Ontario 🏵

COVID-19 PANDEMIC

RAEB'S Evidence Update

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

March 8, 2021

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Research Evidence and Jurisdictional Experience

The research evidence profiled below was selected from highly esteemed academic journals and grey literature sources, based on date of publication and potential applicability or interest to the Ontario health sector.

Health Equity and Vulnerable Populations

Journal of the American Medical Association (JAMA): **Assessment of a hotel-based COVID-19 isolation and quarantine strategy for persons experiencing homelessness in San Francisco**

March 2, 2021. In this study of 1,009 isolation and quarantine (I/Q) hotels guests referred from hospitals, outpatient settings, and public health surveillance, 81% completed their recommended I/Q course, and only 4% of those transferred from the county hospital required readmission for COVID-19 progression. This study suggests that, during the COVID-19 pandemic, a hotel-based I/Q strategy that delivers integrated medical and behavioural health support to people experiencing homelessness can be done safely outside the hospital setting. *[Article](#)*.

Data Analytics, Modelling and Measurement

Nature: **Simplified scores to estimate risk of hospitalization and death among patients with COVID-19**

March 2, 2021. This US study developed simpler models for estimating risk of hospitalization of patients with COVID-19 and mortality based on demographic characteristics (sex, age, race,

median household income based on zip code) and smoking status of 12,347 patients who tested positive at Mass General Brigham centers. Higher risk was associated with older age, male sex, Black race, lower socioeconomic status, and current/past smoking status. The models can be applied to predict the absolute risks of hospitalization and mortality and could aid in individualizing the decision making when detailed medical history of patients is not readily available. *Article*.

Disease Management

***World Health Organization*: The AZD1222 vaccine developed by Oxford University and AstraZeneca**

March 1, 2021. The COVID-19 vaccine AstraZeneca, also known as AZD1222 or ChAdOx1-S (recombinant), was developed by Oxford University, United Kingdom, and AstraZeneca. It is a replication-deficient chimpanzee adenovirus-vectored vaccine expressing the full-length SARS CoV-2 spike glycoprotein gene. This background document provides an overview of the characteristics and clinical data about the vaccine. *Article*.

***The Centre for Evidence-Based Medicine*: Risks of and from COVID-19 infection in people with asthma**

March 1, 2021. This rapid review found that it remains unclear whether people with asthma are at increased risk of infection or severe outcomes from COVID-19. There is no consensus from systematic reviews, and high-quality primary studies report conflicting results in some areas. Among people with asthma and COVID-19, people with co-morbid chronic obstructive pulmonary disease or non-allergic asthma, older age, or non-white ethnicity appear more vulnerable to worse outcomes. Data on asthma medication use is difficult to interpret due to inconsistent findings across primary studies and possible confounding/co-linearity between asthma severity and medication prescribed. *Article*.

***JAMA*: The Johnson & Johnson vaccine for COVID-19**

March 1, 2021. This article describes the characteristics of the Johnson & Johnson vaccine, and how it differs from the Pfizer and Moderna COVID-19 vaccine technology. Initially, the Johnson & Johnson vaccine was shown to produce antibodies against SARS-CoV-2 in 90% of people who received it after the first dose; the numbers of antibodies were greater for those who received two doses of the vaccine. Data released by Johnson & Johnson suggest that one dose of vaccine was 66% effective in preventing moderate to severe COVID-19 and 100% effective in preventing COVID-19-related hospitalization and death. No one developed a severe allergic reaction, and side effects of the vaccine were similar to those of other vaccines, including fever experienced

by 9% of volunteers. The US Food and Drug Administration has approved the Johnson & Johnson vaccine and has not appeared to cause any excess serious complications. *Article*.

***The New England Journal of Medicine (NEJM)*: Interleukin-6 receptor antagonists in critically ill patients with COVID-19**

February 25, 2021. This study evaluated the efficacy of immunosuppressive drugs in the treatment of critically ill adult patients with COVID-19 who were receiving respiratory and cardiovascular organ support in ICUs. The results demonstrated that the use of tocilizumab and sarilumab improved patient outcomes (i.e., organ support-free days), including survival. The median number of organ support-free days was 10 in the tocilizumab group (n=353), 11 in the sarilumab group (n=48), and zero in the control group (n=402). *Article*.

