

COVID-19 PANDEMIC

RAEB'S Evidence Update

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

September 20, 2021

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Evidence Products Produced with Our Partners

The COVID-19 Evidence Synthesis Network is comprised of groups specializing in evidence synthesis and knowledge translation. The group has committed to provide their expertise to provide high-quality, relevant, and timely synthesized research evidence about COVID-19 to inform decision makers as the pandemic continues. Please contact [Evidence Synthesis Unit](#) for the full read of these evidence products.

Best Practices for COVID-19 Case and Contact Management

(Produced in collaboration with Ontario Health)

- There is limited information that noted if jurisdictions' case and contact management was successful in limiting the spread of the Delta variant or COVID-19 generally.
- Studies identified the use of different digital technologies (i.e., social media, SMS messaging) or multimodal methods (i.e., manual/human-based contact tracing coupled with digital technologies) for COVID-19 case and contact management. Multimodal case and contact management was generally recommended.
- Five case and contact management practices were identified across jurisdictions:
 - **Mapping Platforms:** Taiwan and Czech Republic use online maps that display hotspots and locations under investigation for probable COVID-19 cases to identify and track COVID-19-positive individuals.
 - **Public Space Record Keeping:** Administrative controls, including record keeping, have been generally successful in avoiding workplace outbreaks in British Columbia, Nova Scotia, and New Zealand.

- **Inclusion of Probable Cases:** While the World Health Organization recommends self-isolation for both confirmed and probable COVID-19 cases, Nova Scotia, Australia, Ethiopia, and New Zealand only require it for confirmed cases. Prince Edward Island includes contacts of both confirmed and probable cases.
- **Contact Categorization:** Australia and New Zealand use three tiers (i.e., primary/close contacts, contacts with limited direct exposure with a positive case, and secondary close contacts/casual contacts) of isolation requirements for contacts of positive cases.
- **Vaccination Status:** British Columbia, Nova Scotia, and New Brunswick change their case and contact management based on an individual's vaccination status. For example, fully vaccinated and/or recently infected (i.e., within 90 days) contacts are not required to self-isolate in Nova Scotia and British Columbia.
- The Government of Ontario manages contacts and cases based on a combination of symptomatic presentation and vaccination status, paralleling case, and contact management in some other Canadian provinces

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

Journal of the American Medical Association (JAMA): Demographic and clinical characteristics associated with severity, clinical outcomes, and mortality of COVID-19 infection in Gabon

September 14, 2021. This study found that of 63% of 837 patients with COVID-19 from March to June 2020 were asymptomatic. Severity of disease and mortality were associated with advanced age and advanced stage of lung damage. The findings of this study are important because there are few descriptive studies regarding COVID-19 in sub-Saharan African countries, as they have been relatively spared during the COVID-19 pandemic. [Article](#).

Disease Management

JAMA: Safety and antibody response after one and two doses of Pfizer/BioNTech vaccine in recipients of allogeneic hematopoietic stem cell transplant

September 14, 2021. This study found a high response rate of 83% in this cohort of allogeneic hematopoietic stem cell transplant (HSCT) recipients after two doses of the Pfizer vaccine. Of

note, 62% of the patients achieved the highest IgG titer also reached by a concomitant healthy cohort. This is much more than the 54% rate of seroconversion that has been reported after two doses in solid-organ transplant recipients and compares favourably with data obtained in patients treated for solid tumors, for whom a 95% of response rate was obtained after the second dose. This humoral response is, however, only one marker of immunity, and allogeneic HSCT recipients will likely have differences in T-cell reactivity that should be explored. [Article](#).

The New England Journal of Medicine (NEJM): Effectiveness of COVID-19 vaccines in ambulatory and inpatient care settings in the US

September 8, 2021. This study analyzed 41,552 admissions to 187 hospitals and 21,522 visits to 221 emergency departments (EDs) or urgent care clinics. The mRNA-based vaccines (at least 14 days after the second dose) were highly effective against SARS-CoV-2 infection leading to hospitalization (89%), ICU admission (90%), or an ED or urgent care visit (91%). This vaccine effectiveness extended to populations that are disproportionately affected by SARS-CoV-2 infection. [Article](#).

Transmission

NEJM: Effect of vaccination on transmission of SARS-CoV-2

September 8, 2021. This study examined the effect of vaccination of 144,525 health care workers (HCWs) in Scotland and their household members (194,362) between December 2020 and March 2021. Findings suggest vaccination of HCWs is associated with a decrease in documented cases of COVID-19 among members of their households. [Article](#).

Data Analytics, Modelling and Measurement

JAMA: Estimates of COVID-19 cases and deaths among nursing home residents not reported in federal data

September 9, 2021. In this study of 15,307 US nursing homes, approximately 44% of COVID-19 cases and 40% of COVID-19 deaths that occurred before the start of reporting were not reported in the first National Healthcare Safety Network (NHSN) submission in sample states, suggesting there were more than 68,000 unreported cases and 16,000 unreported deaths nationally. These findings suggest that federal NHSN data understate total COVID-19 cases and deaths in nursing homes and that using these data without accounting for this issue may result in misleading conclusions about the determinants of nursing home outbreaks. [Article](#).

