

COVID-19 PANDEMIC

RAEB'S Evidence Update

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

February 14, 2022

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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

The Lancet: Safety and immunogenicity of a high-dose quadrivalent influenza vaccine (QIV-HD) administered concomitantly with a third dose of Moderna in older adults in the US

January 31, 2022. This phase two study found no safety concerns or immune interference for concomitant administration of QIV-HD with Moderna booster in adults aged 65 years and older, supporting co-administration recommendations. [Article](#).

Transmission

Journal of the American Medical Association (JAMA): Comparison of SARS-CoV-2 test positivity in National Collegiate Athletic Association (NCAA) Division I student athletes vs. non-athletes at 12 institutions

February 9, 2021. In this study using data for 555,372 student athlete and 3,482,845 non-athlete student SARS-CoV-2 tests reported from 12 NCAA Division I institutions, participation in collegiate athletics was not associated with increased test positivity in student athletes compared with non-athlete students. This finding suggests that collegiate athletics may be held

safely in the COVID-19 pandemic without associated increases in test positivity among student athletes. [Article](#).

UK Health Security Agency: Omicron sub-lineage BA.2 may have substantial growth advantage

January 28, 2022. The UK Health Security Agency reported more than 1,000 cases of BA.2 (a sub-lineage of the SARS-CoV-2 variant omicron) in England and warned that BA.2 has an increased growth rate compared with the original omicron variant (BA.1). The preliminary investigations found no evidence of decreased vaccine effectiveness against symptomatic disease for BA.2 compared with BA.1. At least 25 weeks after two doses, vaccine effectiveness against symptomatic infection was reported as 9% and 13% respectively for BA.1 and BA.2, which increased to 63% for BA.1 and 70% for BA.2 at two weeks following a third booster dose. [Article](#).

Disease Management

JAMA: Efficacy of niclosamide vs. placebo in SARS-CoV-2 respiratory viral clearance, viral shedding, and duration of symptoms among patients with mild to moderate COVID-19

February 9, 2021. In this randomized clinical trial that included 73 adults with mild to moderate COVID-19, the proportion of participants achieving oropharyngeal clearance of SARS-CoV-2 at three days post-enrollment was not statistically significantly different between patients given placebo and those given niclosamide (i.e., an anthelmintic found to inhibit SARS coronavirus and have antiviral activity against SARS-CoV-2). Niclosamide was well-tolerated. [Article](#).

Canadian Medical Association Journal (CMAJ): The Canadian COVID-19 Emergency Department Rapid Response Network (CCEDRRN) COVID-19 Mortality Score to predict death among non-palliative patients with COVID-19 presenting to emergency department (EDs)

February 8, 2022. Using data from 46 hospitals in eight Canadian provinces, this study developed and validated a clinical score to predict ED and in-hospital mortality among non-palliative patients (not wanting resuscitative measures) with COVID-19 based on age, sex, type of residence, arrival mode, chest pain, severe liver disease, respiratory rate, and level of respiratory support. The CCEDRRN COVID-19 Mortality Score can be used for level-of-care discussions with patients and in situations of critical care resource constraints to accurately predict death using variables available on emergency department arrival. [Article](#).

Nature: Long-term cardiovascular outcomes of COVID-19

February 7, 2022. This study of US national health care data shows that individuals with COVID-19, beyond the first 30 days after infection, are at increased risk of incident cardiovascular

disease spanning several categories (i.e., cerebrovascular disorders, dysrhythmias, ischemic and non-ischemic heart disease, pericarditis, myocarditis, heart failure, and thromboembolic disease). This is evident even among individuals who were not hospitalized during the acute phase of the infection. Care pathways of those surviving the acute episode of COVID-19 should include attention to cardiovascular health and disease. [Article](#).

Journal of Antimicrobial Chemotherapy: Azithromycin in patients with COVID-19

February 2, 2022. This systematic review’s findings do not support the use of azithromycin in the management of COVID-19 – there was no difference in mortality for those treated with or without azithromycin. Different individual studies also reported no significant difference for those treated with or without azithromycin in need for hospital admission or time to admission from ambulatory settings, clinical severity, need for intensive care, or adverse effects. [Article](#).

