

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

## CLINICAL PRESENTATION & BIOLOGY

**MDPI: [Superantigens and SARS-CoV-2](#)** (February 10, 2022)

"If SARS-CoV-2 is a superantigen, superantigen-like or triggers a superantigenic host response, the unpredictable nature of a superantigen makes it particularly difficult to assess what will happen to people on repeat exposure and adds to the overall uncertainty around the long-term effects of the virus [130,131]. Urgent research is needed to confirm or refute the superantigenic nature of SARS-CoV-2, to better understand the long-term risks being taken by governments whose policies enable widespread transmission and to understand whether it is necessary to maintain consistently high levels of neutralizing antibodies to better protect against the consequences of exposure to the pathogen." [LINK](#)

**Frontiers in Immunology: [T-Cell Hyperactivation and Paralysis in Severe COVID-19 Infection Revealed by Single-Cell Analysis](#)** (October 8, 2020)

"This study demonstrates that SARS-CoV-2 drives hyperactivation of CD4+ T-cells and immune paralysis to promote the pathogenesis of disease and thus life-threatening symptoms in severely affected individuals. Therefore, therapeutic approaches to inhibit T-cell hyperactivation and paralysis may need to be developed for severe COVID-19 patients." [LINK](#)

**Signal Transduction and Targeted Therapy: [ACE2-independent infection of T lymphocytes by SARS-CoV-2](#)** (March 11, 2022)

"The authors confirmed that SARS-CoV-2 viral antigen could be detected in patient peripheral blood cells (PBCs) or postmortem lung T cells, and the infectious virus could also be detected from viral antigen-positive PBCs. The authors prove that SARS-CoV-2 infects T lymphocytes, preferably activated CD4 + T cells in vitro. They also show that the infection is spike-ACE2/TMPRSS2-independent through using ACE2 knockdown or receptor blocking experiments. Then the authors demonstrate that viral antigen-positive T cells from patient undergone pronounced apoptosis. They also demonstrated that LFA-1, the protein exclusively expresses in multiple leukocytes, is more

likely the entry molecule that mediated SARS-CoV-2 infection in T cells, compared to a list of other known receptors. Collectively, this work confirmed a SARS-CoV-2 infection of T cells, in a spike-ACE2-independent manner, which shed novel insights into the underlying mechanisms of SARS-CoV-2-induced lymphopenia in COVID-19 patients.” [LINK](#)

**Cedars Sinai: [COVID-19 Can Trigger Self-Attacking Antibodies](#)** (January 3, 2022)

"The Cedars-Sinai investigators found that people with prior infection with SARS-CoV-2, the virus that causes COVID-19, have a wide variety of autoantibodies up to six months after they have fully recovered. Prior to this study, researchers knew that severe cases of COVID-19 can stress the immune system so much that autoantibodies are produced. This [study](#) is the first to report not only the presence of elevated autoantibodies after mild or asymptomatic infection, but their persistence over time.” [LINK](#)

**The Journal of Infectious Diseases: [Global Prevalence of Post COVID-19 Condition or Long COVID: A Meta-Analysis and Systematic Review](#)** (April 16, 2022)

"This study aims to examine the worldwide prevalence of post COVID-19 condition, through a systematic review and meta-analysis. 50 studies were included, and 41 were meta-analyzed. Global estimated pooled prevalence of post COVID-19 condition was 0.43 (95% CI: 0.39,0.46). Hospitalized and non-hospitalized patients have estimates of 0.54 (95% CI: 0.44,0.63) and 0.34 (95% CI: 0.25,0.46), respectively. Regional prevalence estimates were Asia— 0.51 (95% CI: 0.37,0.65), Europe— 0.44 (95% CI: 0.32,0.56), and North America— 0.31 (95% CI: 0.21,0.43). Global prevalence for 30, 60, 90, and 120 days after infection were estimated to be 0.37 (95% CI: 0.26,0.49), 0.25 (95% CI: 0.15,0.38), 0.32 (95% CI: 0.14,0.57) and 0.49 (95% CI: 0.40,0.59), respectively. Fatigue was the most common symptom reported with a prevalence of 0.23 (95% CI: 0.17,0.30), followed by memory problems (0.14 [95% CI: 0.10,0.19]). This study finds post COVID-19 condition prevalence is substantial; the health effects of COVID-19 appear to be prolonged and can exert stress on the healthcare system.” [LINK](#)

**See also:**

- Clinical Infectious Diseases: [Risk factors and multidimensional assessment of long COVID fatigue: a nested case-control study](#) (April 11, 2022)
- Guardian: [Vaccines are no match for long Covid. Treating it is science's next great challenge](#) (April 19, 2022)
- Today Online: [Chinese University of Hong Kong team develops test for risk of long Covid](#) (April 11, 2022)

**Apple Podcast Preview: [Everything We Know about Long COVID](#)** (2022)

"In Andy's conversation with two experts — Yale's Akiko Iwasaki and Mount Sinai's David Putrino — we'll learn more about hypotheses for why certain people don't recover fully from the virus, how Long COVID differs from a lingering infection, and what rehabilitation techniques seem to be working best.” [LINK](#)

**Nature: [Dysregulation of brain and choroid plexus cell types in severe COVID-19](#)** (June 21, 2021)

"Across cell types, perturbations associated with COVID-19 overlap with those found in chronic brain disorders and reside in genetic variants associated with cognition, schizophrenia and depression. These findings and public dataset provide a molecular framework to understand current observations of COVID-19-related neurological disease, and any such disease that may emerge at a later date.” [LINK](#)

**JAMA: [COVID-19 Cases and Disease Severity in Pregnancy and Neonatal Positivity Associated With Delta \(B.1.617.2\) and Omicron \(B.1.1.529\) Variant Predominance](#)** (March 24, 2022)

