FEATURED

- RAEB'S Rapid Responses for Ontario's health sector
- Evidence products produced with our partners
- Research evidence and 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.

- **Barriers and Protections to COVID-19 Sick Leave Among Workers**

  Presenteeism is a leading factor in certain industries (e.g., hospitals, long-term care sector) that put essential workers at risk of occupational exposure to COVID-19. Workplace/employers' resistance to COVID-19 sick leave (e.g., employer threats) and workers having concerns about their job security (e.g., loss of income, loss of employment) are identified as the main barriers to workers taking COVID-19-related sick leave. To address these concerns, COVID-19 specific job protections and amendments to existing sick leave practices have been implemented to ensure equitable job protections for employees who are at risk of falling ill or are required to care for someone with COVID-19.

* 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*

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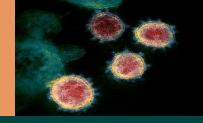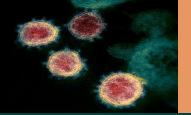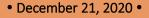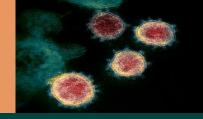
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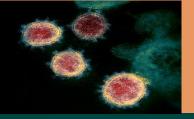
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RAEB'S RAPID RESPONSES FOR ONTARIO'S HEALTH SECTOR cont'd

- **Rapid Response on Hospital Staff-Directed Communication on Infection Prevention and Control (IPC)**
  Five hospital communication models (Canada, Europe, Australia [New South Wales], Saudi Arabia, and Singapore) were identified that deliver IPC information to hospital and health care staff:
  - **General Communication Practices:** Identified best practices (Canada) suggest that hospitals should regularly and frequently communicate with their staff on how to minimize personal risk through IPC measures. Within the context of COVID-19 in home care settings, staff and clients should be provided with information about COVID-19 that pertains to protecting themselves and others through hand hygiene, respiratory hygiene, and personal protective equipment (PPE).
  - **IPC Checklists:** The identified literature notes best practices and evidence supporting the use of IPC checklists to communicate and increase compliance to IPC measures in hospital settings:
    - Identified best practices (Europe) suggest using a checklist to facilitate internal hospital communication that is intended to provide: clear and rapid communication lines to staff and patients/visitors; rules for using PPE; and preventive and protection measures.
    - The use of checklists and coloured cues in a study (Australia, NSW) promoted communication between hospital staff and was reported to significantly improve the adherence rate to IPC protocols.
  - **Online Communication Modalities:** Online modalities are used to communicate IPC information to hospital staff, such as: an intranet page outlining IPC practices relating to the Middle East Respiratory Syndrome (MERS) (Saudi Arabia); informing hospital staff of outbreaks through emails (Saudi Arabia; Singapore); and institution-based social media platforms (e.g., Workplace from Facebook) (Singapore).
  - **Information Seeking:** Identified best practices (Canada) note that home care staff should seek out and be knowledgeable of IPC measures to protect clients and themselves from infection.
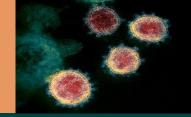
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EVIDENCE PRODUCTS PRODUCED WITH OUR PARTNERS

The COVID-19 Evidence Synthesis Network (ESN) is comprised of groups specializing in evidence synthesis and knowledge translation. The group has committed to provide their expertise to provide high-quality, relevant, and timely synthesized research evidence about COVID-19 to inform decision makers as the pandemic continues. Please contact *Evidence Synthesis Unit* for the full read of these evidence products.

Since April, the ESN has responded to requestors throughout the health sector and government. Our Evidence Synthesis Briefing Notes can be found online at ESnetwork.ca. We are conducting a short impact survey to learn how useful our products have been to you, and how the ESN can improve going forward. The survey can be accessed here, and will only take 5-10 minutes. Your feedback is extremely valuable to us, and will help us navigate the next phase of the pandemic and help us best serve the health sector as we look forward to a post-COVID Ontario.
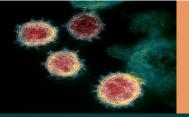
- **Economic Impact of Non-Pharmaceutical Interventions (NPIs) during COVID-19**

Modelling studies provide estimates on the economic trade-offs associated with implementing approaches at various levels of intervention or policy stringency.

