wearing in public (58.4%) than not (29.1%). Three main perceived barriers to mask use involved perceptions that: 1) mask-wearing would create a false sense of security; 2) people may not know how to fit masks properly; and 3) the quality and discomfort of mask-wearing would affect effectiveness. Distal predictors included the state of residence, employment, household income, and level of cash savings. [Read](#).

RESEARCH EVIDENCE/JURISDICTIONAL EXPERIENCE cont'd

CASE TESTING AND SCREENING

- **CMAJ: Individual and social determinants of SARS CoV-2 testing and positivity in Ontario**
[Apr 27, 2021](#). This study examined determinants that are associated with testing and diagnosing SARS-CoV-2 among 14.7 million Ontario residents. Testing by social determinants was consistently related to increased odds of SARS-CoV-2 diagnosis: residing in areas with highest household density; highest proportion of essential workers; lowest educational attainment; and highest proportion of recent immigrants. Results support the suggestion that optimizing COVID-19 testing and diagnoses necessitates sufficient structural interventions that address social determinants of risk (i.e., household crowding, occupation, and structural racism). [Read](#).

UNDERSTANDING THE DISEASE

- **Lancet: SARS-CoV-2 antibody-positivity protects against reinfection**
[Apr 27, 2021](#). This study assessed SARS-CoV-2 reinfections in a cohort of antibody-positive persons in Qatar from April 16 to December 31, 2020. Among 43,044 antibody-positive persons, 314 individuals (0.7%) had at least one PCR positive swab ≥ 14 days after the first-positive antibody test and 129 of these individuals (41.1%) had supporting epidemiological evidence for reinfection, demonstrating an estimated incidence rate of 0.66 per 10,000 persons-weeks. In 149,923 antibody-negative persons, the incidence rate of infection was estimated at 13.69 per 10,000 person-weeks. Overall, natural infection appears to elicit strong protection against reinfection with an efficacy of approximately 95% for at least seven months. [Read](#).
- **Eurosurveillance: Characteristics of SARS-CoV-2 variants of concern B.1.1.7/S gene target failure (SGTF), B.1.351, or P.1**
[Apr 22, 2021](#). This analysis outlines the characteristics of SARS-CoV-2 variant of concern infections in seven EU/EEA countries and suggests a higher risk for hospitalization, and ICU admission in age groups <60 years for B.1.1.7/SGTF, B.1.351, and P.1 (colloquially known as the UK, South African, and Brazilian variants, respectively). These findings underline the necessity to rapidly reach high levels of vaccine coverage and adhere to public health measures to reduce SARS-CoV-2 incidence and prevent severe cases. Enhanced testing and contact tracing implemented with a special focus on cases with variants of concern are also measures to reduce spread. [Read](#).

FRONTLINE WORKERS

- **Vaccine: Acceptance of COVID-19 vaccination among frontline health care workers (HCWs)**
[Apr 23, 2021](#). This study evaluated the COVID-19 vaccination acceptance among frontline HCWs in Germany. Of the 1,296 participants, 57% were willing to be vaccinated while 27.6% were undecided. Results demonstrated the following groups had a higher willingness to be vaccinated: male gender, higher medical education level, older age, and perception of being burdened by the pandemic. Due to the low overall acceptance of vaccination by HCWs, researchers recommend that the groups with vaccination hesitancy be recruited for vaccination through interventions such as continuing education and awareness campaigns. [Read](#).

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FRONTLINE WORKERS

- *Lancet*: COVID-19 vaccine coverage in health care workers in England and effectiveness of BNT162b2 mRNA vaccine against infection (SIREN study)

[Apr 23, 2021](#). This study of staff working in publicly funded hospitals found that the BNT162b2 vaccine (commonly known as the Pfizer vaccine) can prevent both symptomatic and asymptomatic infection in working-age adults. This cohort was vaccinated when the dominant variant in circulation was B.1.1.7 and shows effectiveness against this variant. [Read](#).

DISEASE MANAGEMENT

- *NEJM*: Safety and efficacy of single-dose Ad26.COV2.S vaccine against COVID-19

[Apr 21, 2021](#). This international, randomized, double-blind, placebo-controlled, phase three trial using 19,630 SARS-CoV-2–negative adult participants suggested that a single dose of the Ad26.COV2.S vaccine (commonly known as the Johnson & Johnson vaccine) protected against symptomatic COVID-19 and asymptomatic SARS-CoV-2 infection, and was effective against severe-critical disease, including hospitalization and death. Safety appeared to be similar to that in other phase 3 trials of COVID-19 vaccines. [Read](#).

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 produces Canadian and global spotlights and horizon scans on emerging issues, as well as hosting 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](#).

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TRUSTED RESOURCES cont'd

- 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. COVID-19 responses can include the full spectrum of public health measures, clinical management, health system arrangements, and economic and social responses. During the second half of April, contributing evidence-synthesis teams in [Canada](#) shared 12 completed evidence syntheses, and [globally](#), there are a number of emergent issues related to COVID-19 for which evidence syntheses are or will be needed ([see here](#)). To receive an email containing hyperlinks to these products twice a month, [subscribe here](#).