

*The Newfoundland & Labrador Centre for Applied Health Research (NLCAHR) sends this COVID-19 e-bulletin to our health system stakeholders on a bi-weekly basis. This e-bulletin includes results from recent searches of health evidence and grey literature on the pandemic under specific subject headings, highlighting those findings considered to be of particular relevance to you.*

*We welcome your [feedback and suggestions](#).*

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You can find all NLCAHR e-bulletins and COVID-19 *Quick Response Reports* [online here](#).

## CLINICAL PRESENTATION AND BIOLOGY

**The Conversation:** [How many people get 'long COVID' – and who is most at risk?](#) (February 17, 2021)

“Numerous studies over the past few months have shown that about 1 in 3 people with COVID-19 will have symptoms that last longer than the typical two weeks. These symptoms affect not only people who were very sick and hospitalized with COVID-19, but also those with milder cases.” [LINK](#)

**Bloomberg:** [‘Long Hauler’ Study Shows COVID Can Kill Months after Infection](#) (April 22, 2021)

“Survivors had a 59% increased risk of dying within six months after contracting the SARS-CoV-2 virus... The excess mortality translates into about 8 extra deaths per 1,000 patients -- worsening the pandemic’s [hidden toll](#) amid growing recognition that many patients [require readmission](#), and some die, weeks after the viral infection abates.”

- Original research: [High-dimensional characterization of post-acute sequelae of COVID-19](#)

**Canadian Medical Association Journal:** [The impact of COVID-19 on pregnancy outcomes: a systematic review and meta-analysis](#) (April 19, 2021)

“The authors aimed to evaluate the association between severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection during pregnancy and adverse pregnancy outcomes. They concluded COVID-19 may be associated with increased risks of preeclampsia, preterm birth and other adverse pregnancy outcomes.” [LINK](#)

**Alzheimer's & Dementia:** [Dementia is an age-independent risk factor for severity and death in COVID-19 inpatients](#) (April 21, 2021)

This study examined the associations of several risk factors including all-cause dementia, and AD and PD in particular, with COVID-19 positivity, severity (hospitalization), and deaths. [LINK](#)

**Kaiser Health News: [The Shock and Reality of Catching COVID after Being Vaccinated](#)** (April 16, 2021)

"In data released Thursday, the Centers for Disease Control and Prevention reported that at least 5,800 people had fallen ill or tested positive for the coronavirus two weeks or more after they completed both doses of the Pfizer-BioNTech or Moderna vaccine. A total of about 78 million Americans are now fully vaccinated. These so-called breakthrough infections occurred among people of all ages. Just over 40% were in people age 60 or older, and 65% occurred in women. Twenty-nine percent of infected people reported no symptoms, but 7% were hospitalized and just over 1%, 74 people, died, according to the CDC." [LINK](#)

- See also [Centres for Disease Control: What You Should Know About the Possibility of COVID-19 Illness After Vaccination](#)

## HEALTH EQUITY AND ETHICS

**Globalization and Health: [Why is repositioning public health innovation towards a social paradigm necessary? A reflection on the field of public health through the examples of Ebola and COVID-19](#)**

(April 14, 2021)

This paper attempts to contribute to the literature on theories of knowledge, especially with regard to its methods, validity, and scope, and the distinction between justified belief and opinion when considering innovations in the field of public health, using the COVID-19 and Ebola crises as examples. [LINK](#)

**Review of Economics of the Household: [The many ways COVID-19 affects households: consumption, time, and health outcomes](#)** (April 15, 2021)

This is an overview of articles published on interactions between COVID-19, ensuing policy responses, and household economics. [LINK](#)

**Health Economics: [Unmet healthcare need and income-related horizontal equity in use of healthcare during the COVID-19 pandemic](#)** (April 22, 2021)

This paper contributes to the literature on socioeconomic inequity in healthcare access and provides evidence on the extent of income-related inequity in use of healthcare services and its evolution over the four months of the first wave and lockdown. [LINK](#)

