

The Newfoundland & Labrador Centre for Applied Health Research (NLCAHR) sends this COVID-19 e-bulletin to 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

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CLINICAL PRESENTATION & BIOLOGY

Nature Scientific Reports: [Serum from COVID-19 patients early in the pandemic shows limited evidence of cross-neutralization against variants of concern](#) (March 9, 2021)

"The authors examined serum and plasma from a cohort of patients infected with SARS-CoV-2 early in the pandemic and compared them to negative-control sera. Cytokine and chemokine concentrations varied depending on the severity of infection, and antibody responses were significantly increased in severe cases compared to mild to moderate infections. Neutralization data revealed that patients with high titers against an early 2020 SARS-CoV-2 isolate had detectable but limited neutralizing antibodies against the emerging SARS-CoV-2 Alpha, Beta and Delta variants. This study highlights the potential of re-infection for recovered COVID-19 patients." [LINK](#)

JAMA Network Open: [Comparison of Seroconversion in Children and Adults with Mild COVID-19](#) (March 9, 2022)

"In this cohort study of 57 children and 51 adults, the proportion of children with seroconversion to SARS-CoV-2 was half that found in adults despite similar viral load. These findings suggest that serology may provide a less reliable marker of prior SARS-CoV-2 infection in children and support strategies to protect children against COVID-19, including vaccination." [LINK](#)

CBC: [Why an Omicron infection alone might not offer the immune boost you'd expect](#) (February 3, 2022)

"While vaccinated and boosted individuals largely avoid dire outcomes from COVID-19, data continues to show that unvaccinated individuals remain at a far higher risk of serious illness, hospitalization, and death. Emerging evidence also suggests high infection rates won't necessarily translate into widespread protection against re-infections down the line — unless you're layering Omicron exposure onto the broader immunity provided by vaccines." [LINK](#)

Reuters: [Variant that combines Delta and Omicron identified; dogs sniff out virus with high accuracy](#) (March 8, 2021)

"Hybrid versions of the coronavirus that combine genes from the Delta and Omicron variants - dubbed "Deltacron" - have been identified in at least 17 patients in the United States and Europe, researchers said. Because there have

been so few confirmed cases, it is too soon to know whether Deltacron infections will be very transmissible or cause severe disease.” [LINK](#)

See also:

- medRxiv: [Culture and identification of a “Deltamicron” SARS-CoV-2 in a three cases cluster in southern France](#) (March 8, 2022)

Center for Disease Control and Prevention - Morbidity and Mortality Weekly Report: [SARS-CoV-2 B.1.1.529 \(Omicron\) Variant Transmission within Households — Four U.S. Jurisdictions, November 2021–February 2022](#) (March 4, 2021)

"In a study of household transmission in four U.S. jurisdictions, Omicron infection resulted in high transmission among household contacts, particularly among those who lived with index patients who were not vaccinated or who did not take measures to reduce the risk of transmission to household contacts.” [LINK](#)

JAMA Neurology: [One-Year Trajectory of Cognitive Changes in Older Survivors of COVID-19 in Wuhan, China. A Longitudinal Cohort Study](#) (March 8, 2022)

"In this cohort study of 1438 COVID-19 survivors 60 years and older who were discharged from COVID-19–designated hospitals in Wuhan, China, the incidence of cognitive impairment was higher in COVID-19 survivors, especially those with severe cases, compared with uninfected participants during a 1-year follow-up period. The findings suggest that long-term cognitive decline is common after SARS-CoV-2 infection, indicating the necessity of evaluating the impact of the COVID-19 pandemic on the future dementia burden worldwide.” [LINK](#)

See also:

- BBC: [Long COVID: What is it and what are the symptoms?](#) (February 28, 2022)
- medRxiv: [Post COVID-19 Condition in South Africa: 3-month follow-up after hospitalization with SARS-CoV-2](#) (March 8, 2021)

Nature: [SARS-CoV-2 is associated with changes in brain structure in UK Biobank](#) (March 7, 2022)

"The authors identified significant longitudinal effects when comparing the two groups, including: (i) greater reduction in grey matter thickness and tissue-contrast in the orbitofrontal cortex and parahippocampal gyrus, (ii) greater changes in markers of tissue damage in regions functionally-connected to the primary olfactory cortex, and (iii) greater reduction in global brain size. The infected participants also showed on average larger cognitive decline between the two time points. Whether this deleterious impact can be partially reversed, or whether these effects will persist in the long term, remains to be investigated with additional follow up.” [LINK](#)

MedRxiv: [SARS-CoV-2 infects, replicates, elevates angiotensin II and activates immune cells in human testes](#) (February 5, 2022)

"The authors found that SARS-CoV-2 testicular tropism is higher than previously thought and that reliable viral detection in the testis requires sensitive nanosensing or RT-qPCR using a specific methodology. Macrophages and spermatogonial cells are the main SARS-CoV-2 lodging sites and where new virions form inside the Endoplasmic Reticulum Golgi Intermediate Complex.” [LINK](#)

