

COVID-19 PANDEMIC

RAEB'S Evidence Update

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

March 21, 2022

Featured

[RAEB'S Rapid Responses for Ontario's Health Sector
Research Evidence and Jurisdictional Experience
Trusted Resources](#)

RAEB's Rapid Responses for Ontario's Health Sector

Please contact [Evidence Synthesis Unit](#) for the full read of these rapid responses.

Covid-19 Antiviral Deployment Across Jurisdictions

- **Models of Distribution:** Three distribution models for COVID-19 antivirals (Paxlovid and/or Molnupiravir) were identified from Canada, Australia, France, United Kingdom (UK), and United States (US).
- **Online Self-Assessment Tools:** Online self-assessment tools (British Columbia, New Brunswick, Newfoundland and Labrador, and Nova Scotia) can consist of online assessments where the patient is directed to call a centralized phone number for further information, which may trigger a call to the patient from either a physician or pharmacist (British Columbia).
 - Centralized Agency/Site: A centralized or regional agency conducts the preliminary assessment on the phone and refers patients to a prescribing physician (Alberta, Saskatchewan, Manitoba, Nova Scotia, and Newfoundland and Labrador). In the US, patients visit a designated site where they are tested and, if needed, prescribed treatment.
 - Highest Clinical Need/Risk: Australia and the UK base their antiviral distribution model on individuals who are at-risk or have the highest clinical need (e.g., people living in residential aged care facilities; rural and remote communities; Aboriginal and Torres Strait Islander people; people with a disability).

- **Role of Health Care Practitioners:** In Canada, prescriptions for antivirals are generally provided by a physician, except for Saskatchewan and Prince Edward Island where nurse practitioners can also prescribe. Internationally, physicians are also the main prescribers of antivirals, except in the UK where patients receive prescriptions from the National Health Service and the US where they are assessed by health care providers at a designated site.
- **Eligibility Criteria:** Most eligibility criteria for prescribing and distributing COVID-19 antivirals are generally based on the COVID-19 diagnosis, immunocompromised status, vaccination status, age, chronic conditions, and Indigenous status of patients.

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.

Health Equity and Vulnerable Populations

Journal of Adolescent Health: Mental health outcomes among adolescents and young adults (AYA) engaged in care during the COVID-19 pandemic

April 1, 2022. This study examined how COVID-19 risk mitigations (e.g., lockdowns) have impacted AYA with existing mental health conditions who had been in care at the Johns Hopkins All Children’s Hospital Adolescent Health Specialty Clinic (US) prior to COVID-19. Results suggest that COVID-19 risk mitigation interventions have precipitated adverse mental health outcomes among AYA, including: 1) negative mental health changes (e.g., depression, anxiety, eating disorders); 2) negative effects to their physical health (e.g., sleep, hygiene, physical activity, and diet); and 3) increased use of illicit substances. [Article](#).

World Health Organization: Strengthening COVID-19 vaccine demand and uptake in refugees and migrants

March 14, 2022. This guide is designed to provide practical support, strategies, and good practices for addressing personal, social, and practical barriers to COVID-19 vaccines among refugee and migrant populations, acknowledging that they may face a range of unique barriers to accessing immunization systems. The guide covers data collection, coordination of policy and planning, implementing communication strategies, social media monitoring, community engagement, capacity-building, and monitoring and evaluation. [Article](#).

The Lancet: Acute COVID-19 severity and mental health morbidity trajectories in patient populations across six countries

March 14, 2022. This study found severe acute COVID-19 illness – indicated by extended time bedridden – is associated with long-term mental morbidity among recovering individuals in the general population in Denmark, Estonia, Iceland, Norway, Sweden, and the UK. Participants diagnosed with COVID-19 presented higher prevalence of symptoms of depression and poorer sleep quality, but not symptoms of anxiety or COVID-19-related distress, compared with individuals without a COVID-19 diagnosis. Although the prevalence of depression and COVID-19-related distress attenuated with time, individuals diagnosed with COVID-19, but never bedridden due to their illness, were consistently at lower risk of depression and anxiety than those not diagnosed with COVID-19, whereas patients who were bedridden for more than seven days were persistently at higher risk of symptoms of depression and anxiety than those not diagnosed throughout the study period. [Article](#).

Health Systems Impact

Nature: COVID-19 and resilience of health care systems in ten countries

March 14, 2022. This study assessed the immediate effect of the pandemic on 31 health services in Ethiopia, Haiti, Ghana, Lao People’s Democratic Republic, Mexico, Nepal, South Africa, Thailand, Chile, South Korea. Despite efforts to maintain health services, disruptions of varying magnitude and duration were found in every country, with no clear patterns by country income group or pandemic intensity. Disruptions in health services often preceded COVID-19 waves. For example: cancer screenings, tuberculosis screening, and detection and HIV testing were most affected (26-96% declines); total outpatient visits declined by 9-40% at national levels and remained lower than predicted by the end of 2020; and maternal health services were disrupted in approximately half of the countries, with declines ranging from 5-33%. Preliminary data for 2021 indicate that disruptions likely persisted. Although a portion of the declines observed might result from decreased needs during lockdowns (from fewer infectious illnesses or injuries), a larger share likely reflects a shortfall of health system resilience. [Article](#).