"As in nonpregnant people, Delta and Omicron variant predominance were associated with increased SARS-CoV-2 infections in pregnancy, with the majority occurring in unvaccinated individuals. Delta variant predominance was associated with increased illness severity and Omicron with decreased illness severity after adjusting for prior vaccination. The majority of early neonatal SARS-CoV-2 infections occurred among unvaccinated mothers with

nonsevere COVID-19. Long-term risks of early neonatal SARS-CoV-2 infection are unknown, but maternal vaccination may be protective.” [LINK](#)

**Medical Press:** [Coronavirus found in human feces up to 7 months after infection](#) (April 18, 2022)

"In the study about 1 out of 7 COVID patients continued to shed the virus' genetic remnants in their feces at least four months after their initial diagnosis, long after they've stopped shedding the virus from their respiratory tract, researchers found. This could explain why some COVID patients develop GI symptoms like abdominal pain, nausea, vomiting and diarrhea, said senior researcher Dr. Ami Bhatt, an associate professor of medicine and genetics at Stanford University.” [LINK](#)

**See also:**

- Med: [Gastrointestinal symptoms and fecal shedding of SARS-CoV-2 RNA suggest prolonged gastrointestinal infection](#) (April 5, 2022)

**Reuters:** [WHO says it is analysing two new Omicron COVID sub-variants](#) (April 11, 2022)

"The World Health Organization said on Monday it is tracking a few dozen cases of two new sub-variants of the highly transmissible Omicron strain of the coronavirus to assess whether they are more infectious or dangerous. It has added BA.4 and BA.5, sister variants of the original BA.1 Omicron variant, to its list for monitoring. It is already tracking BA.1 and BA.2 - now globally dominant - as well as BA.1.1 and BA.3.” [LINK](#)

**See also:**

- Nature: [Deltacron: the story of the variant that wasn't](#) (January 21, 2022)

**CBC:** [Is it COVID or a cold? How to know as Omicron cases rise](#) (April 7, 2022)

- "It's impossible to know for sure whether you have COVID-19 without a test, said Dr. Shazma Mithani, an emergency physician in Edmonton. "There's no specific symptom or lack of symptom that can say for sure it is COVID or not." "Many people who have COVID infection feel almost nothing or very mild symptoms — especially if they're young and healthy — versus some people as they start to get into their 40s, 50s and upwards seem to be much more symptomatic," said Dr. Lisa Barrett, an infectious disease doctor and researcher at Dalhousie University in Halifax. Still, the bottom line is that testing is the only way to know for sure whether you have COVID-19.” [LINK](#)

## HEALTH EQUITY AND ETHICS

**Poop People's Campaign:** [A Poor People's Pandemic Report: Mapping the Intersections of Poverty, Race and COVID-19](#) (April 2022)

"A Poor People's Pandemic Report: Mapping the Intersections of Poverty, Race and COVID-19 aggregates data from more than 3200 counties to connect information about COVID-19 deaths to other demographic characteristics, including income, race, health insurance status and more. The data are organized in an interactive dashboard and digital report (StoryMap) to narrate the intersections between poverty, race and the pandemic. To overcome the limits of current poverty measures, the poverty data includes everyone living under 200% of the poverty line (OPM). Where the SPM is used, it is clearly indicated. An intersectional analysis was used as a methodological tool to uncover how poverty, age, gender, race, ethnicity, disability and class intersect with COVID-19 outcomes.” [LINK](#)

**See also:**

- BioMed Central Public Health: [Considering social inequalities in health in large-scale testing for COVID-19 in Montréal: a qualitative case study](#) (April 14, 2022)

- Canadian Journal of Public Health: [“None of it was especially easy”: improving COVID-19 vaccine equity for people with disabilities](#) (April 13, 2022)

**The Journal of Economic Inequality: [Will COVID-19 Have Long-Lasting Effects on Inequality? Evidence from Past Pandemics](#)** (April 14, 2022)

“This paper provides evidence on the impact of major epidemics from the past two decades on income distribution. The pandemics in our sample, even though much smaller in scale than COVID-19, have led to increases in the Gini coefficient, raised the income share of higher-income deciles, and lowered the employment-to-population ratio for those with basic education compared to those with higher education. We provide some evidence that the distributional consequences from the current pandemic may be larger than those flowing from the historical pandemics in our sample, and larger than those following typical recessions and financial crises.”

[LINK](#)

**Public Health Nursing: [Social vulnerability indicators in pandemics focusing on COVID-19: A systematic literature review](#)** (April 7, 2022)

“Social factors can affect the vulnerability of disaster-prone communities. This review aimed to identify and categorize social vulnerability indicators in the COVID-19 pandemic. This systematic review was conducted in February 2021. The indicators were categorized in seven main categories, including; Household, community composition; Race, minority status and language; Socioeconomic status; Community health status; Public health infra-structures; Education; Information, technology and communication. Regions with higher social vulnerability experienced greater mortality rates during the COVID-19 pandemic. Additional research is needed to measure the social vulnerability index in pandemics to prioritize distribution of scarce resources and ensure effectiveness and equity for all regions of countries.” [LINK](#)

**Value in Health: [A Systematic Review of Economic Evaluations of COVID-19 Interventions: Considerations of Non-health Impacts and Distributional Issues](#)** (April 6, 2022)

“This study aims to conduct a systematic review of economic evaluations of COVID-19 interventions and to examine whether and how these studies incorporate non-health impacts and distributional concerns. Our review highlights the lack of consideration of non-health and distributional impacts among COVID-19–related economic evaluations. Accounting for non-health impacts and distributional effects is essential for comprehensive assessment of interventions’ value and imperative for generating cost-effectiveness evidence for both current and future pandemics.” [LINK](#)

