

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

Nature: [How the Delta variant achieves its ultrafast spread](#) (July 21, 2021)

“...the researchers report that virus was first detectable in people with the Delta variant four days after exposure, compared with an average of six days among people with the original strain, suggesting that Delta replicates much faster. Individuals infected with Delta also had viral loads up to 1,260 times higher than those in people infected with the original strain.” [LINK](#)

- Original research: [Viral infection and transmission in a large well-traced outbreak caused by the Delta SARS-CoV-2 variant](#)

New England Journal of Medicine: [Infection and Vaccine-Induced Neutralizing-Antibody Responses to the SARS-CoV-2 B.1.617 Variants](#) (July 7, 2021)

“Results show that the B.1.617.1 variant was 6.8 times less susceptible, and the B.1.617.2 variant was 2.9 times less susceptible, to neutralization by serum from persons who had recovered from COVID-19 and from vaccinated persons than was the WA1/2020 variant. Despite this finding, a majority of the convalescent serum samples (79% [19 of 24 samples] against B.1.617.1 and 96% [23 of 24 samples] against B.1.617.2) and all serum samples from vaccinated persons still had detectable neutralizing activity above the threshold of detection against both variants through 3 months after infection or after the second dose of vaccine. Thus, protective immunity conferred by the mRNA vaccines is most likely retained against the B.1.617.1 and B.1.617.2 variants.” [LINK](#)

BBC: [COVID: Younger adults still at risk of serious organ damage – study](#) (July 16, 2021)

“Younger adults admitted to hospital with COVID are almost as likely to suffer from complications as those over 50 years old, a study has found. Four in 10 of those between 19 and 49 developed problems with their kidneys, lungs or other organs while treated. The research looked at 73,197 adults of all ages across 302 UK hospitals in the first wave of COVID in 2020.” [LINK](#)

- Original research: [Characterisation of in-hospital complications associated with COVID-19 using the ISARIC WHO Clinical Characterization Protocol UK: a prospective, multicentre cohort study](#)

HEALTH EQUITY AND ETHICS (VULNERABLE GROUPS)

SPOR Evidence Alliance: [Pregnancy-related risks associated with COVID-19](#) (July 9, 2021)

“The primary research questions for this review were as follows: 1) has there been a change in the rate of pregnant persons admitted to the ICU/developing severe COVID outcomes? 2) What is the risk of pregnant women acquiring COVID-19, developing severe illness, being hospitalized, requiring ICU admission or death? And 3) What is the association of physiological changes during pregnancy (e.g., increased risk of thromboembolic events, natural state of immunosuppression) with increased risk of acquiring COVID-19, developing severe illness, being hospitalized, requiring ICU admission or death?” [LINK](#)

Journal of the American Medical Association: [The Need for Life-Course Study of Children Born to Mothers with Prior COVID-19 Infection](#) (July 19, 2021)

“Women infected with the [Spanish] flu during pregnancy had children found to have higher rates of heart disease, kidney disease, and diabetes throughout their life course. The implications of such findings hold relevance today, as the novel coronavirus SARS-CoV-2 has spread throughout the world. Given the effects observed in the 1918 pandemic and reported birth outcomes related to maternal COVID-19 infection, it is prudent to use the lessons and epidemiology of the 1918 pandemic to inform practice and follow-up of potential long-term health effects associated with maternal COVID-19 infection.” [LINK](#)

Expert Review of Vaccines: [Should we be vaccinating children against COVID-19 in high-income countries?](#) (July 19, 2021)

“High income countries are now considering vaccination of children as part of their COVID-19 control strategy, but this poses several scientific, practical, and ethical questions, which are still to be resolved. There are four key issues: the benefits for children of being vaccinated to defend their health and well-being; the potential for impact on transmission and benefit to wider society; the risks of vaccination for the individual; and the consequences of redirection of supply to children rather than to local adults or those elsewhere in the world who would benefit more from the doses.” [LINK](#)

New Solutions- A Journal of Environmental and Occupational Health Policy: [Confronting Two Crises: the COVID-19 Pandemic and the Opioid Epidemic - and the Industrial Hygienist](#) (July 7, 2021)

“This article was originally written for and published in the January 2021 issue of The Synergist, a monthly publication of the American Industrial Hygiene Association. The article addresses the convergence of the COVID-19 and opioid crises, the impact of the opioid crisis on the workplace and workers, and the role that industrial hygienists can play in developing workplace programs to prevent and respond to opioid misuse.” [LINK](#)