HEALTH EQUITY AND ETHICS

World Journal of Pediatrics Volume: [Long-term physical, mental and social health effects of COVID-19 in the pediatric population: a scoping review](#) (February 3, 2022)

"The majority of coronavirus disease 2019 (COVID-19) symptom presentations in adults and children appear to run their course within a couple of weeks. However, a subgroup of adults has started to emerge with effects lasting

several months or more after initial infection, which raises questions about the long-term physical, mental and social health effects of COVID-19 in the pediatric population. The purpose of this review was to determine these impacts well into the second year of the pandemic. There are limited studies reporting long physical symptoms of COVID-19 in the pediatric population. However, pediatric COVID-19 cases are underreported due to low rates of testing and symptomatic infection, which calls for more longitudinal studies. Children who have experienced COVID-19 illness should be monitored for long physiological, psychological, behavioral, and academic outcomes.”

[LINK](#)

Developmental Medicine & Child Neurology: [Neurological effects of COVID-19 in infants and children](#)
(March 3, 2022)

“Neurological manifestations of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) in children are becoming increasingly apparent as the coronavirus disease (COVID-19) pandemic continues. While children manifest relatively milder features of the disease, accumulating evidence warrants concern that COVID-19 exerts both acute- and long-term effects on the developing central and peripheral nervous systems. This review focuses on the relatively under investigated topic of the effects of SARS-CoV-2 on the brain in infancy and childhood, concluding that clinicians should be attentive to both the acute effects and long-term consequences of COVID-19 from a neurological perspective.” [LINK](#)

Hospital Pediatrics: [Impact of COVID-19 on Admissions and Outcomes for Children with Complex Chronic Conditions](#)
(March 8, 2022)

“Children with complex chronic conditions (CCCs) are at increased risk for significant health declines with disruption in access to health care services. Understanding how the pandemic affected health care use for these children may inform the future provision of health care and hospital plans for other large-scale disasters limiting health care access. Therefore, we sought to describe the impact of the COVID-19 pandemic on hospital admissions and clinical and financial outcomes for children with CCCs. Total admissions for children with CCCs declined nearly 20% during the pandemic. Among prevalent conditions, the greatest declines were observed for children with CCCs hospitalized with respiratory illnesses. Despite declines in admissions, overall hospital-level outcomes remained similar.” [LINK](#)

See also:

- Dermatologic Therapy: [Chilblain or perniosis-like skin lesions in children during the COVID-19 pandemic: A systematic review of articles](#) (January 3, 2022)

The Journal of Pediatrics: [Comorbidities associated with hospitalization and progression among adolescents with symptomatic COVID-19](#)
(February 28, 2022)

“To identify subgroups likely to benefit from monoclonal antibody and antiviral therapy, we evaluated the relationship between comorbidities and hospitalization among US adolescents with symptomatic COVID-19. SCD, immunocompromising conditions, obesity, diabetes, neurologic disease, and pulmonary disease (excluding mild asthma) were associated with hospitalization for symptomatic COVID-19. Adolescents with acute COVID-19 and these comorbidities should be prioritized for consideration of therapy to avert hospitalization.” [LINK](#)

Progress in Pediatric Cardiology: [Vitamin D and morbidity in children with multisystem inflammatory syndrome related to COVID-19](#)
(March 1, 2022)

“Multisystem inflammatory syndrome (MIS-C) is a clinical presentation reported in children related to Coronavirus-19 infection who present with a toxic shock like syndrome. Vitamin D deficiency has been postulated to play a role with severity of coronavirus infection in adult patients and other viral respiratory infections. This study aims to investigate if severe vitamin D deficiency was associated with increased disease severity and cardiac involvement in MIS-C. We describe a potential association between severe vitamin D deficiency and severe disease in children presenting with MIS-C. Severe vitamin D deficiency predisposes patients for cardiovascular involvement and, may

play a critical role in the host immune response to COVID-19 infection. Future prospective studies at the basic science and clinical level should be pursued to better delineate this association.” [LINK](#)

British Journal of General Practitioners Open: [Virtual care in Ontario community health centres: A Cross-Sectional study to understand changes in care delivery](#) (February 28, 2022)

“Virtual delivery of primary care has seen a massive adoption as a result of the COVID-19 pandemic. In this descriptive study, we use an equity lens to explore the impact of transitioning to greater use of virtual care in community health centres (CHCs) across Ontario, Canada. Our results demonstrate a large shift towards virtual delivery while maintaining in-person care. We found no meaningful differences in virtual versus in-person care related to patient characteristics or rurality of centres. Future studies are needed to explore how to best select the appropriate modality for patients and service types.” [LINK](#)

BioMed Central Geriatrics: [Difficulty and help with activities of daily living among older adults living alone during the COVID-19 pandemic: a multi-country population-based study](#) (March 4, 2022)