**Scientific Reports: [The determinants of COVID-19 morbidity and mortality across countries](#)** (April 7, 2022)

“We identify 21 predetermined country-level factors that explain marked variations in weekly COVID-19 morbidity and mortality across 91 countries between January and the end of 2020. Besides factors commonly associated with infectious diseases (e.g., population and tourism activities), we discover a list of country characteristics that shape COVID-19 outcomes. Among demographic–geographic factors, the male-to-female ratio, population density, and urbanization aggravate the severity of COVID-19, while education, temperature, and religious diversity mitigate the impact of the pandemic on morbidity and mortality. For the political-legal dimension, democracy and political corruption are aggravating factors. In contrast, female leadership, the strength of legal systems, and public trust in government significantly reduce infections and deaths. In terms of socio-economic aspects, GDP per capita, income inequality, and happiness (i.e., life satisfaction) lead to worse COVID-19 outcomes. Interestingly, technology advancement increases morbidity but reduces mortality. For healthcare factors, SARS (severe acute respiratory syndrome) experience and healthcare infrastructure help countries perform better in combating the pandemic.”

[LINK](#)

**The American Surgeon: [Trends of Cancer Screenings, Diagnoses, and Mortalities During the COVID-19 Pandemic: Implications and Future Recommendations](#)** (April 14, 2022)

“The impact of the COVID-19 pandemic on cancer screenings and care has yet to be determined. This study aims to investigate the screening, diagnosis, and mortality rates of the top five leading causes of cancer mortality in the United States from 2019 to 2021 to determine the potential impact of the COVID-19 pandemic on cancer care. There was a decrease in the screening rates for breast and colorectal cancer, along with an increase in the estimated incidence and mortality rate among the five leading causes of cancer deaths from 2019 to 2021. The findings suggest that the COVID-19 pandemic is associated with impaired cancer screening, diagnosis, and care, and further emphasizes the need for proactive screening and follow-up to prevent subsequent cancer morbidity and mortality.” [LINK](#)

**See also:**

- Surgical Endoscopy: [The impact of delaying colonoscopies during the COVID-19 pandemic on colorectal cancer detection and prevention](#) (April 15, 2022)

**BioMed Central Public Health: [Barriers to and strategies to address COVID-19 testing hesitancy: a rapid scoping review](#)** (April 14, 2022)

“Testing is a foundational component of any COVID-19 management strategy; however, emerging evidence suggests that barriers and hesitancy to COVID-19 testing may affect uptake or participation and often these are multiple and intersecting factors that may vary across population groups. To this end, Health Canada’s COVID-19 Testing and Screening Expert Advisory Panel commissioned this rapid review in January 2021 to explore the available evidence in this area. The aim of this rapid review was to identify barriers to COVID-19 testing and strategies used to mitigate these barriers. The most cited barriers were cost of testing; low health literacy; low trust in the healthcare system; availability and accessibility of testing sites; and stigma and consequences of testing positive. Strategies to mitigate barriers to COVID-19 testing included: free testing; promoting awareness of importance to testing; presenting various testing options and types of testing centres (i.e., drive-thru, walk-up, home testing); providing transportation to testing centres; and offering support for self-isolation (e.g., salary support or housing). Further research to test the efficacy of these strategies is needed to better support testing for COVID-19 by addressing testing hesitancy as part of the broader COVID-19 public health response.” [LINK](#)

**British Medical Journal Open: [Lessons learned from the COVID-19 pandemic about sample access for research in the UK](#)** (April 15, 2022)

“Annotated clinical samples taken from patients are a foundation of translational medical research and give mechanistic insight into drug trials. Prior research by the Tissue Directory and Coordination Centre (TDCC) indicated that researchers, particularly those in industry, face many barriers in accessing patient samples. The arrival of the COVID-19 pandemic to the UK produced an immediate and extreme shockwave, which impacted on the ability to undertake all crucial translational research. As a national coordination centre, the TDCC is tasked with improving efficiency in the biobanking sector. Thus, we took responsibility to identify and coordinate UK tissue sample collection organisations (biobanks) able to collect COVID-19-related samples for researchers between March and September 2020. The response to a pandemic demands high level co-ordinated research responses to reduce mortality. Our study highlights the lack of efficiency and coordination between human sample collections and clinical trials across the UK. UK sample access is not working for researchers, clinicians or patients. A radical change is required in the strategy for sample collection and distribution to maximise this valuable resource of human-donated samples.” [LINK](#)

**Pan American Journal of Public Health: [Scientific publication speed and retractions of COVID-19 pandemic original articles](#)** (April 13, 2022)

“The objective was to describe the editorial processing time of published COVID-19 research articles and compare this with a similar topic, human influenza, and analyze the number of publications, withdrawals, and retractions.

This was a descriptive-analytical study using PubMed on research articles with the MeSH terms human influenza and COVID-19. Time to acceptance (from submission to acceptance) and time to publication (from acceptance to publication) were compared. Retractions and withdrawals were reviewed both qualitatively and quantitatively. The conundrum between fast publishing and adequate standards is shown in this analysis of COVID-19 research articles. The speed of acceptance for COVID-19 manuscripts was 11.5 times faster than for human influenza. The high number of acceptances within a day or week of submission and the number of retractions and withdrawals of COVID-19 papers might be a warning sign about the possible lack of a quality control process in scientific publishing and the peer review process.” [LINK](#)

## HEALTH SYSTEM ADMINISTRATION

**The Lancet:** [A roadmap of recovery for the COVID generation](#) (April 01, 2022)

“The pandemic has had wide-ranging and long-lasting effects on young people, but children's developmental plasticity and resilience give us room for optimism. As the world moves into the next phase of pandemic recovery and living with COVID-19, we must grasp this opportunity to support every child to catch up and thrive” [LINK](#)

