

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 **new COVID-19 VARIANTS** are highlighted in RED below.

*A groundbreaking new **COVID-19 TREATMENT** is highlighted for emphasis on Page 4.

CLINICAL PRESENTATION AND BIOLOGY

National Public Radio: [Why Scientists Are Very Worried about the Variant from Brazil](#) (January 27, 2020)

“For some scientists, the most worrying variant might be the newest one. A variant called P.1, which emerged in early December in Manaus, Brazil, and by mid-January had already caused a massive resurgence in cases across the city of 2 million people. The concern with P.1 is twofold: Scientists don’t understand why the variant has spread so explosively in Brazil, and the variant carries a particularly dangerous set of mutations.” [LINK](#)

WebMD: [COVID-19 May Hide in Brains and Cause Relapses](#) (January 25, 2020)

“The coronavirus may remain in people’s brains after infection and trigger relapses in patients who thought they had recovered. The research team found that the virus was located in the brains of mice at a level that was 1,000 times higher than in any other part of the body. Viral loads in the lungs began to drop after three days but remained high in the brain on the fifth and sixth days after infection, which is when the disease became more severe.” [LINK](#)

MedRxiv: [More than 50 Long-term Effects of COVID-19: A Systematic Review and Meta-Analysis](#) (January 29, 2021)

“This systematic review and meta-analysis aimed to identify studies assessing the long-term effects of COVID-19 and estimates the prevalence of each symptom, sign, or laboratory parameter of patients at a post-COVID-19 stage. The five most common symptoms were: fatigue (58%), headache (44%), attention disorder (27%), hair loss (25%), and dyspnea (24%). All meta-analyses showed medium (n=2) to high heterogeneity (n=13). In order to have a better understanding, future studies need to stratify by sex, age, previous comorbidities, severity of COVID-19 (ranging from asymptomatic to severe), and duration of each symptom.” [LINK](#)

Science: [Sex Differences in Immune Responses](#) (January 22, 2020)

"Evidence increasingly indicates that male sex is a risk factor for more severe disease and death from COVID-19. Male bias in COVID-19 mortality is observed in nearly all countries with available sex-disaggregated data, and the risk of death in males is ~1.7 times higher than in females. Sex differences are intertwined with differences in gender roles socially and with behavioral factors, which also influence COVID-19 incidence and outcomes. However, there are also possible biological mechanisms of male sex bias that affect the severity of COVID-19, particularly with respect to immune responses." [LINK](#)

The National Collaborating Center of Environmental Health: [The Basics of SARS-CoV-2 Transmission](#) (January 21, 2020)

"This brief review of the properties of SARS-CoV-2 and how it is transmitted outlines some of the evidence that currently forms the basis of the evolving public health response. This document has been updated from previous versions published in April, July, and November 2020 (previously titled "An introduction to SARS-CoV-2") to reflect new findings and to provide additional information about the virus that may be relevant to the public health response. The evidence presented below is based on current knowledge on the dominant variants currently circulating." [LINK](#)

HEALTH SYSTEM ADMINISTRATION

British Medical Journal (BMJ) Opinion: [Planning for the long term impact of COVID-19 on mental health](#) (February 1, 2021)

"Despite recent progress, there are still long waits, problems with access to specialist services, and big workforce shortages. We simply can't afford to have more people become increasingly unwell during and beyond the pandemic due to lack of proper care and treatment" [LINK](#)

Public Health: [How to improve adherence with quarantine: rapid review of the evidence](#) (May 20, 2020)

"People vary in their adherence to quarantine during infectious disease outbreaks. To improve this, public health officials should provide a timely, clear rationale for quarantine and information about protocols; emphasize social norms to encourage this altruistic behaviour; increase the perceived benefit that engaging in quarantine will have on public health; and ensure that sufficient supplies of food, medication and other essentials are provided." [LINK](#)

Nature- Humanities and Social Sciences Communications: [Toward effective government communication strategies in the era of COVID-19](#) (January 27, 2021)

"We argue that an effective communication strategy is a two-way process that involves clear messages, delivered via appropriate platforms, tailored for diverse audiences, and shared by trusted people. Ultimately, the long-term success depends on developing and maintaining public trust." [LINK](#)

Nature: [Mobility network models of COVID-19 explain inequities and inform reopening](#) (November 10, 2020)

"Our model predicts that a small minority of 'superspreader' points of interest account for a large majority of the infections, and that restricting the maximum occupancy at each point of interest is more effective than uniformly reducing mobility." [LINK](#)

European Review of Medical Pharmacological Sciences: [Point-of-care testing for the detection of SARS-CoV-2: a systematic review and meta-analysis](#) (January 25, 2021)