***NEJM*: Tocilizumab in hospitalized patients with severe COVID-19 pneumonia**

February 25, 2021. This randomized controlled trial involving hospitalized patients (n=452) with severe COVID-19 pneumonia suggests the use of tocilizumab (i.e., dose of 8 mg per kilogram of body weight) did not result in significantly better clinical status or lower mortality than placebo at 28 days. *Article*.

Infection, Prevention and Control in Specific Settings

***World Health Organization*: Roadmap to improve good indoor ventilation in the context of COVID-19**

March 1, 2021. This roadmap is divided into three settings (health care, non-residential, and residential spaces) and takes into account different ventilation systems (mechanical or natural). The roadmap is aimed at health care facility managers, building managers, as well as those members of the general public who are providing home care or home quarantine. *Article*.

Public Health Measures

***The Public Library of Science (PLOS) One:* Knowledge and practice of clients on preventive measures of COVID-19**

March 1, 2021. This study conducted from May 21 to 30, 2020 in South Wollo, Ethiopia, examined the level of knowledge and the prevention strategies for COVID-19 among 81 clients seeking service in health facilities. This study reported that 56.8% of the participants had good knowledge about the symptoms, transmission, and prevention of SARS CoV-2, and this knowledge was significantly higher among urban residents. Furthermore, clients who were knowledgeable about way of transmission and symptoms of COVID-19 had significantly higher COVID-19 preventive practice. Overall, this study suggests that packages and programs directed

in enhancing knowledge about SARS CoV-2 are useful in combating the pandemic and continuing safe practices. *Article*.

***Applied Psychology Health Well-Being*: Stress, physical activity, and screen-related sedentary behaviour within the first month of the COVID-19 pandemic**

March 1, 2021. This Canadian study on changes in stress, physical activity, and sedentary behaviours during the first month (March and April 2020) of the COVID-19 pandemic suggested that participants (n=121) experienced an increase in daily stress and work stress, a decrease in physical activity, and an increase in screen-related sedentary behaviours. The most common barriers to participants increasing physical activity behaviours were access to fitness centres and equipment, time, and motivation. These results highlight the need for continued monitoring of the health of Canadians throughout the pandemic. *Article*.

Case Testing and Screening

***Nature*: *Scientific Reports:* A surveillance tool to detect clusters of COVID-19 symptoms in the United States (US)**

February 25, 2021. This Johns Hopkins University study developed a surveillance approach that collects body temperature and COVID-19-like illness symptoms across the US using a smartphone app. The app applies clustering techniques and cross-correlation analysis to create maps of abnormal symptomatology (e.g., taste/smell loss) incidence. The tool identified temporal clusters of change in taste/smell entries and confirmed COVID-19 incidence in Baltimore City and County. The resulting clusters can serve as indicators of emerging COVID-19 outbreaks, and support surveillance as an early warning system for disease prevention and control. *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.

The COVID-19 Evidence Spotlights from COVID-END provide updated information on COVID-19 responses with three types of products from COVID-END in Canada: 1) Canadian spotlights; 2) global spotlights; and 3) horizon scans. COVID-19 responses can include the full spectrum of

public health measures, clinical management, health system arrangements, and economic and social responses. In the second half of February, contributing evidence-synthesis teams in Canada shared 10 newly completed evidence syntheses and six questions that they are newly taken on, and globally, there have been 10 key additions to the public-health measures and clinical management parts of the COVID-END inventory of 'best' evidence syntheses. Eight emerging issues for discussion were also identified in the second half of February; see here. To receive an email containing hyperlinks to these products twice a month, subscribe here.

The *Ontario COVID-19 Science Advisory Table* is a group of scientific experts and health system leaders who evaluate and report on emerging evidence relevant to the COVID-19 pandemic, to inform Ontario's response to the pandemic.

About RAEB

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Literature reviews
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