

COVID-19 PANDEMIC

RAEB'S Evidence Update

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

July 12, 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

Nature: Eight-month follow-up study on COVID-19 survivors

July 5, 2021. This study described the long-term health outcomes of patients with COVID-19 and investigated the potential risk factors, using clinical data recorded during hospitalization and at a mean of 249 days after discharge from 40 survivors with confirmed COVID-19 (including 25 severe cases). The study demonstrated that survivors with severe COVID-19 had higher incidences of diffusion capacity of the lung for carbon monoxide impairment, persistent symptoms in daily life, and higher abnormal scores on chest CT scans as compared with mild cases. The study also concluded that absent or excess of inflammation reaction during COVID-19 course would lead to the impairment of pulmonary diffusion function at the recovery stage.

[Article.](#)

The Public Library of Science One (PLOS One): COVID-19 and pregnancy: Clinical presentation, vertical transmission, and maternal and perinatal outcomes

June 29, 2021. This review of 66 systematic reviews noted that the most frequent COVID-19 clinical findings during pregnancy were fever (28-100%), mild respiratory symptoms (20-79%), raised C-reactive protein (28-96%), lymphopenia (34-80%), and pneumonia signs in diagnostic imaging (7-99%). The most frequent maternal outcomes were C-section (23-96%) and preterm delivery (14-64%). Most of their babies were asymptomatic (16-93%) or presented fever (0-50%), low birth weight (5-43%), or preterm delivery (2-69%). This evidence suggests that

pregnant women with COVID-19 may be at increased risk of adverse pregnancy and birth outcomes and low risk of congenital transmission. [Article](#).

Diabetes & Metabolic Syndrome: Vitamin D supplementation and COVID-19 treatment

June 28, 2021. This systematic review found that vitamin D supplementation for patients (n=467) with COVID-19 did not reduce mortality, ICU admission rates, or the need for invasive ventilation. However, the included studies suffered from significant baseline heterogeneity with respect to drug dosing and population characteristics; further research is therefore necessary. [Article](#).

Disease Management

The New England Journal of Medicine (NEJM): Inactivated SARS-CoV-2 vaccine in Chile

July 7, 2021. A national study conducted February 2 through May 1, 2021, involving 10.2 million participants in Chile, evaluated the effectiveness of an inactivated SARS-CoV-2 vaccine, ‘CoronaVac’, which had been developed in China and is administered in two doses 28 days apart. Effectiveness among fully immunized persons was estimated at 65.9% for preventing COVID-19, 87.5% for preventing hospitalization, 90.3% for preventing ICU admission, and 86.3% for preventing death. [Article](#).

Journal of Cancer Research and Clinical Oncology: Effectiveness of low-dose radiation therapy (LDRT) to improve mortality of COVID-19

July 5, 2021. This review found that LDRT effectiveness in treating pneumonia resulting from COVID-19 was up to 90% across clinical trials. The vast majority of primary and secondary outcomes of these clinical trials show that LDRT can be considered a feasible treatment to improve mortality of COVID-19. [Article](#).

Nature: Frequency, risk factors, and outcomes of hospital readmissions of COVID-19 in Spain

July 2, 2021. This study calculated outcomes for patients admitted to 147 hospitals in Spain from March 1 to April 30, 2020. Overall, the rate of readmission (not including emergency department visits) after hospital discharge for COVID-19 was found to be low (4.2% of 7,137 patients). The median time from discharge to readmission was seven days. The most frequent causes of admission were previous pneumonia (54%), bacterial infection (13%), venous thromboembolism (5%), and heart failure (5%). Advanced age and comorbidity were associated with an increased risk of readmission. [Article](#).

Nature: Biologic and immunosuppressive therapy in gastroenterology and hepatology

June 29, 2021. This study investigated whether immunosuppressive and biologic therapies

affect the incidence or prognosis of COVID-19 for patients with gastrointestinal diseases. In patients with inflammatory bowel disease (IBD), high-dose corticosteroid treatment before SARS-CoV-2 infection has been identified as a risk factor for aggravated outcomes, suggesting that corticosteroid therapy should be reduced if possible. While systemic corticosteroids are recommended for treatment of patients with severe COVID-19, these drugs might augment mortality in non-severe COVID-19 cases. Immunosuppression in IBD and liver transplant recipients is not associated with an increased risk for severe COVID-19, and potentially provides a protective effect against severe COVID-19. [Article](#).

