

COVID-19 PANDEMIC

RAEB'S Evidence Update

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

September 7, 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: Genome-wide association study of COVID-19 severity among the Chinese population

August 31, 2021. This study examined a genome-wide association of 885 severe or critical COVID-19 patients (cases) and 546 mild or moderate patients (controls) from two hospitals in China in order to reveal genetic determinants of susceptibility to COVID-19 severity in the Chinese population. The findings highlight two loci on chromosome 11q23.3 and 11q14.2 conferring susceptibility to the severity of COVID-19, which might provide novel insights into the pathogenesis and clinical treatment of this disease. [Article](#).

Nature: Risk factors for re-admission and outcome of patients hospitalized with confirmed COVID-19 in Israel

August 31, 2021. This study of adult patients with confirmed SARS-CoV-2 who were admitted to hospital between March to September 2020 found that re-admission rates of hospitalized COVID-19 are fairly moderate at 9.2%. Predictors of re-admission are non-modifiable, including baseline comorbidities, rather than COVID-19 severity or treatment. The findings may help identify which patients can be discharged early and which patients' hospitalization does not significantly affect outcome. [Article](#).

Transmission

The New England Journal of Medicine (NEJM): Resurgence of SARS-CoV-2 infection in a highly vaccinated health system workforce

September 1, 2021. This case report from University of California San Diego Health indicates that, coincident with the end of California's mask mandate on June 15, 2021 and the rapid dominance of the Delta variant, COVID-19 infections among the health system workforce increased rapidly, including cases among fully vaccinated persons (83% of the workforce in July 2021). These findings underline the importance of rapidly reinstating non-pharmaceutical interventions (e.g., indoor masking, intensive testing strategies), in addition to continued efforts to increase vaccinations, to prevent avoidable illness and deaths and to avoid mass disruptions to society. [Article](#).

Disease Management

NEJM: Effectiveness of an inactivated SARS-CoV-2 vaccine (CoronaVac) in Chile

September 2, 2021. This study of approximately 10.2 million persons found that CoronaVac effectively prevented COVID-19, including severe disease and death, a finding that is consistent with results of phase two trials of the vaccine. [Article](#).

The Lancet: Risk factors and disease profile of post-vaccination SARS-CoV-2 infection in UK users of the COVID Symptom Study app

September 1, 2021. This study found that the odds of post-vaccination infection following the first dose were increased in frail, older adults and in those living in more deprived areas, and were decreased in individuals without obesity. Compared with unvaccinated controls, after their second vaccine dose, individuals were less likely to have prolonged illness (symptoms for ≥ 28 days), more than five symptoms in the first week of illness, or present to hospital. Fully vaccinated individuals with COVID-19, especially if they were 60 years or older, were more likely to be completely asymptomatic than were unvaccinated controls. These findings might support caution around relaxing physical distancing and other personal protective measures in the post-vaccination era, particularly around frail older adults and individuals living in more deprived areas, even if these individuals are vaccinated, and might have implications for strategies such as booster vaccinations. [Article](#).

medRxiv: BNT162b2 vaccine booster dose protection in Israel

August 31, 2021. This nationwide study found an 11.4-fold decrease in the relative risk of confirmed infection and a >10-fold decrease in the relative risk of severe illness twelve days or more after Pfizer booster dose administration. On July 30, 2021, a third (booster) dose of the

Pfizer vaccine was approved in Israel for individuals 60 years or older who had been fully vaccinated at least five months previously. [Article](#).

The Lancet: One-year outcomes in hospital survivors with COVID-19

August 28, 2021. This study found that most COVID-19 survivors had a good physical and functional recovery and had returned to their original work and life one year after symptom onset. However, the health status of survivors at 12 months was still lower than that in the control population. Lung diffusion impairment and radiographic abnormalities were still common in critically ill patients at 12 months. [Article](#).

Nature: Neutralization of SARS-CoV-2 variants by convalescent and BNT162b2 (Pfizer) vaccinated serum

August 26, 2021. This study compared levels of protection against B.1.1.7 (alpha) and B.1.351 (beta) variants in Pfizer vaccine recipients and COVID-19 patients. Both the alpha and beta variants were less well-neutralized by serum from vaccinated individuals, and beta, but not alpha, is less well-neutralized by convalescent serum. These results demonstrate the escape of the emerging SARS-CoV-2 variants from neutralization by serum antibodies, which may lead to reduced protection from re-infection or increased risk of vaccine breakthrough. [Article](#).

Health Equity and Vulnerable Populations

Journal of the American Medical Association (JAMA): Eviction moratoria expiration and COVID-19 infection risk across strata of health and socioeconomic status in the US

August 30, 2021. This study of 509,694 individuals living in the US found that residents in states that lifted eviction moratoria had an increased risk of receiving a COVID-19 diagnosis 12 weeks after the moratorium was lifted relative to residents in states where moratoria remained in place. These associations increased over time, particularly among individuals with more comorbidities and lower socioeconomic status. These findings suggest that eviction-led housing insecurity may have exacerbated the COVID-19 pandemic. [Article](#).

