

*The Newfoundland & Labrador Centre for Applied Health Research (NLCAHR) sends this COVID-19 e-bulletin to our health system stakeholders on a bi-weekly basis. This e-bulletin includes results from recent searches of health evidence and grey literature on the pandemic under specific subject headings, highlighting those findings considered to be of particular relevance to you.*

*We welcome your [feedback and suggestions](#).*

*To subscribe to this e-bulletin, please email: [Rochelle.Baker@med.mun.ca](mailto:Rochelle.Baker@med.mun.ca)*

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

## CLINICAL PRESENTATION & BIOLOGY

### **CBC: [How does Omicron spread so fast? Virus may now be multiplying 70 times quicker in airways](#)**

(December 16, 2021)

"The researchers found that, just 24 hours after infection, Omicron multiplies 70 times faster than either the Delta variant or the original SARS-CoV-2 virus within tissue samples of human bronchi — the two large tubes that carry air from your windpipe to your lungs." [LINK](#)

- Original research: Hong Kong University. [HKUMed finds Omicron SARS-CoV-2 can infect faster and better than Delta in human bronchus but with less severe infection in lung](#). December 15, 2021
- See also: Eurosurveillance. [Outbreak caused by the SARS-CoV-2 Omicron variant in Norway, November to December 2021](#). December 15, 2021.

### **Nature: [How severe are Omicron infections?](#)** (December 17, 2021)

"So far, the data are scarce and incomplete. 'There is inevitably a lag between infection and hospitalization... In the meantime, policy decisions have to be made and that's not straightforward.'" [LINK](#)

See also:

- Bloomberg. [WHO Warns Against Underestimating the Omicron Threat](#) December 14, 2021
- CNBC. [Omicron symptoms could seem like a cold — but don't underestimate this variant, experts warn](#). December 16, 2021.
- Reuters. [Fact Check-Omicron is not the common cold 'rebranded'](#). December 10, 2021.
- Reuters. [Omicron more likely to reinfect than Delta, no milder -study](#). December 17, 2021.
- Reuters. [Omicron variant may have picked up a piece of common-cold virus](#). December 4, 2021.

### **CBC: [Data analysis indicates Omicron is milder, better at evading vaccines](#)** (December 15, 2021)

"The Omicron variant appears to cause less severe disease than previous versions of the coronavirus, and the Pfizer vaccine seems to offer less defense against infection from it but still good protection from hospitalization, according to an analysis of data from South Africa... A two-dose Pfizer-BioNTech vaccination appeared to provide just 33 per cent protection against infection during South Africa's current Omicron wave, but 70 per cent protection against hospitalization..." [LINK](#)

See also:

- [Eric Topol. Omicron is getting more defined.](#) December 13, 2021.
- Forbes. [How Omicron Evades Natural Immunity, Vaccination, And Monoclonal Antibody Treatments.](#) December 17, 2021.
- Imperial College. [Omicron largely evades immunity from past infection or two vaccine doses.](#) December 17, 2021.
- medRxiv. [Plasma neutralization properties of the SARS-CoV-2 Omicron variant.](#) December 13, 2021.
- medRxiv. [SARS-CoV-2 B.1.1.529 variant \(Omicron\) evades neutralization by sera from vaccinated and convalescent individuals.](#) December 13, 2021.
- medRxiv. [Improved neutralization of the SARS-CoV-2 Omicron variant after Pfizer-BioNTech BNT162b2 COVID-19 vaccine boosting \(and supplementary material\).](#) December 13, 2021.
- News Medical. [Evaluation of SARS-CoV-2 Omicron's immune evasion potential.](#) December 15, 2021
- NPR. [Omicron evades Moderna vaccine too, study suggests, but boosters help.](#) December 15, 2021
- Scroll.in. [Initial evidence suggests Omicron reduces vaccine efficacy, spreads faster than Delta, says WHO.](#) December 16, 2021.
- Zeynep Tufekçi. [Still Not Sure Edition: Open Thread 12/19.](#) December 19, 2021

**Nature:** [COVID reinfections likely within one or two years, models propose](#) (October 19, 2021)

"Estimates based on viral evolution forecast a 50% risk 17 months after a first infection without measures such as masking and vaccination." [LINK](#)

**Nature:** [Beyond Omicron: what's next for COVID's viral evolution](#) (December 07, 2021)

"How SARS-CoV-2 evolves over the next several months and years will determine what the end of this global crisis looks like — whether the virus morphs into another common cold or into something more threatening such as influenza or worse. A global vaccination push that has delivered nearly 8 billion doses is shifting the evolutionary landscape, and it's not clear how the virus will meet this challenge. Meanwhile, as some countries lift restrictions to control viral spread, opportunities increase for SARS-CoV-2 to make significant evolutionary leaps... It may be that the future of SARS-CoV-2 is still in human hands. Vaccinating as many people as possible, while the jabs are still highly effective, could stop the virus from unlocking changes that drive a new wave." [LINK](#)

See also:

- Nature. [The emergence, genomic diversity and global spread of SARS-CoV-2.](#) December 8, 2021

**British Medical Journal - Emergency Medicine:** [CCEDRRN COVID-19 Infection Score \(CCIS\): development and validation in a Canadian cohort of a clinical risk score to predict SARS-CoV-2 infection in patients presenting to the emergency department with suspected COVID-19](#) (December 02, 2021)

"We derived a 10-item CCEDRRN COVID-19 Infection Score using data from 21,743 patients. This score included variables from history and physical examination and an indicator of local disease incidence. The score had a c-statistic of 0.838 with excellent calibration. We externally validated the rule in 5,295 patients... The CCEDRRN COVID-19 Infection Score uses clinical characteristics and publicly available indicators of disease incidence to quantify a patient's probability of SARS-CoV-2 infection. The score can identify patients at sufficiently high risk of SARS-CoV-2 infection to warrant isolation and empirical therapy prior to test confirmation while also identifying patients at sufficiently low risk of infection that they may not need testing... As of late September, 2021, The National University Hospital has had no clusters of COVID-19 nor any identified transmission between patients and clinical staff through the pandemic. The strategy described in identifying asymptomatic staff with COVID-19 has probably helped to maintain this zero transmission record." [LINK](#)

**Journal of the American Medical Association Internal Medicine.** [Association between Risk of COVID-19 Infection in Nonimmune Individuals and COVID-19 Immunity in Their Family Members](#) (October 11, 2021)

"In this cohort study of 1 789 728 individuals from 814 806 families in Sweden, family members without immunity had a 45% to 97% lower risk of contracting COVID-19 as the number of immune family members increased. Meaning these results suggest that COVID-19 vaccines play a key role in reducing the transmission of the virus within families, which likely has implications for herd immunity and pandemic control." [LINK](#)

**Nature: [Effects of SARS CoV-2, COVID-19, and its vaccines on male sexual health and reproduction: where do we stand?](#)** (October 27, 2021)

"Significant research has been conducted to study viral tropism, potential causes for gender susceptibility, the impact of COVID-19 on male sexual function in the acute and recovery phases, and the effects of the virus on male reproductive organs and hormones. This review provides a recent assessment of the literature regarding the impact of COVID-19 and its vaccine on male sexual health and reproduction." [LINK](#)

See also:

- CDC. [COVID-19 Vaccines for People Who Would Like to Have a Baby](#). December 6, 2021
- Popular Science. [These urologists are setting the record straight about penises and COVID](#). December 3, 2021.

**Public Library of Science ONE: [Altered smell and taste: Anosmia, parosmia and the impact of long COVID-19](#)** (September 24, 2021)

"Our findings suggest altered taste and smell with COVID-19 may lead to severe disruption to daily living that impacts on psychological well-being, physical health, relationships and sense of self. More specifically, participants reported impacts that related to reduced desire and ability to eat and prepare food; weight gain, weight loss and nutritional insufficiency; emotional wellbeing; professional practice; intimacy and social bonding; and the disruption of people's sense of reality and themselves." [LINK](#)

See also:

- HealthLine. [More Than 1 Million People \[in the US\] May Have Lost Their Sense of Smell Due to COVID-19: Here's What They Can Do](#). November 22, 2021.
- JAMA Otolaryngology – Head & Neck Surgery. [Growing Public Health Concern of COVID-19 Chronic Olfactory Dysfunction](#). November 18, 2021
- medRxiv. [Increasing incidence of parosmia and phantosmia in patients recovering from COVID-19 smell loss](#). August 31, 2021.
- The Straits Times. [300,000 Swedes have impaired sense of smell due to COVID-19: Report](#). October 25, 2021.
- Vox. [My Year of Smells](#). December 11, 2021.

**Nature Medicine: [Risks of myocarditis, pericarditis, and cardiac arrhythmias associated with COVID-19 vaccination or SARS-CoV-2 infection](#)** (December 14, 2021)

"Our findings are relevant to the public, clinicians and policy makers. First, there was an increase in the risk of myocarditis within a week of receiving the first dose of both adenovirus and mRNA vaccines, and a higher increased risk after the second dose of both mRNA vaccines. In contrast, we found no evidence of an increase in the risk of pericarditis or cardiac arrhythmias following vaccination, except in the 1–28 days following a second dose of the mRNA-1273 vaccine. Second, in the same population, there was a greater risk of myocarditis, pericarditis and cardiac arrhythmia following SARS-CoV-2 infection. Third, the increased risk of myocarditis after vaccination was higher in persons aged under 40 years. We estimated extra myocarditis events to be between 1 and 10 per million persons in the month following vaccination, which was substantially lower than the 40 extra events per million persons observed following SARS-CoV-2 infection." [LINK](#)

**The New York Times: [The Coronavirus in a Tiny Drop](#)** (December 1, 2021)

"But epidemiological [studies](#) showed that people with COVID-19 could infect others at a much greater distance. Even just talking without [masks](#) in a poorly ventilated indoor space like a bar, church or classroom was enough to spread the virus. Those findings pointed to much smaller drops, called aerosols, as important vehicles of infection. Scientists [define](#) droplets as having a diameter greater than 100 micrometers, or about 4 thousandths of an inch.