Infection, Prevention and Control in Specific Settings

CMAJ: Outcomes of hospital-acquired (HA) SARS-CoV-2 infection in the Canadian first wave epicentre

February 1, 2022. Using data collected in Hôpital Maisonneuve-Rosemont (Montréal) between March 1 and June 30, 2020, this study assessed whether mortality was higher in HA cases than in non-hospital-acquired (NHA) cases and determined the prevalence of HA-SARS-CoV-2 infection. Among 697 patients with SARS-CoV-2 infection, 253 (36.3%) were classified as HA. Results showed that HA-SARS-CoV-2 infection in patients younger than 75 years of age was associated with higher mortality. The increased risk of death from the in-hospital acquisition of SARS-CoV-2 infection seemed to decrease with increasing age. This can be explained by an increase in comorbidities and frailty overwhelming the potential increased risk from HA-SARS-CoV-2 infections for older patients. [Article](#).

Health Equity and Vulnerable Populations

JAMA: Characteristics, outcomes, and severity risk factors associated with SARS-CoV-2 infection among children in the US National COVID Cohort Collaborative

February 8, 2021. In this study, 167,262 children at 56 sites were SARS-CoV-2–positive and 10,245 were hospitalized. Several demographic and comorbidity variables and many initial vital sign and laboratory test values were associated with higher peak illness severity. This study noted clinical data elements that could assist with early identification of children at risk for severe disease due to SARS-CoV-2 infection. [Article](#).

Journal of Affective Disorders: Prevalence rates of anxiety, depressive, and eating pathology symptoms between the pre- and peri-COVID-19 eras

February 1, 2022. This meta-analysis examined whether anxiety, depressive, and eating pathology symptoms varied by gender, age, status as a medical provider (compared to the general public), race, or region of origin. Female participants were significantly more likely to experience eating pathology than males. Findings from the analysis of data from 36 studies indicate that worldwide, regardless of age, status as a medical provider, race, or region of origin, respondents experienced significantly elevated rates of psychopathology symptoms during the onset of the COVID-19 pandemic. [Article](#).

Journal of Developmental and Physical Disabilities: COVID-19 and physical activity behaviour in people with neurological diseases

February 1, 2022. This systematic review concluded that the COVID-19 pandemic has had a negative impact on the physical activity levels of people with neurological diseases (e.g., Parkinson disease, dementia, multiple sclerosis, spinal cord injury, neuromuscular diseases, epilepsy). The physical activity reduction was associated with worse disease symptoms, depression, perceived health, and mental and physical components of quality of life. [Article](#).

Health Systems Impact

JAMA: Trends in violent penetrating injuries during the first year of the COVID-19 pandemic in Massachusetts

February 8, 2021. This study of 2,383 patients with violent injuries noted that there was a significant increase in patients who presented with firearm injuries, but not stabbing injuries, during the first pandemic year compared with the previous five years. This surge in firearm injuries began while Massachusetts was still under a stay-at-home advisory and before large-scale racial justice protests. These findings suggest that policies and procedures aimed at mitigating firearm violence as part of all-hazard preparedness are warranted. [Article](#).

medRxiv: Impacts of the COVID-19 pandemic on future seasonal influenza epidemics

February 6, 2022. This preprint study suggests that the risks posed by seasonal influenza viruses remained largely unchanged during the first two years of the COVID-19 pandemic. The study also shows that low country-level prevalence of each influenza subtype over one or more years has only small impacts on subsequent epidemic size meaning that the sizes of future seasonal influenza virus epidemics will likely be similar to those observed before the pandemic. [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 second half of January 2022, contributing Canadian evidence-synthesis teams have produced five newly completed evidence syntheses. From the COVID-END taxonomy, these syntheses focus on public health measures (n=4) and clinical management (n=1). Please visit [Canadian Spotlight 13.2](#) to view the evidence, or browse past [Canadian evidence spotlights](#). A complete list of the products is available [here](#).

About RAEB

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- Jurisdictional scans
- Economic analysis
- Evaluation planning
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