

COVID-19 PANDEMIC – RAEB'S EVIDENCE UPDATE

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

• February 16, 2021 •

FEATURED

- Evidence Products from our Evidence Synthesis Network Partners
- 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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EVIDENCE PRODUCTS FROM OUR EVIDENCE SYNTHESIS NETWORK PARTNERS

Ministry research partners are actively working with leading agencies and organizations on COVID-19 topics and tools. The following tools have been developed to provide risk assessments based on users' occupations, activities, location, and other relevant factors:

- [Occupational Exposure to COVID-19 Risk Tool](#)
Developed by Public Health Ontario (PHO), the Institute for Work and Health, the University of Toronto, and the University of Alberta, this tool is an open source interactive data visualization platform designed to explore the burden of exposure to COVID-19 risk in Canadian workers, and to inform the design of equitable policy and intervention strategies to mitigate inequities in occupational exposure to COVID-19 risk.
- [Ontario COVID Activity Risk Assessment \(OCARA\)](#)
Students and faculty at the University of Toronto's Dalla Lana School of Public Health (DLSPH) and the Institute for Pandemics (IFP) developed OCARA by leveraging academic research, evidence synthesis, and publicly available data to allow individuals to easily understand how to engage in activities more safely.

* 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*

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.

DISEASE MANAGEMENT

- ***CDC Morbidity and Mortality Weekly Report: Demographic characteristics of persons vaccinated during the first month of the US COVID-19 vaccination program***
[Feb 15, 2021](#). From December 14, 2020 to January 14, 2021, approximately 13,000,000 persons received ≥ 1 dose of vaccine (Pfizer-BioNTech or Moderna), representing approximately 4% of the total US population and 5% of the US population aged ≥ 16 years. Among persons with demographic data, 63.0% were women, 55.0% were aged ≥ 50 years, and 60.4% were non-Hispanic White. National guidance prioritized health care personnel and long-term care facility residents for vaccination, but there was variation in implementation at the jurisdictional and local levels (e.g., Florida and Texas expanded vaccination to all persons aged ≥ 65 years). More complete reporting of race and ethnicity data is critical to ensure rapid detection of and response to potential disparities in COVID-19 vaccination, particularly among Black, American Indian/Alaska Natives, and Hispanic persons. As vaccination coverage expands, further monitoring will also be required to identify vulnerable communities requiring focused efforts. [Read](#).
- ***The Lancet: COVID-19 vaccine hesitancy in a representative working-age population in France***
[Feb 5, 2021](#). This study assessed how vaccine hesitancy in French adults (18-64 years) is impacted by information on herd immunity, general practitioner recommendations, and vaccine characteristics (efficacy, side effects, location of manufacture, place of administration). Vaccine refusal and vaccine hesitancy were associated with female gender, age, lower educational level, previous poor compliance with recommended vaccinations, and a lack of reported chronic conditions. Predicted hesitancy was highest for vaccines manufactured in China with 50% efficacy and a one in 10,000 risk of serious side-effects; hesitancy was lowest for a vaccine manufactured in the EU with 90% efficacy and an one in 100,000 risk of serious side-effects. [Read](#).
- ***JMIR Public Health and Surveillance: Diet, nutrition, obesity, and their implications for COVID-19 mortality***
[Jan 26, 2021](#). This study assessed the effect of diet, nutrition, obesity, and their implications for COVID-19 mortality among 188 countries. Globally, the results suggest that countries that consume more meat, vegetal products, sugar and sweeteners, sugar crops, animal fats, and animal products were associated with more death and few recoveries in patients. The effect of consuming sugar products on mortality was considerable, and obesity has affected increased death rates and reduced recovery rates. To achieve the best results in preventing nutrition-related pandemic diseases, strategies and policies should fully recognize the essential role of both diet and obesity in determining good nutrition and optimal health. [Read](#).

