

FEATURED

- 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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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.

UNDERSTANDING THE DISEASE

- ***Journals of Gerontology: Atypical presentation of COVID-19 in hospitalized older adults during the first surge of the pandemic***
[Jul 19, 2021](#). This study compared demographics, clinical factors, and short-term outcomes between typical versus atypical presentations in older adults aged 65+ years hospitalized with COVID-19 (n=4,961). Atypical presentation, characterized by functional decline or altered mental status, was present in 24.9% and 11.3% of older adults, respectively. Atypical presentation was associated with older age, female gender, Black race, non-Hispanic ethnicity, higher comorbidity index, and the presence of dementia and diabetes mellitus. Those who presented typically were 1.39 times more likely to receive intensive care unit-level of care. [Read](#).
- ***Obesity Research and Clinical Practice: Association of obesity and venous thromboembolism (VTE) and myocardial injury in COVID-19***
[Jul 16, 2021](#). This study investigated the association between obesity class and risk of thrombosis in patients with COVID-19 (n=609). Compared to patients without obesity, patients with class I (i.e., BMI of 30-34.9) and III (i.e., BMI of ≥ 40) obesity had significantly higher risk of VTE, while patients with class III obesity also had significantly higher risk of myocardial injury. Both VTE and myocardial injury were significantly associated with greater risk of mortality. These findings suggest that both macrovascular and microvascular thromboses may contribute to the elevated morbidity and mortality in patients with obesity and COVID-19. [Read](#).
- ***JAMA: Long-term symptoms after SARS-CoV-2 infection in children and adolescents***
[Jul 15, 2021](#). This study identified a low prevalence of symptoms compatible with long COVID among children and adolescents reported up to six months after SARS-CoV-2 testing across 55 random schools in Switzerland. Between October and November 2020 and March and April 2021, four of 109 seropositive children and adolescents (4%) vs. 28 of 1,246 seronegative children and adolescents (2%) reported at least one symptom lasting beyond 12 weeks. [Read](#).

RESEARCH EVIDENCE/JURISDICTIONAL EXPERIENCE cont'd

UNDERSTANDING THE DISEASE cont'd

- **medRxiv: Progressive increase in virulence of novel SARS-CoV-2 variants in Ontario**
[Jul 12, 2021](#). This study (preprint) evaluated the virulence of variants of concern (VOC) compared to non-VOC SARS-CoV-2 infections, as measured by risk of hospitalization, intensive care unit (ICU) admission, and death, from February to June 2021. Compared to non-VOC SARS-CoV-2 strains, the increase in risk associated with N501Y-positive variants (Alpha/B.1.1.17, Beta/B.1.351, and Gamma/P.1) was 59% (95% confidence interval [CI]: 49-69%) for hospitalization; 105% (95% CI: 82-134%) for ICU admission; and 61% (95% CI: 40-87%) for death. Increases with Delta variant were more pronounced. The progressive increase in transmissibility and virulence of SARS-CoV-2 VOCs will result in a significantly larger, and more deadly, pandemic than would have occurred in the absence of VOC emergence. [Read](#).

DISEASE MANAGEMENT

- **Lancet: Dapagliflozin in patients with cardiometabolic risk factors hospitalized with COVID-19 (DARE-19)**
[Jul 21, 2021](#). This randomized controlled trial reported that treatment with dapagliflozin did not result in a statistically significant risk reduction in organ dysfunction or death, or improvement in clinical recovery, in patients with cardiometabolic risk factors who were hospitalized with COVID-19. However, the medication was well-tolerated. Dapagliflozin belongs to a class of inhibitors shown to reduce cardiovascular and kidney events in patients with type 2 diabetes, cardiovascular disease, or kidney disease. [Read](#).
- **NEJM: Effectiveness of COVID-19 vaccines against the B.1.617.2 (Delta) variant**
[Jul 21, 2021](#). This study examined data on all symptomatic sequenced cases of COVID-19 in England to estimate the proportion of cases with either delta variant or the predominant strain (B.1.1.7, or alpha variant) according to the patients' vaccination status. Only modest differences in vaccine effectiveness were noted with the delta variant as compared with the alpha variant after the receipt of two vaccine doses. Differences in vaccine effectiveness were more marked after the receipt of the first dose. This finding supports efforts to maximize vaccine uptake with two doses among vulnerable populations. [Read](#).
- **JAMA: Effect of oral azithromycin vs. placebo on COVID-19 symptoms in outpatients with SARS-CoV-2 infection**
[Jul 16, 2021](#). This randomized clinical trial found that treatment with a single dose of azithromycin compared with placebo did not result in greater likelihood of being symptom-free at day 14 in outpatients with COVID-19. These findings do not support the routine use of azithromycin for outpatient SARS-CoV-2 infection. [Read](#).
- **Euro Surveillance: Efficacy and effectiveness of COVID-19 vaccines against SARS-CoV-2 infection: Interim results of a living systematic review (Jan 1 – May 14, 2021)**
[Jul 15, 2021](#). This living systematic review found the efficacy/effectiveness of European Union-licensed COVID-19 vaccines against symptomatic and asymptomatic infections was 80-90% in fully vaccinated individuals in nearly all 30 identified studies. Fully vaccinated persons are less likely to become infected and contribute to transmission. [Read](#).