JAMA: Changes in body mass index among children and adolescents during the COVID-19 pandemic

August 27, 2021. This study found that significant weight gain occurred during the COVID-19 pandemic among youths, especially among children aged five to 11 years, based on data of 191,509 participants from one non-profit care provider in Southern California. These findings, if generalizable to the US, suggest an increase in pediatric obesity due to the pandemic. Research should monitor whether the observed weight gain persists and what long-term health consequences may emerge. [Article](#).

JAMA: Prevalence and trends in suicidal behaviour among US military veterans during the COVID-19 pandemic

August 25, 2021. This study of 3,078 US military veterans found rates of suicide ideation and suicide attempts did not significantly increase from pre-pandemic to peri-pandemic at the population level. However, a small proportion of veterans (2.6%) developed new-onset suicide ideation during the pandemic. These results suggest that despite grim forecasts about the COVID-19 pandemic possibly creating the circumstances for suicidal behaviour, the prevalence of suicidality did not appear to increase among military veterans nearly 10 months into the pandemic. [Article](#).

Critical Public Health: Sexual minority men’s HIV pre-exposure prophylaxis (PrEP) decision-making during Ontario’s first COVID-19 lockdown

August 25, 2021. This Ontario-based study involving 25 HIV-negative gay, bisexual, queer, and other men who have sex with men (GBM) reported that during the province’s first COVID-19 lockdown, participants significantly altered their sexual practices to avoid the disease, with some stopping, restarting, and others stockpiling their PrEP. Many participants engaged in risk reduction strategies earlier developed by GBM to mitigate HIV, such as avoiding new sexual partnerships and creating small networks of sexual partners prior to government ‘social bubble’ mandates. These findings demonstrate how people modify restrictive public health messaging into more pragmatic practices. [Article](#).

Frontline Workers

JAMA: Racial/ethnic differences in COVID-19 vaccine hesitancy among health care workers (HCWs) in two large academic hospitals

August 30, 2021. This survey study of 10,871 HCWs from two academic hospitals found that, compared with White HCWs, vaccine hesitancy was increased nearly five-fold among Black HCWs, two-fold among Hispanic or Latino HCWs, and by nearly 50% among Asian HCWs and HCWs who were members of other racial/ethnic groups. These findings suggest that interventions focused on addressing vaccine hesitancy among HCWs are needed, particularly for Black and Hispanic or Latino HCWs, among whom hesitancy is highest. [Article](#).

Health Qual Life Outcomes: Anxiety, trauma, and well-being in HCWs during COVID-19 first wave in Spain

August 28, 2021. This study of HCWs (n=232; medical doctors: 38.8%, nurses: 61.2%) during the first wave of COVID-19 in Spain reported that HCWs showed high levels of anxiety and traumatic intensity, and low levels of well-being indicators. HCWs who had access to PPE had lower levels of state anxiety and traumatic symptoms and greater levels of well-being, compared to those who did not. These findings suggest that PPE availability may be a protective

factor for HCWs' mental health. [Article](#).

Health System Impacts

PLoS One: Patient prioritization methods to shorten wait times for elective surgery

August 30, 2021. This systematic review on how to improve access to surgery concluded that explicit prioritization tools with a standardized scoring system based on clear evidence-based criteria are likely to reduce wait times and improve equitable access to health care. Multiple attributes (e.g., those patients with the greatest need) need to be considered in defining a fair prioritization system to overcome limitations with local variations. [Article](#).

JAMA: Safety and efficacy of telehealth medication abortions in the US during the COVID-19 pandemic

August 24, 2021. This study examined the safety and efficacy of fully remote, asynchronous medication abortion care by using a published protocol that involved three follow-up contacts: confirmation of medication administration, a three-day assessment of expulsion and pregnancy symptoms, and a four-week home pregnancy test. Follow-up interactions were conducted by text, secure messaging, or telephone. Results from the study reported a 95% efficacy rate similar to in-person provision and represent some of the earliest data on new telehealth abortion clinics in the US. [Article](#).

Public Health Measures

World Health Organization (WHO): COVID-19 Vaccine Post-Introduction Evaluation (cPIE) guide

August 25, 2021. This cPIE tool is designed to provide a systematic method for evaluating a COVID-19 vaccination program, using structured interviews at the national, subnational, and health facility level, and with specific target groups, and is supplemented with systematic observations of vaccination sessions and vaccine storage sites. The tool is adapted to COVID-19 vaccination approaches considering that multiple vaccine products may be in use in a country, vaccines may be targeted to different priority populations, and certain vaccines require special considerations for ultra-cold-chain capacity and management. [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 August, there were 13 newly added evidence syntheses. Two of these syntheses provide insights across all domains of the COVID-END taxonomy (public health measures, clinical management, health-system arrangements, and economic and social response) and the remaining focus on public health measures (n=8), and clinical management (n=3). Please visit [Canadian Spotlight 8.2](#) 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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