**Heart Matters: [How the pandemic is taking its toll on people with heart and circulatory conditions](#)**

(February 12, 2021)

"From 100,000 fewer heart procedures to long waiting times for treatments, the headlines are alarming. But this is only the tip of the iceberg - there is a larger hidden impact that we need to uncover." [LINK](#)

## HEALTH SYSTEM ADMINISTRATION

**MacLean's: [What new COVID vaccine modelling says about when Canada might lift restrictions](#)** (April 27, 2021)

"While Tam's modelling said that her 75-20 metric would come in mid-summer, Trevor Tombe has done his own calculations. With two simultaneous targets, and varying policies across provinces, he thinks things will come down to how much we want to achieve the goal: "[Getting to 75-20] would require 80 doses be administered per 100 people (or roughly 30 million doses). This doesn't mean we will achieve the 75 per cent and the 20 per cent targets, but it is enough doses that we could." His estimated date: June 28." [LINK](#)

**MacLean's: [COVID-19 in Canada: How our battle to stop the pandemic is going](#)** (April 29, 2021)

"On Wednesday, Alberta reported 1,839 cases of COVID-19, its third highest daily count, surpassing all other days of this pandemic except two days in early December. To put that level in perspective, if Alberta had the population of Ontario, that would represent 6,120 cases. On Wednesday, Ontario actually reported 3,839 cases. Alberta now has a per capita rate of cases of 425.6 per million population, on a seven-day rolling average. That's the first time any province has crossed the 400 per million mark, and means Alberta is adding new cases at almost double the national rate of 216.8. And it has 635 COVID-19 patients in hospital, including 143 requiring ICU care." [LINK](#)

**STAT Health: [Real-world data, not predictions, should drive decisions on COVID-19 and school opening](#)** (April 23, 2021)

"After nine months of observing school closures and re-openings, we identified two factors that appear to be influencing decision-makers toward making less rational, less effective school-reopening policies: overreliance on alarming "predictive" models that are not actually predictive, and media reports based on data that are poorly analyzed and then manipulated to fit preconceived negative narratives. We propose three simple solutions to address these factors: 1. Don't use doomsday scenarios based on flawed models for planning purposes; 2. Conduct simple analyses of publicly- available data to inform policy; 3 Make changes to create more rational COVID-19 school policies moving forward." [LINK](#)

**The Atlantic: [The CDC Is Still Repeating Its Mistakes](#)** (April 28, 2021)

"Yesterday, the CDC released more relaxed mask guidelines for outdoor activities, as well as new charts for indoor and outdoor recommendations. The more permissive guidelines were a welcome step forward, but they're still frustrating. By issuing recommendations that are simultaneously too timid and too complicated, the CDC is repeating a mistake that's hounded America's pandemic response. The new guidelines are rigid and binary, and aren't accompanied by explanations or a link to an accessible version of the underlying science, which would empower people to both understand them better and figure things out for themselves." [LINK](#)

**Journal of American Geriatrics Society: [Short-term impact of nursing home SARS-CoV-2 vaccinations on new infections, hospitalizations, and deaths](#)** (April 16, 2021)

"The early vaccinated group included 136 facilities with 12,157 residents; the late vaccinated group included 144 facilities with 13,221 residents....Cumulatively over 5 weeks, the predicted reduction in new infections was 5.2 cases per 100 at-risk residents (95% CI: 3.2–7.3). By 5 to 8 weeks post-vaccine clinic, early vaccinated facilities had a predicted 1.1 to 3.8 fewer hospitalizations and/or deaths per 100 infected residents per day, averaged by week than expected based on late vaccinated facilities' experience for a cumulative on average difference of 5 events per 100 infected residents per day." [LINK](#)

**Public Health Ontario Evidence Brief: [Considerations for Public Health Measures for Individuals with Partial Vaccination for SARS-CoV-2](#)** (April 15, 2021)

