

## COVID-19 Resource Desk

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### New Research

\*note, **PREPRINTS** have not undergone formal peer review

**COVID-19 related publications by Providence caregivers – see [Digital Commons](#)**

### Epidemiology & Public Health

1. **Infection rate in Guangzhou after easing the zero-COVID policy: seroprevalence results to ORF8 antigen.** Huang J, et al. *Lancet Infect Dis*. 2023 Feb 17:S1473-3099(23)00112-3. doi: 10.1016/S1473-3099(23)00112-3. [https://www.thelancet.com/journals/laninf/article/PIIS1473-3099\(23\)00112-3/fulltext](https://www.thelancet.com/journals/laninf/article/PIIS1473-3099(23)00112-3/fulltext)

During Jan 5–14, 2023, we collected serum samples from 1500 patients aged 1–99 years at The First Affiliated Hospital of Guangzhou University of Chinese Medicine (Guangzhou, China), around 1 month after the zero-COVID policy was ended. Serum samples were tested using ELISA, with ORF8 protein used as the detection antigen (appendix p 1). The demographic information of patients and ELISA results are shown in the table. The overall positive rate of ORF8 ELISA was 61·5%. The samples were further stratified into five age groups with positive rates of 66·2% in group 1–17 years, 71·3% in group 18–39 years, 54·1% in group 40–59 years, 55·8% in group 60–79 years, and 64·5% in group 80–99 years.

2. **Notes from the Field: Epidemiologic Characteristics of SARS-CoV-2 Recombinant Variant XBB.1.5 - New York City, November 1, 2022-January 4, 2023.** Luoma E et al. *MMWR Morb Mortal Wkly Rep*. 2023 Feb 24;72(8):212-214. doi: 10.15585/mmwr.mm7208a4.

[https://www.cdc.gov/mmwr/volumes/72/wr/mm7208a4.htm?s\\_cid=mm7208a4\\_w](https://www.cdc.gov/mmwr/volumes/72/wr/mm7208a4.htm?s_cid=mm7208a4_w)

The SARS-CoV-2 Omicron XBB.1.5 variant, a recombinant variant of Omicron BA.2.75 and BA.2.10, was first detected in New York City (NYC) in October 2022. As of January 7, 2023, XBB.1.5 was the predominant variant in NYC, accounting for 81% of sequenced specimens; at that time, only 26% of sequenced specimens nationwide were XBB.1.5. In addition, in December 2022, only 5% of sequenced genomes in the rest of New York were XBB.1.5, suggesting that NYC was likely the epicenter of XBB.1.5's emergence in the United States. The World Health Organization has noted that XBB.1.5 does not carry any mutation known to be associated with a potential change in severity, such as the Delta spike mutation P681R; however, there are currently limited data available about disease severity in human populations. Because NYC witnessed the emergence of XBB.1.5 before much of the United States, and the NYC Department of Health and Mental Hygiene (DOHMH) routinely links whole genome sequencing and epidemiologic data, DOHMH is uniquely positioned to characterize this subvariant. Although a higher percentage of patients infected with XBB.1.5, compared with those infected with a

co-circulating variant, were younger, identified as racial and ethnic minorities, and lived in high-poverty neighborhoods, and a lower percentage had completed a primary COVID-19 vaccination series with  $\geq 1$  dose of monovalent vaccine booster, there was no evidence of a difference in disease severity.

### Survivorship & Rehabilitation

- 3. Symptom and Viral Rebound in Untreated SARS-CoV-2 Infection.** Deo R et al. *Ann Intern Med.* 2023 Feb 21. doi: 10.7326/M22-2381. <https://www.acpjournals.org/doi/10.7326/M22-2381>

RESULTS: Symptom rebound was identified in 26% of participants at a median of 11 days after initial symptom onset. Viral rebound was detected in 31% and high-level viral rebound in 13% of participants. Most symptom and viral rebound events were transient, because 89% of symptom rebound and 95% of viral rebound events occurred at only a single time point before improving. The combination of symptom and high-level viral rebound was observed in 3% of participants.

LIMITATION: A largely unvaccinated population infected with pre-Omicron variants was evaluated.

CONCLUSION: Symptom or viral relapse in the absence of antiviral treatment is common, but the combination of symptom and viral rebound is rare.

PRIMARY FUNDING SOURCE: National Institute of Allergy and Infectious Diseases.

- 4. The COVID-19 Rebound Study: A Prospective Cohort Study to Evaluate Viral and Symptom Rebound Differences in Participants Treated with Nirmatrelvir Plus Ritonavir Versus Untreated Controls.** Pandit JA, et al. *Clin Infect Dis.* 2023 Feb 22:ciad102. doi: 10.1093/cid/ciad102. <https://academic.oup.com/cid/advance-article/doi/10.1093/cid/ciad102/7049992>

This preliminary report suggests that rebound after clearance of test positivity or symptom resolution is higher than previously reported. However, notably we observed a similar rate of rebound in both the NPR treatment and control groups. Large studies with diverse participants and extended follow-up are needed to better understand the rebound phenomena.

