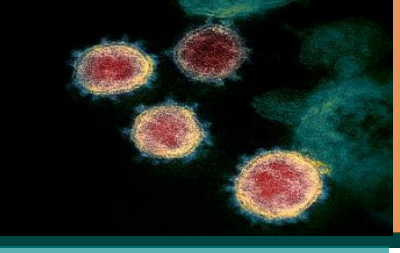
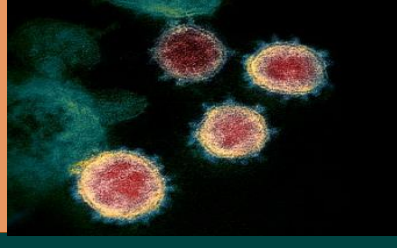


COVID-19 PANDEMIC – RAEB'S EVIDENCE UPDATE

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

• October 19, 2020 •



FEATURED

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

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RAEB'S RAPID RESPONSES FOR ONTARIO'S HEALTH SECTOR

Please contact Evidence Synthesis Unit for the full read of this rapid response.

- Equitable Testing Strategies for COVID-19

  Limited information was identified on increasing COVID-19 testing among the Indigenous, immigrant, refugee, and elderly populations. Most of the identified literature focuses on increasing access to COVID-19 testing in low-income or racialized populations, or increasing access in the general population with the potential of it addressing COVID-19 testing inequities across all vulnerable populations.

  - COVID-19 Testing Strategies: Six testing strategies designed to increase equitable access to COVID-19 testing were identified in Ontario, Saskatchewan, Victoria State (Australia), and California, Florida, Louisiana, New Jersey, Philadelphia, and Texas in the United States: drive-through testing, mobile testing (e.g., paramedic buses, booths), self-testing, targeted testing for vulnerable populations (e.g., Indigenous peoples, elderly), general testing to target both the general and vulnerable populations, and a multipronged testing approach using different strategies in conjunction.

- Barriers to COVID-19 Testing Among Vulnerable Populations

  Low-income, racialized, immigrant and refugee populations, as well as populations who have multiple vulnerabilities (i.e., a combination of being racialized, low-income, and an immigrant) experience barriers to accessing COVID-19 testing in Ontario, Victoria State (Australia), and California, Massachusetts and New York in the US. Most COVID-19 testing access barriers are reported with respect to low-income populations.

  - Barriers to COVID-19 Testing: Having no health insurance, transportation barriers (e.g., no access to a car for drive-through testing, traveling far distances), working during the opening hours of testing sites, costs of health care treatment if tested positive for COVID-19, limited testing sites within neighbourhoods, lower educational attainment, and language barriers.

* 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*

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.

- Impacts on Quadruple-Aim Metrics of Hospital Visitor Restrictions during COVID-19
  (Produced in collaboration with McMaster Health Forum)
  - Risk of Transmission: No scientific evidence was identified on rates of transmission attributable to visitors. However, there are some reports of overall transmission rates in hospitals. For example, a systematic review found the proportion of nosocomial infections in patients with COVID-19 to be 44% in the early outbreak stage.
  - Visitor Restrictions: Limited evidence was found relating directly to the quadruple aim, with the exception of health-related benefits of public health measures (e.g., preventing transmission of COVID-19). No evidence sources or jurisdictional examples were identified for policies which allow no visitors with no exceptions. For policies allowing limited visitors with specific exceptions, no evidence documents were identified that addressed adjusting visitor policies based on the active number of COVID-19 cases, trends in local areas, and/or availability of personal protective equipment (PPE) and testing supplies. China, Germany, South Korea, and New York allow more permissible visitor policies based on regional COVID-19 rates. Canadian jurisdictions range in the types of visitor policies (e.g., general visiting not permitted, visitor restrictions in select areas) and exceptions (e.g., palliative, pediatric, or labour and delivery patients) implemented.
  - Public Health Measures: Scientific evidence and jurisdictional experiences suggest implementing measures, such as: limiting the number of visitors and/or length of visits, temperature and symptom screening, wearing a mask and other PPE, physical distancing, restricting visitors to select areas, and enhancing hand hygiene.
  - Alternative Communication Modalities: Many Canadian provinces recommend that inpatients use outdoor hospital space to see visitors if they are able to. Many hospitals in Australia make use of Skype, WhatsApp, and Facetime to connect patients with families and friends; however, some studies documented bacterial contamination of mobile handheld devices used for this purpose, and advised that strict infection prevention and control programs accompany the use of these devices.
  - Analysis for Ontario: As of June 15, 2020, the Ministry of Health recommended that public and private hospitals resume allowing visitors (e.g., family, caregivers) in acute care settings, and institutional public health measures have been put in place (e.g., limits on the number of visitors or time of visit, designation of care partners, mask wearing). The Ontario Hospital Association also issued guidance on the length and frequency of visits and alternative communication modalities (e.g., virtual care, outdoor visits).
  - Implementation Implications: There is limited scientific evidence on the benefits or harms of visitors for COVID-19 patients in hospitals, but jurisdictional experiences reflect permissible visitor policies with accompanying public health measures and alternative communication modalities.