Aerosols are smaller — in some cases so small that only a single virus can fit inside them. And thanks to their minuscule size, aerosols can drift in the air for hours.” [LINK](#)

## HEALTH EQUITY AND ETHICS

**Vaccine:** [Social inequalities in COVID-19 vaccine acceptance and uptake for children and adolescents in Montreal, Canada](#) (November 8, 2021)

“The success of current and prospective COVID-19 vaccine campaigns for children and adolescents will in part depend on the willingness of parents to accept vaccination. This study examined social determinants of parental COVID-19 vaccine acceptance and uptake for children and adolescents.” [LINK](#)

**Canadian Medical Association Journal Open:** [Pediatric primary care in Ontario and Manitoba after the onset of the COVID-19 pandemic: a population-based study](#) (December 14, 2021)

“We aimed to understand the extent to which pandemic related changes in service delivery and access affected use of primary care for children and adolescents overall and by equity strata.” [LINK](#)

**CanCOVID:** [Speaker Series Event: Pediatric COVID-19: Children are not just little adults](#) (October 13, 2021)

“In response to the COVID pandemic [Dr. Freedman] has expanded his research portfolio to lead large national and international studies focused on SARS-CoV-2 infected children seeking emergency department care.” [LINK](#)

**CanCOVID:** [The Impact of Sex and Gender on COVID 19](#) (March 17, 2021)

“Among the many unknowns regarding coronavirus disease 2019 (COVID-19) is the way in which sex and gender affect the risk of acquiring the virus, illness presentation, disease management and outcomes. Sex, a biological attribute, and gender, a social construct, may both influence an individual’s susceptibility, vulnerability and exposure to infectious disease. Evidence related to COVID-19 appears to largely show increased morbidity and mortality among males, however, the prevalence of reported cases and deaths varies between men and women by country, suggesting that social, economic and cultural factors may influence both the acquisition of SARS-CoV-2 and the treatments and outcomes of COVID-19. Moving beyond sex- disaggregated results, gender dimensions must be recognized as intersecting components within the context of other variables such as disability, age, ethnicity, socioeconomic status, and/or geographic location.” [LINK](#)

**British Medical Journal:** [COVID-19: Build on success of vaccination programme in reaching ethnic minority groups, report recommends](#) (December 03, 2021)

“Interventions to increase uptake included using places of worship as vaccination centres and taking vaccines into the hearts of local communities through initiatives such as vaccination buses and taxis. There were also targeted campaigns to tackle vaccine concerns and promote uptake, linking in with key religious festivals such as Ramadan and Eid. The report says working with trusted voices such as faith leaders and prominent ethnic minority celebrities and influencers helped build trust and encourage vaccination uptake. For example, vaccine uptake among the Bangladeshi group was increased through a national awareness campaign led by Great British Bake Off winner Nadiya Hussain, among others.” [LINK](#)

**CanCOVID:** [What We Heard: Indigenous Peoples and COVID](#) (June 17, 2021)

“The impact of COVID-19 on Indigenous peoples, families, and communities has varied across Canada. Some key themes were provided in the Public Health Agency of Canada’s “What We Heard: Indigenous Peoples and COVID-19” report, which was released in February 2021 and will be discussed in our next speaker series. [Dr. Angela Mashford-Pringle](#) is an Algonquin Assistant Professor and the Associate Director of the Waakebiness-Bryce Institute for Indigenous Health, Dalla Lana School of Public Health, University of Toronto. She was also the lead on the PHAC What We Heard: Indigenous Peoples and COVID-19 report.” [LINK](#)

**CanCOVID: [CanCOVID Workshop: The Economic Impacts of COVID-19](#)** (May 7, 2021)

"A discussion on the impact of Canada's COVID-19 response strategy on employment, poverty, the financial sector, housing markets, and the longer-term impact of increased federal debt." Speakers: Guy Gellatly, PhD, Principal Researcher at Statistics Canada; Avery Shenfeld, PhD, Managing Director and Chief Economist of CIBC Capital Markets; Michael Smart, PhD, Professor of Economics at University of Toronto and co-founder of Finances of the Nation. [LINK](#)

**Journal of American Medical Association Network Open: [Assessment of a Hotel-Based Protective Housing Program for Incidence of SARS-CoV-2 Infection and Management of Chronic Illness among Persons Experiencing Homelessness](#)** (December 13, 2021)

"The primary aim of this study was to describe Chicago's hotel-based protective housing intervention and assess whether the intervention was associated with any differences in the incidence of SARS-CoV-2 infection among those participating in the intervention relative to the citywide population of sheltered PEH. Secondary aims were to assess change in high-risk health conditions during the study period, including hypertension and diabetes; describe treatment for mental health conditions and SUDs; and describe housing outcomes on departure from the intervention." [LINK](#)

See also:

- CanCOVID. [Preventing & Reducing Homelessness During COVID-19: New Systematic Reviews & Guidelines](#) (Speaker: [Dr. Kevin Pottie](#)). May 13, 2021.

