Ontario

COVID-19 PANDEMIC

RAEB'S Evidence Update

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

November 29, 2021

Featured

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.

Understanding Long Covid

(Produced in collaboration with SPOR Evidence Alliance and CADTH)

Research evidence on 'long COVID' includes definitions, risk factors, symptomatology, prognosis, and therapeutics among others. Long COVID is characterized as the persistence of any COVID signs and symptoms that continue or develop between four to 12 weeks after acute COVID-19, including both ongoing symptomatic COVID-19 and post-COVID-19 syndrome. Long COVID is primarily diagnosed based on two factors: 1) having been infected with COVID-19 in the past; and 2) presenting with long COVID symptoms. Prevalence estimates vary widely; for example, 5% to 80% of people with confirmed COVID-19 may have symptoms past the acute phase of illness. Recent reports suggest that 150,000 Canadians currently have long COVID, though it is unclear if this is limited to people with confirmed COVID-19. Research suggests that risk factors include: higher acuity of COVID-19 infection or presence of many acute COVID-19 symptoms, being female, being of older age, having a higher body mass index (e.g., obesity),

pre-existing comorbidities (e.g., asthma, autoimmune disease), psychiatric disorders, and being a health care worker. Ethnicity and socioeconomic factors have been investigated but show mixed findings.

RAEB's Rapid Responses for Ontario's Health Sector

Please contact Evidence Synthesis Unit for the full read of these rapid responses.

The COVID-19 Pandemic's Impact on Hospital Infrastructure Building Standards

Limited information was identified on the pandemic's impact on hospital building infrastructure strategies and standards relating to the topics below, except for infection, prevention, and control (IPAC) strategies.

- **IPAC:** IPAC strategies were identified in Canada (Saskatchewan), Australia, Europe, Germany, New Zealand, the United Kingdom (UK), and the United States (US), relating to the following measures:
    - Personal Protective Equipment (PPE): Guidelines on hospital PPE use were identified in Saskatchewan, Germany, the US, and the UK. All guidelines recommend the use of masking in hospitals, while Saskatchewan and US guidelines recommend the use of eye protection in high-risk settings (e.g., interacting with COVID-19 patients).
    - COVID-19 Testing: Hospitals in the US and Germany routinely tested patients prior to surgery. Recent UK guidelines recommend discontinuing required testing for some elective procedures.
    - Environmental Disinfection: Ontario, Europe, and the US recommend regular cleaning and disinfection protocols during the pandemic. Canada and the UK recommend enhanced protocols (e.g., more frequent cleaning in common areas).
    - Suspending Elective Procedures: Canada and the US reported suspending some medical procedures during the pandemic. For example, a US study reported that 55 of 58 surveyed hospitals suspended elective procedures in March and April 2020.
- **HVAC Strategies**: A systematic review on hospital HVAC outlined the effectiveness of using high efficiency particulate air (HEPA) filters, including in isolation rooms and portable filter systems.
- **Safety Strategies:** Strategies for ensuring hospital staff safety included assigning exposure risk levels to clinical tasks to determine occupational exposures. For example, performing administrative duties was low-risk, whereas entering a suspected COVID-19 patients' room was high risk.

- **Patient Room Strategies**: Hospitals in Ontario and Germany established dedicated COVID-19 isolation facilities. Ontario and Australia recommend placing COVID-19 patients in existing hospital rooms, while prioritizing the use of private rooms.
- **Clinician and Patient Perspectives**: Studies from the UK and Australia reported mixed findings in terms of medical staffs' knowledge of proper PPE use.

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.

Transmission

***Journal of the American Medical Association (JAMA)*: Seroprevalence of SARS-CoV-2 antibodies among children in school and day care in Montreal**

Nov 23, 2021. This study of 1,632 children aged two to 17 years enrolled in school and day care between October 2020 and March 2021 found the mean baseline seroprevalence of SARS-CoV-2 was 5.8%. Of the 95 participants who were seropositive for SARS-CoV-2 antibodies, 82% were not tested or tested negative, and all experienced either mild or no clinical symptoms. The findings suggest that there was more transmission occurring in children compared with what was being detected, although children experienced few or mild symptoms. *Article*.

Disease Management

***Nature*: Comparing the clinical efficacy of COVID-19 vaccines**

Nov 23, 2021. This systematic review and meta-analysis compared the efficacy of nine COVID-19 vaccines to prevent symptomatic and severe disease in the adult population and to prevent symptomatic COVID-19 among the elderly. The Pfizer and Moderna vaccines, which use mRNA technology, were associated with the highest efficacy in preventing symptomatic COVID-19 compared to the other vaccines. The compared vaccines were not different in efficacy to prevent severe disease, and there was no difference between vaccines' efficacy to prevent symptomatic COVID-19 among the elderly. *Article*.

***The Lancet:* Safety, immunogenicity, and efficacy of Novavax COVID-19 vaccine co-administered with seasonal influenza vaccines in the UK**

Nov 17, 2021. This phase three trial showed no early safety concerns with the concomitant administration of Novavax with an influenza vaccine. Immunogenicity of the influenza vaccine

was preserved with concomitant administration, although a modest decrease in the immunogenicity of the Novavax vaccine was found. Vaccine efficacy in those aged 18 to less than 65 years appeared to be preserved in those receiving both vaccines compared with those vaccinated with Novavax alone. *Article*.