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.

TRANSMISSION

- *JAMA*: Outcomes of neonates born to mothers with SARS-CoV-2 in New York City
  Oct 12, 2020. This study reported no clinical evidence of vertical transmission in 101 newborns from mothers positive for, or with suspected, SARS-CoV-2 infection, despite most newborns rooming-in with mothers and direct breastfeeding practices. *Read*.

DISEASE MANAGEMENT

- *NEJM*: Effect of hydroxychloroquine in hospitalized patients with COVID-19
  Oct 8, 2020. This randomized controlled trial demonstrated that patients hospitalized with COVID-19 who received hydroxychloroquine did not have a lower incidence of death at 28 days than those who received usual care. *Read*.
- *NEJM*: Remdesivir for the treatment of COVID-19
  Oct 8, 2020. This randomized controlled trial demonstrated that intravenous remdesivir (i.e., 200 mg loading dose on day one, followed by 100 mg daily for up to nine additional days) was superior to a placebo in shortening the time to recovery in adults who were hospitalized with COVID-19 and had evidence of lower respiratory tract infection. *Read*.
- *JAMA*: Use and content of primary care office-based vs. telemedicine care visits during COVID-19 in the US
  Oct 2, 2020. This study reports that the pandemic has been associated with marked reductions in the primary care assessment of cardiovascular risk factors, such as blood pressure and cholesterol levels, decreasing total visit volume, and less frequent assessment during telemedicine visits than during office-based visits. Middle-aged individuals and those who were commercially insured were more likely to adopt telemedicine during the pandemic than their counterparts with other or no insurance. *Read*.

INFECTION, PREVENTION AND CONTROL IN SPECIFIC SETTINGS

- *US Agency for Healthcare Research and Quality*: No-touch modalities for disinfecting patient rooms in acute care settings
  Oct 2, 2020. This rapid review found that the effectiveness of no-touch disinfection modalities for disinfecting hospital rooms to decrease respiratory viral infections and *Clostridioides difficile* infection remains unclear. The evidence base for ultraviolet light, vaporous hydrogen peroxide, and solid copper surfaces disinfection systems is weak, and no studies were identified about the effectiveness of steam, ozone, and chlorine dioxide. Higher quality studies, particularly randomized controlled trials, are needed to assess the impact of these no-touch modalities for disinfecting hospital rooms. *Read*.