- **Lockdown Interventions**: A modelling study (US) notes that the best outcome is reached when lockdowns last for 30 days and public compliance with COVID-19 physical distancing measures is at least 80%. Another modelling study (British Columbia) recommends implementing an initial lockdown stringency level that reduces the reproduction number close to one, which can be lessened once a vaccination program is underway. It is suggested that maintaining a moderate lockdown level is more effective than one that oscillates between mild and strict lockdown levels. Macro/microeconomic outcomes include:
  - o <u>Macroeconomic Outcomes</u>: Six studies report national or state-level economic outcomes from lockdowns in Australia, China, Italy, Switzerland, New York, and San Francisco. For example, the Australian Treasury estimated that the lockdown cost Australia more than CAD $1.14 billion per week. A modelling study estimated the total monthly economic losses in China during the lockdown reached CAD $60 billion.
  - o <u>Microeconomic Outcomes</u>: A modelling study (Switzerland) estimated that 31% of jobs have been restricted by the lockdown policy, with the strongest effects in large industries such as hospitality, construction, and arts and entertainment, and among low- and middle-income individuals compared to high-income individuals.
- **Micro/Targeted Interventions**: The geographical impact of the disease and socio-economic factors can lead to uneven regional economic losses. A modelling study (Italy) suggests adopting geographically tailored policy actions instead of a 'one-rule-fits-all' approach. Some approaches of targeted interventions include travel restrictions (Sweden as compared with Denmark, Finland, Norway, and New Zealand) and school closures (OECD countries).
- **No Intervention**: In the absence of any interventions (i.e., vaccine or school closure), a study (US) on influenza predicted a 50% attack rate with an economic impact of CAD $224 per capita as loss to society. Moreover, in Nordic countries less stringent lockdowns are not associated with higher quality economic growth.
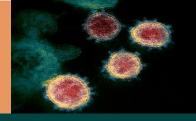
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RESEARCH EVIDENCE/JURISDICTIONAL EXPERIENCE

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.

UNDERSTANDING THE DISEASE

- *JAMA*: Readmission and death after initial hospital discharge among patients with COVID-19
  Dec 14, 2020. This study reported that 27% of survivors of COVID-19 hospitalization in the Veterans Affairs health care system were readmitted or died by 60 days after discharge, and this rate was lower than matched survivors of pneumonia or heart failure. Nonetheless, rates of readmission or death were higher than pneumonia or heart failure during the first 10 days after discharge following COVID-19 hospitalization, suggesting a period of heightened risk of clinical deterioration. *Read*.
- *JAMA*: Risk factors associated with in-hospital mortality among US patients with COVID-19
  Dec 10, 2020. This study of patients with COVID-19 in acute care hospitals suggested that COVID-19 was associated with high intensive care unit admission and in-hospital mortality rates. Use of statins, angiotensin-converting enzyme inhibitors, and calcium channel blockers were associated with decreased odds of death. The study indicates that understanding the potential benefits of unproven treatments will require future randomized trials. *Read*.
- *CMAJ*: Diagnosis-wide analysis of COVID-19 complications
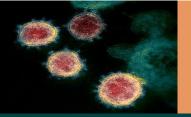 Dec 7, 2020. This study of US health claims data from 70,288 patients who received a diagnosis of COVID-19 between March 1 and April 30, 2020 found a strong association with COVID-19 and high risk of viral pneumonia, respiratory failure, acute kidney failure, and sepsis. The study provided COVID-19 risk estimates for complications, which may guide prognosis, treatment decisions, and patient counselling. *Read*.

TRANSMISSION

- *JAMA*: Association of political party affiliation with physical distancing among young adults during the COVID-19 pandemic
  Dec 14, 2020. In this study of young adults, predominantly living in Los Angeles County or elsewhere in California, self-reported Republican political party affiliation was associated with less frequent physical distancing and participation in social recreational activities that may perpetuate the COVID-19 pandemic. *Read*.
- *JAMA*: Household transmission of SARS-CoV-2: A systematic review and meta-analysis
  Dec 1, 2020. This study suggests that households will continue to be a significant venue for transmission of SARS-CoV-2 given individuals with suspected or confirmed infections are being referred to isolate at home. *Read*.
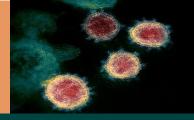
RESEARCH EVIDENCE/JURISDICTIONAL EXPERIENCE cont'd

DISEASE MANAGEMENT

- *NEJM*: Safety and efficacy of Pfizer's BNT162b2 mRNA vaccine
  Dec 10, 2020. This study suggests that the two-dose regimen of BNT162b2 was 95% effective in preventing COVID-19 in persons 16 years of age or older. Safety over a median of two months was similar to that of other viral vaccines. *Read*.

