

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](#).

To subscribe to this e-bulletin, please email: Rochelle.Baker@med.mun.ca

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

Articles about **COVID-19 VARIANTS** are **highlighted in RED** below.

CLINICAL PRESENTATION & BIOLOGY

CNBC: [Delta mutation is no reason to panic — but COVID vaccination remains crucial, scientists say](#)
(October 29, 2021)

“The sub-variant — which is thought to have emerged in the U.K. over the summer — has two additional mutations affecting its spike protein, part of the virus’s structure used to infiltrate cells. Questions are still hanging over exactly how, or if, those mutations will affect how quickly it spreads. In the last 28 days, AY.4.2 has accounted for around 10% of new COVID-19 cases, according to data from public health consortium Cog-UK.” [LINK](#)

- See also CNBC: [WHO says delta variant accounts for 99% of COVID cases around the world](#) (November 16, 2021)

Eurosurveillance: [The SARS-CoV-2 Lambda variant and its neutralisation efficiency following vaccination with Comirnaty, Israel, April to June 2021](#) (November 11, 2021)

“The SARS-CoV-2 Lambda (Pango lineage designation C.37) variant of interest, initially identified in Peru, has spread to additional countries. First detected in Israel in April 2021 following importations from Argentina and several European countries, the Lambda variant infected 18 individuals belonging to two main transmission chains without further spread. Micro-neutralization assays following Comirnaty (BNT162b2 mRNA, BioNTech-Pfizer) vaccination demonstrated a significant 1.6-fold reduction in neutralizing titres compared with the wild type virus, suggesting increased susceptibility of vaccinated individuals to infection.” [LINK](#)

Nature Immunology: [Maternal COVID-19 leaves a lasting immunological impression on the fetus](#)
(November 15, 2021)

“New data show that fetal exposure to SARS-CoV-2 acutely increases the frequencies of fetal NK cell and $\gamma\delta$ T cell immune effector cells, and also accelerates the maturation and non-specific activation of multiple fetal immune

cell populations. Although the effect of these changes on neonatal immunity might not be known for many years, fetal exposure to a maternal SARS-CoV-2 infection — even in the absence of a congenital infection — can imprint the fetal immune system.” [LINK](#)

- See also Journal of the American Medical Association Network Open: [Immune Response of Neonates Born to Mothers Infected With SARS-CoV-2](#) (November 3, 2021)

British Medical Journal: [Effects of COVID-19 pandemic on life expectancy and premature mortality in 2020: time series analysis in 37 countries](#) (November 3, 2021)

“More than 28 million excess years of life were lost in 2020 in 31 countries, with a higher rate in men than women. Excess years of life lost associated with the COVID-19 pandemic in 2020 were more than five times higher than those associated with the seasonal influenza epidemic in 2015.” [LINK](#)

HEALTH EQUITY AND ETHICS

Welcome Open Research: [An ethical analysis of vaccinating children against COVID-19: benefits, risks, and issues of global health equity](#) (October 4, 2021)

“This paper provides an ethical analysis of COVID-19 vaccination of healthy children. Specifically, we argue that it is currently unclear whether routine COVID-19 vaccination of healthy children is ethically justified in most contexts, given the minimal direct benefit that COVID-19 vaccination provides to children, the potential for rare risks to outweigh these benefits and undermine vaccine confidence, and substantial evidence that COVID-19 vaccination confers adequate protection to risk groups, such as older adults, without the need to vaccinate children. We conclude that child COVID-19 vaccination in wealthy communities before adults in poor communities worldwide is ethically unacceptable and consider how policy deliberations might evolve in light of future developments.” [LINK](#)

See also:

- BMJ Archives of Disease in Childhood: [Should children be vaccinated against COVID-19?](#) (November 03, 2021)
- Centres for Disease Control: [The Advisory Committee on Immunization Practices’ Interim Recommendation for Use of Pfizer-BioNTech COVID-19 Vaccine in Children Aged 5–11 Years — United States, November 2021](#) (November 12, 2021)
- New England Journal of Medicine: [Evaluation of the BNT162b2 COVID-19 Vaccine in Children 5 to 11 Years of Age](#) (November 9, 2021)
- Slate: [What’s Stopping So Many Parents from Giving their Kids the COVID Vaccine?](#) (November 15, 2021)