Journal of the American Medical Association (JAMA): Trends in engagement with opioid use disorder treatment among Medicaid beneficiaries during the COVID-19 pandemic in Wisconsin

March 11, 2022. In this study of 6,453 Medicaid beneficiaries with opioid use disorder, buprenorphine possession remained stable at the onset and for the first six months of the public health emergency. In contrast, completion of urine drug tests and receipt of opioid treatment program services declined with the onset of the public health emergency and

recovered partially six months into the public health emergency. These findings suggest that the COVID-19 public health emergency did not disrupt access to buprenorphine but did disrupt urine drug testing and access to opioid treatment program services. [Article](#).

BMC Health Services Research: Infant, pediatric, and adult well visit trends before and during the COVID-19 pandemic in the US

March 11, 2022. This study examined whether COVID-19 pandemic was associated with a change in well visits (i.e., annual health exams) among infants, children, adolescents, and adults (n=798,751) at a large mid-western health care system in the US before the pandemic, compared to during the pandemic. Results suggest that infant well visits did not decline at the onset (March 1, 2020) of the pandemic. Although well visits for all other ages decreased to a low point in April 2020, a rapid return to pre-pandemic utilization rates occurred by July 2020. The lack of a decline in well visits among infants is likely due to the need to obtain appropriate vaccinations and evaluate for normal development within a short period of time. For others, there is more flexibility in when well visits need to occur. [Article](#).

Case Testing Screening

Journal of Clinical Ultrasound: The diagnostic performance of lung ultrasound (LUS) for detecting COVID-19 in emergency departments (EDs)

March 9, 2022. This systematic review and meta-analysis concluded that the LUS demonstrated acceptable sensitivity but poor specificity when used independently to diagnose COVID-19 pneumonia patients in EDs, while the lung computed tomography (i.e., x-ray) showed higher performance. This study suggests that LUS can be used to supplement existing diagnostic tools and possibly for the triage of patients. [Article](#).

Frontline Workers

JAMA: Uptake of COVID-19 vaccination among frontline workers in California State prisons

March 11, 2022. In this study of 23,472 custody staff and 7,617 health care staff in California state prisons, 14,317 custody staff (61%) and 2,819 (36%) health care staff remained unvaccinated through June 30, 2021, despite widespread vaccine availability. Unvaccinated staff were younger and more likely to have had COVID-19; they were also more likely to work alongside other unvaccinated staff and reside in communities with relatively low rates of vaccination. The study results suggest that low vaccination rates among prison staff pose continuing risks. [Article](#).

Disease Management

Aging: Association of active immunotherapy with outcomes in cancer patients with COVID-19

March 10, 2022. A systematic review and meta-analysis that included 20 articles with over 6,000 cancer patients diagnosed with COVID-19 found that accepting immunotherapy within 30 days before the diagnosis of COVID-19 was not significantly associated with a higher risk of mortality or severe/critical disease of infected cancer patients. However, further studies with large sample sizes are required to evaluate the present results. [Article](#).

JAMA: Evaluation of antibody response to Moderna vaccination in patients with cancer in Florida

March 10, 2022. In this study of 515 patients with cancer, seropositivity after the first and second vaccine doses was 71% and 90%, respectively. Antibody levels after vaccination were substantially higher among patients who were seropositive before vaccination. Results of this study suggest that the Moderna vaccine induced variable antibody responses that differed by cancer diagnosis and treatment received. These findings recommend that patients with hematologic cancer and those who are receiving immunosuppressive treatments may need additional vaccination doses. [Article](#).

New England Journal of Medicine (NEJM): Booster vaccination against omicron in Qatar

March 9, 2022. This study of 2,239,193 persons examined the protection conferred by booster doses of the Pfizer-BioNTech and Moderna vaccines in Qatar, compared with that conferred by two doses. In persons who received the Pfizer vaccine, the incidence of infection with the Omicron variant after 35 days of observation was 2.4% among those who received three doses, and 4.5% among those who were vaccinated but not boosted; among those who had received the Moderna vaccine, the incidence was 1.0% with a boost and 1.9% without. [Article](#).

Nutrients: The effects of enteral nutrition in critically ill patients with COVID-19

March 7, 2022. This systematic review and meta-analysis reported that early enteral nutrition (e.g., feeding tube) significantly reduced the risk of mortality among critically ill patients with COVID-19. However, neither the introduction of early enteral nutrition nor enteral nutrition significantly reduce the length of hospital stay, length of ICU stay, and days on mechanical ventilation compared to delayed enteral nutrition or nutrition delivered by a vein. [Article](#).

Data Analytics, Modelling and Measurement

Canadian Medical Association Journal: Impact of cancer surgery slowdowns on patient survival during the COVID-19 pandemic in Ontario

March 21, 2022. This modelling study estimated wait times for cancer surgery over a six-month period during the pandemic by simulating a slowdown in operating room capacity (60% operating room resources in month one, 70% in month two, 85% in months three to six), as compared with simulated pre-pandemic conditions with 100% resources. Mean wait time to surgery pre-pandemic was 25 days and during the pandemic was 32 days. Excess wait time led to 0.01–0.07 life-years lost per patient across cancer sites, translating to 843 life-years lost among patients with cancer in Ontario. [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 first half of March 2022, contributing Canadian evidence synthesis teams shared six newly completed evidence syntheses. All the syntheses provide insight focused on public health measures. Please visit [Canadian Spotlight 15.1](#) 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 scan
- Economic analysis
- Evaluation planning
- Research fund management
- Knowledge translation services

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