- *The Journal of Allergy and Clinical Immunology*: Prevalence of comorbid asthma and related outcomes in COVID-19: A systematic review and meta-analysis
  Dec 9, 2020. This study found that there is great variability in asthma prevalence among COVID-19 patients in different countries or regions. Asthma is not associated with higher COVID-19 severity or worse prognosis, and asthmatic patients are found to have lower risk of death compared with non-asthmatic patients. *Read*.

DATA ANALYTICS, MODELLING AND MEASUREMENT

- *Nature Medicine*: Individual and community-level risk for COVID-19 mortality in the US
  Dec 11, 2020. Researchers at Johns Hopkins University developed a risk calculator that estimates the risk of COVID-19 mortality based on various sociodemographic factors and pre-existing conditions among the US population. The tool is used to produce absolute risk estimates in future time frames by incorporating information on pandemic dynamics at the community level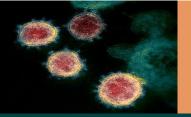. Validation analyses suggests that the model is well calibrated for the US population and projections show that the model can identify relatively small fractions of the population that may experience a disproportionately large number of deaths. *Read*.

- *Lancet*: Artificial intelligence screening test for the rapid triage of hospital patients
  Dec 11, 2020. In this study, linear and non-linear machine learning classifiers were trained to distinguish 155,689 patients with COVID-19 from pre-pandemic controls, using electronic health record data for patients presenting to the emergency department in the UK. The models performed effectively as a screening test for COVID-19, excluding the illness with high-confidence within one hour of presentation to hospital. The approach is rapidly scalable, fitting within the existing laboratory testing infrastructure and standard of care of hospitals in high-income and middle-income countries. *Read*.

PUBLIC HEALTH MEASURES

- JAMA: Evaluation of cloth masks and modified procedure masks during the COVID-19 pandemic
  Dec 10, 2020. This study suggests that while modifications to improve medical procedure mask fit can enhance the filtering capability and reduce inhalation of airborne particles, fitted filtration efficiencies (FEE) of consumer-grade masks available to the public are nearly equivalent to or better than their non-N95 respirator medical mask counterparts. *Read*.
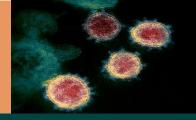
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RESEARCH EVIDENCE/JURISDICTIONAL EXPERIENCE cont'd

HEALTH EQUITY AND VULNERABLE POPULATIONS

- *JAMA:* Racial Differences in statewide suicide mortality trends in Maryland during the COVID-19 pandemic
  Dec 16, 2020. This study reported changing suicide trends during the pandemic with opposite effects observed between Black and White residents of Maryland. Among Black residents, suicide mortality appeared to double between March 5, 2020, to May 7, 2020 compared with the means in 2017 to 2019. In contrast, suicide mortality appeared nearly halved among White residents during periods March 5, 2020, to May 7, 2020 and May 8, 2020, to July 7, 2020 compared with the means of 2017 to 2019. As continuing pandemic restrictions represent public health priorities, policy interventions and targeted resource allocation may be warranted to mitigate disparities impacting Black individuals. *Read*.

- *JAMA:* Diversity and representation of physicians during the COVID-19 news cycle
  Dec 14, 2020. In this study of primetime programming on three major news networks (i.e., Fox News Network, CNN, and MSNBC), physicians constituted one-fifth of unique speakers and had less than one-third of speaking time on COVID-19 content. Women's voices were in the minority, including among physicians and non-physicians with PhD degrees, with variability by network. The proportion of women speaking on COVID-19 content was no different from the proportion of women speaking on other content, suggesting that the paucity of female voices on cable news programs is not subject-specific. *Read*.

- *JAMA:* Analyses of risk, racial disparity, and outcomes among US patients with cancer and COVID-19 infection
  Dec 10, 2020. This study reported that patients with recently diagnosed cancer, particularly leukemia, lung cancer, and non–Hodgkin lymphoma, had significantly increased risk of COVID-19. Compared with White patients with cancer, African American patients with cancer had significantly higher risk of COVID-19. These findings highlight the need to protect and monitor patients with cancer as part of the strategy to control the pandemic. *Read*.

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 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.

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