Addictive Behaviors Reports: [Substance-related coping behaviours among youth during the early months of the COVID-19 pandemic](#) (October 15, 2021)

“Highlights: 2% of youth in our sample used substances to cope with COVID-19-related changes. Substance-related coping was more common among females than males in our sample. Greater depression was associated with using substances to cope with COVID-19. For females, psychosocial wellbeing may be protective of substance-related coping. Secondary impacts of COVID-19 pandemic on youth substance use and mental health.” [LINK](#)

European Journal of Public Health: [Precarious employment and health in the context of COVID-19: a rapid scoping umbrella review](#) (November 9, 2021)

“The included studies indicate that essential (non-health) workers are at greater risk of COVID-19 infection and case fatality than others in their surrounding community. The occupational risk of exposure to COVID-19 also seems to be greater among more precarious categories of workers, including younger workers and workers in low-income and low-skilled occupations. Further, hazardous working conditions faced by many essential workers

appear to have amplified the pandemic, as several occupational sites became ‘super-spreaders’, due to an inability to socially distance at work and high contact rates among workers. Finally, employment and financial insecurity generated by the pandemic appears to be associated with negative mental health outcomes. The quality of the included reviews however, and their primary studies, were generally weak and many gaps remain in the evidence base.” [LINK](#)

Science Table COVID-19 Advisory for Ontario: [The Impact of the COVID-19 Pandemic on Opioid-Related Harm in Ontario](#) (September 8, 2021)

“Rates of opioid-related harms, particularly fatal overdose, have increased significantly in Ontario during the [COVID-19 pandemic](#) and have disproportionately impacted marginalized and racialized populations. Strategies to address this crisis include ensuring uninterrupted and equitable access to addiction, mental health, and harm reduction services; incorporating these services into high-risk settings such as shelters, hotels, and encampments; adapting harm reduction services to meet current needs; and promoting access to alternative service delivery methods such as telemedicine programs when in-person services are not available.” [LINK](#)

Journal of Epidemiology & Community Health: [Prevention of COVID-19 among populations experiencing multiple social exclusions](#) (November 2, 2021)

"[We] consider existing evidence on ‘what works’ in vaccine provision and contact tracing among socially excluded populations, as well as learning from the response so far including the provision of emergency accommodation and vaccine delivery. We set out strategies for interventions and priority research questions, emphasizing the importance of co-production in research and service delivery, to prevent ongoing transmission of SARS-CoV-2 and future infectious disease outbreaks." [LINK](#)

Slate: [Our Worst Idea About “Safety”](#) (November 7, 2021)

“Throughout the pandemic, each time a public safety measure arrives on the scene, some experts fret that the masses will simply use the newfound sense of security as license to behave recklessly, canceling out or even reversing any benefits of the safety measure. The concept many medical experts can’t seem to loosen their grip on is known as “risk compensation.”” [LINK](#)

The Lancet: [Elimination versus mitigation of SARS-CoV-2 in the presence of effective vaccines](#) (November 2, 2021)

“There is increasing evidence that elimination strategies have resulted in better outcomes for public health, the economy, and civil liberties than have mitigation strategies throughout the first year of the COVID-19 pandemic. With vaccines that offer high protection against severe forms of COVID-19, and increasing vaccination coverage, policy makers have had to reassess the trade-offs between different options.” [LINK](#)

World Socialist Web Site: [How to End the Pandemic \(International Webinar\)](#) (November 5, 2021)

This International webinar featured a series of presentations addressing issues of health equity and ethics [LINK](#):

- Dr. [Deepti Gurdasani](#): [Long COVID is “the hidden pandemic after the pandemic”](#)
- Dr. [Eric Feigl-Ding](#): [“The moral backbone of public health has been broken by politics”](#)
- Dr. Howard Ehrman: [The spread of COVID-19 in schools](#)
- Dr. [Michael Baker](#): [The case for elimination.](#)