**National Public Radio:** [Despite effective treatments, HIV drags on. Experts warn COVID may face the same fate](#) (April 19, 2022)

“When federal officials say “we have the tools” Brooks-Wiggins says, they’re missing the point. “There’s a human aspect to it that they’re discounting – people have emotional habits that they don’t break, and that’s how the virus thrives,” she says. As with HIV, the COVID-19 situation is still precarious even though effective treatments are available.” [LINK](#)

**See also:**

- Medical Journal of Australia: [COVID-19: preparing for the next viral variant](#) (April 04, 2022)

**Medical Journal of Australia:** [The COVID Positive Pathway: a collaboration between public health agencies, primary care, and metropolitan hospitals in Melbourne](#) (April 04, 2022)

“The COVID Positive Pathway is a feasible multidisciplinary, tiered model of care for people with COVID-19. About 80% of participants could be adequately supported by primary care and community organisations, allowing hospital services to be reserved for people with more severe illness or with risk factors for disease progression. The principles of this model could be applied to other health conditions if regulatory and funding barriers to information-sharing and care delivery by health care providers can be overcome.” [LINK](#)

**Nature Scientific Data:** [A dataset of non-pharmaceutical interventions on SARS-CoV-2 in Europe](#) (April 01, 2022)

“This paper describes a new dataset designed for the accurate recording of NPIs in Europe’s second wave to allow precise modelling of NPI effectiveness. The dataset includes interventions from 114 regions in 7 European countries during the period from the 1st August 2020 to the 9th January 2021. The paper includes NPI definitions tailored to the second wave following an exploratory data collection. Each entry has been extensively validated by semi-independent double entry, comparison with existing datasets, and, when necessary, discussion with local epidemiologists. The dataset has considerable potential for use in disentangling the effectiveness of NPIs and comparing the impact of interventions across different phases of the pandemic.” [LINK](#)



**New Scientist:** [Is covid-19 causing a global surge of diabetes cases?](#) (April 19, 2022)

"COVID-19 is notorious for sometimes leaving an aftermath of puzzling symptoms, such as fatigue or concentration difficulties. But doctors are also worried about the coronavirus triggering a more familiar condition: diabetes. In countries that are dropping coronavirus precautions, it seems likely that nearly everyone will get infected at some point. So what do we know so far about the link between the virus and diabetes – and how will health services cope?" [LINK](#)

**See also:**

- Nature: [Diabetes risk rises after COVID, massive study finds](#) (March 31, 2022)

**Medical Journal of Australia:** [The Virtual Inpatient Diabetes Management Service: COVID-19 brings the future to inpatient diabetes management](#) (April 04, 2022)

"We have developed a virtual inpatient diabetes management service (vIDMS) as a means for a small diabetes team to manage COVID-19 inpatients with diabetes. The success of this model has revolved around an electronic medical record, electronic inpatient prescribing, a diabetes dashboard, and videoconferencing communications." [LINK](#)

**The British Medical Journal:** [The delivery plan for tackling the covid-19 backlog of elective care falls short](#) (April 20, 2022)

"By any measure, the extent of the backlog is a serious failure. Patients are suffering physically and emotionally, which contributes to poorer health. Confidence and trust in the system are weakened, and the economic consequences are huge for individuals and society. How we respond to the backlog is therefore crucial. Getting it right will provide a "resilience dividend" of improved future care in both good times and bad times" [LINK](#)

**Nature Medicine:** [Studying severe long COVID to understand post-infectious disorders beyond COVID-19](#) (April 5, 2022)

"In authors cohort of patients with severe long COVID, we will investigate B cell and T cell responses to SARS-CoV-2 and will assess somatic hypermutation and clonal evolution relative to the patterns seen in people who recovered from COVID-19 without persistent signs and symptoms. This will serve as an indirect test of ongoing antigen exposure in patients with severe long COVID. Also, by assessing functional states of SARS-CoV-2-specific T cells, the authors will determine if patients with long COVID exhibit evidence of functional impairment that could explain viral persistence. The authors believe that their genetic and immunological studies of patients with severe long COVID hold potential for better understanding of this complex condition, and by focusing on severe cases that develop after mild COVID-19 and maximize chances of success. The results would probably be applicable beyond COVID-19 and will hopefully provide important insights of relevance into other post-infectious disorders such as myalgic encephalomyelitis." [LINK](#)

## INFECTION PREVENTION AND CONTROL

**CBC News:** [Scientists, doctors try to fill gaps in COVID-19 risk information amid decrease in reliable data](#) (April 19, 2022)

"Right now, COVID-19 Resources Canada, which receives funding from the Public Health Agency of Canada, is trying to develop a metric that translates "science speak" into risk information "that is clear and compelling" for the general public, Moriarty said.