"Clear messaging is required for the public to understand that the protective effects of the first dose of the vaccines takes weeks to develop and is neither immediate nor the same as being fully vaccinated. Further, an individual's risk factors for severe SARS-CoV-2 infection (e.g., age, immunocompromise) can impact vaccine effectiveness. Nonetheless, widespread coverage with a first dose would be sufficient to lower case rates in the population thereby allowing reductions in population level measures rather than individual level measures." [LINK](#)

**The Atlantic: [It's Not Vaccine Hesitancy. It's COVID-19 Denialism](#)** (April 27, 2021).

"COVID-19 vaccine hesitancy doesn't line up with the H1N1 polling, nor with standard patterns of hesitancy—for example, crunchy left-wing opposition to childhood vaccinations. But the patterns do line up with resistance to mask wearing and stay-at-home orders. In other words, the pattern of resistance to the coronavirus vaccines looks less like COVID-19 vaccine hesitancy and more like COVID-19 denialism. While a significant chunk of Americans profess to be uneasy about getting shots to prevent COVID-19, most come from the swath of the population that has tended to downplay the disease's severity and to resist other measures to fight it, rather than the swaths that have resisted vaccines for other diseases." [LINK](#)

**Nature:** [COVID vaccines: time to confront anti-vax aggression](#) (April 27, 2021)

"Halting the spread of the coronavirus will require a high-level counteroffensive against new destructive forces... Today, the anti-vaccine empire has hundreds of websites and perhaps 58 million followers on social media. The bad guys are winning, in part because health agencies either underestimate or deny the reach of anti-science forces, and are ill-equipped to counter them." [LINK](#)

## INFECTION PREVENTION AND CONTROL

**The Lancet:** [SARS-CoV-2 elimination, not mitigation, creates best outcomes for health, the economy, and civil liberties](#) (April 28, 2021)

"Despite its health and economic advantages, an elimination strategy has been criticized for restricting civil liberties... Among OECD countries, liberties were most severely impacted in those that chose mitigation, whereas swift lockdown measures—in line with elimination—were less strict and of shorter duration. Importantly, elimination has been framed as a civic solidarity approach that will restore civil liberties the soonest; this focus on common purpose is frequently neglected in the political debate." [LINK](#)

**Public Health Ontario:** [Use of Portable Air Cleaners and Transmission of COVID-19](#) (December 31, 2020)

"Q5. When could the use of a portable air cleaner be considered? ... Ventilation can also contribute to reducing overall risk, and can be optimized to varying degrees depending on the system. If these methods are insufficient or cannot be achieved, the use of a portable air cleaner can be considered. In addition, the use of portable air cleaners to complement existing HVAC filtration and ventilation in schools, offices, and commercial buildings may be considered particularly in areas where sufficient ventilation is difficult to achieve. Portable air cleaners are not intended for building-wide application but rather localized areas such as a single room. Directing air flow from a portable unit such that the air does not directly blow from one individual to another will help reduce the potential spread of respiratory droplets." [LINK](#)

**Journal of the American Medical Association Insights:** [Indoor Air Changes and Potential Implications for SARS-CoV-2 Transmission](#) (April 16, 2021)

"To reduce far-field airborne transmission of SARS-CoV-2 in small-volume indoor spaces (e.g., classrooms, retail shops, homes if guests are visiting), the suggestions include targeting 4 to 6 air changes per hour, through any combination of the following: outdoor air ventilation; recirculated air that passes through a filter with at least a minimum efficiency rating value 13 (MERV 13) rating; or passage of air through portable air cleaners with HEPA (high-efficiency particulate air) filters." [LINK](#)

**Journal of the Royal Society of Medicine:** [Healthier schools during the COVID-19 pandemic: ventilation, testing and vaccination](#) (February 5, 2021)