See also The New England Journal of Medicine. [Audio Interview: Do We Have the Tools to End the COVID-19 Pandemic?](#) (November 04, 2021)

HEALTH SYSTEM ADMINISTRATION

The Lancet: [Estimating the early impact of the US COVID-19 vaccination programme on COVID-19 cases, emergency department visits, hospital admissions, and deaths among adults aged 65 years and older: an ecological analysis of national surveillance data](#) (November 03, 2021)

"After acceleration of COVID-19 vaccine administration among older US adults, COVID-19 cases, emergency department visits, and hospital admissions declined faster among people aged 65 years and older compared with a younger reference group. Although it is not possible to conclusively attribute these declines solely to vaccination given the ecological design of this analysis, these results suggest that the initial phases of the US COVID-19 vaccination programme led to a meaningful reduction in COVID-19 burden" [LINK](#)

- See also The Lancet: [The value of vaccine programme impact monitoring during the COVID-19 pandemic](#) (November 3, 2021)

Nature Scientific Reports: [Development and validation of a prognostic model for early triage of patients diagnosed with COVID-19](#) (November 09, 2021)

"Our results demonstrate that a data-driven model to predict prognosis can be a good tool for early triage of COVID-19 patients. A significant shortcoming of the triage protocols that are not based on data is that risk factors are not weighted appropriately based on their effects on the outcome." [LINK](#)

Nature: [Wearable sensor derived decompensation index for continuous remote monitoring of COVID-19 diagnosed patients](#) (November 08, 2021)

"The time from symptom onset to the need for hospitalization can extend beyond 10 days, and the severity of an individual's clinical course is rarely clear at the time of diagnosis... We show that through the use of a multi-parameter sensor patch in the outpatient setting that we were able to develop a machine learning based [COVID-19 decompensation index (CDI)] model that has the potential to significantly improve the lead time and accuracy of identifying individuals requiring hospitalization due to progressive COVID-19, relative to what is routinely done in current remote monitoring programs." [LINK](#)

The Lancet Respiratory Medicine: [Infection control in the intensive care unit: expert consensus statements for SARS-CoV-2 using a Delphi method](#) (November 10, 2021)

"Consensus was achieved for 31 (94%) of 33 statements, from which 25 clinical practice statements were issued. These statements include guidance on ICU design and engineering, health-care worker safety, visiting policy, personal protective equipment, patients and procedures, disinfection, and sterilization. Consensus was not reached on optimal return to work criteria for health-care workers who were infected with SARS-CoV-2 or the acceptable disinfection strategy for heat-sensitive instruments used for airway management of patients with SARS-CoV-2 infection." [LINK](#)

British Medical Journal Thorax: [SARS-CoV-2 environmental contamination from hospitalized patients with COVID-19 receiving aerosol-generating procedures](#) (November 4, 2021)

"Our sampling study of the immediate environment of patients requiring non-invasive respiratory support for life-threatening COVID-19 disease found that few air and surface samples had measurable viral RNA contamination, irrespective of using CPAP/HFNO and/or coughing. Furthermore, the samples that did detect viral RNA by RT-qPCR, including those from the nasopharynx, failed to demonstrate biological viability in cell culture, except for one nasopharyngeal sample. These data question any significant additional risks to HCWs/other patients associated with the use of CPAP and HFNO, which are considered 'aerosol-generating', compared with the use of supplemental oxygen." [LINK](#)

British Medical Journal Global Health: [Primary healthcare in the time of COVID-19: breaking the silos of healthcare provision](#) (November 03, 2021)

"The COVID-19 pandemic unraveled the false dichotomy between health and social services. In order to effectively implement home quarantine and other public health measures while ensuring continuity of essential health services, governments had to provide basic social services such as food, medications and economic relief for low-income families, emergency programmes for the homeless and childcare for frontline health workers with young children." [LINK](#)