RESEARCH EVIDENCE/JURISDICTIONAL EXPERIENCE cont'd

DISEASE MANAGEMENT cont'd

- **JAMA: Association of remdesivir treatment with survival and length of hospital stay among US veterans hospitalized with COVID-19**
[Jul 15, 2021](#). This study examined associations between remdesivir treatment and survival and length of hospital stay among 2,344 US veterans hospitalized with COVID-19 in routine care settings. The study found that remdesivir therapy was not associated with improved 30-day survival, but was associated with a significant increase in median time to hospital discharge. The study concluded that routine use of remdesivir may be associated with increased use of hospital beds while not being associated with improvements in survival. [Read](#).
- **JAMA: Association between BNT162b2 (Pfizer) vaccination and incidence of SARS-CoV-2 infection in pregnant women in Israel**
[Jul 12, 2021](#). This study found that vaccination was associated with a significantly lower risk of SARS-CoV-2 infection in comparison to no vaccination among pregnant women (n=15,060). However, interpretation of the findings may be limited by the observational design. [Read](#).

CASE TESTING AND SCREENING

- **Journal of Clinical Virology: Performance of saliva as a specimen to detect SARS-CoV-2**
[Jul 17, 2021](#). This study compared the results of using RT-PCR of RNA extracted from nasopharyngeal swabs and saliva with using saliva directly without RNA extraction among patients suspected of having COVID-19. The study concluded that RNA extraction from saliva does not offer better sensitivity than its use directly in RT-PCR, and that the use of saliva specimens should be carefully considered due to the false negative rate. [Read](#).

PUBLIC HEALTH MEASURES

- **Lancet: SARS-CoV-2 testing and sequencing for international arrivals in the UK**
[Jul 14, 2021](#). This study examined the impact of mandatory Day 2 and Day 8 PCR testing and variant sequencing of international arrivals recently introduced by the UK Government to mitigate against cross-border transmission of high-risk SARS-CoV-2 variants. The study found that the unexpectedly high prevalence of COVID-19 infection in travellers (1.9%) was associated with a rich diversity of SARS-CoV-2 high risk variants, including B.1.617.2 (Delta). Genomic surveillance for monitoring of cross border transmission may be a critical public health measure that countries may need to adopt to protect their populations from emerging high-risk SARS-CoV-2 variants until the global roll-out of effective vaccines has been achieved. [Read](#).

RESEARCH EVIDENCE/JURISDICTIONAL EXPERIENCE cont'd

HEALTH EQUITY AND VULNERABLE POPULATIONS

- ***Nature*: High coverage COVID-19 mRNA vaccination rapidly controls transmission in long-term care facilities (LTCFs) in Spain**
[Jul 16, 2021](#). This study used statistical modeling to compare the expected number of infections and deaths in LTCFs if vaccination would not have occurred to those actually observed after vaccinating more than 70% of residents with the BNT162b2-mRNA (Pfizer) vaccine. It was estimated that three out of four SARS-CoV-2 infections and deaths were prevented due to vaccination, and that SARS-CoV-2 transmission in LTCFs was reduced by 90%. These findings demonstrate that high-coverage vaccination is a highly effective way to prevent SARS-CoV-2 transmission and death among vulnerable populations. [Read](#).
- ***Lancet*: Mental disorders and risk of COVID-19-related mortality, hospitalization, and intensive care unit (ICU) admission**
[Jul 15, 2021](#). This systematic review identified strong evidence that patients with mental disorders are at higher risk of mortality and hospitalization, but not ICU admission, after SARS-CoV-2 infection. Psychotic and mood disorders were consistently associated with COVID-19-associated mortality, as were exposure to antipsychotic and anxiolytic treatments. Patients with substance use disorders were at increased risk of hospitalization, whereas no increased risk of hospitalization was identified among patients with psychotic disorders. [Read](#).
- ***Journal of Primary Care & Community Health*: Tough choices sex workers faced during the COVID-19 pandemic**
[Jul 8, 2021](#). This Canadian commentary addresses the unintended consequences the COVID-19 pandemic has had on various social determinants of health among female sex workers (FSWs) globally, as well as in Canada where the sex trade is not formally recognized. Due to COVID-19, many FSWs suddenly lost their main source of income, work conditions became riskier, and sheltering-in-place presented challenges for women with no safe housing. The authors draw on their experience with the [Exit Doors Here](#) program, a sex work exiting program implemented in Toronto, Ontario, to make recommendations for protecting FSWs in future health, social, or economic crises. These include: 1) ensure no-strings-attached support for social and health care services; 2) secure sex workers' access to essential resources; 3) remove barriers to accessing safe housing; 4) implement universal basic income; and 5) recognize sex work as a form of employment. [Read](#).
- ***BMJ*: Safeguarding teenagers in a sexual health service (SHS) during the COVID-19 pandemic**
[Jul 5, 2021](#). This UK study examined the impact of COVID-19 restrictions during the first six months of lockdown (April-September 2020) on teenagers' sexual health-seeking behaviour at a local SHS, compared to service use during the same months in 2019. The study found a 100% reduction in contact with SHS service for those aged 13 years and younger, 52% for those aged 14 and 15 years, and 31% for those aged 16 and 17 years. Results suggest that reduced face-to-face services may be a barrier for some young people accessing sexual health services. [Read](#).

COVID-19 PANDEMIC – RAEB'S EVIDENCE UPDATE

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

• July 26, 2021 •

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) lobar 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](#).

* 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*