“Older adults who live alone and have difficulties in activities of daily living (ADLs) may have been more vulnerable during the COVID-19 pandemic. However, little is known about pandemic-related changes in ADL assistance (such as home care, domiciliary care) and its international variation. We examined international patterns and changes in provision of ADL assistance, and related these to country-level measures including national income and health service expenditure. This study revealed an unequal (and in some countries, partly needs-mismatched) response from countries to older adults living alone during the COVID-19 pandemic. The findings might inform future research about, and policies for, older adults living alone, particularly regarding social protection responses during crises.” [LINK](#)

Canadian Journal of Public Health: [Improving the health equity and the human rights of Canadians with dementia through a social determinants approach: a call to action in the COVID-19 pandemic](#) (March 3, 2022)

“As the new Omicron COVID-19 variant approaches its peak, our commentary highlights the need for urgent action to support people living with dementia and their care partners. More specifically, we argue that reducing COVID-19 inequities requires addressing underlying population-level factors known as the social determinants of health. Health disparities cannot be rectified merely by looking at mortality rates of people with dementia. Thus, we believe that improving the COVID-19 outcomes of people with dementia requires addressing key determinants such as where people live, their social supports, and having equitable access to healthcare services.” [LINK](#)

Journal of Medical Ethics: [The un-naturalistic fallacy: COVID-19 vaccine mandates should not discriminate against natural immunity](#) (March 7, 2022)

“Since vaccine requirements represent a substantial infringement of individual liberty, as well as imposing other significant costs, they can only be justified if they are necessary for achieving a proportionate public health benefit. Without compelling evidence for the superiority of vaccine-induced immunity, it cannot be deemed necessary to require vaccination for those with natural immunity. Subjecting them to vaccine mandates is therefore not justified. We conclude by defending the standard of proof that this argument from necessity invokes, and address other pragmatic and practical considerations that may speak against natural immunity exemptions.” [LINK](#)

The Atlantic: [How Did This Many Deaths Become Normal?](#) (March 8, 2022)

“The U.S. is nearing 1 million recorded COVID-19 deaths without the social reckoning that such a tragedy should provoke. Why?” [LINK](#)

Open Anthropological Research: [Necrosecurity, Immunosupremacy, and Survivorship in the Political Imagination of COVID-19](#) (May 24, 2021)

“The neologism ‘necrosecurity’ describes the cultural idea that mass death among less grievable subjects plays an essential role in maintaining social welfare and public order. In the early months of the novel coronavirus pandemic in the United States, this perspective on the social value of death emerged in diverse contexts, particularly in claims that deaths were a necessary consequence of returning economies to normal. Necrosecurity discourse encourages audiences to perceive coronavirus fatalities as neither preventable nor exceptional, and to perceive themselves as facing little risk of infection or death. Overlooking the realities of infectious disease epidemiology, these accounts portrayed COVID-19 as a mild disease and imagined a population of robust and physically normative individuals who would survive an epidemic unscathed and ready to return to work. These appeals articulate with powerful cultural tropes of survivorship, in which statistical calculations of relative risk and life chances—ostensibly cited to inspire hope for an individual outcome—conceal a zero-sum calculus in which ill or susceptible individuals are pitted against one another. In contrast to the construct of biosecurity—the securing of collective life against risk—necrosecurity paradoxically imagines the deaths of vulnerable others as a means of managing shared existential dangers.” [LINK](#)

HEALTH SYSTEM ADMINISTRATION

Public Health Ontario: [Considerations for Population Immunity and Endemicity](#) (February 18, 2022)

“Reaching a critical population immunity threshold against SARS-CoV-2 infection will not be achievable given factors such as the uncertainty about the level of immunity due to infection, lack of non-sterilizing immunity resulting from currently available vaccines, waning of immunity, and the emergence of new variants of concern (VOC) as well as the unknown role of animal reservoirs and/or human-to-animal transmission. In the context of SARS-CoV-2 becoming endemic, the notion of population immunity should be thought of as being “continuous” (i.e., level of immunity in the population required to achieve a desired outcome, such as acceptable level of infection or severe disease) and something that can be localized and vary by region.” [LINK](#)

The Guardian: [COVID pandemic sparks steep rise in number of people in UK with long-term illness](#) (March 05, 2022)

“An Observer analysis of the Office for National Statistics’ (ONS) labour market status of disabled people figures shows that nearly 14.2 million people in the UK aged 16 to 64 said they had a health condition lasting for at least 12 months in 2021 – a rise of 1.2 million during the two years of the pandemic.” [LINK](#)

See also:

- Reuters: [Almost a third of people report lingering symptom 6-12 months after COVID-19 -study](#) (March 04, 2022).
- Original study: MedRxiv: [Post-acute symptoms, new onset diagnoses and health problems 6 to 12 months after SARS-CoV-2 infection: a nationwide questionnaire study in the adult Danish population.](#)

