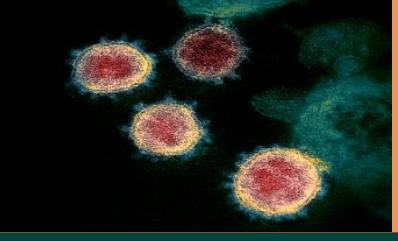
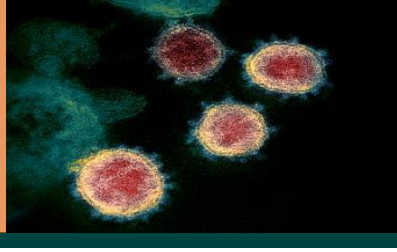


COVID-19 PANDEMIC – RAEB'S EVIDENCE UPDATE

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

• June 8, 2020 •



FEATURED

- Evidence products produced with our partners
- Research evidence
- 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

CONTACT RAEB

Anne Hayes, RAEB Director
Andrea Proctor, Evidence Synthesis
Emre Yurga, Economic Analysis and Evaluation
Erika Runions-MacNeil, Research Planning and Management

EVIDENCE PRODUCTS PRODUCED IN COLLABORATION 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.

- COVID-19 Infection and Mortality Rates among Health Care Workers (HCWs)
  (Produced in collaboration with Ontario Health (Quality) and Public Health Ontario).

  A search revealed no information on mortality rates of COVID-19 among HCWs, and no guidelines or policies were identified that stated that there may be an occupational risk of developing COVID-19 in HCWs. Some research findings suggest that the incidence of COVID-19 infection rates in HCWs across jurisdictions is variable due to differences in epidemic intensities, health systems, and public health strategies. For example, four studies reported incidence rates for HCWs (from China and the United States) ranging from 2.5-8.2%, and four studies (all from Europe) described incidence rates for HCWs ranging from 10-41%. Moreover, an analysis of data from three "low-risk" (non-Hubei areas in China, Indonesia, Philippines) and three "high-risk" (Italy, Spain, Hubei province in China) jurisdictions found that the overall incidence of COVID-19 infection in HCWs was higher than that of the general population. The only Canadian data identified was from Alberta, which reports that the overall risk of COVID-19 infection in HCWs was 0.13%, compared to a 0.1% risk in the province's general population. The higher relative risk of infection in HCWs may be due to higher case ascertainment among HCWs versus the general population (i.e., higher rates of quarantine and testing in the HCW population) and differences in travel patterns among HCWs compared with other populations prior to recognition of the pandemic and the implementation of travel restrictions. Ontario data from January 15 to May 25, 2020 suggests that 4,485 of HCWs in Public Health Units (PHUs) were infected with COVID-19, representing 17% of all Ontario cases. Approximately 55% of all the infected HCW cases in Ontario were associated with an identified outbreak in an institution: 51% in a long-term care home, retirement home, or hospital; 4% in other types of facilities (i.e., group home, shelter, and other/unknown). The reminder of COVID-19 cases (i.e., 45%) resulted from travel, close contact, community spread, or unknown sources.

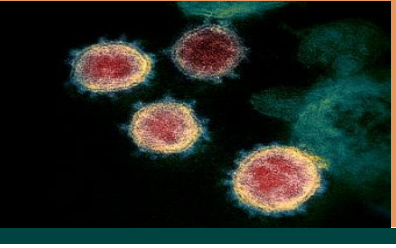
EVIDENCE PRODUCTS PRODUCED IN COLLABORATION WITH OUR PARTNERS cont'd

- Barriers Vulnerable Populations Face Regarding Adherence to COVID-19 Public Health Measures
  (Produced in collaboration with Public Health Ontario).

  Limited information was found on barriers regarding adherence to COVID-19 public health measures. Preliminary evidence shows that structural inequities and the social determinants of health (SDOH), such as race/ethnicity, indigeneity, sex/gender, socioeconomic position, occupation (i.e., precarious employment), incarceration, and homelessness, may contribute to increased risk of COVID-19, particularly when they limit ability to maintain physical distancing. Existing social inequities in health increase risk of severe COVID-19 outcomes through increased prevalence of underlying medical conditions and/or decreased access to health care. Ontario demonstrates the impact of four SDOH on the risk of COVID-19 exposure or outcomes: race/ethnicity, homelessness, precarious employment, and neighborhood deprivation.

- Contact Tracing for COVID-19
  (Produced in collaboration with the Canadian Agency for Drugs and Technologies in Health, North American Observatory on Health Systems and Policies, Ontario Health (Cancer Care Ontario), Ontario Health (Quality), and Unity Health – St. Michael's Hospital).

