

# COVID-19 PANDEMIC

## RAEB'S Evidence Update

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

October 26, 2020

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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.

### Handling and Storage of N95 Masks before Reprocessing

*(Produced in collaboration with McMaster Health Forum)*

Several health agencies recommend procedures at the organizational level such as appropriate documentation and recording of re-use or reprocessing.

#### **Instructions for Short-Term Storage (i.e., for reuse):**

- Discard used masks with visible soiling, saturation, or loss of structural integrity in a separate receptacle using standard institutional procedures.
- Collect used masks for transport to processing in clearly labeled plastic bins that can be disinfected or double-bagged biohazard bags; do not compress bags to prevent aerosolization of contents.
- Label and hang used respirators in a designated storage area or keep them in a clean, breathable container such as a paper bag between uses. Storage containers should be disposed of or cleaned regularly.

- Masks in three- to four-day rotation should be kept at room temperature (21 to 23 Celsius) and 40% humidity.

**Long-Term Storage of Used Masks:** No information on long-term storage of used masks was identified.

**Long-Term Storage of Unused Masks:** Stocks of expired single-use respirators can be used to protect health care personnel provided that: 1) masks were safely stored (e.g., without exposure to sun, excess humidity); and 2) samples show that they are in good working condition, well-fitting, and without any deterioration (e.g., intact elastic bands and nose bridge).

- Masks are required to be stored in humidity-controlled conditions between 15 to 27 Celsius.

Ontario Health advises that if used masks are not visibly soiled or damaged, they should be collected and stored in disposal receptacles that are clearly labelled, dated, and separated from other types of personal protective equipment (PPE) (e.g., in a biohazard bag, paper bag, or box). Inspection of respirators before reprocessing should be ensured to confirm the condition of the N95 respirators is suitable for reprocessing if they have been stored for a length of time.

## 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.

### Public Health Measures

#### ***Nature Medicine: A global survey of potential acceptance of a COVID-19 vaccine***

**October 20, 2020.** This survey study of 13,426 people across 19 countries reported that 71.5% of participants would be ‘very’ or ‘somewhat likely’ to take a COVID-19 vaccine, and 61.4% reported that they would accept their employer’s recommendation to do so. Differences in acceptance rates ranged from almost 90% (i.e., China) to less than 55% (i.e., Russia).

Participants reporting higher levels of trust in information from government sources were more likely to accept a vaccine and take their employer’s advice to do so. [Article](#).

### Health Equity and Vulnerable Populations

#### ***Organisation for Economic Cooperation and Development: Impact of COVID-19 on immigrants and their children***

**October 19, 2020.** This policy brief provides evidence on how the pandemic has affected immigrants and their children in terms of health, jobs, education, language training and other integration measures and describes host countries' policy responses. Due to a range of vulnerabilities, such as higher incidence of poverty, overcrowded housing conditions, and high concentration in jobs where physical distancing is difficult, immigrants are at a much higher risk of COVID-19 than the native-born population. A number of communication campaigns have aimed at addressing backlashes in public opinion against immigrants, with a particular focus on tackling misinformation regarding the role of immigrants in the spread of the virus. [Article](#).

***Influenza and Other Respiratory Viruses: Characterization of community-wide transmission of SARS-CoV-2 in congregate living settings***

**October 15, 2020.** This study reported that active cluster investigations (e.g., vulnerable populations housed in congregate living settings) can uncover the dynamics of community transmission affecting both residents of congregate settings and their caregivers, which can help to target efforts toward populations with ongoing challenges in access to detection and control resources. Engagement of clinical, community, and government partners through public health coordination efforts can create opportunities to develop and coordinate effective response strategies to support facilities. [Article](#).

## Health Equity and Vulnerable Populations

***Angus Reid Institute: Isolation, loneliness, and COVID-19: Pandemic leads to sharp increase in mental health challenges and social woes***

**October 14, 2020.** This study surveyed a sample of 1,845 Canadian adults between September 25-28, 2020 and reported that 33% of the Canadian population currently suffer from loneliness and social isolation. [Article](#).