Nuffield Trust: [Health system recovery from COVID-19: International lessons for the NHS](#) (March 02, 2022)

“This report uses interviews with medical directors, academics and policy-makers across 16 different countries alongside a structured policy analysis of each of those countries to understand how each has approached system recovery. The conclusions provide key learning and emerging lessons for the NHS on recovery and resilience as it delivers its own elective recovery strategy, as well as informing wider international learning.” [LINK](#)

The British Medical Journal: [COVID-19: Vaccine programme a success, but staff burnout is a major risk, auditors warn](#) (February 25, 2022)

“In a report published on 25 February the National Audit Office said the programme had successfully achieved unprecedented moving targets, helping to save lives and reduce serious illness and hospital admissions but it cautioned, “There are considerable risks to the programme’s continuing success. There are still around 3.7 million unvaccinated adults who are unevenly spread throughout the population. Our assessment is that staffing remains a major risk, due to staff burnout, and the lack of surplus capacity in the healthcare system generally.” [LINK](#)

See also:

- Expert Systems with Applications: [Prioritizing and queueing the emergency departments’ patients using a novel data-driven decision-making methodology, a real case study](#) (January 30, 2022)

International Journal of Cancer: [Predicted long-term impact of COVID-19 pandemic-related care delays on cancer mortality in Canada](#) (November 29, 2021)

“Increasing cancer treatment capacity in the post-pandemic era by $\geq 10\%$ over pre-pandemic levels was predicted to avert most predicted excess cancer deaths caused by the pandemic. This occurs for two reasons: (a) increasing treatment capacity helps clear treatment backlogs accumulated during the pandemic and (b) cancer treatment demand is predicted to increase in the future due to cancer diagnoses which were missed or delayed during the pandemic, but which are expected to eventually be diagnosed and require treatment. In the model, these delayed diagnoses are added to the treatment backlog and increase treatment wait times for all cancers once diagnosed, unless treatment capacity is increased to meet demand” [LINK](#)

See also:

- Journal of Clinical Nursing: [Socioeconomic correlates of health outcomes and mental health disparity in a sample of cancer patients during the COVID-19 pandemic](#) (March 1, 2022)

Medical Journal of Australia: [Long COVID: sustained and multiplied disadvantage](#) (March 07, 2022)

“The recognition of “living with COVID-19” in a “new normal” only peripherally acknowledges continuing patterns of inequity and vulnerability, both in terms of acquiring an infection as well as maintaining immunity (either through vaccination or recovery). What is worse is the looming sustained wave of post-COVID-19 social and health impacts, which are also inequitably distributed. In short, the disadvantaged continuing to suffer more and longer. Precarious lives are further cast in uncertain futures.” [LINK](#)

National Collaborating Centre for Methods and Tools: [What is known about changes to public health surveillance programs, systems and strategies at the population level for governments globally due to the COVID-19 pandemic?](#) (March 07, 2022)

“This rapid scoping review was produced to support public health decision makers’ strategic planning in the context of the COVID-19 pandemic and recovery. This review seeks to identify and summarize emerging research evidence to support evidence-informed decision making.” [LINK](#)

Journal of Advanced Nursing: [Effectiveness of a nurse-led smartphone-based self-management programme for people with poorly controlled type 2 diabetes: A randomized controlled trial](#) (February 15, 2022)

“The existing diabetes service is labour intensive as nurses are required to deliver education, follow-up telephone calls to trace blood sugar monitoring and provide therapeutic consultations and necessary referrals. The outbreak of COVID-19 pandemic has added further strain on the overworked professionals. NSSMP provides an alternative programme that is just as effective, to reduce nurses' workload by delegating them back to the individuals through self-management strategies. This enables nurses to increase contact time with patients, and individuals to take onus of their disease through increased self-efficacy, facilitated by technology.” [LINK](#)

Journal of Affective Disorders: [Effects of COVID-19 pandemic on anxiety and depression in primary care: A retrospective cohort study](#) (February 06, 2022)

“Throughout both the first and second waves of the pandemic, older adults were more likely to present with anxiety/depression related concerns in a visit with their family physician than they were before the pandemic. This contrasts with other findings that suggest that older adults were more emotionally resilient in coping with the pandemic relative to younger age groups ... Although visits for adolescents were lower than expected during the first few months of the pandemic, this pattern was reversed later in 2020, with an increase in the number of adolescents visiting for anxiety or depression related concerns. This finding adds to a growing body of evidence that the pandemic may have worsened mental health and increased the demand for mental health supports among youth and young adults.” [LINK](#)

INFECTION PREVENTION AND CONTROL

Nature: [COVID restrictions are lifting — what scientists think](#) (March 07, 2022)