Moriarty and her colleagues are designing a tool that would take all of the available information — including wastewater data, which is proving to be helpful in measuring true levels of infection in a community, as well as

hospitalizations, COVID deaths, the test positivity rate and estimated daily cases — and calculate the risk level in every province and territory.” [LINK](#)

**Time:** [The Key Policy We Need to End the COVID-19 Pandemic Is Being Ignored](#) (April 01, 2022)

“To fully capture its powerful life-saving potential with the urgency required, significant enhancements to this program must be made and barriers removed. There are daunting but surmountable manufacturing, logistical, regulatory and financing challenges. But there is precedent for overcoming these in the prior federal vaccine and at-home rapid testing programs. We can’t wait months to make these life saving medicines available to vulnerable Americans. Here’s a six-point roadmap of how we can achieve this now.” [LINK](#)

**New Scientist:** [Zero-covid strategies are being ditched, but they were the best option](#) (March 30, 2022)

“If the target of zero covid is now being ditched, does that mean it was a failure? A crude answer would be: only if you think saving lives and preserving economic growth constitutes a misstep. Let’s go further. Consider what would have happened if, in early 2020, every country able to had adopted a zero-covid policy. It is incontestable that the global death count would be far lower, fewer people would have long covid and the economic damage would have been reduced. The virus would still be spreading, but slowly, and rising rates of vaccination would control it further. Crucially, omicron probably wouldn’t have had the chance to evolve.” [LINK](#)

**Inside Medicine:** [Six crucial lessons from Omicron](#) (March 01, 2022)

“Think how far we have come. At first, in 2020, we had to wait until people were sick enough to require hospitalization to know when Covid-19 had taken hold locally. By 2021, we were better, identifying individual cases in the community via extensive testing. But that wasn’t enough; slow results and unequal access meant unacceptable lags and missed cases. In 2022 and beyond, we can and must rely on wastewater testing to detect coronavirus outbreaks early. We should not wait for individual cases to spike to respond to outbreaks. The sooner we act, the less we must do, for less time.” [LINK](#)

**The Conversation:** [‘Living with COVID-19’ must be more than an empty phrase: Individuals need tools to manage BA.2 and future waves](#) (April 20, 2022)

“The answer would be a useful indicator for the public to make COVID-19 protection choices. This is not about living with a zero-COVID policy. It is about empowering the public with up-to-date information and providing the right tools to weather a COVID-19 storm. Individuals cannot protect themselves on their own, nor should they have to” [LINK](#)

**The Guardian:** [People have false sense of security about Covid risks among friends – study](#) (April 07, 2022)

“Limiting interactions to close friends and family members is a common protective measure to reduce Covid-19 transmission risk, but the study findings demonstrate that this practice also unintentionally creates other issues, in that people tend to perceive reduced health risks and engage in potentially hazardous health behaviours,” the authors report.” [LINK](#)

**CHEO:** [COVID-19 household transmission is high, with children being a significant source of spread: study](#) (April 12, 2022)

“Our study was conducted when we were dealing with a less transmissible virus and pandemic restrictions were strongly in place, and we still had a 50% transmission rate within households. Flash forward to where we are today with an extremely transmissible variant of COVID-19 and the majority of pandemic restrictions lifted; it’s safe to say transmission rates will be higher even though we have a high vaccination rate amongst those who are eligible,”



said Dr. Maala Bhatt, pediatric emergency physician and Director of Emergency Medicine Research at CHEO and an Investigator at the CHEO Research Institute.” [LINK](#)

**See also:**

- Canadian Medical Association Journal: [Household transmission of SARS-CoV-2 from unvaccinated asymptomatic and symptomatic household members with confirmed SARS-CoV-2 infection: an antibody-surveillance study \(April 12, 2022\)](#)

**The Lancet:** [Risk of SARS-CoV-2 reinfection and COVID-19 hospitalisation in individuals with natural and hybrid immunity: a retrospective, total population cohort study in Sweden](#) (March 31, 2022)

“The risk of SARS-CoV-2 reinfection and COVID-19 hospitalisation in individuals who have survived and recovered from a previous infection remained low for up to 20 months. Vaccination seemed to further decrease the risk of both outcomes for up to 9 months, although the differences in absolute numbers, especially in hospitalisations, were small. These findings suggest that if passports are used for societal restrictions, they should acknowledge either a previous infection or vaccination as proof of immunity, as opposed to vaccination only” [LINK](#)

**See also:**

- The Lancet -Infectious Disease: [Interplay of infection and vaccination in long-term protection from COVID-19](#) (March 31, 2022)

**Nature:** [An olfactory self-test effectively screens for COVID-19](#) (April 05, 2022)

“We built an online tool (smelltracker.org) that enables assessment of the sense of smell using commonly available household odorants. Initial use by 13,484 participants (462 COVID-19 positive) from 134 countries corroborated that SARS-CoV-2 infection is associated with impaired smell. Moreover, the tool detected infection in the absence of any other symptoms, including subjective loss in smell. Use of this tool may provide an added instrument for screening SARS-CoV-2 infection, and the data generated by the tool may provide for deeper understanding of the brain mechanisms involved with loss of smell associated with COVID-19.” [LINK](#)

**Inside Medicine:** [Are large indoor events safe? It’s impossible to know, making “personal choice” a false one](#) (April 10, 2022)

“Nevertheless, large events are happening. But until everyone of all ages and risks has adequate protection, I don’t think we can responsibly just leave this to everyone’s perceived personal risk tolerance. How can we expect people to behave in ways that reflect their risk thresholds when they don’t have a prayer at accurately staking what the risks are?” [LINK](#)

## TREATMENT

**The New England Journal of Medicine:** [Intramuscular AZD7442 \(Tixagevimab–Cilgavimab\) for Prevention of Covid-19](#) (April 20, 2022)

“A single dose of AZD7442 had efficacy for the prevention of Covid-19, without evident safety concerns. Clinical and pharmacokinetic assessments from this trial are expected to continue for at least 12 months, with studies under way to evaluate the effectiveness of AZD7442 in immunocompromised persons who receive this agent as immunoprophylaxis under emergency use authorization. The results of this trial support the use of a single dose of AZD7442 (two consecutive intramuscular injections) for the prevention of symptomatic and severe Covid-19.” [LINK](#)

**See also:**

- CBC: [Health Canada approves AstraZeneca COVID-19 prevention drug for immunocompromised patients](#) (April 14, 2022)

**Fortune:** [An experimental COVID drug was so successful that they're shutting down trials early](#) (April 12, 2022)

"A double-blind study that ended last week showed that sabizabulin, a new oral medication from pharmaceutical company Veru has the potential to cut the virus's mortality rate in half for moderate and severe cases. It was so successful, in fact, that researchers stopped the trial early. While the study was originally meant to involve around 210 patients hospitalized with COVID, an early analysis of the first 150 patients showed such overwhelming success that the study's independent data monitoring committee recommended halting it. The group of people who took the placebo pill had a 45% mortality rate, while the sabizabulin-treated group had a mortality rate of just 20%."

