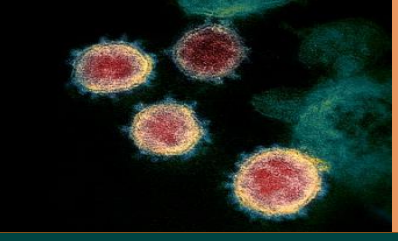
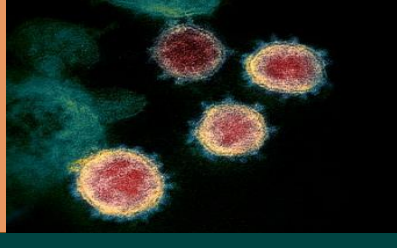


COVID-19 PANDEMIC – RAEB'S EVIDENCE UPDATE

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

• May 4, 2020 •



FEATURED

- Rapid responses for Ontario's health sector
- 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

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RAEB'S RAPID RESPONSES FOR ONTARIO'S HEALTH SECTOR

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

- Zinc for Treatment of COVID-19 Patients

  Studies have shown that the level of zinc in an individual's body is a critical factor that can influence immunity against viral infections, with zinc-deficient populations being at increased risk of acquiring infections, such as HIV or hepatitis C virus. The existing evidence shows a therapeutic effect of zinc on viral infections, such as herpes simplex, common cold, and influenza. Clinical trials have shown that oral zinc supplementation reduces the incidence rate of acute respiratory infections; shortens the duration of flu-like symptoms; and improves the rate of recovery. Based on previous studies on other respiratory viral infections, some researchers hypothesized that zinc might be one of the micronutrients that could be consumed for both prevention and treatment of COVID-19. Furthermore, some researchers have hypothesized that oral zinc treatment may have a synergistic effect with antimalarial drug chloroquine (CQ) and its metabolite hydroxychloroquine (HCQ), which is being actively studied and used in the treatment of COVID-19. Two clinical trials are measuring: 1) effects of intravenous injection of zinc chloride (Australia); and 2) use of chloroquine in combination with oral zinc and vitamins C and D (Turkey).

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.

- Variation in COVID-19 hospitalizations and deaths across New York City

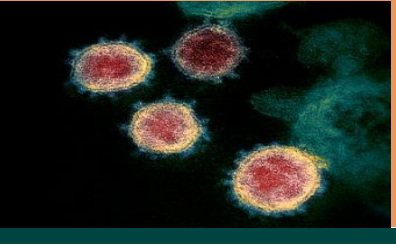
  April 29, 2020. This study described demographic characteristics and hospital bed capacities of five New York City boroughs, and identified racial, ethnic, and financial disparities in testing for COVID-19, hospitalizations, and deaths. *Read*.
- The Vaccine Race

  April 28, 2020. More than 90 vaccines are being developed against SARS-CoV-2 by research teams in companies and universities across the world, with at least eight approaches to vaccine design that rely on different viruses or viral parts. *Read*.
- Large-vessel stroke and COVID-19 in the young in New York City

  April 28, 2020. A case report detailed five younger patients (under 50 years of age) with SARS-CoV-2 infection who, over a two-week period, presented to hospitals with new-onset symptoms of large-vessel ischemic stroke. *Read*.