RESEARCH EVIDENCE/JURISDICTIONAL EXPERIENCE cont'd

PUBLIC HEALTH MEASURES

- *Journal of Travel Medicine*: Social consequences of mass quarantine during epidemics with implications for COVID-19
  Oct 13, 2020. This systematic review of 15 peer-reviewed articles concluded that policymakers should balance the pros (i.e., altruistic attitudes) and cons (i.e., psychological distress, heightened communication inequalities, food insecurity, economic challenges, diminished health care access, alternative delivery of education, and gender-based violence) of movement restrictions. They should also facilitate multi-sectoral action to tackle social inequalities, and provide clear and coherent guidance to the public. *Read*.
- *US Agency for Healthcare Research and Quality*: Resource allocation and pandemic response
  Oct 5, 2020. This rapid review evaluated resource allocation and pandemic response strategies deployed in infectious disease threats, natural disasters, terrorism, and other mass casualty events for decision makers. First, most research exists to reduce care demand, reporting benefits of contact tracing, school closures, travel restrictions, port of entry screening, and mass vaccination. Second, effective strategies to augment resources include establishing temporary facilities, using volunteers, and using decision support software. Third, strategies to optimize existing resources include expanding scope of work and building on existing agreements between agencies. Lastly, few studies have evaluated crisis standards of care strategies. COVID-19 research is emerging: four higher quality studies evaluated combinations of interventions, and one reported the benefit of community-wide mask policies. *Read*.
- *WHO*: Setup and management of COVID-19 hotlines
  Oct 2020. According to WHO's technical guidance, hotlines are among the most commonly used tools by health authorities in the response to the COVID-19 pandemic in the WHO European Region. They establish a direct link between at-risk populations and emergency responders, improve responders' understanding of people's perceptions, attitudes and concerns, and provide public health advice, counselling and/or referral to other services. They are also used to conduct listening, or data collection, from calls to inform and adjust the public health response. This guidance provides details on how to conduct such data collection in a practical and ethical manner, along with best practices for running hotlines for public health emergency purposes. *Read*.

SUPPLY CHAIN

- *CMAJ*: Effect of moist heat reprocessing of N95 respirators on SARS-CoV-2 inactivation and respirator function
  Oct 13, 2020. This study demonstrated that N95 respirators inoculated with SARS-CoV-2 were decontaminated with a single heat treatment (i.e., 60 minutes at 70°C and 50% relative humidity). The structural integrity and functioning of the masks were intact. The results suggested the process could be used in hospitals and long-term care facilities with commonly available equipment to mitigate the depletion of N95 masks. *Read*.

RESEARCH EVIDENCE/JURISDICTIONAL EXPERIENCE cont'd

DATA ANALYTICS, MODELLING AND MEASUREMENT

- *MedRxiv*: Robust test and trace strategies can prevent COVID-19 resurgences
  Oct 13, 2020. This modelling study (preprint) based in New South Wales, Australia estimated that with very high testing rates (i.e., 90% of people with symptoms, plus 90% of people with a known history of contact with a confirmed case), the epidemic would remain under control until at least the end of 2020. However, across comparable levels of mask uptake and contact tracing, the number of infections over this period would be up to six times higher if the testing rate was 80% instead of 90%, 17 times higher if the testing rate was 65%, or more than 100 times higher with a 50% testing rate. *Read*.
- *MedRxiv*: Optimal COVID-19 testing strategies for schools and businesses
  Oct 12, 2020. This modelling study (preprint) found that increasing testing frequency was associated with a non-linear positive effect on cases averted over 100 days (e.g., testing every three days versus every 14 days, even with a lower sensitivity test, reduces the disease burden substantially). Key characteristics of strategies for schools and businesses include high frequency testing with a moderate or high sensitivity test and minimal results delay. *Read*.
- *MedRxiv*: Age- and sex-specific modelling in the COVID-19 epidemic
  Oct 8, 2020. This modelling study (preprint) projected that infection rates will be highest among the young and working ages, but will also rise among the old. Sex ratios reveal higher infection risks among women than men at working ages; the opposite holds true at old age. Death rates in all age groups are twice as high among men as women. *Read*.

HEALTH EQUITY AND VULNERABLE POPULATIONS

- *JAMA*: Changes in internet searches for mental health issues in New York during the COVID-19 pandemic
  Oct 5, 2020. This analysis reported that searches for anxiety, panic attack, and insomnia rose significantly during the lockdown, then eventually reverted to their mean level. Searches for depression did not increase during the lockdown; however, depression could increase if the quarantines return or as a result of the economic turmoil and unemployment that might ensue. Suicide queries did not increase during the lockdown, which might be explained by a pulling-together effect of feeling solidarity with others facing the same collective experience. Nevertheless, suicide rates and hospitalizations should continue to be closely monitored because they are associated with higher unemployment and increased alcohol and firearm sales. The study also recommends providing competent online and telemedicine services during quarantines. *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 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.