Forbes: [Long COVID has over 200 symptoms and leaves 1 in 5 unable to work, study finds](#) (July 15, 2021)

“There are more than 200 symptoms associated with long COVID spanning 10 organ systems—including memory loss, hallucinations, tremors and fatigue—according to a new [study](#) published Thursday, providing one of the most comprehensive insights yet into the lingering and debilitating illness that can affect patients for months or years after infection.” [LINK](#)

British Medical Journal Open: [Economic and social impacts of COVID-19 and public health measures: results from an anonymous online survey in Thailand, Malaysia, the UK, Italy and Slovenia](#) (July 20, 2021)

“To understand the impact of COVID-19 and public health measures on different social groups, we conducted a mixed-methods study in five countries (‘SEBCOV—social, ethical and behavioural aspects of COVID-19’). Here, we report the results of the online survey.” [LINK](#)

HEALTH SYSTEM ADMINISTRATION

Nature: [Predictability of COVID-19-related morbidity and mortality based on model estimations to establish proactive protocols of countermeasures](#) (July 15, 2021)

"Model estimations after the first wave could have established a satisfactory predictability of hospitalized patients, ICU patients and deceased. This could thus have been used by governments and agencies of public health in their pandemic strategies and epidemic plans of action to impose enhanced countermeasures to face a second wave in advance. Proactive protocols could have been established about what, when, where, who and how to react and act by imposing pre-determined, preventive and restrictive countermeasures in the case of a second wave."

[LINK](#)

Public Library of Science (PLOS) ONE: [The impact of medical teleconsultations on general practitioner-patient communication during COVID-19: A case study from Poland](#) (July 16, 2021)

"Most of the patients in this study positively assessed the technical and behavioural quality of teleconsultation in primary care facilities during the COVID-19 pandemic. This happened despite the fact that telemedicine had not been used in Polish health care institutions before. Many patients appreciated the convenience and safety of telemedicine and the ability to be listened to without the risk of infection. Our study has confirmed indications of other scientists, that teleconsultations in general practices are rated well because of many advantages, including, inter alia, enabling patients to treat chronic diseases [44], convenience, and possibility to avoid potential infection." [LINK](#)

Oxford - Clinical Infectious Diseases: [The Risk of SARS-CoV-2 Transmission from Patients with Undiagnosed COVID-19 to Roommates in a Large Academic Medical Center](#) (June 18, 2021)

"Almost 40% of patients that shared a hospital room with someone with occult SARS-CoV-2 infection became infected. The risk was highest for patients sharing rooms with individuals with very low Ct counts. Others have also documented associations between high viral loads (i.e. low Ct counts) and increased transmission risk. Our study underscores the importance of isolating and testing all patients exposed to roommates with SARS-CoV-2, including those who have been discharged. The majority of exposed roommates tested positive after discharge, hence in the absence of active follow-up of exposed patients many nosocomial transmission events will be missed." [LINK](#)

Nursing Ethics: [Workplace challenges and nurses recovered from COVID-19](#) (July 13, 2021)

"Given the experiences of nurses in the workplace after recovering from COVID-19 as a context-based concept, a qualitative approach can be adopted to effectively explore these experiences. This article was extracted from a study on the experiences of patients recovered from COVID-19, which was approved by Urmia University of Medical Sciences. This study thus aimed at determining the challenges faced by nurses recovered from COVID-19 in their workplace. The data obtained from the interviews with these nurses helped determine their challenges after their return to work." [LINK](#)

Science Daily: ['Long COVID': More than a quarter of COVID-19 patients still symptomatic after six months](#) (July 13, 2021)

"55% of 'Long COVID' sufferers reported fatigue, 25% had shortness of breath, and 26% had symptoms of depression." [LINK](#)

- See also: [Burden of post-COVID-19 syndrome and implications for healthcare service planning: A population-based cohort study](#)

New England Journal of Medicine- Perspective: [Confronting Our Next National Health Disaster — Long-Haul COVID](#) (June 30, 2021)

"There is an urgent need for coordinated national health policy action and response, which the authors believe should be built on five essential pillars. Addressing this post-infection condition effectively is bound to be an

extended and complex endeavor for the healthcare system and society as well as for affected patients themselves. But taken together, these five interrelated efforts may go a long way toward mitigating the mounting human toll of long COVID." [LINK](#)

Health Canada: [Mental Health during COVID-19 Outbreak - Poll #7 – Full Report](#) (June 2021)