RESEARCH EVIDENCE cont'd

- **Using admission data to estimate hospitalized COVID-19 patient survival**
  April 27, 2020. Based on data from 5,233 inpatients in acute care facilities at Northwell Health, researchers developed a new clinical survival probability calculator that uses seven variables to predict in-hospital survival of COVID-19 patients (i.e., patient age, serum blood urea nitrogen, Emergency Severity Index, red cell distribution width, absolute neutrophil count, serum bicarbonate, and glucose). *Read*.
- **Saliva may be more sensitive for SARS-CoV-2 detection than nasopharyngeal swabs**
  April 27, 2020. Saliva may be a viable and more sensitive alternative to nasopharyngeal swabs and could enable at-home, self-administered sample collection for accurate and large-scale SARS-CoV-2 testing. *Read*.
- **Aerodynamic analysis of SARS-CoV-2 in two Wuhan hospitals**
  April 27, 2020. Room ventilation, open space, sanitization of protective apparel, and proper use and disinfection of toilet areas may effectively limit the concentration of SARS-CoV-2 in aerosols. *Read*.
- **Transforming Operating Rooms (ORs) into Intensive Care Units (ICUs)**
  April 24, 2020. Health care professionals at New York-Presbyterian Weill Cornell Medical Center converted unused ORs and post-anaesthesia care units into ICUs, configuring an additional 60 beds for critically ill ventilator-dependent patients and increasing critical care capacity by 52% from baseline within three days. *Read*.
- **Transmission of pre-symptomatic SARS-CoV-2 infection in a skilled nursing facility in Washington State**
  April 24, 2020. Following the identification of a single case of COVID-19, health experts tracked the rapid and widespread transmission of SARS-CoV-2 that later infected 64% of residents in 23 days. More than half of residents with positive test results were asymptomatic at the time of testing and most likely contributed to transmission. *Read*.
- **Risk of COVID-19 transmission to rescuers delivering treatment for cardiac arrest**
  April 16, 2020. A systematic review did not find any direct evidence that chest compressions or defibrillation are or are not associated with aerosol generation or transmission of COVID-19 to rescuers. *Read*.
- **Cardiovascular Disease (CVD) and use of Renin-Angiotensin System (RAS) inhibitors in COVID-19**
  April 13, 2020. There is ongoing debate on the safety of RAS inhibitors, angiotensin converting enzyme (ACE) inhibitors and angiotensin receptor blockers (ARBs), in COVID-19 (*Read*). These drugs are extensively used for CVD and hypertension therapy and may potentially be protective or harmful in the event of COVID-19 infection (*Read*; *Read*). Until further data are available, Canadian, European, American, and international cardiovascular societies have suggested that benefits of these drugs in CVD outweigh the uncertain risks and discourage their discontinuation in patients with COVID-19.
- **Work-related COVID-19 transmission**
  April 11, 2020. An analysis of government data from Hong Kong, Japan, Singapore, Taiwan, Thailand, and Vietnam suggested the top high-risk occupations for COVID-19 local transmission are: health care workers (22%), drivers and transport workers (18%), services and sales workers (18%), cleaning and domestic workers (9%), and public safety workers (7%). *Read*.



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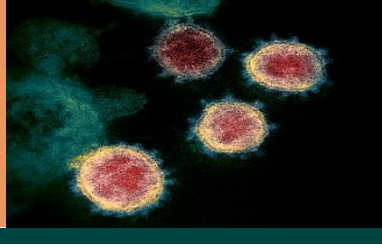

JURISDICTIONAL EXPERIENCE

- **Tracking and comparing the best COVID-19 interventions**
  April 27, 2020. The World Health Organization is creating a platform, based at the London School of Hygiene and Tropical Medicine, that gathers and standardizes data collected by 10 groups already tracking hundreds of different interventions worldwide. The dataset will be ready in the coming weeks and will be open to anyone to use. *Read*.
- **Universal mask use in health care settings and retirement homes in Ontario**
  April 20, 2020. Public Health Ontario (PHO) noted that universal masking has been instituted in Ontario long-term care facilities, requiring staff and visitors to use surgical masks at all times. PHO noted that wearing a mask is not a substitute for physical distancing. *Read*.
- **Guidance for the management of cardiovascular disease (CVD) during COVID-19**
  April 2020. The European Society of Cardiology published guidance on the diagnosis and management of CVD. The UK's National Institute for Health and Care Excellence released a COVID-19 rapid guideline to help health care professionals who are not cardiology specialists identify and treat acute myocardial injury and its cardiac complications in adults with known or suspected COVID-19, but without known pre-existing CVD.

TRUSTED RESOURCES

Newly identified evidence sources on COVID-19 are profiled below. An up-to-date and comprehensive list of sources, organized by type of research evidence, is available on McMaster Health Forum's website.

- **The Centre for Effective Practice**, in collaboration with Ontario partners, developed The COVID-19: Clinical and Practical Guidance for Primary Care Providers resource and curated list of evidence-based supports to assist providers in areas impacting primary care due to the pandemic.
- **The US Veterans' Affairs Evidence Synthesis Program** catalogues COVID-19 evidence reviews and has tags for those meeting minimum quality standards and for living reviews.
- **The International Labour Organization (ILO)** is tracking policies implemented by governments, employers' and workers' organizations, and the ILO in 188 countries and territories in response to COVID-19.
- **The International Monetary Fund's** policy tracker summarizes the key economic responses governments are taking to limit the human and economic impact of the COVID-19 pandemic. The tracker includes 193 economies.

* 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*