### Therapeutics

- 5. Effect of Higher-Dose Ivermectin for 6 Days vs Placebo on Time to Sustained Recovery in Outpatients With COVID-19: A Randomized Clinical Trial.** Naggie S et al. *JAMA.* 2023 Feb 20:e231650. doi: 10.1001/jama.2023.1650. <https://jamanetwork.com/journals/jama/fullarticle/2801827>

Among outpatients with mild to moderate COVID-19, treatment with ivermectin, with a maximum targeted dose of 600  $\mu\text{g}/\text{kg}$  daily for 6 days, compared with placebo did not improve time to sustained recovery. These findings do not support the use of ivermectin in patients with mild to moderate COVID-19.

TRIAL REGISTRATION: ClinicalTrials.gov Identifier: NCT04885530.

- 6. Outcomes and Adverse Effects of Baricitinib Versus Tocilizumab in the Management of Severe COVID-19.** Peterson JH, Paranjape NS, Grundlingh N, Priestley JL. *Crit Care Med.* 2023 Mar 1;51(3):337-346. doi: 10.1097/CCM.0000000000005756. Epub 2022 Dec 19.

[https://journals.lww.com/ccmjournal/Fulltext/2023/03000/Outcomes and Adverse Effects of Baricitinib Versus.1.aspx](https://journals.lww.com/ccmjournal/Fulltext/2023/03000/Outcomes_and_Adverse_Effects_of_Baricitinib_Versus.1.aspx)

Our propensity score-matched, retrospective, observational study in patients hospitalized with severe COVID-19 showed no difference in mortality but significantly fewer adverse effects with baricitinib compared with tocilizumab. Our data suggest that baricitinib may be a better choice when treating patients with severe COVID-19, but additional prospective, randomized trials are needed to help clinicians choose the most optimal drug.

*See also: Baricitinib or Tocilizumab? Treatment of Patients Hospitalized With Severe COVID-19.* Cawcutt KA, Kalil AC. *Crit Care Med.* 2023 Mar 1;51(3):413-415. doi: 10.1097/CCM.0000000000005757. Epub 2023 Feb 21.

[https://journals.lww.com/ccmjournal/Fulltext/2023/03000/Baricitinib or Tocilizumab Treatment of Patients.8.aspx](https://journals.lww.com/ccmjournal/Fulltext/2023/03000/Baricitinib_or_Tocilizumab_Treatment_of_Patients.8.aspx)

- 7. COVID-19 Convalescent Plasma Outpatient Therapy to Prevent Outpatient Hospitalization: A Meta-analysis of Individual Participant Data From Five Randomized Trials.** Levine AC et al. *Clin Infect Dis.* 2023 Feb 21:ciad088. doi: 10.1093/cid/ciad088.

<https://academic.oup.com/cid/advance-article/doi/10.1093/cid/ciad088/7048396>

Among outpatients with COVID-19, treatment with COVID-19 convalescent plasma reduced the rate of all-cause hospitalization and may be most effective when given within 5 days of symptom onset and when antibody titer is higher.

- 8. Inhaled ciclesonide in adults hospitalised with COVID-19: a randomised controlled open-label trial (HALT COVID-19).** Brodin D et al. *BMJ Open.* 2023 Feb 22;13(2):e064374. doi:

10.1136/bmjopen-2022-064374. <https://bmjopen.bmj.com/content/13/2/e064374>

In patients hospitalised with COVID-19 receiving oxygen therapy, this trial ruled out, with 0.95 confidence, a treatment effect of ciclesonide corresponding to more than a 1 day reduction in duration of oxygen therapy. Ciclesonide is unlikely to improve this outcome meaningfully.

TRIAL REGISTRATION NUMBER: NCT04381364.

- 9. Long-term outcomes of patients with COVID-19 treated with helmet noninvasive ventilation or usual respiratory support: follow-up study of the Helmet-COVID randomized clinical trial.**

Arabi YM et al. *Intensive Care Med.* 2023 Feb 23:1-11. doi: 10.1007/s00134-023-06981-5.

<https://link.springer.com/article/10.1007/s00134-023-06981-5>

Helmet noninvasive ventilation did not reduce 180-day mortality or improve HRQoL compared to usual respiratory support among patients with acute hypoxemic respiratory failure due to COVID-19 pneumonia.

## Transmission / Infection Control

- 10. Risk factors associated with severe acute respiratory coronavirus virus 2 (SARS-CoV-2) transmission, outbreak duration, and mortality in acute-care settings.** Duncombe TR, et al. *Infect Control Hosp Epidemiol.* 2023 Feb 23:1-7. doi: 10.1017/ice.2023.19.