**CanCOVID: [Navigating the Pandemic's Most Difficult Decisions: Science, Policy, and Ethics](#)** (September 24, 2021)

"Allocating vaccines in scarce supply; closing schools versus keeping them open; postponing surgeries to preserve hospital capacity – the COVID-19 pandemic has required that we make profoundly difficult decisions. While scientific evidence plays a necessary role in informing these decisions, it is not sufficient, owing to persistent uncertainty and the invariably value-laden nature of policy decisions." [LINK](#)

See also:

- European Molecular Biology Organization Reports. [An ongoing science-society-ethics experiment: The human challenge trial debate in COVID-19 pandemic](#). December 13, 2021.
- National Institutes of Health. [Ethics Grand Rounds: The Ethics of Vaccine Mandates](#). December 1, 2021.

**Expert Reviews of Vaccines: [Inequitable COVID-19 vaccine distribution and the intellectual property rights prolong the pandemic](#)** (December 8, 2021)

"Ending this global pandemic seems unlikely with the current patent and technology sharing systems because (i) the number of available vaccine doses is limited by the production capacity of the companies owning the patents, recipes and technology and (ii) the inequitable distribution of the limited supply of vaccines throughout the world. India and South Africa put forward a proposal at the World Trade Organization (WTO) to temporarily suspend intellectual property rights and gained the support of over two-thirds of the member countries including the USA. However, several wealthy countries still oppose this proposal, including the European Union, which procured 6.9 doses for each inhabitant, as well as the United Kingdom and Canada, which respectively procured 8.2 and 10.1 vaccines doses for each inhabitant." [LINK](#)

## HEALTH SYSTEM ADMINISTRATION

**CanCOVID Speaker Series: [Leading Through COVID: Lessons Learned to Date](#)** (October 12, 2021)

"In a world that has a natural tendency for fragmentation, the pandemic has shone a light on the resilience of our health leaders but also exposed the fault lines in Canada's health and healthcare systems. This session will provide

an opportunity to share lessons learned to date and anticipate the challenges looking beyond COVID. [LINK](#)  
Speakers: [Graham Dickson](#) and [Bill Tholl](#)"

**CanCOVID Speaker Series: [Evidence-Based Debunking: Needed and Effective](#)** (June 01, 2021)

"The spread of misinformation has been a defining characteristic of the pandemic, and it continues to do real harm. The good news is that there is a growing body of evidence that shows countering COVID misinformation can be effective. [LINK](#) Speaker: [Dr. Timothy Caulfield](#)"

See also:

- CanCOVID Speaker Series. [Managing the Infodemic for Public Health: A Call to Action for an Evidence-Based Approach](#). (Speaker: [C Czerniak](#))
- Nature. [Decision makers need constantly updated evidence synthesis](#). December 15, 2021.

**Nature: [Omicron: the global response is making it worse](#)** (December 07, 2021)

"For a short while this year, researchers were optimistic that the pandemic might end at the end of 2022. But Andrea Taylor, who leads a COVID-19 data team at the Duke Global Health Innovation Center... says that will be pushed back until 2023 or even 2024, so long as wealthy nations insist on buying up most of the available vaccine stock without agreeing to provide more manufacturing capacity, and as new variants such as Omicron continue to arise. "We are taking the least efficient pathway out of the pandemic," she laments." [LINK](#)

See also:

- Centres for Disease Control and Prevention. [Omicron Variant: What You Need to Know](#). Updated: December 15, 2021.
- The Lancet. [The political theatre of the UK's travel ban on South Africa](#). December 03, 2021.
- UK Health Security Agency. [Risk assessment for SARS-CoV-2 variant: Omicron VOC-21NOV-01 \(B.1.1.529\)](#). December 9, 2021
- UK Health Security Agency. [SARS-CoV-2 variants of concern and variants under investigation in England](#). Technical briefing 31. December 10, 2021.

**The Lancet - Infectious Diseases: [Serial antigen rapid testing in staff of a large acute hospital](#)**

(December 06, 2021)

"Serial ART is an emerging testing strategy and few real-world examples of its use have been published. ARTs performed every 3 days can break chains of transmission of SARS-CoV-2. Although a single ART is not as sensitive or specific as a single rtPCR test, serial testing two or three times a week can outperform a single weekly rtPCR test. The National University Hospital's implementation required all asymptomatic clinical staff to self-administer ART twice a week, routinely. Staff then submitted time-stamped photographs of their ARTs to a co-worker (their ART buddy), which could be reviewed by reporting officers on-demand. Any symptomatic staff were not to make use of this system; rather, they needed to promptly present to the occupational health clinic for rtPCR testing."