"For frontline workers, the prevalence of diagnosis of a mental health issue is up significantly from 30% to 40% since Poll 6. Our previous research indicates that the profession diagnosed most frequently is registered nurses." [LINK](#)

Annals of Intensive Care: [Mental health outcomes of ICU and non-ICU healthcare workers during the COVID-19 outbreak: a cross-sectional study](#) (July 10, 2021)

"Our primary objective was to assess the mental health, well-being and changes in health behaviors of ICU HCW and to make comparisons across different professions (nurses, physicians, care assistants and others), following the first wave of the pandemic. Our secondary objectives were (1) to compare mental health outcomes between ICU and non-ICU HCW; and (2), to determine the factors associated with poor mental health and well-being. These results will help develop appropriate measures to address mental health issues of frontline HCW in case of future waves or similar outbreaks." [LINK](#)

INFECTION PREVENTION AND CONTROL

The Conversation: [Rethink ventilation for a safe return to schools after the COVID-19 pandemic](#) (July 15, 2021)

"The recipe to minimize the risks and create stronger plans can be summarized in three steps. The first step is finding affordable ways to measure indoor infection risks. Second, studying the factors that may elevate or reduce such risks using modelling and simulation. Finally, based on the results of the first two steps, visualizing how to mitigate the infection risks by controlling indoor environmental factors." [LINK](#)

British Medical Journal: [Defining COVID-19 elimination](#) (July 15, 2021)

"Countries pursuing an elimination strategy have experienced less disruption and economic damage than those that have focused on mitigation to protect health services. A comparison of five member countries of the Organization for Economic Cooperation and Development that aimed for elimination with 32 others that opted for mitigation indicated that elimination creates the best outcomes for health, the economy, and civil liberties.⁴ The authors defined elimination as "maximum action to control SARS-CoV-2 and stop community transmission as quickly as possible." This is an action oriented definition, which acknowledges that some community transmission of the virus will occur after importation, though steps will be taken to extinguish it." [LINK](#)

Public Library of Science (PLOS) ONE: [Early detection of COVID-19 outbreaks using human mobility data](#) (July 20, 2021)

"Using anonymized, macro-level data human mobility data along with health data aids predictions of when and where COVID-19 outbreaks are likely to occur. Our method provides a useful tool for government decision makers, particularly in the post-vaccination era, when focused interventions are needed to contain COVID-19 outbreaks while mitigating the collateral damage from more global restrictions." [LINK](#)

Nature: [How the Delta variant achieves its ultrafast spread](#) (July 21, 2021)

"In a preprint posted 12 July, the researchers report that virus was first detectable in people with the Delta variant four days after exposure, compared with an average of six days among people with the original strain, suggesting that Delta replicates much faster. Individuals infected with Delta also had viral loads up to 1,260 times higher than those in people infected with the original strain." [LINK](#)

- Original research: [Viral infection and transmission in a large well-traced outbreak caused by the Delta SARS-CoV-2 variant.](#)

STAT News: [When and how will we know if we need COVID-19 booster shots?](#) (July 12, 2021)

"There are two key scenarios that could determine whether and when people need COVID-19 vaccine boosters: one, if vaccine-generated immunity just generally wanes over time (which could happen in some groups, such as older adults, faster than others), or two, if a variant emerges that can "escape" that elicited immune response in ways that render the vaccines less effective. Companies have been preparing for the possibility of either scenario with two strategies: considering deploying another dose of their existing vaccines to boost immune system fighters and developing variant-specific booster." [LINK](#)

Public Health Ontario: [Estimating the Prevalence and Growth of SARS-CoV-2 Variants in Ontario using Mutation Profiles](#) (July 14, 2021)

"We estimate that currently, the majority (84.8%) of COVID-19 cases in Ontario are infected with a SARS-CoV-2 variant having the N501Y- & E484K- mutation profile, which includes cases of the B.1.617.2 (Delta) variant. Cases with the N501Y+ & E484K- mutation profile (likely B.1.1.7 [Alpha]), represent 12.3% of cases, while 1.5% of cases are infected with a SARS-CoV-2 variant having the N501Y+ & E484K+ mutation profile (likely P.1 [Gamma] or B.1.351 [Beta])." [LINK](#)

Science and Technology for the Built Environment: [Strategies to minimize SARS-CoV-2 transmission in classroom settings: Combined impacts of ventilation and mask effective filtration efficiency](#)

(June 29, 2021)