[LINK](#).

**See also:**

- Veru Pharma: [Deaths by 55% in Hospitalized Patients in Interim Analysis of Phase 3 Study; Independent Data Monitoring Committee Halts Study Early for Overwhelming Efficacy](#) (April 11, 2022)

**JAMA Cardiology:** [SARS-CoV-2 Vaccination and Myocarditis in a Nordic Cohort Study of 23 Million Residents](#) (April 20, 2022)

"In a cohort study of 23.1 million residents across 4 Nordic countries, risk of myocarditis after the first and second doses of SARS-CoV-2 mRNA vaccines was highest in young males aged 16 to 24 years after the second dose. For young males receiving 2 doses of the same vaccine, data were compatible with between 4 and 7 excess events in 28 days per 100 000 vaccinees after second-dose BNT162b2, and between 9 and 28 per 100 000 vaccinees after second-dose mRNA-1273. The risk of myocarditis in this large cohort study was highest in young males after the second SARS-CoV-2 vaccine dose, and this risk should be balanced against the benefits of protecting against severe COVID-19 disease." [LINK](#)

**JAMA:** [Association of COVID-19 Vaccination in Pregnancy With Adverse Peripartum Outcomes](#) (March 24, 2022)

"In this population-based retrospective cohort study of 97 590 individuals in Ontario, Canada, COVID-19 vaccination during pregnancy, compared with vaccination after pregnancy and with no vaccination, was not significantly associated with increased risk of postpartum hemorrhage, chorioamnionitis, cesarean delivery, admission to neonatal intensive care unit, or low newborn 5-minute Apgar score." [LINK](#)

**JAMA Network Open:** [Rates of COVID-19 Among Unvaccinated Adults With Prior COVID-19](#) (April 20, 2022)

"Among 121 615 patients with more than 10 million days of follow-up, unvaccinated individuals with prior symptomatic COVID-19 had 85% lower risk of acquiring COVID-19 than unvaccinated individuals without prior COVID-19. mRNA vaccines are associated with similar prolonged protection from severe COVID-19 as found in our study, although vaccine-associated protection from mild COVID-19 has been shown to wane at 6 months." [LINK](#)

**The Guardian:** [Heart inflammation after Covid vaccine 'no more common than after other jabs'](#) (April 11, 2022)

"Now research suggests that myopericarditis – an umbrella term that encompasses myocarditis and pericarditis – is not only uncommon after Covid jabs, but the risk of developing it is no greater than that posed by other types of inoculations, such as flu vaccinations. Researchers in Singapore describe how they carried out an analysis of 22 previously published studies, covering more than 405m vaccine doses around the world, that looked at the occurrence of myopericarditis after vaccination. The results reveal the incidence of myopericarditis is low after a Covid jab, with a mean incidence of about 18 cases per million doses. This is similar to incidence after a flu vaccine and after other types of vaccination." [LINK](#)

## See also:

- The Lancet: [Myopericarditis following COVID-19 vaccination and non-COVID-19 vaccination: a systematic review and meta-analysis](#) (April 11, 2022)

## MENTAL HEALTH & WELLNESS

### Personality and Individual Differences: [Creativity is associated with higher well-being and more positive COVID-19 experience](#) (April 16, 2022)

“We investigated whether creativity is associated with higher well-being and more positive COVID-19 experience. Participants (N = 252) filled out a creativity measure during the COVID-19 pandemic, they rated their positive affect and stress experience in the last month, their satisfaction with life, and indicated the extent to which they perceived COVID-19 as a positive experience. More creative individuals were more satisfied with their lives after controlling for perceived stress and personality. Results of a serial mediation showed that creativity fostered more positive emotions, which lowered perceived stress, which then led to a more positive COVID-19 experience. Findings add to the literature showing the beneficial effects of creativity on well-being, and point to the utility of introducing interventions that would promote creative thinking to improve quality of life and resilience to life adversities.” [LINK](#)

### Scientific Reports: [Pet ownership and psychological well-being during the COVID-19 pandemic](#) (April 12, 2022)

“The question of pet ownership contributing to human well-being has received mixed empirical evidence. This contrasts with the lay intuition that pet ownership contributes positively to wellness. In a large representative sample, we investigate the differences that may exist between pet vs. non-pet owners in terms of their well-being during the COVID-19 pandemic, and examine among different sociodemographic strata, for whom pet ownership can be more vs. less beneficial. A cross-sectional questionnaire survey was conducted among Canadian adults (1220 pet owners, 1204 non-pet owners). Pet owners reported lower well-being than non-pet owners on a majority of well-being indicators; this general pet ownership effect held when accounting for pet species (dogs, cats, other species) and number of pets owned. Compared to owners of other pets, dog owners reported higher well-being. When examining the effect of pet ownership within different socioeconomic strata, being a pet owner was associated with lower well-being among: women; people who have 2 + children living at home; people who are unemployed. Our results offer a counterpoint to popular beliefs emphasising the benefits of pets to human wellness during the COVID-19 pandemic and confirm the importance of accounting for sociodemographic factors to further understand the experience of pet ownership.” [LINK](#)