“Several countries that have dropped restrictions have seen subsequent increases not only in cases, but also in hospitalizations and deaths, although the link between cases and severe outcomes has decoupled, says Deepti Gurdasani, an epidemiologist at Queen Mary University of London. “Although some [deaths following a positive test] are incidental, there is a very large proportion that are deaths due to COVID-19,” she says. “It’s a very concerning situation — and that’s not even talking about the impact of long COVID.” [LINK](#)

The American Conference of Governmental Industrial Hygienists (ACGIH): [COVID-19: Workers Need Respirators](#) (March 07, 2022)

“Workers need a fit-tested* respirator to prevent inhalation of infectious particles. Better respirators with higher protection factors should be used for high particle concentrations.” [LINK](#)

See also:

- CBS17 News: [Fact check: Are you reading this COVID mask chart the wrong way?](#) (January 8, 2022)

The Conversation: [Omitting indoor air quality from COVID-19 guidance for shelters and long-term care homes is a grave mistake](#) (March 07, 2022)

“Finally, and while we attempt to mitigate the damage unfolding in real time, it’s time to seed the beginnings of a new system: one that embraces the precautionary principle, values the health and well-being of people living and working in congregate settings, and treats every single preventable death as a catastrophic failure.” [LINK](#)

Nature: [Development and validation of a population-based risk stratification model for severe COVID-19 in the general population](#) (February 28, 2022)

“We aimed to develop and validate a COVID-19 risk stratification system that allows allocating individuals of the general population into four mutually-exclusive risk categories based on multivariate models for severe COVID-19, a composite of hospital admission, transfer to intensive care unit (ICU), and mortality among the general population. The model was developed using clinical, hospital, and epidemiological data from all individuals among the entire population of Catalonia...Our results provide clinicians and policymakers with an evidence-based tool for prioritizing COVID-19 healthcare resources in other population groups aside from those with higher exposure to SARS-CoV-2 and frontline workers.” [LINK](#)

Cities: [Spatial congruency or mismatch? Analyzing the COVID-19 potential infection risk and urban density as businesses reopen](#) (April, 2022)

“Through visual analytics, we found that the high-risk peaks (risk levels 8–10) neither intersect with high population density nor with high morphological density. This finding indicates that spatial mismatch exists between urban density and high-risk peak on the basis of the [point of interest] distribution. By contrast, the risk peaks with medium degrees (risk levels 4–5) intersect with some of the hotspots with high population density. This finding further suggests that as businesses reopen, contagious transmission from person to person, once infected, is fast due to the high density and population mobility in these hotspot areas despite a short face-to-face exposure time.” [LINK](#)

Nature: [Replacing quarantine of COVID-19 contacts with periodic testing is also effective in mitigating the risk of transmission](#) (March 07, 2022)

“In this paper, we propose an alternative to quarantines for traced contacts based on sequential PCR and/or LFA tests (with isolation of confirmed cases) and show that by choosing the appropriate test mix and timing, it is possible to reach the same risks of secondary infections compared to that of quarantines with high levels of adherence. For example, the use of 4 consecutive LFAs since notification is equivalent to a 14-day quarantine with 90–100% adherence; this can be achieved even when using LFA tests with relatively low levels of sensitivity.” [LINK](#)

Public Health Ontario: [Public Health Measures and COVID-19 Epidemiology in Select Jurisdictions](#) (February 10, 2022)

“Due to changes in PCR testing eligibility in Ontario on December 31, 2021, and lack of rapid antigen tests (RAT), current surveillance strategies are unable to capture the true epidemiology of SARS-CoV-2. Current indicators of COVID-19 burden such as hospitalizations, ICU admissions, and death will continue to be key indicators to monitor moving forward; however, they are lagging indicators. In the absence of accurate case counts through rapid or molecular tests there is a need for a reliance on new and/or alternative data sources to estimate the prevalence of SARS-CoV-2 in the population (e.g., waste water surveillance). These indicators can be monitored to examine the impact of loosening of public health protective measures. Triangulation across new indicators can provide greater confidence in the estimates.” [LINK](#)

Lancet Regional Health: [Public health guideline compliance and perceived government effectiveness during the COVID-19 pandemic in Canada: Findings from a longitudinal cohort study](#) (February 14, 2022)

“Using a longitudinal observational cohort design, the current study examined the temporal periodicity of compliance with and perceptions of public health COVID-19 guidelines and government response. Overall, the results revealed diverging trends. On one hand, participants reported either initially high or dramatically increasing self-reported behavioural compliance with government recommendations [...] On the other hand, perception of importance and compliance with public health guidelines and perceptions of government response all significantly decreased over the five time points. These results can be thought of as an empirical signature of so-called pandemic fatigue in response to lifestyle changes in response to the pandemic.” [LINK](#)

eClinical Medicine: [Burden of COVID-19 restrictions: National, regional and global estimates](#) (February 18, 2022)

“A growing literature has documented the high global morbidity, mortality and mental health burden associated with the current COVID-19 pandemic. In this paper, we aimed to quantify the total utility and quality of life loss resulting from COVID-19-related government restrictions imposed at the national, regional and global levels. The results presented here suggest that the QALY losses due to restrictions are substantial. Future mitigation strategies should try to balance potential reductions in disease transmission achievable through specific measures against

their respective impact on quality of life. Additional research is needed to determine differences in restriction-specific disutilities across countries, and to determine optimal policy responses to similar future disease threats.”

