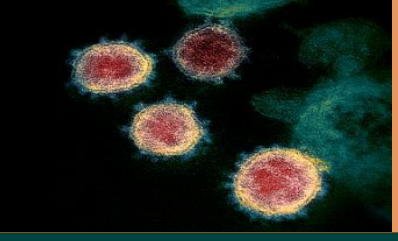
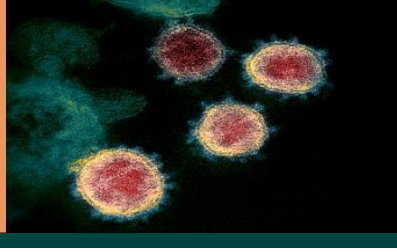


COVID-19 PANDEMIC – RAEB'S EVIDENCE UPDATE

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

• April 27, 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

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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.

- **Contact Tracing Strategies for COVID-19**

  Contact tracing identifies, educates, and monitors individuals who have had close contact with someone who is infected with a virus. Researchers, industry, and governments across the world are partnering to develop geographic information systems and smartphone applications (apps) that use location data to trace and map contacts across space and time to enhance social distancing efforts. For example, China, Singapore, South Korea, Taiwan, and Vietnam have each implemented a cohesive matrix of advanced contact tracing technologies, including video, phone, and internet surveillance with artificial intelligence capabilities, online reporting systems, voluntary smartphone apps, and big data analytics that link medical records, credit card transactions, and/or immigration and travel data. The UK and US have developed interactive map-based dashboards that locate and tally confirmed infections, fatalities, and recoveries in real-time. Strategies to mitigate data privacy and mass surveillance concerns include: 1) sharing anonymized and aggregated information that reveals general trends about where and when people are congregating and risk spreading infection; or 2) developing a new coronavirus-specific app that asks users to voluntarily share their location and health data, which is only recorded for a set period of time.

- **Testing for COVID-19 in Cancer Patients**

  Cancer patients may have a higher risk for acquiring COVID-19 because of frequent hospital visits, advanced aged, and immunocompromised state related to the nature of their malignancy and/or their anti-cancer treatment. Research studies and guidelines have testing recommendations (including those from CDC) ranging from one to two negative swab tests, with 24 hours to one-week intervals, before conducting any cancer treatment. Some recommendations also include conducting a chest scan via x-ray or computerized tomography. Many strategies were identified for preventing potential exposure and transmission of COVID-19 to cancer patients and their health care providers, including considerations for: deferring treatments or switching to other forms of more manageable treatments, establishing clear communication and education about infection prevention and control measures (e.g., handwashing, PPE), using telemedicine to reduce in-person visits, creating checkpoint screening areas, dedicating health care providers for infected patients in designated areas, and implementing no-visitor policies.

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.

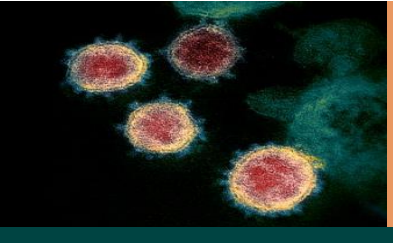
- **Characteristics, comorbidities, and outcomes among COVID-19 patients hospitalized in New York City**
  April 22, 2020. This case series described clinical characteristics, health services use, and outcomes of 5,700 COVID-19-infected patients cared for at 12 hospitals in the New York City area. *Read*.
- **SARS-CoV-2 infection in children and adolescents in China and Singapore**
  April 22, 2020. A systematic review assessed recently reported pediatric cases of SARS-CoV-2 from China and Singapore to evaluate clinical features, diagnostic tests, current therapeutic management, and prognosis. Results suggested that most children with COVID-19 presented with mild symptoms, if any, generally required supportive care only, typically had a good prognosis, and recovered within one to two weeks. *Read*.
- **Barriers and facilitators to health care workers' adherence with infection prevention and control (IPC) guidelines for respiratory infectious diseases**
  April 21, 2020. A Cochrane rapid review found that factors that influence health care workers' ability and willingness to follow the IPC guidelines include: the guideline itself and how it is communicated, manager support, workplace culture, training, physical space, access to and trust in PPE, and a desire to deliver good patient care. It is also important to include all facility staff when implementing IPC guidelines. *Read*.
- **Testing SARS-CoV-2 antibodies may provide better epidemic and mortality projections**
  April 17, 2020. Researchers found that testing for the prevalence of antibodies in blood from a sample of 3,330 residents in Santa Clara County, California allowed them to estimate a range between 48,000 and 81,000 people had been infected by early April. This is 50-85-fold more than the number of confirmed cases, which implies that the infection may be more widespread than indicated. *Read*.
- **Clinical characteristics and diagnostic challenges of pediatric COVID-19**
  April 16, 2020. A systematic review and meta-analysis of nine case series found that disease severity is generally mild, most pediatric patients had a household contact history, and there is no evidence of vertical transmission to neonates born to mothers with COVID-19. Current diagnosis is based mainly on a computerized tomography scan of the chest, epidemiological suspicion, and contact tracing. *Read*.
- **PPE for preventing highly infectious diseases due to exposure to contaminated body fluids in health care staff**
  April 15, 2020. A Cochrane review found low-certainty evidence that covering more parts of the body leads to better protection, but usually comes at the cost of more difficult donning or doffing and less user comfort, which may lead to even more contamination. More breathable types of PPE may lead to similar contamination, but may have greater user satisfaction. Modifications to PPE design (e.g., tabs to grab) may decrease the risk of contamination. For donning and doffing procedures, following CDC guidance, a one-step glove and gown removal, double-gloving, spoken instructions during doffing, and glove disinfection may reduce contamination and increase compliance. Face-to-face PPE training may reduce errors more than folder-based training. *Read*.