### Social Science & Medicine – Mental Health: [Acute relationships between mental health and cognitive function during the COVID-19 pandemic: Longitudinal evidence from middle-aged and older US adults](#) (April 8, 2022)

“The acute impacts of COVID-19-related mental health concerns on cognitive function among middle-aged and older adults are unknown. We investigated whether between-person (BP) differences and within-person (WP) changes in loneliness, anxiety, and worry about COVID-19 were related to cognitive function and abilities in a longitudinal cohort of middle-aged and older United States (US) adults over a nine-month period during the COVID-19 pandemic. Elevated loneliness, anxiety symptoms, and worry about COVID-19, both relative to other adults and to one's usual levels, were acutely associated with worse perceived cognitive function and abilities over a nine-month period during the COVID-19 pandemic in the United States. The long-term impacts of mental health symptoms experienced during the pandemic for population cognitive health should be explored.” [LINK](#)

**Brain and Behavior:** [The COVID-19 pandemic impact on wellbeing and mental health in people with psychotic and bipolar disorders](#) (April 6, 2022)

“The COVID-19 pandemic affects people globally, but it may affect people with psychotic and bipolar disorders disproportionately. Our aims were to investigate the pandemic impact on perceived wellbeing and mental health in this population, including which pandemic-related factors have had an impact. Many participants experienced deteriorated wellbeing and mental health after the pandemic outbreak, especially in life satisfaction, meaning in life, positive feelings, depression, anxiety, and self-harm/suicidal ideation. During a pandemic, it is particularly important that mental health services strive to offer the best possible treatment under the current conditions and target loneliness, coping strategies, pandemic worry, insomnia, and increased alcohol use to uphold wellbeing and reduce mental health difficulties. For some, teletherapy is an agreeable substitute for traditional therapy.” [LINK](#)

**Annals of General Psychiatry:** [Personality disorders \(PD\) and interpersonal violence \(IV\) during COVID-19 pandemic: a systematic review](#) (April 9, 2022)

“Not only did the ongoing CoronaVirus Disease-19 (COVID-19) pandemic cause a massive number of casualties, but also there is growing concern that the burden of its psychological aftermaths will only show up years down the road. This systematic review summarises the existing literature reporting the impact of COVID-19 on personality disorders (PDs)-related violence. The majority reported a worse Mental Health Outcome (MHO) during the pandemic as related to dysfunctional personality and positive personality traits predicting a better outcome. Furthermore, increased levels of interpersonal violence (IV) and self-directed violence were reported. Further research should be conducted on the reciprocal interaction of PDs and IV during the time of pandemic. Nevertheless, the dramatic impact of restrictive measures on PDs has still to be appropriately addressed.” [LINK](#)

**Statistics Canada:** [Changes in chronic disease risk factors and current exercise habits among Canadian adults living with and without a child during the COVID-19 pandemic](#) (April 20, 2022)

“Canadians have been gravely impacted by the COVID-19 pandemic, and adults living with children may have been disproportionately impacted. The objective of this study was to describe changes in chronic disease risk factors and current exercise habits among adults living with and without a child younger than 18 years old. The presence of a child in the household was associated with higher odds of increased (compared with decreased or no change) alcohol consumption at all three time points, consumption of junk food and sweets at CPSS1 (OR: 1.69, 95% CI: 1.09-2.60), and time on the Internet at CPSS1 (OR: 1.59, 95% CI: 1.05-2.41) and CPSS4 (OR: 1.56, 95% CI: 1.05-2.29). Compared with older adults (aged 55 and older), younger adults (aged 25 to 54) were more likely to exhibit increases in chronic disease risk factors regardless of the presence of a child in the household. A substantial proportion of Canadian adults reported increased chronic disease risk factors during the pandemic, with greater increases noted among adults living with a child, compared with those living without a child. Public health interventions are urgently needed to mitigate the long-term impact of the pandemic on population health.” [LINK](#)

**Journal of Eating Disorders:** [Changes of symptoms of eating disorders \(ED\) and their related psychological health issues during the COVID-19 pandemic: a systematic review and meta-analysis](#) (April 13, 2022)

“The COVID-19 pandemic and the consequent lockdowns have significantly impacted people's mental health and mental status worldwide. Remarkably, people with pre-existing illnesses (e.g., eating disorders) were affected by the COVID-19-related restrictions. Thus, gathering information and data would significantly help researchers and physicians provide better future therapy and support for people with ED. Moreover, the use of online surveys to evaluate the mental status of people with ED has grown hugely in the era of the COVID-19 pandemic, which could be used as a promising way of communicating with these people in the future. Considering the growing number of studies that reported the status of individuals with ED in the COVID-19 era, we aimed to conduct a comprehensive

review to summarize the current literature. Our findings show that, of all individuals participating in the surveys, 59.65% of them experienced exacerbations in their ED symptoms and 9.37% experienced improved ED symptoms. Altogether, this emphasizes the challenges to maintaining well-being in individuals with ED during the pandemic.” [LINK](#)

**International Journal of Environmental Research and Public Health: [A Cross-Sectional Study Investigating Canadian and Australian Adolescents’ Perceived Experiences of COVID-19: Gender Differences and Mental Health Implications](#) (April 6, 2022)**