[LINK](#)

TREATMENT

Stat News: [Pfizer COVID vaccine is less effective in kids 5 to 11, study finds](#) (February 28, 2022)

"The data, from New York State, show a rapid and substantial decline in protection after vaccination in children in the younger age group, with efficacy against infections dropping off more quickly and dramatically than the declines seen in children aged 12 to 17. The study also found a significant, but less steep, decline in protection against hospitalizations." [LINK](#)

See also:

- medRxiv: [Effectiveness of the BNT162b2 vaccine among children 5-11 and 12-17 years in New York after the Emergence of the Omicron Variant](#) (February 28, 2022)

Center for Disease Control and Prevention - Morbidity and Mortality Weekly Report: [Effectiveness of COVID-19 Pfizer-BioNTech BNT162b2 mRNA Vaccination in Preventing COVID-19–Associated Emergency Department and Urgent Care Encounters and Hospitalizations Among Non-immunocompromised Children and Adolescents Aged 5–17 Years — VISION Network](#) (March 4, 2021)

"Two doses protect against COVID-19–associated emergency department and urgent care encounters among children and adolescents. However, vaccine effectiveness (VE) was lower during Omicron predominance and decreased with time since vaccination; a booster dose restored VE to 81% among adolescents aged 16–17 years. Overall, 2-dose VE against COVID-19–associated hospitalization was 73%–94%." [LINK](#)

CBC: [Medicago's homegrown, plant-based COVID-19 vaccine approved by Health Canada](#) (February 24, 2022)

"Dubbed "Covifenz," the two-dose shot's overall efficacy rate against all virus variants studied was 71 per cent, with a higher efficacy rate of 75 per cent against COVID-19 infections of any severity from the Delta variant, then dominant, according to data shared at the time in a press release." [LINK](#)

Hypertension Research: [The effect of an mRNA vaccine against COVID-19 on endothelial function and arterial stiffness](#) (March 10, 2021)

"This study shows that the mRNA vaccine causes a prominent increase in inflammatory markers, especially after the 2nd dose, and a transient deterioration of endothelial function at 24 h that returns to baseline at 48 h. These results confirm the short-term cardiovascular safety of the vaccine." [LINK](#)

The Globe and Mail: [Canadian company SaNOtize's COVID-19 treatment wins approval in India](#) (February 10, 2022)

"SaNOtize Research and Development Corp., a Vancouver-based pharmaceutical company, announced on Wednesday that its nitric oxide nasal spray has received approval from India's drug regulator. The product has been licensed for manufacture there by Glenmark Pharmaceuticals Ltd. The spray is effective at reducing viral load in people with mild cases of COVID-19 and can help to prevent the disease from progressing, according to Phase 3 clinical trial results." [LINK](#)

See also:

- Trial Site News: [Nasal Spray Kills COVID-19, Now Approved in India, Israel, Bahrain, Indonesia, and Thailand: No Mention in Big Media](#) (February 13, 2022)

University of Ottawa: [Virologist leads attempt to develop coronavirus nasal spray vaccine](#) (March 3, 2022)

"A team of nine labs, led by University of Ottawa virologist Dr. Marc-André Langlois, has secured \$1-million in CIHR funding to pursue a combination of tools against COVID-19, including therapeutic and diagnostic antibodies and a nasal spray vaccine." [LINK](#)

New England Journal of Medicine: [Resistance Mutations in SARS-CoV-2 Delta Variant after Sotrovimab Use](#) (March 9, 2021)

"These data show the persistence of viable SARS-CoV-2 in patients after sotrovimab infusions and the rapid development of spike gene mutations associated with high-level sotrovimab resistance in vitro. These findings underscore the importance of stewardship of monoclonal antibodies, particularly because sotrovimab is one of the few monoclonal antibodies with retained activity against the B.1.1.529 (omicron) variant." [LINK](#)

Journal of the American Medical Association: [Association of Convalescent Plasma Treatment With Clinical Status in Patients Hospitalized With COVID-19. A Meta-analysis](#) (January 25, 2021)

"In this meta-analysis of 8 randomized clinical trials enrolling 2341 participants, individual patient data were monitored in real time and analyzed using a robust Bayesian framework and advanced statistical modeling. No association of convalescent plasma with clinical outcomes was found. These findings suggest that real-time individual patient data pooling and meta-analysis during a pandemic are feasible, offering a model for future research and providing a rich data resource." [LINK](#)

Salon: [COVID "long-haulers" may have finally found relief in inexpensive, over-the-counter drugs](#) (February 21, 2022)