Infection, Prevention and Control in Specific Settings

JAMA: Investigation of an outbreak of COVID-19 in a French nursing home with most residents vaccinated

September 13, 2021. This study of an outbreak that occurred in a 77-bed nursing home facility due to the B.1.1.7 (Alpha) variant found that an outbreak of COVID-19 can occur among fully vaccinated nursing home residents (30% of staff were vaccinated), but few individuals who were infected developed severe disease. These findings suggest that prevention measures other than vaccination should not be abandoned in these settings, and more research is needed to improve the effectiveness of SARS-CoV-2 vaccines in this population. [Article](#).

Frontline Workers

British Medical Journal: Risk of hospital admission with COVID-19 among teachers compared with health care workers (HCWs) and other adults of working age in Scotland

September 2, 2021. This study examined the risk of hospital admission with COVID-19 among teachers and their household members, overall and compared with HCWs and adults of working age in the general population. The results suggest that teachers and their household members were not at increased risk of hospital admission with COVID-19 and were found to be at lower risk of severe COVID-19. [Article](#).

Health Equity and Vulnerable Populations

JAMA: Risk factors associated with SARS-CoV-2 infection among farmworkers in Monterey County, California

September 15, 2021. In this study of 1,107 farmworkers, both household and workplace risk factors were associated with positive COVID-19 test results in 13% of those tested, including having less than a primary school-level education, speaking an Indigenous language at home, and working in the fields rather than elsewhere in agriculture. These findings suggest that urgent distribution of vaccines to farmworkers and intervention on modifiable risk factors (e.g., increasing availability of isolation facilities, paid medical leave) for SARS-CoV-2 infection are warranted. [Article](#).

Nature: Having more virtual interaction partners during COVID-19 physical distancing measures may benefit mental health in the US

September 14, 2021. This survey of US undergraduate students found that having a greater number of virtual interaction partners was associated with better mental health, including decreased loneliness and increased perceptions of social support. These findings suggest that

virtual interactions may benefit overall mental health, particularly during physical distancing and other circumstances where opportunities to interact in-person with different people are limited. [Article](#).

JAMA: Effect of a telecare case management program for older adults who are homebound during the COVID-19 pandemic

September 9, 2021. This randomized clinical trial with 68 participants found no statistical difference in self-efficacy between the telecare group (i.e., participants received weekly case management from a nurse supported by a social service team via telephone call and weekly video messages covering self-care topics delivered via smartphone) and control group (i.e., participants received monthly social telephone calls) at three months. However, scores for self-efficacy improved in both groups over time. While the intervention did not increase self-efficacy, the findings suggest that telecare case management may increase quality of life and rates of medication adherence among older adults who are homebound. [Article](#).

JAMA: Association of social isolation with disability burden and one-year mortality among older adults with critical illness

September 7, 2021. In this nationally representative study including 997 patients, more social isolation was significantly associated with a higher disability burden and increased likelihood of death within one year of hospital admission. The study findings suggest that social isolation is a risk factor for poor outcomes among older adults with critical illness. [Article](#).

Public Health Measures

International Journal of Health Planning and Management: COVID-19 pandemic responses of Canada and the US in first six months

September 12, 2021. This review from Memorial University of Newfoundland of pandemic responses in the first six months in Canada and the US found existing social disparity, underfunded pandemic preparation, and the initial failure to act appropriately resulted in the rapid spread of infection in both countries. In Canada, its poorly regulated services of long-term care facilities, initial restriction of testing, and lack of access to epidemiological data helped spread infection and increased casualties in vulnerable populations. [Article](#).

Centres for Disease Control and Prevention: Monitoring incidence of COVID-19 cases, hospitalizations, and deaths by vaccination status in 13 US jurisdictions

September 10, 2021. This report found that after the week of June 20, 2021, when the Delta variant became predominant, incidence rate ratios for hospitalization and death in 13 US jurisdictions changed relatively little, suggesting high, continued vaccine effectiveness against

severe COVID-19. Monitoring COVID-19 incidence by vaccination status might provide early signals of potential changes in vaccine effectiveness that can be confirmed through robust controlled studies. [Article](#).

Health Systems Impact

Canadian Institute for Health Information: Costs for COVID-19-related hospital stays in Canada

September 9, 2021. This dataset from the Canadian Institute for Health Information showed that the average estimated cost of a COVID-19 hospital stay (including both ICU and non-ICU admissions) in Canada is just over \$23,000 – about four times the average cost of a hospital stay for influenza, three times the average cost of a stay for a heart attack, and almost as much as the cost of a stay for a kidney transplant. The estimated total cost of COVID-19 hospital stays in Canada (excluding Quebec) was almost \$1 billion in 2020-21, tripling between November 2020 and March 2021. People who have COVID-19 remain in the hospital about twice as long as the average pneumonia patient (15 days and seven days, respectively), and a larger proportion of them are admitted to the ICU and ventilated. [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 first half of September, there were 11 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=7) and clinical management (n=4). Please visit [Canadian Spotlight 9.1](#) 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 scans
- Economic analysis
- Evaluation planning
- Research fund management
- Knowledge translation services

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