[LINK](#)

See also:

- Journal of Medical Virology. [What is the true place of the SARS-CoV-2 rapid point-of-care antigen test in the hospital setting? Lessons learned from real life](#). December 6, 2021.

**STAT News: [Growing use of home COVID-19 tests leaves health agencies in the dark about unreported cases](#)**. (December 07, 2021)

"It's a story that's becoming commonplace in the era of rapid home COVID testing: People who test positive are almost never counted by public health agencies charged with bringing the pandemic to heel. While home tests have distinct advantages — they're convenient and quickly inform people of their infection status so they can take steps to avoid spread the virus — most who test positive don't come to the attention of health officials unless they are sick enough to see a doctor." [LINK](#)

**British Medical Journal: [Doctors are under more work pressure than during height of COVID-19 pandemic in 2020](#)** (December 15, 2021)

"The growing backlog of patient care amid repeated waves of COVID-19 means more doctors are struggling with their workload, this year's GMC annual report said, after some reported experiencing "a temporary decrease in workload" during 2020... The barometer survey of a representative sample of 3386 UK doctors, commissioned by the GMC, found that GPs face the greatest workforce pressure of any group of doctors. On average, GPs described three quarters of their days as "high intensity" and around a third are considered at high risk of burnout—almost double the proportion at risk across the profession as a whole." [LINK](#)

**CanCOVID Speaker Series: [Quantifying Nursing Workload During the COVID-19 Pandemic: A Simulation Approach](#)** (November 27, 2021)

"Nurse workload is a long-standing global health care issue. Higher acuity levels in COVID-19 patients and increased infection prevention and control (IPAC) routines have significantly increased the work demands on nurses. Over the past 18 months, the impact of COVID-19 has increased burnout among hospital nurses leading to a critical nursing shortage as many nurses are leaving current positions and the profession altogether... Join [Dr. Sue Bookey-Bassett](#) and [Dr. Patrick Neumann](#) to learn how discrete event simulation (DES) was used to explore and quantify the effects of varying COVID-19 policies on nurse workload and quality of care. Implications for healthcare leaders and decision makers will be included in the presentation" [LINK](#)

**The National Collaborating Centre for Methods and Tools: [Rapid Review: What is known about health care worker intent to leave their occupation in the context of the COVID19 pandemic?](#)** (November 26, 2021)

"Across all studies reporting a percentage, 11-42.6% of health care workers employed during the COVID-19 pandemic reported an intent to leave their current role and 2-35% of health care workers reported an intent to leave their profession. The certainty of the evidence is very low (GRADE); findings are very likely to change as new data become available. These findings are corroborated by a registered nurse peer reviewer who expressed concern that increased rates of health care workers leaving roles and/or professions may lead to a cyclical effect, with even more strain on those remaining, resulting in further intent to leave." [LINK](#)

**Saskatchewan COVID Evidence Support Team: [What have been the consequences of delayed surgeries due to the COVID-19 pandemic?](#)** (October 18, 2021)

"The unintended consequences of delayed surgeries due to the COVID-19 pandemic have not yet been fully understood, particularly as service interruptions are continuing around the world. Predicted impacts based on historical data on surgical delays indicate a wide range of acceptable delays without impacting morbidity and mortality, largely dependent on the procedure, the severity of the condition and the length of delay. Patient experiences regarding delays are equally as varied, highlighting a need for the use of shared-decision-making to best navigate the particular circumstances of their case." [LINK](#)

## INFECTION PREVENTION AND CONTROL

**CanCOVID Speaker Series: [The Role of Ventilation and Filtration in Reducing COVID-19 Transmission](#)** (July 13, 2021)

"Building and ventilation measures are important components of an overall strategy to reduce COVID-19 transmission risk. The success of these strategies as layers of protection are dependent on the building context and implementation details." [LINK](#) Speaker: [Professor Jeffrey Siegel](#).

See also:

- Doctors in Unite. [The place of vaccines and airborne controls in the hierarchy of controls for COVID-19](#). December 12, 2021
- Jose-Luis Jimenez. [Why is there such EXTREME RESISTANCE by WHO, CDC and IPC to clearly state that COVID-19 is a dominantly AIRBORNE disease?](#) December 14, 2021
- Lancet. [Ten scientific reasons in support of airborne transmission of SARS-CoV-2](#). May 1, 2021.
- NY Times. [This 3-D Simulation Shows Why Social Distancing Is So Important](#). April 14, 2020.