The Atlantic: [Why Healthcare workers are quitting in droves](#) (November 16, 2021)

"About one in five health-care workers has left medicine since the pandemic started. This is their story—and the story of those left behind." [LINK](#)

INFECTION PREVENTION AND CONTROL

British Medical Journal: [Effectiveness of public health measures in reducing the incidence of COVID-19, SARS-CoV-2 transmission, and COVID-19 mortality: systematic review and meta-analysis](#)

(November 18, 2021)

"This systematic review and meta-analysis suggests that several personal protective and social measures, including handwashing, mask wearing, and physical distancing are associated with reductions in the incidence COVID-19."

[LINK](#)

See also:

- Nature Scientific Reports: [Characterization of non-adopters of COVID-19 non-pharmaceutical interventions through a national cross-sectional survey to assess attitudes and behaviours](#) (November 5, 2021)
- Nature: [When are masks most useful? COVID cases offer hints](#) (November 4, 2021)
- Science Advances: [Safe traveling in public transport amid COVID-19](#) (October 22, 2021)

The Conversation: [Lessons from COVID-19 for the next pandemic: We need better data on workplace transmission](#) (November 09, 2021)

"If we had, from the early days of the pandemic, routinely and systematically collected information from COVID-positive people about their work, we would have enhanced our understanding of the role of workplaces in the spread of COVID-19, the relative importance of the potential routes of COVID-19 transmission and the effectiveness — or not — of mitigation strategies... The COVID-19 pandemic has shone a spotlight on the importance of work on health outcomes. Without better work data about people who have tested positive, we remain in the dark about where and how to target prevention measures for a potentially important route of transmission." [LINK](#)

- See also Nature Scientific Report: [Impact of Governmental interventions on epidemic progression and workplace activity during the COVID-19 outbreak](#) (November 09, 2021)

The Conversation: [How an online quiz became the best tool to convince 18- to 30-year-olds to get the COVID-19 vaccine](#) (November 10, 2021)

"We quickly saw that while there were already many information sources about COVID-19, what was missing was a tool that made information attractive to young people, one that would make it possible for them to exchange and share ideas... While access to scientific information is an essential condition to get people to adopt public health behaviours, misinformation is rampant on social networks and confuses people. So it is essential to provide quality

scientific information in an accessible and attractive format. In this way, we can stimulate young people's interest in science and reduce the distance that still exists between experts and the public." [LINK](#)

Nature: [Why scientists worldwide are watching UK COVID infections](#) (November 2, 2021)

"As one of the first countries to trust high vaccine coverage and public responsibility alone to control the spread of SARS-CoV-2, the United Kingdom has become a control experiment that scientists across the world are studying. "We are watching the increase in cases closely, trying to dissect what is going on and how that might influence our situation right now," says Rafael Radi, a biochemist and coordinator of Uruguay's COVID-19 Scientific Advisory Group." [LINK](#)

Nature Medicine: [Monitoring key epidemiological parameters of SARS-CoV-2 transmission](#) (November 8, 2021)

"Changes in virus reproduction numbers are well recognized, but there has been less attention on changes through time in epidemiological parameters that describe other quantities that affect transmission. For example, population-level estimates of infectiousness and the latent period are currently limited to only a few contexts, such as a German hospital population, sports team, returning travelers, and healthcare workers, all of which have their limitations for generalizability. As new Variants of Concern (VOCs) arise, the public health community needs to identify quickly what combination of factors contribute to potential increases in transmissibility, so that interventions can be adapted to the specific context within which VOCs emerge." [LINK](#)

The Atlantic: [The Pandemic's Next Turn Hinges on Three Unknowns](#) (November 18, 2021)

"We are no longer in the most dangerous phase of the pandemic, but we also have not reached the end. So COVID-19's trajectory over the next few months will depend on three key unknowns: how our immunity holds up, how the virus changes, and how we behave. These unknowns may also play out differently state to state, town to town, but together they will determine what ends up happening this winter." [LINK](#)