"The news comes from a report published this month in [The Journal for Nurse Practitioners](#) which describes the recovery of two middle-aged women who, by chance, found that antihistamines greatly improved their daily functions after suffering from long COVID." [LINK](#)

Harvard Health Publishing: [Do vitamin D, zinc, and other supplements help prevent COVID-19 or hasten healing?](#) (April 5, 2021)

"Based on the science, there is reason to be hopeful that supplements such as vitamin C or D, zinc, or melatonin might help in the fight against COVID-19. While there's no proof yet that they do, additional research could show a benefit in certain situations, or with a different dose or formulation of the supplement. So it's worth keeping an open mind. In the meantime, we should not dismiss the findings of negative studies just because the results weren't what we'd hoped." [LINK](#)

Journal of the American Medical Association Network Open: [Supplements for the Treatment of Mild COVID-19—Challenging Health Beliefs with Science from A to Z](#) (February 12, 2022)

"The best evidence to guide clinical recommendations comes from well-designed RCTs. Given the widespread public use of supplements, such as zinc and ascorbic acid, for the prevention and treatment of viral infections, the COVID A to Z Study investigators are applauded for adding rigorous science by testing their efficacy and challenging popular beliefs. Unfortunately, these 2 supplements failed to live up to their hype." [LINK](#)

See also:

- Public Health: [Effect of High-Dose Zinc and Ascorbic Acid Supplementation vs Usual Care on Symptom Length and Reduction Among Ambulatory Patients With SARS-CoV-2 Infection](#) (February 12, 2022)

Reuters: [Cannabis compound CBD stops coronavirus in test tube, but can it treat COVID?](#) (January 25, 2022)

"Early research suggesting that a popular non-psychoactive compound derived from marijuana might help prevent or treat COVID-19 warrants further investigation in rigorous clinical trials, researchers say. Several recent laboratory studies of cannabidiol, or CBD, have shown promising results, attracting media attention." [LINK](#)

See also:

- Journal of Natural Products: [Cannabinoids Block Cellular Entry of SARS-CoV-2 and the Emerging Variants](#) (January 10, 2022)
- Cannabis and Cannabinoid Research: [Cannabidiol for COVID-19 Patients with Mild to Moderate Symptoms \(CANDIDATE Study\): A Randomized, Double-Blind, Placebo-Controlled Clinical Trial](#) (October 7, 2021)

MENTAL HEALTH & WELLNESS

Nutrition and Health: [Associations among Self-Reported Mental Health, Physical Activity, and Diet during the COVID-19 Pandemic](#) (March 2, 2022)

"Understanding the relationship between physical activity, diet, and mental health during the COVID-19 pandemic may help inform resources encouraging healthy lifestyle choices during the time of an increased threat to health and wellbeing. Our objective was to examine how self-rated mental health was associated with engagement in physical activity and consumption of fruits and vegetables during the COVID-19 pandemic. The relationship between mental health and physical activity and diet reaffirms a need for healthcare providers to promote the importance of maintaining both a healthy physical activity level and a nutrient-rich diet in the face of challenging circumstances, such as a global pandemic." [LINK](#)

Worldviews on Evidence-Based Nursing: [Mental health effects prevalence in children and adolescents during the COVID-19 pandemic: A systematic review](#) (March 1, 2022)

"The COVID-19 pandemic health crisis has changed household and school routines leaving children and adolescents without important anchors in life. This, in turn, can influence their mental health, changing their behavioral and psychological conditions. The aim of this study is to answer the research question, "What is the worldwide prevalence of mental health effects in children and adolescents during the COVID-19 pandemic?" Overall findings showed that the proportion of children and adolescents presenting mental health effects during the COVID-19 pandemic showed a wide variation in different countries. However, there was a trend toward mental health issues. Therefore, policymakers, healthcare planners, youth mental health services, teachers, parents, and researchers need to be prepared to deal with this demand." [LINK](#)

Clinical Obstetrics and Gynecology: [Mental Health in Obstetric Patients and Providers during the COVID-19 Pandemic](#) (March 1, 2022)

"Psychiatric morbidity is the most common childbirth complication with 1 in 5 women experiencing a perinatal mood or anxiety disorder. The cost of this psychiatric morbidity is pervasive, contributing to devastating maternal health, child developmental, and economic consequences. The coronavirus disease 2019 (COVID-19) pandemic, and associated changes to perinatal experiences, resulted in profound psychological reactions including increased anxiety, depression, stress disorders, and sleep disturbance, further impacting obstetric patients. Providers' mental health has been challenged by moral injury and shared trauma. This article reviews mental health outcomes in regard to the COVID-19 pandemic for obstetric patients and their providers." [LINK](#)

See also:

- **Journal of Midwifery & Women's Health:** [Rural Residents' Perinatal Experiences During the Initial Months of the COVID-19 Pandemic: A Qualitative Study in British Columbia](#) (March 4, 2022)