[https://www.cambridge.org/core/journals/infection-control-and-hospital-](https://www.cambridge.org/core/journals/infection-control-and-hospital-epidemiology/article/risk-factors-associated-with-severe-acute-respiratory-coronavirus-virus-2-)

[epidemiology/article/risk-factors-associated-with-severe-acute-respiratory-coronavirus-virus-2-](https://www.cambridge.org/core/journals/infection-control-and-hospital-epidemiology/article/risk-factors-associated-with-severe-acute-respiratory-coronavirus-virus-2-)

[sarscov2-transmission-outbreak-duration-and-mortality-in-acutecare-settings/631ACFDC8749FB65FBDDDF3C2A6D081C](https://doi.org/10.1093/infdis/jiad040)

This study highlights the importance of hand hygiene practices during an outbreak and the difficulties faced by older facilities, many of which have infrastructural challenges. The latter reinforces the need to incorporate infection control standards into healthcare planning and construction.

## Vaccines / Immunology

### 11. Protection from COVID-19 mRNA vaccination and prior SARS-CoV-2 infection against COVID-19-associated encounters in adults during Delta and Omicron predominance. Bozio CH et al. *J Infect Dis.* 2023 Feb 18:jiad040. doi: 10.1093/infdis/jiad040.

<https://academic.oup.com/jid/advance-article/doi/10.1093/infdis/jiad040/7045997>

COVID-19 mRNA vaccination and/or prior SARS-CoV-2 infection provided protection against COVID-19-associated hospitalizations and ED/UC encounters regardless of variant. Staying up-to-date with COVID-19 vaccination still provides protection against severe COVID-19 disease, regardless of prior infection.

### 12. When to update COVID-19 vaccine composition. Grant R et al. *Nat Med.* 2023 Feb 20. doi: 10.1038/s41591-023-02220-y. <https://www.nature.com/articles/s41591-023-02220-y>

Vaccines against different SARS-CoV-2 variants have been approved, but continued surveillance is needed to determine when the antigen composition of vaccines should be updated, together with clinical studies to assess vaccine efficacy.

### 13. Impact of Vaccination on Major Adverse Cardiovascular Events in Patients With COVID-19 Infection. N3C Consortium. *J Am Coll Cardiol.* 2023 Jan 27:S0735-1097(22)07601-X. doi: 10.1016/j.jacc.2022.12.006.

<https://www.sciencedirect.com/science/article/pii/S073510972207601X>

Taken from the largest U.S. cohort of patients with SARS-CoV2, our results demonstrate the association of even partial vaccination with lower risk of MACE after SARS-CoV-2 infection.

## Women & Children

### 14. Safety and immunogenicity of a protein subunit COVID-19 vaccine (ZF2001) in healthy children and adolescents aged 3-17 years in China: a randomised, double-blind, placebo-controlled, phase 1 trial and an open-label, non-randomised, non-inferiority, phase 2 trial.

Gao L et al. *Lancet Child Adolesc Health.* 2023 Feb 17:S2352-4642(22)00376-5. doi: 10.1016/S2352-4642(22)00376-5. [https://www.thelancet.com/journals/lanchi/article/PIIS2352-4642\(22\)00376-5/fulltext](https://www.thelancet.com/journals/lanchi/article/PIIS2352-4642(22)00376-5/fulltext)

ZF2001 is safe, well tolerated, and immunogenic in children and adolescents aged 3-17 years. Vaccine-elicited sera can neutralise the omicron BA.2 subvariant, but with reduced activity. The results support further studies of ZF2001 in children and adolescents.

FUNDING: Anhui Zhifei Longcom Biopharmaceutical and the Excellent Young Scientist Program from National Natural Science Foundation of China.

TRANSLATION: For the Chinese translation of the abstract see Supplementary Materials section.

15. **Surveillance for multisystem inflammatory syndrome in U.S. children aged 5-11 years who received Pfizer-BioNTech COVID-19 vaccine, November 2021-March 2022.** Cortese MM et al. *J Infect Dis.* 2023 Feb 23;jiad051. doi: 10.1093/infdis/jiad051.

<https://academic.oup.com/jid/advance-article/doi/10.1093/infdis/jiad051/7055915>

Multisystem inflammatory syndrome in children (MIS-C) is a complication of SARS-CoV-2 infection; in the U.S., reporting of MIS-C after COVID-19 vaccination is required for vaccine safety monitoring. Pfizer-BioNTech COVID-19 vaccine was authorized for children aged 5-11 years on October 29, 2021. Covering a period when ~7 million children received vaccine, surveillance for MIS-C ≤90 days post-vaccination using passive systems identified 58 children with MIS-C and laboratory evidence of past/recent SARS-CoV-2 infection, and 4 without evidence. During a period with extensive SARS-CoV-2 circulation, MIS-C illness in children after COVID-19 vaccination who lacked evidence of SARS-CoV-2 infection was rare (<1 per million vaccinated children).

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**FDA / CDC / NIH / WHO Updates**

[CDC and FDA Identify Preliminary COVID-19 Vaccine Safety Signal for Persons Aged 65 Years and Older](#)

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