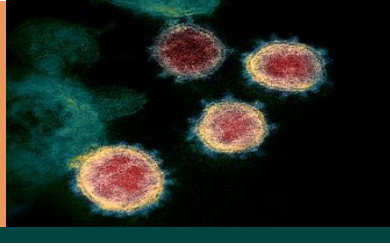
RESEARCH EVIDENCE cont'd

- The Chinese experience of managing and treating COVID-19
  April 13, 2020. Of all therapeutic measures used in the treatment and management of COVID-19, a review found the most critical were early recognition of infected individuals and strictly enforced national quarantine measures. *Read*.
- COVID-19 among people experiencing homelessness: Early evidence from Boston
  April 10, 2020. Homeless adults in Boston are being diagnosed with COVID-19 at a greater estimated population frequency (46.3 cases/1,000 persons) compared with Massachusetts adults (1.9 cases/1,000 persons), suggesting that cities should prepare urgently for the possibility of a COVID-19 surge in this population. *Read*.
- Quarantine alone or in combination with other public health measures to control COVID-19
  April 8, 2020. A Cochrane rapid review found current evidence is limited to modelling studies, which consistently indicate that quarantine is important in reducing incidence and mortality during the COVID-19 pandemic. Early implementation of quarantine and combining quarantine with other public health measures (e.g., travel restrictions, social distancing) is important to ensure effectiveness. *Read*.
- Communicating public health information about COVID-19 in rural areas in the United States
  April 2020. A commentary discussed public health communication strategies (e.g., engaging community leaders) that are tailored to the rural context to mitigate the spread of the coronavirus while its prevalence remains relatively low in such areas. *Read*.
- Thrombosis among COVID-19 patients
  April 2020. A Dutch study of 184 patients in the ICU with COVID-19-related pneumonia found that 31% were having thrombotic complications, and recommended applying pharmacological thrombosis prophylaxis to such patients admitted to the ICU. A study from Wuhan, China of 81 similarly ill patients found a 25% incidence of venothromboembolism, which may be related to poor prognosis.

JURISDICTIONAL EXPERIENCE

- Public Health England's guidance on how to work safely in care homes during COVID-19
  April 2020. This guidance includes a flowchart for care workers providing care to residents to identify whether there is a need for personal protective equipment (PPE); PPE recommendations for care home staff; frequently asked questions on the use of PPE in care homes; and examples to help identify the correct use of PPE when undertaking activities that require physical contact or activities which do not require physical contact but are carried out in close proximity to residents. *Read*.





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.

- **COVID-evidence** includes worldwide planned, ongoing, and completed trials on any intervention to treat or prevent COVID-19.

- **The UK Collaborative on Development Research (UKCDR) and Global Research Collaboration for Infectious Disease Preparedness (GloPID-R)** developed the COVID-19 Research Project Tracker, a live database of funded research projects on COVID-19 across the world. By providing an overview of research projects mapped against the priorities identified in the WHO Coordinated Global Research Roadmap: 2019 Novel Coronavirus, this tool will help funders and researchers identify gaps and opportunities and inform future research investments or coordination needs.

- **The New South Wales Health Critical Intelligence Unit** in New South Wales' Agency for Clinical Innovation provides rapid, evidence-based advice on COVID-19 in four topical areas (epidemiology and transmission, symptoms and treatment, clinical models of care, system capacity and evaluation), based on peer review and grey literature. Its operations focus on systems intelligence, clinical intelligence, and evidence integration.

- **Cambridge University Press's** Cambridge Core Blog provides the academic and librarian community with information, news, and updates, and includes posts on government responses to the COVID-19 pandemic across the world.

- **The Blavatnik School of Government** at the University of Oxford has created the Coronavirus Government Response Tracker, which systematically tracks and compares policy responses to the COVID-19 outbreak around the world.

* 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*