

COVID-19 PANDEMIC

RAEB'S Evidence Update

Highlights of health research synthesized by the Research, Analysis and Evaluation Branch

August 10, 2020

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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.

Journal of the American Medical Association (JAMA): Prevalence of health care worker burnout during the COVID-19 pandemic in Japan

August 4, 2020. A study found that that burnout prevalence among 312 frontline health care workers was significantly higher among nurses (46.8%), radiological technologists (36.4%), and pharmacists (36.8%), compared to physicians (13.4%). Burnout was also more prevalent in participants with: fewer years of experience, heightened anxiety due to unfamiliarity with personal protective equipment, decreased sleep compared with the pre-pandemic period, desire for reduced workloads, and expectations of appreciation or respect. [Article](#).

The Lancet: Cerebral changes in recovered COVID-19 patients

August 3, 2020. Researchers revealed possible disruption to structural and functional brain integrity in the recovery stages of 60 COVID-19 patients (as compared with 39 non-COVID-19 controls), suggesting long-term consequences of COVID-19. 68.33% of patients had neurological symptoms (e.g., mood change, fatigue, headache) and over 50% recovered patients still had neurological symptoms three months later. [Article](#).

The Lancet: Use of facemasks during the COVID-19 pandemic

August 3, 2020. The current best evidence includes the possibility of important benefits of wearing a facemask, including an infection risk reduction of 6-80% (this wide range may result from variable factors in studies, such as differences in inclusion and exclusion criteria). The cost of universal facemask wearing, in combination with other public health measures, might be lower than not reopening businesses and schools once baseline risk achieves acceptable levels. [Article](#).

JAMA Internal Medicine: Admissions in US health care systems during the first months of the pandemic

August 3, 2020. A study of 24 emergency departments (EDs) in five states (Colorado, Connecticut, Massachusetts, New York, and North Carolina) found a decrease in ED visits and an increase in hospital admissions from January to April 2020, suggesting the importance of visiting EDs during the pandemic for serious symptoms, illnesses, and injuries that cannot be managed in other settings. [Article](#).

Science: COVID-19 risks to global food security

July 31, 2020. This article outlines the main threats COVID-19 poses to food security and suggests critical responses that policy-makers should consider to prevent this global health crisis from becoming a global food crisis. [Article](#).

British Medical Journal (BMA): Drug treatments for COVID-19: Living systematic review and network meta-analysis

July 31, 2020. The effects of treatments for COVID-19 were compared among 23 randomized controlled trials. The effectiveness of most interventions is uncertain because most of the trials so far have been small and have study limitations. Glucocorticoids were the only intervention with evidence for a reduction in death and mechanical ventilation in patients with COVID-19 compared with standard care. Hydroxychloroquine, remdesivir, and lopinavir-ritonavir may reduce symptom duration compared with standard care. [Article](#).

American Journal of Obstetrics and Gynecology (AJOG): Vertical transmission of COVID-19: A systematic review and meta-analysis

July 30, 2020. This review examined 30 case reports describing 43 tested newborns and 38 studies describing 936 tested newborns and concluded that vertical transmission of SARS-CoV-2 is possible and appears to occur in a minority of cases (approximately 3.2% of infected mothers in the third trimester). [Article](#).

JAMA: Association between school closure and COVID-19 incidence and mortality in the US

July 29, 2020. Between March to May 2020, school closure was associated with a significant decline in incidence of COVID-19 and mortality. Some of the reductions may have been related to other concurrent nonpharmaceutical interventions. [Article](#).

Nature: SARS-CoV-2-reactive cells in healthy donors and patients with COVID-19

July 29, 2020. A study demonstrated the presence of SARS-CoV-2-reactive T-cells in 83% of COVID-19 patients and 35% of unexposed healthy donors, suggesting the possibility of pre-existing immune responses acquired in previous coronavirus infections (e.g., common cold). This finding has important implications for the design and analysis of upcoming COVID-19 vaccine trials. [Article](#).