- Wired. [The 60-Year-Old Scientific Screwup That Helped COVID Kill](#). May 13, 2021

**New Zealand Herald: [COVID 19 Delta outbreak: Ministry of Education ordering air purifiers, CO2 monitors for schools](#)** (December 03, 2021)

"COVID management in schools had followed a layered approach, with vaccines providing the first line of defense. Behaviour management - like social distancing, mask wearing and lower occupancy - was next, followed by ventilation, and air monitoring and purification. Ventilation was important to ensure exhaled air spent the least possible time in a room before leaving the building and being replaced by fresh air, the report said. Evidence showed recirculated, unfiltered air could promote transmission of the virus." [LINK](#)

**Max Planck Institute for Dynamics and Self-Organization: [How well masks protect](#)** (December 02, 2021)

"Three metres are not enough to ensure protection. Even at that distance, it takes less than five minutes for an unvaccinated person standing in the breath of a person with COVID-19 to become infected with almost 100 percent certainty. That's the bad news. The good news is that if both are wearing well-fitting medical or, even better, FFP2 masks, the risk drops dramatically." [LINK](#)

See also:

- CanCOVID Speaker Series. [Canadians' Perceptions of Face Masks and Reactions to Public Health Messaging Early in the COVID-19 Pandemic](#) (Speakers: [Ying Shan Doris Zhang](#) and [Yekta Sharafaddin-zadeh](#)) (November 30, 2021).
- PNAS. [An upper bound on one-to-one exposure to infectious human respiratory particles](#). December 7, 2021
- NPR. [It's Time To Up Your Mask Game](#). August 12, 2021

**Journal of the American Medical Association: [Global Percentage of Asymptomatic SARS-CoV-2 Infections among the Tested Population and Individuals with Confirmed COVID-19 Diagnosis: A Systematic Review and Meta-analysis](#)** (December 14, 2021)

"[We] found that the pooled percentage of asymptomatic SARS-CoV-2 infections among the tested population was 0.25%. Among the confirmed population, 40.50% of individuals had asymptomatic infections. The high percentage of asymptomatic infections highlights the potential transmission risk of asymptomatic infections in communities. Screening for asymptomatic infection is required, especially for countries and regions that have successfully controlled SARS-CoV-2. Asymptomatic infections should be under management similar to that for confirmed infections, including isolating and contact tracing." [LINK](#)

**Kaiser Health News: [Is It Time to Change the Definition of 'Fully Vaccinated'?](#)** (December 3, 2021)

"As more indoor venues require proof of vaccination for entrance and with winter — as well as Omicron, a new COVID variant — looming, scientists and public health officials are debating when it will be time to change the definition of "fully vaccinated" to include a booster shot." [LINK](#)

**Nature: [Increased personal protective equipment litter as a result of COVID-19 measures](#)** (December 09, 2021)

"Here, we quantitatively analyze emergence of PPE and COVID-19-related litter over 14 months for 11 countries using the litter collection application Litterati. The proportion of masks in litter increased by >80-fold as a result of COVID-19 legislation, from <0.01% to >0.8%. Gloves and wipes, more prevalent at ~0.2% of litter before the pandemic, doubled to 0.4%, but this has since fallen. Glove litter increased in the initial stages of the pandemic but fell after the introduction of facemask policies, whereupon there was an increase of facemask litter. National COVID-19 policy responses and international World Health Organization announcements and recommendations are a probable driver of PPE litter dynamics, especially the implementation of facemask policies. Waste management should be incorporated in designing future pandemic policies to avoid negative environmental legacies of mismanaged PPE." [LINK](#)



**Science:** [Track Omicron's spread with molecular data](#) (December 09, 2021)

"Tracking SARS-CoV-2 lineages and variants, including Omicron, through GISAID, Pango lineages, and NextStrain has provided valuable information about their spread in close to real time. However, genome sequencing intensities and turnaround times vary substantially across the world; in most countries, it takes more than 21 days after sample collection to deposit data in GISAID. Moreover, sampling strategies used to select samples for sequencing are heterogeneous across geographic regions and often not reported in virus genome metadata. To evaluate risk and guide policy, there is an urgent need to incentivize the quick sharing of well-annotated genomic and S-gene-stratified surveillance data globally. By acting with speed, transparency, and consistency, we can establish norms to support better global responses to newly emerging variants." [LINK](#)

## TREATMENT

**MedRxiv:** [Effectiveness of COVID-19 vaccines against the Omicron \(B.1.1.529\) variant of concern](#) (December 14, 2021)

"Our findings indicate that vaccine effectiveness against symptomatic disease with the Omicron variant is significantly lower than with the Delta variant. We are unable to determine protection against severe forms of disease due to the small number of Omicron cases so far and the natural lag between infection and more severe outcomes." [LINK](#)

See also:

- NY Times. [Most of the World's Vaccines Likely Won't Prevent Infection from Omicron](#). December 19, 2021.

**Reuters:** [Lab tests: Eli Lilly, Regeneron antibody therapies lose out against Omicron](#). (December 14, 2021)

"Regeneron Pharmaceuticals is developing new antibodies that work against the omicron variant of COVID-19, after the company confirmed that its current cocktail has diminished potency against the heavily mutated strain."

[LINK](#)

**Reuters:** [New data shows GSK-Vir drug works against all Omicron mutations](#). (December 7, 2021)

"The data, yet to be published in a peer-reviewed medical journal, shows that the companies' treatment, sotrovimab, is effective against all 37 identified mutations to date in the spike protein, GSK said in a [statement](#)."

