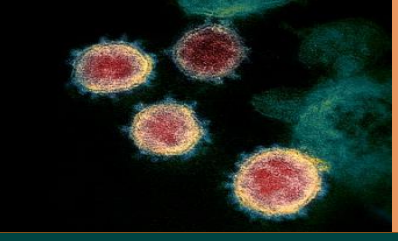
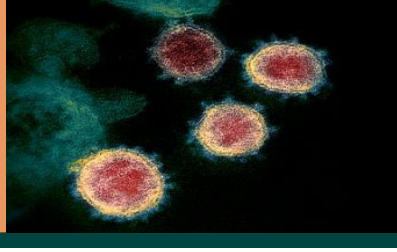


COVID-19 PANDEMIC – RAEB'S EVIDENCE UPDATE

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

• April 14, 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

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

RAEB'S RAPID RESPONSES FOR ONTARIO'S HEALTH SECTOR

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

- **Emerging Studies of Drug Treatments for COVID-19**
  Five emerging randomized clinical trial (RCT) and non-RCT studies have evaluated the efficacy and safety of various therapeutics to treat and prevent the progression of COVID-19, including Chloroquine, Hydroxychloroquine (HQC), Favipiravir, and Arbidol. According to these preliminary studies, patients treated with HQC showed improvements in body temperature recovery time, cough remission time, and viral load reduction. In addition, the results suggest the effect of HQC on virus elimination may be significantly more efficient when reinforced with the antibiotic Azithromycin.
- **Emerging Treatments for COVID-19: A Primer**
  The BC Centre for Disease Control and Ministry of Health noted that over 200 publications cite the following pharmaceutical agents for the potential treatment of SARS-CoV-2:
  - **Favipiravir**: Approved for treatment of SARS-CoV-2 on February 15, 2020 in China, and is currently undergoing clinical trials.
  - **Arbidol**: Used to treat influenza and has been reported to effectively inhibit SARS-CoV-2.
  - **Remdesivir**: Evaluated for the treatment of Ebola, but non-FDA approved; however, it is being used on 'compassionate use' grounds in the US with promising results.
  - **Chloroquine/hydroxychloroquine**: Used to treat malaria and some inflammatory conditions.
  - **Oseltamivir**: Could be used for critically ill patients with influenza pneumonia.
  - **Ribavirin**: SARS patients treated with ribavirin and lopinavir/ritonavir had a lower risk of acute respiratory distress syndrome and death, but there are strong recommendations against its use for SARS-CoV-2 because of risk of harm.
  - **Interferon**: Used to treat hepatitis, but it is strongly recommended against its use for SARS-CoV-2 because of risk of harm.
  - **Tocilizumab**: Used to treat rheumatoid arthritis. Sanofi is in discussion with the FDA to initiate trials for treatment of SARS-CoV-2.
  - **Corticosteroids**: Strong recommendations against its use for SARS-CoV-2 unless another compelling indication is present (e.g., asthma, refractory septic shock).
  - **Blood Plasma**: In the US, although considered experimental, the FDA has allowed hospitals to use plasma to treat patients with serious or immediately life-threatening COVID-19 infections. On April 7, 2020 in Ontario, McMaster University reported they will begin the Convalescent Plasma for COVID-19 Research (CONCOR) clinical trial to test plasma therapy.

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.