  No relevant evidence-based guidelines have been identified regarding contact tracing for people who have been in contact with a person with a suspected or confirmed diagnosis of COVID-19. Best practices that appear to improve the effectiveness of contact tracing across jurisdictions include: 1) high surveillance and contact tracing capacity (e.g., well-trained and adequately staffed contact tracing teams achieved through redeployment and training of employees/volunteers across sectors); and 2) digital approaches (e.g., Bluetooth, global positioning system, and cloud-based technologies). Due to privacy and usability concerns, digital tools may best serve as supplementary measures to traditional contact tracing approaches, in which contacts are identified through a thorough review of available data (e.g., telephone interviews with the infected individual; medical, travel, or police records). Enabling contextual factors that may improve the effectiveness of contact tracing include emergency preparedness infrastructure, cross-sectoral collaboration, local public health units for implementing approaches, and evidence-informed strategic communication. On April 27, 2020, the Government of Ontario released its framework document for reopening the province, echoing the need to strengthen public health capacity for timely contact tracing and case management. Public Health Ontario, in collaboration with the Ministry of Health and the Canadian federal government, is leading the COVID-19 Contact Tracing Initiative.



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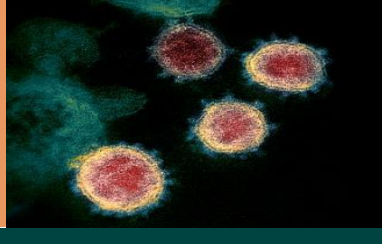
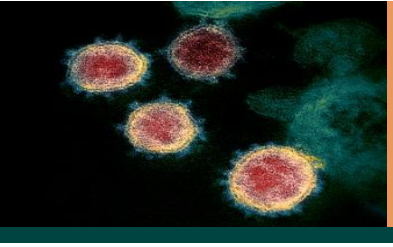
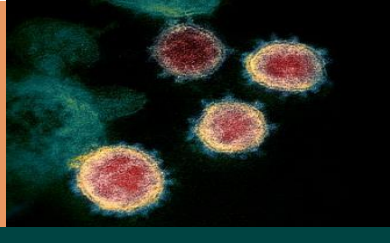


RESEARCH EVIDENCE

The research evidence profiled below was selected from highly esteemed academic journals, based on date of publication and potential applicability or interest to the Ontario health sector.

- **Correlation between N95 extended use and reuse and fit failure in an US emergency department**
  June 4, 2020. A fit test failure of two common types of N95 masks (i.e., dome-shaped [3M 1860] and duckbill [Kimberly-Clark 46727 or Halyard 46867]) identified duckbill masks as having a high failure rate and dome-shaped masks failing with increased use. The study suggested that N95 failure may contribute to SARS-CoV-2 transmission despite PPE use and deserves further study. *Read*.
- **Hydroxychloroquine as post-exposure prophylaxis for COVID-19**
  June 3, 2020. A randomized, double-blind, placebo-controlled trial across the United States and parts of Canada tested the efficacy of hydroxychloroquine in 821 asymptomatic adults who had household or occupational exposure to someone with COVID-19; the drug did not prevent illness compatible with COVID-19 or confirmed infection within four days of exposure. *Read*.
- **The impact of ethnicity on clinical outcomes in COVID-19**
  June 3, 2020. A systematic review of emerging evidence on the relationships between ethnicity and COVID-19 reported that individuals who are of Black, Asian, and minority ethnicity are at an increased risk of acquiring SARS-CoV-2 infection compared to White individuals and also experience worse clinical outcomes. *Read*.
- **Physical distancing, face masks, and eye protection to prevent person-to-person transmission of SARS-CoV-2**
  June 1, 2020. Findings from a systematic review and meta-analysis support physical distancing of one-metre or more and provide quantitative estimates for models and contact tracing to inform policy. Optimum use of face masks, respirators, and eye protection in public and health care settings should be informed by these findings and contextual factors. *Read*.
- **Safety, tolerability, and immunogenicity of first-in-human trial of COVID-19 vaccine**
  May 22, 2020. In Wuhan, China, a non-randomized clinical trial that enrolled and allocated one of three dose groups (i.e., low, medium, high) to 108 healthy adults aged eight to 60 years found the vaccine to be tolerable and to produce an immunogenic response at 28 days post-vaccination. *Read*.
- **Sheltering in place and domestic violence: Evidence from calls for service during COVID-19**
  May 22, 2020. A study that examined the COVID-19 pandemic and accompanying public health response found a 10.2% increase in reported domestic incidents in 15 large metropolitan cities across the United States; the increase in reported incidents appears to be driven by households without a prior history of domestic violence. *Read*.





JURISDICTIONAL EXPERIENCE

- Collecting and reporting race-based COVID-19 data in Canada
  May 2020. To help harmonize and facilitate collection of high-quality data that monitors racial health inequalities, the Canadian Institute for Health Information is proposing an interim race data collection standard that is based on engagement with researchers, clinicians, organizations representing racialized communities, and federal, provincial, and territorial governments. It is intended for use by any jurisdiction or organization that decides to collect this type of data. *Read*.
- World Health Organization issues interim guidance on the clinical management of COVID-19
  May 27, 2020. This guidance document is intended for clinicians caring for COVID-19 patients during all phases of their disease (i.e., screening to discharge). This update has been expanded to meet the needs of front-line clinicians and promotes a multi-disciplinary approach to care for patients with COVID-19, including those with mild, moderate, severe, and critical disease. The following sections are entirely new: COVID-19 care pathway, treatment of acute and chronic infections, management of neurological and mental manifestations, non-communicable diseases, rehabilitation, palliative care, ethical principles, and reporting of death; while previous chapters have also been significantly expanded. *Read*.

TRUSTED RESOURCES

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.

* 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*