TREATMENT

Eurosurveillance: [Vaccine effectiveness against SARS-CoV-2 transmission to household contacts during dominance of Delta variant \(B.1.617.2\), the Netherlands, August to September 2021](#) (November 4, 2021)

"We estimated SARS-CoV-2 vaccine effectiveness against onward transmission by comparing secondary attack rates among household members for vaccinated and unvaccinated index cases, based on source and contact tracing data collected when the Delta variant was dominant. Effectiveness of full vaccination of the index case against transmission to unvaccinated and fully vaccinated household contacts, respectively, was 63% (95% confidence interval (CI): 46–75) and 40% (95% CI: 20–54), in addition to the direct protection of vaccination of contacts against infection." [LINK](#)

British Medical Journal COVID-19: [Booster vaccine gives "significant increased protection" in over 50s](#) (November 17, 2021)

"A [study](#) by the UK Health Security Agency (UKHSA) found that at least 20 weeks after being fully vaccinated with two doses of the AstraZeneca vaccine effectiveness against symptomatic disease was 44.1%, while for Pfizer it was 62.5%. But two weeks after receiving the booster dose, protection against symptomatic infection increased to 93.1% (95% confidence interval, 91.7 to 94.3) in those who initially had two doses of the Oxford AstraZeneca vaccine, and 94.0% (95% CI, 93.4 to 94.6) for those who had Pfizer." [LINK](#)

See also:

- CNBC: [UK extends COVID booster vaccines to the over-40s](#) (November 15, 2021)
- CBC: [Health Canada authorizes Moderna COVID-19 vaccine as a booster shot](#) (November 12, 2021)

Journal of the American Medical Association: [Association of Prior SARS-CoV-2 Infection with Risk of Breakthrough Infection Following mRNA Vaccination in Qatar](#) (November 1, 2021)

“Prior SARS-CoV-2 infection was associated with a lower risk for breakthrough infection among persons receiving the SARS-CoV-2 mRNA vaccines; however, the observational study design precludes direct comparison of infection risk between the 2 vaccines.” [LINK](#)

Centres for Disease Control: [Effectiveness of 2-Dose Vaccination with mRNA COVID-19 Vaccines against COVID-19–Associated Hospitalizations among Immunocompromised Adults — Nine States, January–September 2021](#) (November 5, 2021)

“Effectiveness of mRNA vaccination against laboratory-confirmed COVID-19–associated hospitalization was lower (77%) among immunocompromised adults than among immunocompetent adults (90%). Vaccine effectiveness varied considerably among immunocompromised patient subgroups. Immunocompromised persons benefit from COVID-19 mRNA vaccination but are less protected from severe COVID-19 outcomes than are immunocompetent persons. Immunocompromised persons receiving mRNA COVID-19 vaccines should receive 3 doses and a booster, consistent with CDC recommendations, practice non-pharmaceutical interventions, and, if infected, be monitored closely and considered early for proven therapies that can prevent severe outcomes.” [LINK](#)

StatNews: [Eight lingering questions about the new COVID pills from Merck and Pfizer](#) (November 15, 2021)

“Two different oral treatments have proved effective at both preventing people newly diagnosed with COVID-19 from entering the hospital and from dying. Molnupiravir, from Merck and Ridgeback Therapeutics, reduced hospitalizations by 50% and prevented deaths entirely in a large randomized clinical trial when it was given within five days of when symptoms began... Pfizer announced that its COVID pill, Paxlovid, reduced hospitalizations by 89% and also prevented deaths in its own large, randomized study.” [LINK](#)

- See also StatNews: [Experimental Pfizer pill prevents COVID hospitalizations and deaths](#) (November 5, 2021)

Journal of the American Medical Association Network Open: [Do the Selective Serotonin Reuptake Inhibitor Antidepressants Fluoxetine and Fluvoxamine Reduce Mortality Among Patients With COVID-19?](#) (November 15, 2021)

“...results confirm and expand on prior findings from observational, preclinical, and clinical studies suggesting that certain SSRI antidepressants, including fluoxetine or fluvoxamine, could be beneficial against COVID-19.” [LINK](#)