RESEARCH EVIDENCE/JURISDICTIONAL EXPERIENCE cont'd

VULNERABLE POPULATIONS

- **JAMA: Factors associated with racial differences in deaths among nursing home residents with COVID-19 infection in the US**
[Feb 10, 2021](#). This study reported that nursing homes with the highest proportions of non-White residents experienced COVID-19 death counts that were 3.3-fold higher than those of facilities with the highest proportions of White residents. These differences were associated with factors such as larger nursing home size and higher infection burden in counties in which nursing homes with high proportions of non-White residents were located. Focusing limited available resources on facilities with high proportions of non-White residents is needed to support nursing homes during potential future outbreaks. [Read](#).
- **The Lancet: Seroprevalence and risk factors of exposure to COVID-19 in homeless people in Paris**
[Feb 5, 2021](#). This study evaluated COVID-19 exposure prevalence among people experiencing recurrent homelessness during the first wave of the COVID-19 pandemic (June 23 – July 2, 2020). Researchers conducted SARS-CoV-2 antibody testing and collected sociodemographic and exposure-related information (N = 818). In total, 426 (52%) individuals tested positive. Seroprevalence varied by type of recruitment site (emergency shelters, hotels, and large venues) and was highest among those living in workers' residences (88.7%), followed by emergency shelters (50.5%), and food distribution sites (27.8%). Living in crowded conditions was the strongest factor associated with exposure level. This study underscores the importance of providing safe, uncrowded accommodation, alongside adequate testing and public health information. [Read](#).
- **Psychiatry Research: The burden of loneliness: Implications of the social determinants of health during COVID-19**
[Feb, 2021](#). This Canadian study examined how various demographic groups experience mental health issues (i.e., depression, anxiety symptoms, loneliness) during the COVID-19 pandemic (March to July 2020). The study reported that younger females, individuals with lower income, and those living alone experienced greater loneliness and mental health challenges. Specifically, loneliness was greater in those with an annual income <\$50,000/year compared with higher income brackets. Younger females (18-29 years) displayed greater anxiety, depressive symptoms, and loneliness than their male counterparts; this difference did not exist among the other age groups (30-64 years, >65 year). [Read](#).
- **Journal of Psychiatric Research: Loneliness in the COVID-19 pandemic**
[Jan 31, 2021](#). Drawing on survey data collected from a sample of 3,012 English-speaking Canadian adults (18+ years), this study examined the associations of age, gender, and their interaction with loneliness during the COVID-19 pandemic (May 8 to June 23, 2020). Approximately 8.4% of the sample reported feeling lonely five or more days in the previous week. In addition, the results suggest that women had greater odds of loneliness than men among those aged 18-29 years and 60+ years. Special consideration of loneliness among younger and older adult women is needed in service planning. [Read](#).

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PUBLIC HEALTH MEASURES

- **CMAJ: Shifts in office and virtual primary care during the early COVID-19 pandemic**
[Feb 8, 2021](#). This study in Ontario, Canada aimed to understand the degree to which office and virtual primary care changed, and for which patients and physicians, during the initial months of the pandemic in Ontario. Compared with 2019, office visits declined by 79.1% and virtual care increased 56-fold, comprising 71.1% of primary care physician visits. The smallest declines were among those with higher health care needs (those with the highest expected health care use [8.3%], those who could not be attributed to a primary care physician [10.2%], and older adults [19.1%]). Overall, primary care in Ontario saw large shifts from office to virtual care over the first four months of the COVID-19 pandemic; the determinants and consequences of these major shifts in care require further study. [Read](#).
- **medRxiv: Engagement with COVID-19 public health measures in the United States: A cross-sectional social media analysis from June to November 2020**
[Feb 8, 2021](#). This study measuring the public's behaviours and perceptions regarding COVID-19 and its daily life reported a decline in COVID-19-related social media discussion, even as COVID-19 cases in the US increased to the highest rate since the beginning of the pandemic. The study suggested that targeted public health messaging may be needed to ensure engagement in public health prevention measures until a vaccine is widely available to the public. [Read](#).

INFECTION PREVENTION AND CONTROL IN SPECIFIC SETTINGS

- **The Lancet: SARS-CoV-2 transmission among children and staff in daycare centres**
[Feb 8, 2021](#). This study in France examined 327 children (mean age one to nine years) and 197 staff (mean age 42 years) who attended one of 22 daycare centres during a nationwide lockdown between March 15 and May 9, 2020 and were compared to 164 hospital staff (mean age 42 years) not occupationally exposed to patients with COVID-19 or children. Positive serological tests were observed for 14 children (4.3%) and 14 daycare staff (7.7%) compared to nine hospital staff (5.5%). The analysis suggests that seropositive children were more likely than seronegative children to have been exposed to an adult household member with laboratory-confirmed COVID-19 by 43%. Intrafamily transmission seemed more plausible than transmission within daycare centres. [Read](#).

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DATA ANALYTICS, MODELLING AND MEASUREMENT

- ***The Lancet: Comparative cost-effectiveness of SARS-CoV-2 testing strategies in the US***
[Feb 4, 2021](#). This modelling study found that extensive expansion of SARS-CoV-2 testing programs with more frequent and rapid tests across communities, coupled with isolation of individuals with confirmed infection, is essential for mitigating the COVID-19 pandemic. Daily testing combined with a two-week isolation period was the costliest strategy considered in the study, reflecting increased costs with greater test frequency and length of isolation period. Weekly testing followed by a two-week isolation period after a positive test result was the most cost-effective during rapid transmission. Resources recouped from shortened isolation duration could be cost-effectively allocated to more frequent testing. [Read](#).

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.
- An up-to-date and comprehensive list of sources, organized by type of research evidence, is available on McMaster Health Forum's COVID-19 Evidence Network to support Decision-making (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. COVID-19 responses can include the full spectrum of public health measures, clinical management, health system arrangements, and economic and social responses. To receive an email containing hyperlinks to these products twice a month, [subscribe here](#).
- 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.