“The coronavirus (COVID-19) disease pandemic has been associated with adverse psychological outcomes. This cross-cultural study (N = 1326, 71% female) aimed to investigate Canadian and Australian adolescents’ subjective experiences of COVID-19, gender differences, and psychological implications. Mixed-methods analyses were used to examine differences in COVID-19 experiences and mental health outcomes between country and gender in a Canadian (N = 913, 78% female) and an Australian sample (N = 413, 57% female) of adolescents. Canadian adolescents reported increased COVID-19 discussions and more concerns related to their COVID-19 experiences compared to Australian adolescents. Girls consistently reported more concerns related to COVID-19 and poorer psychological outcomes compared to boys. School lockdown for the Canadian sample may have played a role in these country differences. Further, girls might be at significantly more risk for mental health concerns during COVID-19, which should be considered in adolescent mental health initiatives during the pandemic. Although school disruption and separation of peers due to the pandemic likely have a role in adolescent perceived stressors and mental health, the differences between Canadian and Australian adolescents were less clear and future investigations comparing more objective pre-COVID-19 data to current data are needed” [LINK](#)

**BioMed Central Pediatrics: [An examination of bedtime media and excessive screen time by Canadian preschoolers during the COVID-19 pandemic](#) (April 18, 2022)**

“Risky media use in terms of accumulating too much time in front of screens and usage before bedtime in early childhood is linked to developmental delays, reduced sleep quality, and unhealthy media use in later childhood and adulthood. For this reason, we examine patterns of media use in pre-school children and the extent to which child and family characteristics contribute to media use during the COVID-19 pandemic. Our results indicate that 64% of preschoolers used more than 2 h of digital media hours/day on average during the pandemic. A majority (56%) of children were also exposed to media within the hour before bedtime. Logistic and multinomial regressions revealed that child age and temperament, restrictive parental mediation, as well as parent digital media use, education, satisfaction with the division of childcare, remote work, and number of siblings and family income were all correlates of risky digital media use by preschoolers. Our results suggest widespread risky media use by preschoolers during the pandemic. Parenting practices that include using more restrictive mediation strategies may foster benefits in regulating young children’s screen time.” [LINK](#)

**The Journal of Child Psychology and Psychiatry: [Editorial Perspective: COVID-19-related publications on young people’s mental health – what have been the key trends so far and what should come next?](#) (April 19, 2022)**

“In this Editorial Perspective, we take a systematic look at the overall nature of the Covid-19 related research on mental health in children and young people, to gain insight into the major trends in this area of research and inform future lines of investigation, clinical practices, and policies. By means of state-of-the-art scientometric approaches, we identified 3,692 relevant research outputs, mainly clustering around the following themes: (a) mental health consequences of the Covid-19 pandemic in children and young people; (b) impact of the pandemic on pre-existing psychiatric disorders; (c) family outcomes (i.e., family violence and parental mental health); and (d) link between physical and mental conditions. Only 23% of the retrieved publications reported new data, the remaining ones being reviews, editorials, opinion papers, and other nonempirical reports. The majority of the empirical studies used a cross-sectional design. We suggest that future research efforts should prioritise: (a)

longitudinal follow-up of existing cohorts; (b) quasi-experimental studies to gain insight into causal mechanisms underlying pandemic-related psychopathology in children and young people; (c) pragmatic randomised controlled trials (RCTs) to test evidence-based intervention strategies; and (d) evidence-based guidelines for clinicians and policymakers.” [LINK](#)

**Child and Youth Services:** [The impact of COVID-19 on Canadian child maltreatment workers](#) (April 6, 2022)

“As cases of child maltreatment become an increasing concern during the COVID-19 pandemic, the perspectives of those charged with protecting and supporting children and families is an important area of inquiry. We sought to examine the experiences of child maltreatment workers during the first wave of the pandemic (i.e., May-July 2020). We specifically aimed to examine child maltreatment experiences related to the following: (1) their work practices during the pandemic, (2) their perceived safety during the pandemic, and (3) their perceptions on the safety of the children and families with whom they work. A total of 106 child maltreatment investigators and forensic interviewers provided responses to a national survey disseminated across Canada. Overall, our findings highlight both how child maltreatment investigators have adapted to preventative measures and the continuing areas of weakness where further supports are required.” [LINK](#)

**Brain, Cognition and Mental Health:** [The effect of the COVID-19 pandemic on health care workers' anxiety levels: a meta-analysis](#) (April 11, 2022)

“The COVID-19 pandemic has been declared a public health emergency of international concern, causing excessive anxiety among health care workers. Additionally, publication bias and low-quality publications have become widespread, which can result in the dissemination of unreliable information. A meta-analysis was performed for this study with the following two aims: (1) to examine the prevalence of anxiety among health care workers and determine whether it has increased owing to the COVID-19 pandemic and (2) to investigate whether there has been an increase in publication bias. Determining whether the anxiety state of health care workers is altered by the COVID-19 pandemic is currently difficult. However, there is evidence that their anxiety levels may always be high, which suggests that more attention should be paid to their mental health. Furthermore, we found a substantial publication bias; however, the quality of the studies was relatively stable and reliable.” [LINK](#)

**The Atlantic:** [The Final Pandemic Betrayal](#) (April 13, 2022)

“Millions of people are still mourning loved ones lost to COVID, their grief intensified, prolonged, and even denied by the politics of the pandemic. Lucy esparza-casarez thinks she caught the coronavirus while working the polls during California’s 2020 primary election, before bringing it home to her husband, David, her sister-in-law Yolanda, and her mother-in-law, Balvina. Though Lucy herself developed what she calls “the worst flu times 100,” David fared worse. Lucy took him to the hospital on March 20, the last time she saw him in the flesh. He died on April 3, nine days before their wedding anniversary, at the age of 69. Lucy said goodbye over Skype. During that time, Yolanda fell ill too; after two months in the hospital, she died on June 1. Balvina, meanwhile, recovered from her bout with COVID-19, but, distraught after losing two children in as many months, she died on June 16. Lucy found herself alone in her home for the first time in 23 years. Because the hospital never returned David’s belongings, she didn’t even have his wedding ring.” [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 March and April, 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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