"The results of the current work provide guidance on the relative effectiveness of ventilation, mask wearing, mask fitters, and combinations thereof for decreasing aerosol transmission infection probabilities. They specifically emphasize the large potential for effective mask wearing and improved masks, or use of mask fitters, to greatly reduce infection probabilities. The results also indicate that achieving COVID-19 transmission rates similar to those achieved with reduced occupant density, improved ventilation, and mask wearing, will require high vaccination rates (>70%) and high vaccine efficacy when returning to pre-pandemic levels of occupancy in classrooms without additional measures (like masks) in place." [LINK](#)

TREATMENT

New England Journal of Medicine: [Prevention and Attenuation of COVID-19 with the BNT162b2 and mRNA-1273 Vaccines](#) (July 22, 2021)

"Authorized mRNA vaccines were highly effective among working-age adults in preventing SARS-CoV-2 infection when administered in real-world conditions, and the vaccines attenuated the viral RNA load, risk of febrile symptoms, and duration of illness among those who had breakthrough infection despite vaccination." [LINK](#)

New England Journal of Medicine: [Effectiveness of COVID-19 Vaccines against the B.1.617.2 \(Delta\) Variant](#) (July 21, 2021)

"Only modest differences in vaccine effectiveness were noted with the delta variant as compared with the alpha variant after the receipt of two vaccine doses. Absolute differences in vaccine effectiveness were more marked after the receipt of the first dose. This finding would support efforts to maximize vaccine uptake with two doses among vulnerable populations." [LINK](#)

World Health Organization: [Guidance for clinical case management of thrombosis with thrombocytopenia syndrome \(TTS\) following vaccination to prevent coronavirus disease \(COVID-19\) : interim guidance, 19 July 2021](#) (July 19, 2021)

“Vaccinated individuals should be advised to seek immediate medical attention if they develop symptoms including severe or persistent headache, blurred vision, shortness of breath, chest pain, leg swelling, persistent abdominal pain or unusual skin bruising and/or petechiae (tiny purple, red, or brown spots on the skin) occurring within four weeks after vaccination, although some cases have been reported later than 30 days post-vaccination. These patients should be investigated for thrombosis and thrombocytopenia. Reporting these symptoms must be made easy for the vaccine recipients, and could include helplines and hospital vaccine centre, online reporting systems.” [LINK](#)

Nature Medicine: [Another COVID-19 vaccine to boost rollout](#) (July 15, 2021)

“CoronaVac (Sinovac, Beijing) is an inactivated whole-virus vaccine that performed well in phase 1 and 2 trials, but more data from larger cohorts are needed. Two large studies report positive data for CoronaVac in both clinical-trial and real-world settings.” [LINK](#)

NewsWise: [Joint Statement of the FLCCC Alliance and British Ivermectin Recommendation Development Group on Retraction of Early Research on Ivermectin](#) (July 16, 2021)

“The Front Line COVID-19 Critical Care Alliance (FLCCC), a group of highly published, world-renowned critical care physicians and scholars, and the British Ivermectin Recommendation Development Group (BIRD), a U.K. based group of medical and scientific experts from over 15 countries, are concerned over the misrepresentation of science in the recent article published in the Guardian regarding the withdrawal of Professor Emeritus Ahmed Elgazzar’s study into ivermectin that was first posted December 16, 2020. Contrary to the voices quoted in the article, there is no scientific basis to state that the removal of one study from meta-analyses would ‘reverse results.’ Worryingly, this article’s insinuation is reported as if it is fact. According to the most recent analyses by BIRD, excluding the Elgazzar data from the cited meta-analyses by Bryant and Hill does not change the conclusions of these reviews, with the findings still clearly favouring ivermectin for both prevention and treatment.” [LINK](#)

Oxford Academic: [Meta-analysis of randomized trials of ivermectin to treat SARS-CoV-2 infection](#) (July 6, 2021)

“In 11 randomized trials of moderate/severe infection, there was a 56% reduction in mortality (Relative Risk 0.44 [95%CI 0.25-0.77]; p=0.004; 35/1064 (3%) deaths on ivermectin; 93/1063 (9%) deaths in controls) with favorable clinical recovery and reduced hospitalization. Many studies included were not peer reviewed and a wide range of doses were evaluated. Currently, WHO recommends the use of ivermectin only inside clinical trials. A network of large clinical trials is in progress to validate the results seen to date.” [LINK](#)

Journal of the American Medical Association (JAMA) Internal Medicine: [Association of Facial Paralysis with mRNA COVID-19 Vaccines- A Disproportionality Analysis Using the World Health Organization Pharmacovigilance Database](#) (April 27, 2021)