JAMA: Comparison of face-touching behaviours before and during the COVID-19 pandemic

July 29, 2020. A study analyzed videos of mask-wearing and face-touching behaviour in public areas among the general population in China, Japan, South Korea, England, France, Germany, Spain, Italy, and the US before the pandemic (January 2018 to October 2019) and during the pandemic (February 2020 to March 2020). The study reported that mandatory mask-wearing policies were associated with increased mask wearing and reduced face-touching behaviour, especially touching of the eyes, nose, and mouth, which may prevent contact transmission of COVID-19. [Article](#).

JAMA: Mood homeostasis before and during COVID-19 lockdown among students in the Netherlands

July 29, 2020. A study examined mood homeostasis (i.e., the extent to which participants preferentially engage in pleasant activities at a time when their mood is low, thereby stabilizing their mood) among 78 students in the Netherlands during the COVID-19 lockdown and reported that it decreased. The decrease was associated with a reduction in the range of available activities during the lockdown and was larger for people with a history of mental illness. [Article](#).

New England Journal of Medicine (NEJM): Reopening primary schools during COVID-19

July 29, 2020. US education experts argue that primary schools should be recognized as essential services and school personnel as essential workers even under moderate transmission conditions (<10 cases per 100,000 people); school reopening plans should be developed and financed accordingly. Examples of lessons learned from comparator schools in France, Israel, New Zealand, Scotland, and Denmark are provided. [Article](#).

The Lancet: Observations of the global epidemiology of COVID-19 from the pre-pandemic period using web-based surveillance

July 29, 2020. A study found cases with travel links to China, Italy, or Iran accounted for almost two-thirds of the first reported COVID-19 cases from affected countries. Among cases with age information available, most were among adults aged 18 years and older. Although there were many clusters of household transmission among early cases, clusters in occupational or community settings tended to be larger, supporting a possible role for physical distancing to slow the progression of SARS-CoV-2 spread. [Article](#).

Acta Paediatrica: Review of guidelines and recommendations from 17 countries on caring for neonates born to mothers with COVID 19

July 27, 2020. The guidelines and recommendations for managing infants affected by COVID-19 were of low, variable quality and may be unsustainable: most did not provide recommendations for delivery methods or managing symptomatic infants; none provided recommendations for post-discharge assimilation of potentially-infected infants into the community; the majority encouraged keeping mothers and infants together, subject to infection control measures, but one-third recommended separation; and although breastfeeding or using breastmilk were widely encouraged, two countries specifically prohibited this. [Article](#).

New England Journal of Medicine (NEJM): Multisystem Inflammatory Syndrome (MIS-C) in US children and adolescents

July 23, 2020. Among pediatric health centres across the US between March 15 and May 20, 2020, MIS-C in children associated with SARS-CoV-2 led to serious and life-threatening illness in previously healthy children and adolescents. [Article](#).

Jurisdictional Experience

Severe mental illness (SMI) and risks from COVID-19

August 5, 2020. According to a review by the Centre for Evidence-Based Medicine, there is reason to suspect that people with SMI may be at increased risk of contracting SARS-CoV-2 and have worse outcomes following infection compared to the wider public, however no existing data that quantified these risks was identified. Public health measures associated with COVID-19, including quarantine of suspected cases and lockdowns, may negatively affect the mental health status of people with SMI, through change of environment, disruption of services, increased stress, and isolation. [Article](#).

Status of environmental surveillance for SARS-CoV-2 virus

August 5, 2020. Environmental surveillance is being used for the detection of SARS-CoV-2 shed into wastewater from the upper gastrointestinal and upper respiratory system and via faeces. A scientific brief published by the World Health Organization explores potential use cases, considerations, and research needs for this emerging tool that may be explored in close coordination with established public health surveillance for COVID-19. At present, there is not yet sufficient evidence to recommend environmental surveillance as a standard approach for COVID-19 surveillance. [Article](#).

Clinician-led virtual care services in hospital-based ambulatory care settings

July 31, 2020. A rapid evidence profile by McMaster Health Forum reviews which clinician-led virtual care services can be used to replace in-person care in hospital-based ambulatory care settings. [Article](#).

Trusted Resources

The Evidence Synthesis Network (ESN) is a collaborative COVID-19 response initiative by Ontario's research and knowledge production community. The [ESN website](#) is a portal where research evidence requests can be made and includes previously completed ESN briefing notes.

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](#).

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
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