"Point-of-care tests (POCTs), especially molecular assays, have high sensitivity, specificity, and overall diagnostic accuracy for detecting SARS-CoV-2. If approved, POCTs can provide a rapid and practical way to identify infected individuals early on and help to limit the strain on the healthcare system." [LINK](#)

Healthcare Workers Australia: [National action on aerosol transmission of COVID-19](#) (January 4, 2021)
 "Urgent upgrades of respiratory protection for healthcare workers are needed as well as improved ventilation in healthcare settings, other indoor public spaces and private homes." [LINK](#)

INFECTION PREVENTION AND CONTROL

Nature: [Coronavirus is in the air — there's too much focus on surfaces](#) (February 2, 2021)

"A year into the pandemic, the evidence is now clear. The coronavirus SARS-CoV-2 is transmitted predominantly through the air — by people talking and breathing out large droplets and small particles called aerosols. Catching the virus from surfaces — although plausible — seems to be rare." [LINK](#)

The Chronicle of Higher Education: [The 5 Biggest Lessons We've Learned about How Coronavirus Spreads on Campus](#) (December 3, 2020)

This article details lessons learned from a review of school campuses that opened for the fall semester. These lessons might help shape educational institutions' responses to infection control and prevention measures for in-person classes. [LINK](#)

MedRxiv: [The effectiveness of eight non-pharmaceutical interventions against COVID-19 in 41 countries](#) (October 14, 2020)

"We found that closing schools and universities was highly effective; that banning gatherings and closing high-risk businesses was effective, but closing most other businesses had limited further benefit; and that many countries may have been able to reduce R below 1 without issuing a stay-at-home order." [LINK](#)

BBC News: [UK variant has mutated again, scientists say](#) (February 2, 2021)

"The Kent variant of coronavirus that has been spreading in the UK appears to be undergoing some 'worrying' new genetic changes, say scientists. Tests on some samples show a mutation, called E484K, already seen in the South Africa and Brazil variants that are of concern." [LINK](#)

BBC News: [COVID: Data shows outbreaks in England's offices in lockdown](#) (January 29, 2021)

"The data showed there were more than 500 outbreaks, or suspected outbreaks, in offices in the second half of 2020 - more than in supermarkets, construction sites, warehouses, restaurants and cafes combined." [LINK](#)

Alberta Health Services (AHS) Scientific Advisory Group: [Rapid Review: COVID-19 Risk of Reinfection](#) (January 26, 2021)

"Reinfection with SARS-CoV-2 after recovery from COVID-19 disease has been demonstrated to be possible, although is not frequently reported as yet. It is unclear whether reinfection will prove to be rare, or will become increasingly common over time. Therefore, the average duration of natural immunity to this new pandemic virus is not yet able to be known." [LINK](#)

Infectious Diseases: [A systematic review on the recurrence of SARS-CoV-2 virus: frequency, risk factors, and possible explanations](#) (January 28, 2021)

"Recurrence rate has been reported between 2.3% and 21.4% in cohort studies, within a mean of 20 (ranged 1–98) days after discharge; younger patients are being affected more. Following the second course of disease, the disease severity decreased or remained unchanged in 97.3% while it increased in 2.6%." [LINK](#)

Research in Social and Administrative Pharmacy: [Factors associated with preventive behaviors of COVID-19 among adolescents: Applying the Health Belief Model](#) (February 3, 2021)

"In the context of coronavirus disease pandemic in adolescents, the health belief model could provide a useful framework for planners to develop educational programs. Moreover, in such a context, strategies to promote self-efficacy in adolescents should be considered more carefully to help them improve their protective behaviors." [LINK](#)

TREATMENT

Science: [An Ultra-Potent Synthetic Nanobody Neutralizes SARS-CoV-2 by Stabilizing Inactive Spike](#) (December 18, 2020)

"The severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) virus enters host cells via an interaction between its Spike protein and the host cell receptor angiotensin-converting enzyme 2 (ACE2)... we developed nanobodies that disrupt the interaction between Spike and ACE2. [One particular nanobody] mNb6-tri retains function after aerosolization, lyophilization, and heat treatment, which enables aerosol-mediated delivery of this potent neutralizer directly to the airway epithelia." [LINK](#)

Science: [Plitidepsin has potent preclinical efficacy against SARS-CoV-2 by targeting the host protein eEF1A](#) (January 25, 2021)