“When compared with other viral vaccines, mRNA COVID-19 vaccines did not display a signal of facial paralysis. As of March 9, 2021, more than 320 million COVID-19 vaccine doses had been administered worldwide. Therefore, despite selective reporting and a potential delay in reporting and transferring cases among pharmacovigilance databases, the reporting rate of facial paralysis after mRNA COVID-19 vaccination found in the present study is not higher than that observed with other viral vaccines. Although we adjusted for sex and age, residual confounding and reporting bias may influence the results. To conclude, if an association between facial paralysis and mRNA COVID-19 vaccines exists, the risk is likely very low, as with other viral vaccines.” [LINK](#)

CTV News: [Ontario responds after WHO calls mixing COVID-19 vaccines 'dangerous trend'](#) (July 12, 2021)

““Ontario continues to follow the advice of the National Advisory Committee on Immunization (NACI), which recommends that it is safe to mix vaccines based on studies from the UK, Spain and Germany that have found that mixing vaccines is safe and produces a strong immune response,” said Carly Luis, the director of communications for Health Minister Christine Elliott.” [LINK](#)

MENTAL HEALTH & WELLNESS

The Journal of Allergy and Clinical Immunology: [Effect of COVID-19 on asthma exacerbation](#)

(April 29, 2021)

“Understanding the effect of the coronavirus disease 2019 (COVID-19) pandemic, and the efforts taken to combat it, on specific diseases is difficult owing to the many ways in which COVID-19 is impacting patients and health care systems. A significant decrease in the utilization of emergency services for asthma exacerbation (AEX) has been reported. However, health care system avoidance has also been reported and has resulted in delayed or decreased primary and acute care consultations, making it difficult to assess the extent to which decreased health utilization is related to patient avoidance of health services versus actual changes in asthma control.” [LINK](#)

- Related: [Doctors Might Have Been Focusing on the Wrong Asthma Triggers.](#)

Molecular Psychiatry: [Post-traumatic stress symptoms \(PTSS\) in COVID-19 survivors: a self-report and brain imaging follow-up study](#) (July 20, 2021)

“Our study suggests that COVID-19 survivors might face possible PTSS deteriorations, and highlights the importance of monitoring mental wellness of COVID-19 survivors.” [LINK](#)

Public Health: [“I didn't know I have the capacity to be creative”: children's experiences of how creativity promoted their sense of well-being. A pilot randomized controlled study in school arts therapies](#) (July 15, 2021)

“Arts therapies allowed children to share experiences and emotions that they may not have otherwise expressed merely through verbal means. During a period where COVID-19 has disrupted academic schedules and sparked a transitional period at schools, opportunities for creativity and engagement with the arts may contribute significantly to support children's emerging health needs.” [LINK](#)

Aging Clinical and Experimental Research: [Closeness to friends explains age differences in positive emotional experience during the lockdown period of COVID-19 pandemic](#) (July 11, 2021)

“This study examined whether age differences in positive and negative emotional experiences were explained by the engagement in different categories of daily activities and by the perception of more closeness to family and friends during the early lockdown phase of the COVID-19 pandemic in a sample of Italian adults ranging from 18 to 87 years old.” [LINK](#)

Health & Justice: [Family member incarceration and coping strategies during the COVID-19 pandemic](#) (July 9, 2021)

“The current study extends prior research on the various coping styles of people with an incarcerated loved one during the COVID-19 pandemic. Specifically, we draw on data collected from a non-profit organization in Texas that serves those with a loved one incarcerated (n = 365; respondents are 93.7% female) to examine a variety of functional and dysfunctional coping strategies among individuals who are concerned about their loved one contracting the virus while incarcerated.” [LINK](#)

Appetite: [“It is the only constant in what feels like a completely upside down and scary world”: Living with an eating disorder during COVID-19 and the importance of perceived control for recovery and relapse](#) (July 9, 2021)

“The purpose of our study was to investigate the longitudinal impacts of the pandemic on people with EDs. We hypothesized that eating disorder status, mental wellbeing, perceived stress, social support, perceived control, and ED rumination would be negatively impacted between April 2020 and June 2020” [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 July 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:

The Newfoundland & Labrador Centre for Applied Health Research

95 Bonaventure Avenue, Suite 300

St. John's, NL A1B 2X5

nlcahr@mun.ca

www.nlcahr.mun.ca

Newfoundland & Labrador Centre for

**APPLIED
HEALTH
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www.nlcahr.mun.ca