

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](#)

Clinical Syndrome

1. **Presence of symptoms 6 weeks after COVID-19 among vaccinated and unvaccinated US healthcare personnel: a prospective cohort study.** Project PREVENT Network. *BMJ Open*. 2023 Feb 2;13(2):e063141. doi: 10.1136/bmjopen-2022-063141. <https://doi.org/10.1136/bmjopen-2022-063141>

Among 419 HCP with COVID-19, 298 (71%) reported one or more COVID-like symptoms 6 weeks after illness onset, with a lower prevalence among vaccinated participants compared with unvaccinated participants (60.6% vs 79.1%). Following their illness, vaccinated HCP returned to work a median 2.0 days (95% CI 1.0 to 3.0) sooner than unvaccinated HCP. Receipt of two doses of a COVID-19 mRNA vaccine among HCP with COVID-19 illness was associated with decreased prevalence of COVID-like symptoms at 6 weeks and earlier return to work.

2. **Myocardial Involvement After Hospitalization for COVID-19 Complicated by Troponin Elevation: A Prospective, Multicenter, Observational Study.** Artico J et al. *Circulation*. 2023 Jan 27:364-374. doi: 10.1161/CIRCULATIONAHA.122.060632. <https://www.ahajournals.org/doi/10.1161/CIRCULATIONAHA.122.060632>

Compared with contemporary controls, patients with COVID-19 and elevated cardiac troponin level have more ventricular impairment and myocardial scar in early convalescence. However, the proportion with myocarditis was low and scar pathogenesis was diverse, including a newly described pattern of microinfarction.

Epidemiology & Public Health

3. **Association of culturable-virus detection and household transmission of SARS-CoV-2 - California and Tennessee, 2020-2022.** Deyoe JE et al. *J Infect Dis*. 2023 Jan 27:jiad018. doi: 10.1093/infdis/jiad018. <https://academic.oup.com/jid/advance-article/doi/10.1093/infdis/jiad018/7006820>

From two SARS-CoV-2 household transmission studies (enrolling April 2020 - January 2022) with rapid enrollment and specimen collection for 14 days, 61% (43/70) of primary cases had culturable-virus detected ≥ 6 days post-onset. Risk of secondary infection among household contacts tended to be greater when primary cases had culturable-virus detected after onset. Regardless of duration of

culturable-virus, most secondary infections [70% (28/40)] had serial intervals <6 days, suggesting early transmission. These data examine viral culture as a proxy for infectiousness, reaffirm the need for rapid control measures after infection and highlight the potential for prolonged infectiousness (≥ 6 days) in many individuals.

- 4. A Discrete Choice Analysis Comparing COVID-19 Vaccination Decisions for Children and Adults.** Prosser LA, et al. *JAMA Netw Open*. 2023 Jan 3;6(1):e2253582. doi: 10.1001/jamanetworkopen.2022.53582.

<https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2800817>

In this survey study of US adults, the identification of 4 distinct preference groups provides new information to guide communications to support vaccine decision making. In particular, the group that prioritize convenience (less time required for vaccination and fewer doses) may present an opportunity to create actionable strategies to increase vaccination uptake for both adult and pediatric populations.

Healthcare Delivery & Healthcare Workers

- 5. Efficacy and safety of antimicrobial stewardship prospective audit and feedback in patients hospitalised with COVID-19 (COVASP): a pragmatic, cluster-randomised, non-inferiority trial.** Chen JZ et al. *Lancet Infect Dis*. 2023 Jan 27:S1473-3099(22)00832-5. doi: 10.1016/S1473-3099(22)00832-5.

[https://www.thelancet.com/journals/laninf/article/PIIS1473-3099\(22\)00832-5/fulltext](https://www.thelancet.com/journals/laninf/article/PIIS1473-3099(22)00832-5/fulltext)

This cluster-randomised clinical trial shows that prospective audit and feedback is safe and effective in optimising and reducing antibiotic use in adults admitted to hospital with COVID-19. Despite many competing priorities during the COVID-19 pandemic, antimicrobial stewardship should remain a priority to mitigate the overuse of antibiotics in this population.