- See also JAMA Network Open: [Mortality Risk Among Patients With COVID-19 Prescribed Selective Serotonin Reuptake Inhibitor Antidepressants](#) (November 15, 2021)

MENTAL HEALTH & WELLNESS

The Lancet: [Adverse events of active and placebo groups in SARS-CoV-2 vaccine randomized trials: A systematic review](#) (October 28, 2021)

“Our results suggest that a substantial proportion of solicited [adverse effects] are not a result of the vaccine per se but are, in fact, nocebo effects. Awareness of the nocebo effect in placebo recipients of the vaccine trials may lead to a greater participation in the COVID-19 immunization and to a greater protection from infection.” [LINK](#)

Journal of Affective Disorders: [Mass quarantine and mental health during COVID-19: A meta-analysis](#) (September 2, 2021)

“The results indicated that: COVID-19 quarantine had varying impacts on individual anxiety, depression, and psychological stress; different groups had different regulatory effects on the relationship between quarantine and mental health; and country of origin had no moderating effect on quarantine and psychology.” [LINK](#)

Journal of Affective Disorders: [Psychological problems and reduced health-related quality of life in the COVID-19 survivors- A Systematic review and meta-analysis](#) (October 7, 2021)

“Our findings suggest that a group of COVID-19 survivors would have reduced [health-related quality of life] and limited social role beyond one month. Psychological distress, including PTSD, depression, and anxiety, should be expected in a large number of them” [LINK](#)

Journal of Medical Virology: [Post-acute COVID-19 syndrome \(PCS\) and health-related quality of life \(HRQoL\)—A systematic review and meta-analysis](#) (August 31, 2021)

“Our study concludes that PCS is associated with poor quality of life, persistent symptoms including fatigue, dyspnea, anosmia, sleep disturbances, and worse mental health. This suggests that we need more research on PCS patients to understand the risk factors causing it and eventually leading to poor quality of life.” [LINK](#)

International Journal of Eating Disorders: [A systematic scoping review of research on COVID-19 impacts on eating disorders: A critical appraisal of the evidence and recommendations for the field](#) (November 13, 2021)

“Pandemic impacts on rates of probable eating disorders, symptom deterioration, and general mental health varied substantially. Symptom escalation and mental health worsening during—and due to—the pandemic were commonly reported, and those most susceptible included confirmed eating disorder cases, at-risk populations (young women, athletes, parent/carers), and individuals highly anxious or fearful of COVID-19. Evidence emerged for increased demand for specialist eating disorder services during the pandemic. The forced transition to online treatment was challenging for many, yet telehealth alternatives seemed feasible and effective.” [LINK](#)

Frontiers in Psychology | Environmental Psychology: [Mental Health and the Role of Physical Activity during the COVID-19 Pandemic](#) (October 20, 2021)

“This article explores the relationship between physical exercise and mental health during the COVID-19 pandemic based on the latest research findings published in 2019–2021. We offer a novel model that consists of three central arguments. First, physical exercises during COVID-19, especially supervised exercises, are conducive to enhancing happiness and improving mental health. Second, physical exercise reduces people's anxiety, sadness and depression during the COVID-19 pandemic. Third, the maintenance and improvement of mental health are related to the intensity and frequency of physical exercise. Intensive and frequent physical exercise are conducive to maintaining mental health. Finally, this article proposes important directions for future research.” [LINK](#)

European Journal of Public Health: [The COVID-19 disaster and mental health—assessing, responding and recovering](#) (November 9, 2021)

“Like other disasters, COVID-19 spread more easily among certain more vulnerable population groups and the economic consequences of social distancing measures are leading to an increase of inequalities in many countries of the world. Accordingly, the inequality of the pandemic interacts with pre-existing inequalities along dimensions such as age, gender and socio-economic conditions. In this context, intersectionality means that current inequality structures not only affect the spread of the infection but also how the containment measures affect the existing structure of inequalities. The pandemic did not equally affect population groups nor countries.” [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 October and November 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.

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