## Disease Management

***Journal of Medical Genetics: Implementation and impact of virtualizing cancer genetic services during COVID-19 at Princess Margaret (PM) Cancer Centre, Canada***

**October 16, 2020.** This study of the Familial Cancer Clinic (FCC) at PM demonstrated that clinical genetics operations can continue under pandemic restrictions by modifying service delivery. The FCC was able to successfully transition to a virtual clinic during the COVID-19 pandemic without a significant impact to clinical volumes or number of patients offered testing. Some challenges associated with the transition to a virtual genetic clinic included clinician increased workload, technological difficulties (e.g., strength of home internet connections), the availability of a quiet place to work, and reliable phone reception to conduct appointments. [Article](#).

***The Lancet: COVID-19 in New Zealand and the impact of the national response***

**October 13, 2020.** This study reports that during the early phase of the COVID-19 pandemic, New Zealand implemented national COVID-19 suppression strategies aimed at disease elimination. New Zealand effectively achieved control with risk-informed border closures reducing the burden of imported disease, a phase of rapid escalation of non-pharmaceutical interventions, and a national lockdown. The lockdown was associated with a substantial reduction in daily case infection rate and improving response performance measures. [Article.](#)

***Royal Australian College of General Practitioners: Caring for adult patients with post-COVID-19 conditions***

**October 2020.** This guide contains information for general practitioners who are providing care for adult patients who have previously tested positive to COVID-19 or have a history suggestive of undiagnosed COVID-19 and have – or are at risk of – post-COVID-19 conditions. [Article.](#)

## Frontline Workers

***The Lancet: Association of resilience and burnout during the COVID-19 pandemic among frontline nurses in China***

**October 14, 2020.** This study (preprint) investigated the relationship between resilience and burnout among 180 healthcare workers in Wuhan hospitals and reported a total prevalence of burnout was 51.7%, of which 15% was severe. This study proposes the prioritization and coordination of policy-relevant research on burnout and negative emotion, to ensure that resilience interventions are targeted for the optimal mental health of health care workers as the pandemic unfolds. [Article.](#)

## Data Analytics, Modelling and Measurement

***Proceedings of the National Academy of Sciences (PNAS): Seasonality and uncertainty in global COVID-19 growth rates***

**October 15, 2020.** This study developed a statistical model that explains 36% of the variation in maximum COVID-19 growth rates based on weather and demography (17%) and country-specific effects (19%). The study reported that UV light was most strongly associated with lower COVID-19 growth. [Article.](#)

***Environment and Urbanization: Spatial modelling of COVID-19 death incidence in São Paulo, Brazil***

**October 14, 2020.** This study used spatial modelling to assess the spread of COVID-19 and reported that the high population density found in informal settlements in the city of São Paulo

is a determining factor influencing the spread of COVID-19, possibly because people living in socioeconomic vulnerability may not be able to adhere to social distancing measures. This study suggests the need for special attention in peripheral areas and informal settlements. [Article](#).

## Transmission

### ***Cochrane Library: Interventions to reduce contaminated aerosols produced during dental procedures for preventing infectious diseases***

**October 13, 2020.** This systematic review of 16 studies, involving a total of 425 people, found no studies that evaluated disease transmission via aerosols in a dental setting and no evidence about viral contamination in aerosols. The analyses suggested that the evaluated interventions (i.e., high-volume evacuator, dental isolation combination system, rubber dam, air cleaning systems, and antimicrobial coolant disinfectants) may reduce bacterial contamination in aerosols, but it is not possible to draw any reliable conclusions based on the very low certainty evidence. No conclusions could be drawn regarding the superiority of any intervention over another. Future trials should focus on testing similar methods of intervention and direct outcome measurements (e.g., viable particles in aerosols with small particle size), and measure patient-related outcomes and cost effectiveness. [Article](#).

## Case Testing and Screening

### ***University of Arizona: COVID-19 forecast models report for Arizona***

**October 9, 2020.** This study reported that the current COVID-19 test capacity in Arizona is adequate as evidenced by quick turn-around for polymerase chain reaction (PCR) results and a PCR test positivity of five to six percent which is near the recommended threshold. [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.

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 [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.

## 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

## Contact RAEB

[Anne Hayes](#), RAEB Director

[Andrea Proctor](#), Evidence Synthesis

[Emre Yurga](#), Economic Analysis and Evaluation

[Erika Runions-MacNeil](#), Research Planning and Management