Prognosis

- 6. In-Hospital Outcomes of COVID-19 Associated Myocarditis (from a Nationwide Inpatient Sample Database Study).** Sattar Y et al. *Am J Cardiol*. 2023 Jan 28;192:39-44. doi: 10.1016/j.amjcard.2023.01.004. [https://www.ajconline.org/article/S0002-9149\(23\)00005-X/fulltext](https://www.ajconline.org/article/S0002-9149(23)00005-X/fulltext)

Cardiovascular outcomes and resource utilization were studied among cohorts with COVID-19, with and without myocarditis, using descriptive statistics, multivariate regression matching, and propensity score matching using STATA version 17. Of 1,678,995 patients, 3,565 (0.21%) had COVID-19 with myocarditis, and 1,675,355 (99.78%) had COVID-19 without myocarditis. On multivariate regression analysis, we found higher odds of in-hospital mortality in patients with myocarditis than in those without myocarditis, in addition to higher odds of major adverse cardiovascular and cerebrovascular events, acute kidney injury, heart failure, cardiogenic shock, myocardial infarction, and use of mechanical circulatory support. The propensity-matched cohort also favored similar outcomes. In conclusion, patients with COVID-19 and myocarditis had worse clinical outcomes, having a higher rate of in-hospital mortality, major adverse cardiovascular and cerebrovascular events with longer length of hospital stay, and higher hospitalization costs. Large prospective trials are necessary to validate these

findings with diagnostic measures, including biopsy and cardiac magnetic resonance imaging for the extent of myocardial involvement.

- 7. Mortality by Age Group and Intubation Status in Adult Hospitalized Patients from 21 U.S. Hospital Systems during Three Surges of the COVID-19 Pandemic.** Nolan MB, et al. *Chest*. 2023 Jan 30:S0012-3692(23)00160-5. doi: 10.1016/j.chest.2023.01.029.
<https://doi.org/10.1016/j.chest.2023.01.029>

These descriptive data over three surges of COVID-19 reveal important findings for clinicians and patients. First, they illustrate the stepwise increase in overall mortality by age up to 90+ years. Second, though intubated patients had differentially higher mortality during the delta wave, mortality among those requiring intubation peaked among those aged 70-79 years during all three surges. Third, despite alteration of intubation practices across pandemic waves⁶, if patients were sick enough to require mechanical ventilation, mortality was remarkably consistent regardless of vaccination status. Supporting anecdotal reports from frontline healthcare workers, about half of patients requiring intubation for COVID-19 did not leave the ICU alive.

Survivorship & Rehabilitation

- 8. Severe Fatigue and Persistent Symptoms at Three Months Following SARS-CoV-2 Infections During the Pre-Delta, Delta, and Omicron Time Periods: A Multicenter Prospective Cohort Study.** Gottlieb M et al. *Clin Infect Dis*. 2023 Jan 27:ciad045. doi: 10.1093/cid/ciad045.
<https://academic.oup.com/cid/advance-article/doi/10.1093/cid/ciad045/7007177>

Prolonged symptoms following SARS-CoV-2 infection were more common among participants infected during the pre-Delta period compared with Delta and Omicron periods; however, these differences were no longer significant after adjusting for vaccination status. This suggests a potential beneficial effect of vaccination on the risk of developing long-term symptoms.

Therapeutics

- 9. Symptom duration and resolution with early outpatient treatment of convalescent plasma for COVID-19: a randomized trial.** Baksh S et al. *J Infect Dis*. 2023 Jan 31:jiad023. doi: 10.1093/infdis/jiad023. <https://academic.oup.com/jid/advance-article/doi/10.1093/infdis/jiad023/7017764>

In this trial of outpatients with early COVID-19, CCP was not associated with faster resolution of symptoms compared to control. Overall, there were no differences in the prevalence of each symptom or symptom clusters at day 14 by treatment.