[LINK](#)

**StatNews:** [Will we always need COVID-19 boosters? Experts have theories](#). (December 15, 2021)

"Are COVID boosters always going to be a fixture in our future? The simple truth is that, at this point, there's no definitive answer to that question. But virologists, immunologists, and vaccinologists have opinions that are anchored in an understanding of how the immune system works and in emerging data on how COVID vaccines engage with this complicated enterprise that has evolved to help humans fend off disease threats." [LINK](#)

See also:

- Financial Times. [COVID booster shots up to 75% effective against Omicron, UK study finds](#). December 10, 2021.
- Imperial College. [Report 48 - The value of vaccine booster doses to mitigate the global impact of the Omicron SARS-CoV-2 variant](#). December 16, 2021.

**CanCOVID:** [Therapeutic Advances in the Treatment of COVID-19](#). (September 22, 2021)

Moderator: [Peter Jüni](#). Speakers: [Rob Fowler](#), [Emily McDonald](#), [Edward Mills](#), [Srinivas Murthy](#), [Ryan Zarychanski](#). Topics: How has the treatment for COVID-19 evolved for outpatients, ward patients and in critical care? The TOGETHER Trial. The CATCO Trial. Therapeutic-dose anticoagulation with heparin in hospitalized patients with COVID-19. WHO prospective meta-analyses of clinical trials. [LINK](#)

**JAMA: [Immunogenicity of Extended mRNA SARS-CoV-2 Vaccine Dosing Intervals](#)**. (December 3, 2021)  
“Longer mRNA vaccine dosing intervals demonstrated improved immunogenicity, which was consistent when responses were measured based on timing of the first or second dose. These data suggest that extending dosing intervals may be particularly advantageous against the Delta variant.” [LINK](#)

**StatNews: [Pfizer’s COVID pill remains 89% effective in final analysis, company says](#)**. (December 14, 2021)

“Paxlovid, Pfizer’s pill to treat COVID-19, retained its 89% efficacy at preventing hospitalization and death in the full results of a study of 2,246 high-risk patients, the company said Tuesday.” [LINK](#)

See also:

- Eric Topol. [Why Paxlovid is a Just-in-Time Breakthrough](#). December 16, 2021

**New England Journal of Medicine: [Efficacy and Safety of NVX-CoV2373 in Adults in the United States and Mexico](#)**. (December 15, 2021)

“NVX-CoV2373 is a new adjuvant recombinant protein vaccine that can be added to the portfolio of vaccines that are safe and highly protective against contemporary SARS-CoV-2 strains and that have an acceptable side-effect profile.” [LINK](#)

**Eurosurveillance: [Initial assessment of the COVID-19 vaccination’s impact on case numbers, hospitalizations and deaths in people aged 80 years and older, 15 EU/EEA countries, December 2020 to May 2021](#)**. (December 2, 2021)

“Prioritization of elderly people in COVID-19 vaccination campaigns aimed at reducing severe outcomes in this group. Using EU/EEA surveillance and vaccination uptake, we estimated the risk ratio of case, hospitalization and death notifications in people 80 years and older compared with 25–59-year-olds. Highest impact was observed for full vaccination uptake 80% or higher with reductions in notification rates of cases up to 65% (IRR: 0.35; 95% CI: 0.13–0.99), hospitalizations up to 78% (IRR: 0.22; 95% CI: 0.13–0.37) and deaths up to 84% (IRR: 0.16; 95% CI: 0.13–0.20.” [LINK](#)

## MENTAL HEALTH & WELLNESS

**CanCOVID: [The Shadow Pandemic: Intimate Partner Violence and Brain Injury](#)** (November 10, 2021)

“Intimate partner violence (IPV), affecting 1 in 3 women during their lifetime globally, has increased dramatically during COVID-19 such that it has been called the “shadow pandemic.” Although most of the hits are to the head, face, and neck, putting women at risk of brain injury, there has been very little awareness of the intersection of brain injury and IPV. Join us to hear more about the Canadian data on IPV during the pandemic with a focus on brain injury, from the perspectives of survivors, service providers, and a broad range of diverse stakeholders across Canada that includes a system’s perspective. The presentation will conclude with resources for participants including the Battered and Brain Injured toolkit.” [LINK](#) Speakers: [Dr. Angela Colantonio](#), [Danielle Toccalino](#), and [Halina Haag](#).

**CanCOVID: [COVID-19 in Canada: Disparities, Compliance with Preventative Measures, and Mental Health](#)** (November 24, 2021)

Webinar about disparities, compliance with preventative measures and mental health. [LINK](#)

Moderator: [Susan Law](#). Speakers and topics:

- [Roland Pongou](#): An overview of the research project and presentation of the socioeconomic and demographic disparities in self-reported COVID-19 symptoms.
- [Marie Christelle Mabeu](#): Documentation of the socioeconomic and demographic disparities in COVID-19 testing behaviours.
- [Bright Opoku Ahinkorah](#): Analyze compliance with preventative measures in the workplace.
- [Arunika Agarwal](#): Study the determinants of mental health issues during the pandemic.