BioMed Central Public Health: [Working mothers during COVID-19: a cross-sectional study on mental health status and associations with the receipt of employment benefits](#) (March 4, 2022)

“Beyond the sweeping physiological effects of COVID-19 infections in 2020 and 2021, the psychosocial impacts of lockdowns, social distancing, and the associated disruptions to daily life have brought on a simultaneous mental health crisis, particularly among many working mothers who are disproportionately balancing childcare, virtual schooling, and employment vulnerability. The aim of this study was to measure the mental health status of working mothers in the United States and associations with the provision of family-friendly employment benefits one year into the pandemic. Results suggest employment benefits may help support the mental health of working mothers and provide a call to action to employers and policy stakeholders to develop solutions addressing gaps in workplace benefits and mental health support for working parents, with sustainable reform in mind to mitigate employment benefit inequities exposed by the pandemic.” [LINK](#)

American Journal of Men's Health: [The Association between Men's Mental Health during COVID-19 and Deterioration in Economic Status](#) (March 4, 2022)

“This study investigated associations among economic status deterioration, mental health, and gender during the COVID-19 pandemic. As the COVID-19 outbreak has had a significant impact on mental health worldwide, it is important to identify individuals and groups who are at high risk of mental health impairment. The current study demonstrates that men's distress, which is frequently complex to identify, can be detected using standardized measures and analyzing these according to changes in reporting patterns as opposed to simply examining means and frequencies. The results suggest that the COVID-19 crisis may provide an opportunity to understand more about mental health, in particular, that of men.” [LINK](#)

Schizophrenia: [Mental health in individuals with severe mental disorders during the COVID-19 pandemic: a longitudinal investigation](#) (March 8, 2022)

“The main objective of the present longitudinal study was to investigate the impact of the COVID-19 pandemic on mental health of people with and without a history of mental disorders living in Tyrol (Austria) and South Tyrol (Italy). Though an inter-state border separates the region since 1919, the population has similar characteristics and is comparable in many ways (socioeconomic context, healthcare system, etc.). Levels of psychological symptoms and the prevalence of psychological distress were significantly higher in individuals with MDD compared to the other two groups, and Italian participants were more prone to anxiety than those from Austria. Psychological distress was predicted by a lower degree of both resilience and perceived social support as well as loneliness and boredom. Notably, the prevalence of clinically relevant psychological symptoms remained unchanged among each group over time. These results underscore the relevance of tailored prevention and mitigation strategies to meet the specific needs of people both with and without mental disorders.” [LINK](#)

Current Psychology: [Mental health among the general population and healthcare workers during the COVID-19 pandemic: A meta-analysis of well-being and psychological distress prevalence](#) (March 1, 2022)

“The COVID-19 pandemic has constituted a global health crisis that has threatened the mental health of individuals worldwide. The present paper sought to systematically review and meta-analyze studies reporting the prevalence during the COVID-19 pandemic of well-being and psychological distress as defined by the dual-continua model, which includes (absence of) psychological distress and (presence of) well-being among the general population and healthcare workers. Results revealed differences among the two groups and indicated that disparities in terms of

preparedness to fight the pandemic can distinctly affect mental health in the general population and healthcare workers. Addressing mental health during and after a health crisis should be in the spotlight of the international and national public health agenda. Considering the protective role of well-being to minimize psychological symptoms, mental health policies during the COVID-19 should include strategies to combat the psychological consequences of the pandemic by promoting well-being practices.” [LINK](#)

Public Health Agency of Canada: [Well-being of Canadian Armed Forces members during the COVID-19 pandemic: the influence of positive health behaviours](#) (March 2022)

“The COVID-19 pandemic has been linked to increased depression, anxiety and other adverse mental health outcomes. Understanding the behaviours that positively influence health is important for the development of strategies to maintain and improve well-being during the pandemic. Engaging in behaviours such as exercise and healthy eating was generally associated with better health outcomes. Unexpected relationships of meditation and connecting with loved ones are discussed in terms of their use in stressful times among those with mental health issues, past research on coping strategies and impacts of the pandemic and physical distancing on social connections. The findings may have implications for strategies to promote healthy behaviours during the remainder of the pandemic and similar crises in the future.” [LINK](#)

Public Health Agency of Canada: [Trials and tribulations among members of Canada’s Defense Team early in the pandemic: key insights from the COVID-19 Defense Team Survey](#) (February 2022)

“Due to the unprecedented impact of COVID-19, there is a need for research assessing pandemic-related challenges and stressors. The current study aimed to assess key concerns and general well-being among members of Canada’s Defense Team, including Canadian Armed Forces personnel and members of the Department of National Defense (DND) Public Service. The pandemic has negatively impacted a substantial portion of the Defense Team. When responding to future crises, it is recommended that leaders of organizations provide additional supports to higher-risk groups and to supervisors who are ideally positioned to support employees during challenging times.” [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 February and March, 2022.

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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