Vaccines / Immunology

- 10. SARS-CoV-2 humoral and cellular immunity following different combinations of vaccination and breakthrough infection.** Pušnik J, et al. *Nat Commun*. 2023 Feb 2;14(1):572. doi: 10.1038/s41467-023-36250-4. <https://doi.org/10.1038/s41467-023-36250-4>

Our data suggest that two vaccine doses and delta breakthrough infection or three vaccine doses and optionally omicron or delta infection provide better B cell immunity than the initial two doses of mRNA

vaccine with or without alpha breakthrough infection. A particularly potent B cell response against the currently circulating omicron variant (B. 1.1.529) was observed for thrice vaccinated individuals with omicron breakthrough infection; a 46-fold increase in plasma neutralization compared to two vaccine doses. The T cell response after two vaccine doses is not significantly influenced by additional antigen exposures. Of note, individuals with hybrid immunity show better correlated adaptive immune responses compared to those only vaccinated.

11. Booster vaccination with inactivated whole-virus or mRNA vaccines and COVID-19-related deaths among people with multimorbidity: a cohort study. Lai FTT et al. *CMAJ*. 2023 Jan 30;195(4):E143-E152. doi: 10.1503/cmaj.221068. <https://www.cmaj.ca/content/195/4/E143>

Among people with multimorbidity, booster vaccination with BNT162b2 or CoronaVac was associated with reductions of more than 90% in COVID-19-related mortality rates compared with only 2 doses. These results highlight the crucial role of booster vaccination for protecting vulnerable populations as the COVID-19 pandemic continues to evolve.

12. Reports of Guillain-Barré Syndrome After COVID-19 Vaccination in the United States. Abara WE et al. *JAMA Netw Open*. 2023 Feb 1;6(2):e2253845. doi:

10.1001/jamanetworkopen.2022.53845.

<https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2800871>

This study found disproportionate reporting and imbalances after Ad26.COVID-19 vaccination, suggesting that Ad26.COVID-19 vaccination was associated with increased risk for GBS. No associations between mRNA COVID-19 vaccines and risk of GBS were observed.

13. Incidence and predictors of breakthrough and severe breakthrough infections of SARS-CoV-2 after primary series vaccination in adults: A population-based survey of 22,575 participants.

DeSantis SM, et al. *J Infect Dis*. 2023 Feb 2;jiad020. doi: 10.1093/infdis/jiad020.

<https://doi.org/10.1093/infdis/jiad020>

Breakthrough infection was 4-25 times more common during the Omicron-dominant wave versus earlier waves. Higher burden of severe breakthrough infections was identified in subgroups.

Women & Children

14. Assessment of COVID-19 as the Underlying Cause of Death Among Children and Young People Aged 0 to 19 Years in the US. Flaxman S et al. *JAMA Netw Open*. 2023 Jan 3;6(1):e2253590. doi:

10.1001/jamanetworkopen.2022.53590.

<https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2800816>

The findings of this study suggest that COVID-19 was a leading cause of death in CYP. It caused substantially more deaths in CYP annually than any vaccine-preventable disease historically in the recent period before vaccines became available. Various factors, including underreporting and not accounting for COVID-19's role as a contributing cause of death from other diseases, mean that these estimates may understate the true mortality burden of COVID-19. The findings of this study underscore the public health relevance of COVID-19 to CYP. In the likely future context of sustained SARS-CoV-2 circulation, appropriate pharmaceutical and nonpharmaceutical interventions (eg, vaccines,

ventilation, air cleaning) will continue to play an important role in limiting transmission of the virus and mitigating severe disease in CYP.

15. Robustness of reported postacute health outcomes in children with SARS-CoV-2 infection: a systematic review. Hirt J, et al. *Arch Dis Child*. 2022 Sep 2:archdischild-2022-324455. doi: 10.1136/archdischild-2022-324455.

<https://adc.bmj.com/content/early/2022/09/05/archdischild-2022-324455>

The robustness of reported postacute SARS-CoV-2 infection health outcomes in children is seriously limited, at least in all the published articles we could identify. None of the studies provided evidence with reasonable certainty on whether SARS-CoV-2 infection has an impact on postacute health outcomes, let alone to what extent. Children and their families urgently need much more reliable and methodologically robust evidence to address their concerns and improve care.

FDA / CDC / NIH / WHO Updates

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

White House Office of Management and Budget: [STATEMENT OF ADMINISTRATION POLICY H.R. 382 – A bill to terminate the public health emergency declared with respect to COVID-19 and H.J. Res. 7 – A joint resolution relating to a national emergency declared by the President on March 13, 2020](#)

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