"It takes about four minutes for the number of small droplets in the air to be halved with no ventilation; whereas with only mechanical ventilation turned on in a room, the number of respiratory particles is halved in 1.4 min. In a room that also has a door and window open, the number is halved after 30 seconds; substantially faster than in poorly-ventilated and unventilated rooms. Therefore, an important approach to lowering the concentrations of indoor air pollutants or contaminants, including any viruses that may be in the air, is to increase ventilation." [LINK](#)

**Public Health Ontario:** [Wastewater Surveillance of COVID-19](#) (April 21, 2021)

"Wastewater surveillance (WWS) for COVID-19 involves the testing of sewage for the presence of SARS-CoV-2 virus ribonucleic acid (RNA), which, if positive, suggests some level of COVID-19 presence in a source population. A key advantage of WWS is that a single test represents an independent signal from the entire population contributing to

the sampled wastewater stream regardless of health status (symptomatic, asymptomatic, or recovered) or access/utilization of clinical testing." [LINK](#)

**The Conversation:** [How Taiwan beat COVID-19 – new study reveals clues to its success](#) (April 15, 2021)

"A new study in the Journal of the American Medical Association has examined further just why Taiwan did so well at conquering COVID-19. The study's authors, from a range of health institutes and hospitals in Taiwan and the US...concluded that it was the combination of case-based and population-based policies, along with widespread adherence, that led to Taiwan's success in containing COVID." [LINK](#)

- Original research: [Comparison of Estimated Effectiveness of Case-Based and Population-Based Interventions on COVID-19 Containment in Taiwan](#)

## TREATMENT

**CBC:** [Quebec is planning to use a different vaccine for the second dose in some cases. Here's what the experts say](#) (April 23, 2021)

"Combining Moderna and Pfizer shots may provide even better protection, says province's public health director. Quebec is planning to administer second doses to the province's most vulnerable residents — even if the second dose doesn't match the first." [LINK](#)

**Slate:** [The Really Surprising Thing about Fully Vaccinated People Who Get COVID-19](#) (April 22, 2021)

"If it were 95 percent protection, you would expect 5 percent of the [75] million people who've been vaccinated not to be protected"... In fact, the number of breakthrough COVID cases was 'less than I expect,' said Barry [Bloom, a professor of public health and an immunologist at the Harvard T.H. Chan School of Public Health]. 'Far less.' Of the 75 million vaccinated people in the U.S., the 5,800 breakthrough cases represent just 0.0075 percent." [LINK](#)

**Public Health England:** [One dose of COVID-19 vaccine can cut household transmission by up to half](#) (April 28, 2021)

"This new research shows that those who do become infected 3 weeks after receiving one dose of the Pfizer-BioNTech or AstraZeneca vaccine were between 38% and 49% less likely to pass the virus on to their household contacts than those who were unvaccinated." [LINK](#)

- Original research: [Impact of vaccination on household transmission of SARS-COV-2 in England](#)

**Canadian Medical Association Journal:** [Informing COVID-19 vaccination priorities based on the prevalence of risk factors among adults in Canada](#) (April 26, 2021)

"Key Points:

- Debate continues about how best to prioritize vaccinations for SARS-CoV-2 once the most vulnerable older adults have been vaccinated.
- Although age is the most important risk factor for severe COVID-19, three-quarters of adults in Canada have at least 1 other risk factor for severe illness, and one-third have 2 or more risk factors, based on analysis of national survey data.
- A more nuanced approach to vaccine prioritization that takes into account the prevalence and weight of risk factors, as well as geographic and occupational risk exposures is needed.
- Continued adherence to public health advice for universal masking, physical distancing and frequent hand washing will be necessary as vaccination programs proceed, given the high prevalence of risk factors in the Canadian population.
- Policies that allow a prolonged interval between first and second vaccine doses as a means of maximizing the number of people who will receive at least 1 dose of vaccine as quickly as

possible also make sense, given a high burden of risk factors, as long as first-dose protection data remain favourable." [LINK](#)

