

COVID-19 PANDEMIC – RAEB'S EVIDENCE UPDATE

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

• March 27, 2020 •

FEATURED

- Rapid responses for Ontario's health sector
- Evidence products from our partners
- Trusted Resources
- Research evidence
- Jurisdictional experience

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

- **Safe Use and Re-Use of Personal Protective Equipment (PPE)**
Some research evidence and guidelines suggested methods for maximizing the use and conserving the supply of PPE, including: decontaminating respirators via ultraviolet germicidal irradiation and hydrogen peroxide vapour, wearing face shields over surgical masks to allow for the re-use of masks, and disinfecting safety goggles, face shields, medical gowns, and laboratory equipment. *Contact [Evidence Synthesis Unit](#) for the full read.*
- **Single Ventilator Use for Multiple Patients**
The findings from three research articles and one review were mixed. One early study published in 2006 suggested there was potential with an approach to quickly modify a single ventilator to ventilate four simulated adults for a limited time, but advised that more research was needed; and a more recent study tested this approach using test lungs that simulated four patients. However, a review of emergency mass critical care guidelines recommended that each patient should have their own mechanical ventilator. No research describing the use of a single ventilator for multiple actual patients (as opposed to simulated patients) was identified, although some hospitals in the US are reported to be moving toward this practice. *Contact [Evidence Synthesis Unit](#) for the full read.*

EVIDENCE PRODUCTS FROM OUR PARTNERS

Ministry research partners are actively working with leading agencies and organizations on questions related to COVID-19. The [SPOR Evidence Alliance](#) has recently produced four products in collaboration with the World Health Organization (WHO) and Public Health Agency of Canada (PHAC).

- [Infection and Prevention Control Guidance for Long-Term Care Facilities in the Context of COVID-19 \(for the WHO\)](#)
- [Preventing Respiratory Illness in Older Adults Aged 60 Years and Above Living in Long-Term Care: A Rapid Overview of Reviews \(for the WHO\)](#)
- [Guidelines for Preventing Respiratory Illness in Older Adults Aged 60 Years and Above Living in Long-Term Care: A Rapid Review of Clinical Practice Guidelines \(for the WHO\)](#)
- [Effectiveness and Safety of Antiviral or Antibody Treatments for Coronavirus: A Rapid Review \(for PHAC\)](#)

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TRUSTED RESOURCES

- **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 (e.g., epidemiology, diagnosis, guidelines), 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.

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.

- **Fair Allocation of Scarce Medical Resources in the Time of Covid-19**
[March 23, 2020](#). Based on four ethical values (maximizing benefits, treating equally, promoting and rewarding instrumental value, and giving priority to the worst off), this article makes six recommendations for allocating medical resources in the Covid-19 pandemic: maximize benefits; prioritize health workers; do not allocate on a first-come, first-served basis; be responsive to evidence; recognize research participation; and apply the same principles to all Covid-19 and non-Covid-19 patients. [Read](#).
- **Case-Fatality Rate and Characteristics of Patients Dying in Relation to COVID-19 in Italy**
[March 23, 2020](#). The older population in Italy may partly explain differences in cases and case-fatality rates among countries. COVID-19 deaths in Italy were mainly observed among older, male patients who also have multiple comorbidities. [Read](#).
- **Factors Associated with Mental Health Outcomes among Health Care Workers Exposed to COVID-19**
[March 23, 2020](#). Health care workers in hospitals equipped with fever clinics or wards for COVID-19 in China reported experiencing psychological burden, especially among nurses and frontline health care workers directly engaged in the diagnosis, treatment, and care for patients with COVID-19. [Read](#).
- **Characteristics and Outcomes of Critically Ill Patients with COVID-19 in Washington State**
[March 19, 2020](#). Incident COVID-19 cases at Evergreen Hospital, which were largely linked to exposures at a skilled nursing facility, had a high rate of Acute respiratory distress syndrome and a high risk of death, and poor short-term outcomes were demonstrated among patients requiring mechanical ventilation. [Read](#).

RESEARCH EVIDENCE cont'd

- **COVID-19 is Stable for Several Hours to Days in Aerosols and on Surfaces**
[March 17, 2020](#). Scientists found that SARS-CoV-2, which causes COVID-19 disease, was detectable in aerosols for up to three hours, up to four hours on copper, up to 24 hours on cardboard, and up to two to three days on plastic and stainless steel. The results suggest that people may acquire the virus through the air and after touching contaminated objects. [Read](#).
- **Risk Factors Associated with Acute Respiratory Distress Syndrome and Death in COVID-19 Patients**
[March 13, 2020](#). In Wuhan, China, older age was associated with greater risk of development of acute respiratory distress syndrome and death likely owing to less rigorous immune response. [Read](#).
- **Clinical Characteristics of COVID-19 in China**
[February 28, 2020](#). During the initial outbreak in Wuhan, the diagnosis of the disease was complicated by the diversity in symptoms and imaging findings and in the severity of disease at the time of presentation. Patients' most common symptoms were fever (43.8% on admission; 88.7% during hospitalization) and cough (67.8%), while gastrointestinal symptoms or radiologic abnormalities were uncommon. [Read](#).

JURISDICTIONAL EXPERIENCE

- **How Blood from COVID-19 Survivors Might Save Lives**
[March 24, 2020](#). Hospitals in New York City are gearing up to use the blood of people who have recovered from COVID-19 as a possible antidote for the disease. This decision follows from the US Food and Drug Administration's March 23rd announcement to classify convalescent plasma as an 'investigational new drug' against coronavirus that allows scientists to submit proposals to test it in clinical trials, and lets doctors use it compassionately to treat patients with serious or life-threatening COVID-19 infections, even though it is not yet approved. Researchers note that a key advantage to convalescent plasma is that it's available immediately, whereas drugs and vaccines take months or years to develop. [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