- **Ensuring and sustaining a health care workforce during a pandemic**
  April 8, 2020. Health care system experts recommended strategies for rapidly increasing health care workforce capacity, including hiring medical students in their final semesters of their programs, encouraging retired health care professionals to return to work, and hiring and training other health care professionals (e.g., dentists, optometrists, chiropractors). *Read*.
- **Targeted mass testing needed**
  April 8, 2020. The mass deployment of at-home blood testing for SARS-CoV-2 antibodies, and frequent testing for SARS-CoV-2 in those likely to be exposed to the virus (e.g., health care workers and those at a higher risk for severe respiratory disease), is critically needed. *Read*.
- **Addressing sources of anxiety among health care professionals during the COVID-19 pandemic**
  April 7, 2020. This study summarized key considerations to support the health care workforce, including but not limited to: access to appropriate personal protective equipment; access to childcare during increased work hours and school closures; and support for other personal and family needs as work hours and demands increase (e.g., food, hydration, lodging, transportation). *Read*.
- **Characteristics of and important lessons from the COVID-19 outbreak in China**
  April 7, 2020. Key findings are summarized from the Chinese Center for Disease Control and Prevention's report on the largest case series to date (i.e., 72,314 cases) of COVID-19 in mainland China, and emerging understanding of and lessons from the epidemic are discussed. *Read*.
- **Continuously updated list of commercial SARS-CoV-2 diagnostic testing kits delivered by courier and digital tools**
  April 7, 2020. The journal *Nature Biotechnology* maintains an up-to-date list and in-depth analysis of select rapid and portable diagnostic tests for SARS-COV-2. *Read*.
- **Protective barrier enclosure during endotracheal intubation**
  April 3, 2020. Medical experts suggested that fabricating and using an "aerosol box" (i.e., a transparent plastic cube designed to cover a patient's head and that incorporates two circular ports through which the clinician's hands are passed to perform the airway procedure) during endotracheal intubation can serve as a protective barrier for doctors with inadequate access to standard personal protection equipment. *Read*.

RESEARCH EVIDENCE cont'd

- Flattening the curve for incarcerated populations in the US
  April 2, 2020. Medical experts encourage correctional facilities to actively minimize the impact of the COVID-19 pandemic on incarcerated persons, correctional staff, and surrounding communities. One of their recommendations is to "decarcerate," or release as many people as possible, focusing on the elderly, the infirm, and those who are least likely to commit additional crimes. *Read*.
- Sensitivity and efficiency comparisons of diagnostic assays for rapid detection of SARS-COV-2
  April 1, 2020. A US study compared nine versions of reverse-transcription polymerase chain reaction (qRT-PCR) assays and found that all of them can be used to detect the virus, but found differences in their ability with low amounts of virus. *Read*.
- Quantifying SARS-CoV-2 transmission suggests epidemic control with digital contact tracing
  March 31, 2020. A modelling study suggested that digitizing contact tracing through a mobile-phone app may achieve sustainable epidemic suppression without need for mass quarantines. *Read*.

JURISDICTIONAL EXPERIENCE

- COVID-19 symptom tracking app developed in the UK
  March 27, 2020. Kings College London has created a simple symptom-monitoring app, called COVIDradar, to provide real-time updates for policy makers. A US version will be launched soon. *Read*.

* 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*

TRUSTED RESOURCES

- New! **McMaster University's** McMaster Optimal Aging Portal has citizen-targeted summaries of systematic reviews that may be relevant to staying active and engaged while practicing physician distancing.
- New! **The British Columbia Academic Health Science Network (BC AHSN)** created a COVID-19 response page that will help researchers navigate the provincial research response to COVID-19, including guidance on grant applications, funding opportunities, clinical trials, informed consent, and research ethics approval.
- New! **The National COVID-19 Clinical Evidence Taskforce** in Australia brings together the peak health professional bodies across the country. They have created "living" evidence-based guidelines for the clinical care of people with COVID-19, which are updated with new research in near real-time in order to provide reliable advice to clinicians providing frontline care.
- New! **The Joanna Briggs Institute (University of Adelaide)** has a special collection of evidence-based guidance on infection control and prevention measures for health professionals and organizations.
- New! **COVID-NMA** has created a living mapping and living network meta-analysis (NMA) of ongoing COVID-19 studies that focus on prevention and treatment.
- New! **PROSPERO** is an international database of prospectively registered systematic reviews in health and social care, and it includes a separate search filter for human studies and animal studies related to COVID-19.
- **Public Health Ontario** is actively monitoring and assessing relevant information related to COVID-19 and posts evidence briefs, guidances, and best practices based on published literature, scientific list-serves, and media reports.
- **EBSCO** created a COVID-19 Information Portal, comprised of news feeds and resources from trusted bodies of authority (e.g., World Health Organization, US Centers for Disease Control and Prevention), to support the immediate need for legitimate information. They also provide clinical information about COVID-19, as well as free online resources on distance learning, remote work, and stress management.
- **World Health Organization** is actively collating information on situation updates, technical guidance for countries, advice for health workers and the public, research and development, and scam alerts.