"The authors report that the drug plitidepsin (aplidin), which has limited clinical approval, possesses antiviral activity (IC₉₀ = 0.88 nM) 27.5-fold more potent than remdesivir against SARS-CoV-2 in vitro, with limited toxicity in cell culture. Through the use of a drug resistant mutant, the authors show that the antiviral activity of plitidepsin against SARS-CoV-2 is mediated through inhibition of the known target eEF1A. They also demonstrate the in vivo efficacy of plitidepsin treatment in two mouse models of SARS-CoV-2 infection with a reduction of viral replication in the lungs by two orders of magnitude using prophylactic treatment." [LINK](#)

StatNews: [Comparing the Covid-19 vaccines developed by Pfizer, Moderna, and Johnson & Johnson](#) (February 2, 2021)

"A head-to-head comparison of the vaccines developed by Pfizer and its partner, BioNTech, and by Moderna, and the J&J vaccine." [LINK](#)

CBC: [How the Novavax COVID-19 vaccine differs from those already approved in Canada](#) (February 2, 2021)

"The Novavax vaccine, now closer to joining Canada's COVID-19 inoculation program, differs from the two vaccines Canadians are currently receiving to guard against the respiratory illness, primarily because of how it's engineered to induce an immune response in the body. Early findings from U.K. research show the Novavax vaccine appears to be 86 per cent effective against a new variant of the virus first reported in Britain and 60 per cent effective against the variant circulating in South Africa, the company said on January 28. The efficacy against the original strain of virus that causes COVID-19 is thought to be around 89 per cent." [LINK](#)

SENIORS AND OTHER VULNERABLE GROUPS

SN Comprehensive Clinical Medicine: [Care for Older People with Dementia during COVID-19 Pandemic](#) (January 27, 2021)

This manuscript reviews the atypical neurological presentation of COVID-19 in dementia patients and methods of prevention, diagnosis, and management. [LINK](#)

Journal of Post-Acute and Long-Term Care Medicine: [Impact of a Public Policy Restricting Staff Mobility Between Nursing Homes in Ontario, Canada During the COVID-19 Pandemic](#) (January 25, 2021)

This study assessed changes in the mobility of staff between nursing homes in Ontario, Canada, before and after enactment of public policy restricting staff from working at multiple homes. [LINK](#)

Journal of General Internal Medicine: [Early Acceleration of COVID-19 in Areas with Larger Nursing Homes and Certificate-of-Need Laws](#) (January 28, 2021)

This study included all US counties with at least one nursing home and examined the association between county average nursing home bed size and presence of certificate-of-need (CON) laws, which influence nursing home size, with county-level SARS-CoV-2 prevalence over time. [LINK](#)

International Journal of Clinical Oncology: [The mortality rate of COVID-19 was high in cancer patients: a retrospective single-center study](#) (January 24, 2021)

This study investigated how cancer patients are affected by COVID-19 infection, examined the virus's clinical course, and looked at factors affecting mortality. [LINK](#)

Cerebrovascular Diseases: [The Association between Presence of Comorbidities and COVID-19 Severity: A Systematic Review and Meta-Analysis](#) (February 2, 2021)

This study is a meta-analysis assessed the association between all underlying comorbidities in COVID-19 infection severity. [LINK](#)

Obesity Surgery: [SARS-CoV-2 and Obesity: “CoVesity”—a Pandemic within a Pandemic](#) (January 22, 2021)

This systematic review highlights [1] the reciprocal link between the obesity and COVID-19 pandemics, [2] obesity as a risk factor for more severe disease in past pandemics, [3] potential mechanisms that make individuals suffering from obesity more susceptible to severe disease and higher viral load, and [4] the need to safely resume bariatric services as recommended by expert guidelines, in order to mitigate the health outcomes of an already vulnerable population. [LINK](#)

International Journal of Environmental Research and Public Health: [Susceptibility to Coronavirus \(COVID-19\) in Occupational Settings: The Complex Interplay between Individual and Workplace Factors](#) (January 25, 2021)

This narrative review provides an updated overview on possible individual risk factors predictive for unfavorable mortality and morbidity outcomes that may inform risk assessment and management in workplace scenarios, with the perspective to identify knowledge gaps and future research needs in this field. [LINK](#)

MENTAL HEALTH & WELLNESS

Journal of Mental Health: [Trauma, mental health and the COVID-19 crisis: are we really all in it together?](#) (February 1, 2021)

This paper discusses evidence of increased risks to trauma survivors during the current pandemic, what specific support survivors might need, and how communities impacted by COVID-19 can learn from survivor activism. [LINK](#)

Current Psychology: [The impact of epidemic information on the public's worries and attitude toward epidemic prevention measures during the COVID-19 outbreak](#) (January 28, 2021)

This study investigated the impact of epidemic information on public's worries and attitude toward prevention measures during the outbreak of COVID-19 epidemic (in February 2020, before the WHO declared it a pandemic). [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 January and February, 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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