Case Testing Screening

***Nature*: Saliva is superior over nasopharyngeal swab for detecting SARS-CoV2 in COVID-19 patients**

Nov 22, 2021. This study collected pairs of nasopharyngeal swabs and saliva samples from 152 symptomatic, confirmed COVID-19 patients and compared their positivity rate, viral load, and duration of viral shedding. Saliva had higher yield in detecting SARS-CoV2, and COVID-19 patients showed higher viral load and prolonged period of viral shedding in saliva. The study recommends the use of saliva as a good alternative to nasopharyngeal swabs sample in diagnosing COVID-19 patients. *Article*.

Data Analytics, Modelling and Measurement

***Nature*: Lockdowns lose one-third of their impact on mobility in a month**

Nov 22, 2021. This modelling study analyzed mobility data from 93 countries finding that for the median country, 30.1% of the mobility reduction achieved is lost within four weeks, and lockdowns lose their impact on mobility in 112.1 days. Overall, the findings show that while lockdowns significantly reduce mobility, this impact is also subject to fatigue as the lockdown period extends longer. This research can help policy makers anticipate the likely impact of their lockdown policies. *Article*.

Public Health Measures

***JAMA*: Assessment of mental health of high school students one semester after COVID-19-associated remote schooling measures were lifted in Austria in 2021**

Nov 22, 2021. This study of 3,052 adolescents reported that school re-openings and reduced social distancing measures correlate with improved mental health measures (i.e., depressive symptoms, anxiety symptoms, insomnia, and stress levels) among high school students. There are several possible explanations for these findings (e.g., increased vaccination rates, decreased rates of COVID-19 infection could influence their mental health). Further studies are needed to validate these results. *Article*.

***Journal of Community Health*: COVID-19 vaccine uptake among college students at a Midwest university**

Nov 20, 2021. This study found that half of the over 1,600 university student respondents to a survey at a Midwest university were vaccinated. Of the half that were unvaccinated, 49% did not intend to get vaccinated, and 22% were undecided. Main reasons for hesitancy included not trusting the vaccine was fully tested (85%), fear of potential side effects (78%), not trusting the vaccine is safe (72%), not trusting the US government (61%), and having read negative reports from the media about the vaccine (60%). Findings suggest that college students may be more hesitant to receive the vaccination than others. *Article*.

***PlosOne*: Individual determinants of COVID-19 vaccine hesitancy**

Nov 17, 2021. Using the World Health Organization's (WHO) '3Cs' model (i.e., confidence, complacency, and convenience), this study found that the main determinants of vaccine hesitancy among 7,678 adults in the US and Canada were mistrust of vaccine benefit and lower perceived seriousness of COVID-19. Lack of vaccine confidence and complacency explained 38% and 21% of the variance in vaccine hesitancy, respectively; whereas, sociodemographic and psychological determinants (e.g., right-wing political affiliation, higher risk propensity, fewer negative mental health effects of the COVID-19 pandemic) explained 13% and 11% of the variance in vaccine hesitancy, respectively. *Article*.

Public Health Measures

***JAMA*: Access to COVID-19 vaccines in high-, middle-, and low-income countries hosting clinical trials**

Nov 18, 2021. This study, which examined authorization and delivery of COVID-19 vaccines recommended by the WHO in the countries where they were tested, found that wealth-based access inequities among countries hosting trials parallel general disparities in COVID-19 vaccine access. Among 11 high-income countries hosting completed clinical trials, 10 (90.9%) authorized the tested vaccine and received enough doses to vaccinate a median 51.7% of their populations aged 15 years and older. Lower middle- and upper middle-income countries had high rates of authorization (100% and 90.9%, respectively), but median vaccination rates of 31.0% and 14.9%, respectively. *Article*.

Infection, Prevention and Control in Specific Settings

***International LTC Policy Network*: What long-term care (LTC) interventions and policy measures have been studied during the COVID-19 pandemic?**

Nov 17, 2021. This rapid mapping review found that during the first year of the COVID-19 pandemic, a substantial body of evidence on interventions to mitigate impact of the pandemic in the LTC sector emerged, but most studies did not apply an analytical lens and provided descriptive findings only. There were very few studies on home-based or community-based care settings. As countries assess what can be learnt from the pandemic and improve the preparedness of LTC systems, emphasis should be placed on facilitating rapid robust evidence. *Article*.

Health Equity and Vulnerable Populations

***Centres for Disease Control and Prevention (CDC)*: Risk for stillbirth among women with and without COVID-19 at delivery hospitalization in the US March 2020 to September 2021**

Nov 19, 2021. Among 1,249,634 delivery hospitalizations during March 2020 to September 2021, US women with COVID-19 were at increased risk for stillbirth compared with women without COVID-19. The magnitude of association was higher when the Delta variant was predominant. Implementing evidence-based COVID-19 prevention strategies, including vaccination before or during pregnancy, is critical to reduce the impact of COVID-19 on stillbirths. *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 November, contributing Canadian evidence synthesis teams shared 10 newly completed products. One 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 one synthesis provides insight across two domains (public health measures and health system arrangements). The remaining focus on public health measures (n=6) and clinical management (n=2). Please visit Canadian Spotlight 11.1 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
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