**Family Process:** [Parental burnout during the COVID-19 pandemic](#) (December 14, 2021)

“Increased and long-term parental stress related to one’s parental role can lead to parental burnout. In the early phase of the COVID-19 pandemic, families experienced intensified pressure due to the government-initiated contact restrictions applied to prevent the spread of the virus in the population. This study investigates the risk factors and predictors of parental burnout in a large sample of parents (N = 1488) during the COVID-19 pandemic in Norway.” [LINK](#)

**BioMed Central Pregnancy and Childbirth:** [Associations between postpartum depression and assistance with household tasks and childcare during the COVID-19 pandemic: evidence from American mothers](#) (December 13, 2021)

“The early postpartum period is recognized cross-culturally as being important for recovery, with new parents receiving increased levels of community support. However, COVID-19-related lockdown measures may have disrupted these support systems, with possible implications for mental health. Here, we use a cross-sectional analysis among individuals who gave birth at different stages of the pandemic to test (i) if instrumental support access in the form of help with household tasks, newborn care, and care for older children has varied temporally across the pandemic, and (ii) whether access to these forms of instrumental support is associated with lower postpartum depression scores.” [LINK](#)

**BioMed Central Public Health:** [Children and parents’ perspectives of the impact of the COVID-19 pandemic on Ontario children’s physical activity, play, and sport behaviours](#). (December 13, 2021)

“The COVID-19 pandemic and associated public health measures have resulted in the closure of many physical activity-supporting facilities. This study examined Ontario parents’ and children’s perspectives of COVID-19’s impact on children’s physical activity behaviours, return to play/sport during COVID-19, as well as barriers/facilitators to getting active amid extended closures of physical activity venues.” [LINK](#)

**CanCOVID:** [The Mental Health Impact & Service Use of Ontario’s Young People Since the COVID-19 Pandemic: Differences Between Those With & Without a Mental Health Diagnosis](#) (May 26, 2021)

“As the COVID-19 pandemic persists, there has been a general decline in young people’s mental health. The pandemic has uniquely affected young people with and without pre-existing mental health concerns but has similarly exposed the desire for mental health care, exacerbating the long-standing rates of unmet needs. The abrupt shift to virtual service delivery and online self-help supports has impacted the continuity of care and help-seeking behaviours of young people. Join us in a discussion with Dr. Cappelli and Dr. Radomski on their research that explores the services young people have been interested in and have received since the pandemic—highlighting the differences between those young people with and without a mental health diagnosis.” [LINK](#)

See also:

- Los Angeles Times. [Surgeon general warns of emerging youth mental health crisis in rare public advisory](#). December 7, 2021.

**Public Library of Science One:** [Health and well-being of university students before and during COVID-19 pandemic: A gender comparison](#) (December 14, 2021)

“Most studies evaluating mental and physical health status during COVID-19 lack information on health before COVID-19 and data regarding gender differences are scarce. Current study is one of the few to explore the effects

of the COVID-19 pandemic on physical and mental well-being of first-year university students and one of the first that focuses on gender differences.” [LINK](#)

**Axios:** [The labor shortage is a health problem](#) (December 13, 2021)

“Almost half of unemployed Americans say health issues are the primary reason they're not working, according to new survey data from McKinsey, shared exclusively with Axios. Why it matters: If one of the key drivers of the labor shortage is Americans' physical and mental health, rather than any lack of economic growth, then that means the Fed is not well placed to get millions more people working.” [LINK](#)

**British Medical Journal Open:** [Severity of COVID-19 and adverse long-term outcomes: a retrospective cohort study based on a US electronic health record database](#) (December 10, 2021)

“The current study used the Optum deidentified COVID-19 EHR dataset to better understand the types of LTOs encountered by patients with long COVID-19, to define the factors that predict their diagnosis and to understand the role that treatment setting (as a proxy for COVID-19 severity) plays in the manifestation of these outcomes.” [LINK](#)

**Health & Social Care in the Community:** [Healthcare utilization and physical activities for older adults with comorbidities in the UK during COVID-19](#) (December 9, 2021)

“A major concern with COVID-19 was the impact it would have on individual health, the routine use of healthcare services, and physical activities, especially for older adults with comorbidities. To address this, we studied the association between these variables for older adults during the pandemic. To explore what policy instruments might be effective in mitigating the negative impacts, we investigated the effects of a shielding notice for those identified as vulnerable by the government and social media given it has been an important source for disseminating information of COVID-19.” [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 November and December of 2021.

Given the rapidly changing nature of the coronavirus pandemic, some of the references included in this e-bulletin may quickly become out-of-date.

We further caution readers that researchers at the Newfoundland & Labrador Centre for Applied Health Research are not experts on infectious diseases and are relaying work produced by others.

This report has been produced quickly and it is not exhaustive, nor have the included studies been critically appraised.

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