**MedRxiv:** [The impact of SARS-CoV-2 vaccines on antibody responses in the general population in the United Kingdom](#) (April 23, 2021)

"Two doses achieved high responses across all ages, particularly increasing seroconversion in older people, to similar levels to those achieved after prior infection followed by a single dose. Antibody levels rose more slowly and to lower levels with Oxford-AstraZeneca vs Pfizer-BioNTech, but waned following a single Pfizer-BioNTech dose." [LINK](#)

## MENTAL HEALTH & WELLNESS

**CBC:** [Pediatricians sound alarm over mental health crisis in youth](#) (April 27, 2021)

"A group of Ottawa pediatricians say they're dealing with youth with a wide range of mental health issues — from eating disorders to major depression — brought on by the pandemic. "We're seeing it in our offices," said Dr. Jane Liddle. "We have never seen this level of kids with major depression, suicidal thoughts and severe eating disorders." Liddle is among a group of local pediatricians sounding the alarm about the rise of mental health issues among children, adolescents and teens — psychological effects of the pandemic they fear will linger after the health crisis is over." [LINK](#)

**Journal of Eating Disorders:** [The COVID-19 pandemic and eating disorders in children, adolescents, and emerging adults: virtual care recommendations from the Canadian consensus panel during COVID-19 and beyond](#) (April 16, 2021)

The objective of the Canadian Consensus Panel was to develop clinical practice guidelines related to the provision of virtual care for children, adolescents, and emerging adults living with an eating disorder, as well as their caregivers, during the COVID-19 pandemic and beyond. [LINK](#)

**BioMed Central Health Services Research:** [Going virtual: youth attitudes toward and experiences of virtual mental health and substance use services during the COVID-19 pandemic](#) (April 14, 2021)

This study examined the attitudes toward and experiences of virtual mental health and substance use services among youth drawn from clinical and non-clinical samples. [LINK](#)

**Mental Health Research Canada:** [Mental Health During COVID-19 Outbreak: Poll #5 of 13 in Series](#) (February 2021)

"This online survey was conducted among a sample of 3,005 adult Canadians, including an oversample of 500 surveys with residents of Saskatchewan. This was the fifth poll of this study (see below). Results between the polls are compared where applicable." [LINK](#)

**Scientific Reports:** [Dual impacts of coronavirus anxiety on mental health in 35 societies](#) (April 26, 2021)

This study examined the consequences of the COVID-19 pandemic on mental health in a multinational study and explored the effects of government responses to the outbreak. [LINK](#)

**Psychiatry Research:** [Predictors and consequences of loneliness during the COVID-19 Pandemic](#) (April 18, 2021)

This study examined factors associated with increased loneliness and reduced quality of life during the COVID-19 pandemic. [LINK](#)

**Translational Behavioral Medicine: [Physical distancing ≠ physical inactivity](#)** (January 7, 2021)

The purpose of this paper is to urge public health and medical professionals not to forget the importance of physical activity to whole-person health, recognize the importance of physical activity as a potential COVID-19 mitigation strategy and to serve as advocates for promoting active lifestyles. [LINK](#)

This **COVID-19 e-bulletin** was prepared by researchers at the Newfoundland & Labrador Centre for Applied Health Research (Kazeem Adefemi, Waseem Abu Ashour, Wendy Lasisi, and Pablo Navarro) to summarize research evidence and grey literature produced by a variety of sources that were accessed online in April and May of 2021. Given the rapidly changing nature of the coronavirus pandemic, some of the references included in this e-bulletin may quickly become out-of-date.

We further caution readers that researchers at the Newfoundland & Labrador Centre for Applied Health Research are not experts on infectious diseases and are relaying work produced by others.

This report has been produced quickly and it is not exhaustive, nor have the included studies been critically appraised.

**QUESTIONS/ SUGGESTIONS? CONTACT:**

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