Journal of the American Medical Association (JAMA): Myocarditis following immunization with mRNA COVID-19 vaccines in members of the US military

June 29, 2021. This retrospective study of examined 23 male patients, including 22 previously healthy military members, who experienced myocarditis within four days of receipt of a COVID-19 vaccine between January and April 2021. For most patients (n=20), the diagnosis was made after the second dose of mRNA COVID-19 vaccine; these episodes occurred against the backdrop of 2.8 million doses of mRNA COVID-19 vaccines administered by the military. [Article](#).

Public Health Measures

BMC Public Health: Factors associated with the intention of the Syrian adult population to accept COVID19 vaccination

July 4, 2021. This study used an online questionnaire (n=3,402) to estimate the proportion of the Syrian adult population intending to be vaccinated against COVID-19 and assessed the demographic and attitudinal factors associated with the intention to vaccinate. Of the sample, 1,222 participants (35.92%) indicated they would consent to get vaccinated against COVID-19. Findings also indicated that vaccine hesitancy was closely related to the fear of side effects and doubts about vaccine efficacy. Factors such as conspiracy beliefs and myths about the vaccine were found to lower vaccine uptake. The study concluded that vaccine acceptance is low among Syrian populations and stressed the importance of implementing interventional educational campaigns to overcome misinformation and avert low vaccination acceptance rates. [Article](#).

European Journal of Medical Research: Effects of COVID-19 prevention procedures on other common infections

July 3, 2021. This systematic review found that the adherence to health protocols to prevent COVID-19 might have reduced the incidence of other infectious diseases such as influenza, pneumonia, and Mycobacterium tuberculosis. However, further large population-based studies are necessary, as some countries, such as the United States, documented more influenza and pneumonia deaths in 2020 compared to 2019. [Article](#).

Nature: Mobility restrictions associated with reductions in COVID-19 incidence early in the pandemic

July 2, 2021. This study analyzed mobility data and reported COVID-19 cases in 34 countries, starting from the 14th day after the 100th case was detected in each country through to August 31, 2021. The study found that in two-thirds of the examined countries, reductions of up to 40% in commuting mobility (to workplaces, transit stations, retailers, and recreation) were associated with decreased cases, especially early in the pandemic. Once both mobility and incidence had been brought down, further restrictions provided little additional benefit. These findings point to the importance of acting early and decisively in a pandemic. [Article](#).

World Health Organization (WHO): Policy and technical considerations for implementing a risk-based approach to international travel

July 2, 2021. This interim guidance notes that a risk-based approach should consider the risk posed by travel for the importation and exportation of cases in the context of the evolving epidemiology, including the emergence and circulation of virus variants of concern; the expansion of the COVID-19 vaccination roll-out; and lessons learned while responding to the pandemic. Proof of COVID-19 vaccination should not be required as a condition of entry to or exit from a country. National authorities implementing testing or quarantine as a condition for entry of international travellers may consider individualized approaches to exempting them from these measures based on acquired immunity from vaccination or previous SARS-CoV-2 infection. Adherence to personal protective measures (e.g., mask use, physical distancing) must continue to be respected by all international travellers, both while on board conveyances and at points of entry. [Article](#).

Health Equity and Vulnerable Populations

American Journal of Epidemiology: Persistent disparities among racially/ethnically marginalized groups in the COVID-19 pandemic persist regardless of statewide shelter-in-place (SIP) policies

July 2, 2021. This study, conducted at a northern California health care system, examined COVID-19 disparities among racial/ethnically marginalized groups in hospitalization and ICU-transfer pre/post implementation of the California statewide SIP policy (January to August 2020). Based on analyses of 16,520 people with COVID-19, disparities in hospitalization persisted while ICU risk became more pronounced for Asian and Hispanic patients post-SIP. Policy makers should consider ways to proactively address inequities in risk when considering future population-level policy interventions for public health crises. [Article](#).

Frontline Workers

JAMA: Seroprevalence of and risk factors associated with SARS-CoV-2 infection in health care workers (HCWs) during the early COVID-19 pandemic in Italy

July 6, 2021. This study of 82,961 serological tests of Italian HCWs identified the seroprevalence and the relative odds of SARS-CoV-2 infection among HCWs employed in different professional categories and operational units. Higher odds of infection were found among nurses, health assistants, and workers enrolled in emergency departments or in treatment of patients with sub-acute disease. These findings suggest that equipment and training of personnel less accustomed to managing infectious disease, but directly exposed to patients who may be infected with SARS-CoV-2, should be prioritized to decrease infection risks in health care settings. [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 June, Canadian evidence synthesis teams completed 18 new evidence syntheses. Please visit [Canadian Spotlight 6.2](#) 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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