

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](#)

Healthcare Delivery & Healthcare Workers

1. **Comparison of US Hospital Charity Care Policies Before vs After Onset of the COVID-19 Pandemic.** Goodman C, et al. *JAMA Netw Open.* 2022 Sep 1;5(9):e2233629. doi: 10.1001/jamanetworkopen.2022.33629.

<https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2796731>

Tax-exempt hospitals appear to have updated their policies with mostly positive changes during and after the onset of the COVID-19 pandemic; however, some hospitals restricted charity care in 2021 documents. Unpublicized or vague eligibility criteria may limit patients' understanding of charity care policies and conceal the full extent of charity care policy changes over time. Policy makers should consider requiring greater transparency and simplification for hospital charity care policies to ensure adequate access to care for uninsured and underinsured patients.

Prognosis

2. **Estimated Atherosclerotic Cardiovascular Disease Risk: Disparities and Severe COVID-19 Outcomes (from the National COVID Cohort Collaborative).** Arif YA, Stefanko AM, et al. *Am J Cardiol.* 2022 Sep 26:S0002-9149(22)00850-5. doi: 10.1016/j.amjcard.2022.08.011.

<https://www.sciencedirect.com/science/article/pii/S0002914922008505>

Although further research is needed, the 10-year ASCVD risk score in adults ages 40 to 79 years may be used to identify those who are at highest risk for COVID-19 complications and for whom more intensive treatment may be warranted.

Survivorship & Rehabilitation

3. **One-Year Mental and Physical Health Assessment in Survivors After ECMO for COVID-19-related ARDS.** Chommeloux J et al. *Am J Respir Crit Care Med.* 2022 Sep 23. doi: 10.1164/rccm.202206-1145OC. <https://www.atsjournals.org/doi/10.1164/rccm.202206-1145OC>

Despite the partial recovery of the lung function tests at one year, the physical and psychological function of this population remains impaired. Based on the comparison with long-term follow-up of non-COVID ECMO patients, poor mental and physical health may be more related to COVID-19 than to ECMO in itself, although this needs confirmation.

Therapeutics

4. **"Prone Positioning for Acute Hypoxemic Respiratory Failure and ARDS, a Review"**. Rampon GL, et al. *Chest*. 2022 Sep 23:S0012-3692(22)03888-0. doi: 10.1016/j.chest.2022.09.020. <https://www.sciencedirect.com/science/article/pii/S0012369222038880>

Prone positioning is an immediately accessible, readily implementable intervention that was initially proposed as a method for improvement in gas exchange over 50 years ago. Initially implemented clinically as an empiric therapy for refractory hypoxemia, multiple clinical trials were performed on the use of prone positioning in various respiratory conditions, cumulating in the landmark PROSEVA trial which demonstrated mortality benefit in patients with severe acute respiratory distress syndrome (ARDS). Following this trial and the corresponding meta-analysis, expert consensus and societal guidelines recommended the use of prone positioning for the management of severe ARDS. The ongoing coronavirus disease 2019 (COVID-19) pandemic has brought prone positioning to the forefront of medicine, including widespread implementation of prone positioning in awake, spontaneously breathing, non-intubated patients with acute hypoxemic respiratory failure. Multiple clinical trials have now been performed to investigate the safety and effectiveness of prone positioning in these patients and have enhanced our understanding of the effects of the prone position in respiratory failure. In this review, we discuss the physiology, clinical outcome data, practical considerations, and lingering questions of prone positioning.

5. **Effect of intravenous almitrine on intubation or mortality in patients with COVID-19 acute hypoxemic respiratory failure: A multicentre, randomised, double-blind, placebo-controlled trial**. Kalfon P et al. *EClinicalMedicine*. 2022 Sep 21:101663. doi: 10.1016/j.eclinm.2022.101663. <https://www.sciencedirect.com/science/article/pii/S2589537022003935>

In patients with COVID-19 acute hypoxemic respiratory failure, low-dose almitrine failed in reducing the need for MV or death at day 7.

FUNDING: Programme Hospitalier de Recherche Clinique (PHRC COVID 2020) funded by the French Ministry of Health, Les Laboratoires Servier (Suresnes, France) providing the study drug free of charge.

6. **Effect of High-Flow Nasal Cannula Oxygen vs Standard Oxygen Therapy on Mortality in Patients with Respiratory Failure Due to COVID-19: The SOHO-COVID Randomized Clinical Trial**. Frat JP et al. *JAMA*. 2022 Sep 27;328(12):1212-1222. doi: 10.1001/jama.2022.15613. <https://jamanetwork.com/journals/jama/fullarticle/2796693>

CONCLUSIONS AND RELEVANCE: Among patients with respiratory failure due to COVID-19, high-flow nasal cannula oxygen, compared with standard oxygen therapy, did not significantly reduce 28-day mortality.

TRIAL REGISTRATION: ClinicalTrials.gov Identifier: NCT04468126.

Transmission / Infection Control

- 7. Increased household transmission and immune escape of the SARS-CoV-2 Omicron compared to Delta variants.** Jalali N, et al. *Nat Commun.* 2022 Sep 29;13(1):5706. doi: 10.1038/s41467-022-33233-9. <https://www.nature.com/articles/s41467-022-33233-9>

Understanding the epidemic growth of the novel SARS-CoV-2 Omicron variant is critical for public health. We compared the ten-day secondary attack rate (SAR) of the Omicron and Delta variants in households using Norwegian contact tracing data, December 2021 - January 2022. Omicron SAR was higher than Delta, with a relative risk (RR) of 1.41 (95% CI 1.27-1.56). We observed increased susceptibility to Omicron infection in household contacts compared to Delta, independent of contacts' vaccination status. Among three-dose vaccinated contacts, the mean SAR was lower for both variants. We found increased Omicron transmissibility from primary cases to contacts in all vaccination groups, except 1-dose vaccinated, compared to Delta. Omicron SAR of three-dose vaccinated primary cases was high, 46% vs 11 % for Delta. In conclusion, three-dose vaccinated primary cases with Omicron infection can efficiently spread in households, while three-dose vaccinated contacts have a lower risk of being infected by Delta and Omicron.

Vaccines / Immunology

- 8. Odds of Hospitalization for COVID-19 After 3 vs 2 Doses of mRNA COVID-19 Vaccine by Time Since Booster Dose.** Ridgway JP, Tideman S, French T, Wright B, Parsons G, Diaz G, Robicsek A. *JAMA.* 2022 Sep 23. doi: 10.1001/jama.2022.17811. Online ahead of print. **[Providence authors]** <https://jamanetwork.com/journals/jama/fullarticle/2796847>

In a large US population, mRNA boosters were associated with decreased odds of hospitalization compared with the mRNA vaccine primary series alone, with the magnitude of the association attenuated with more time since the booster dose. Studies comparing COVID-19 rates among boosted individuals vs unvaccinated individuals have found 55% to 99% lower odds of COVID-19 among those who are boosted. By matching cases with controls based on the date of second mRNA dose, this study was able to measure the added benefit of a booster dose to the primary series. This study's findings are similar to the hazard ratio of 0.48 for hospitalization for COVID-19 associated with boosters that was found in a study with shorter follow-up. Because the 2-dose primary series reduces long-term risk for hospitalization, even if the magnitude of the association attenuated over time after 3 vs 2 vaccine doses, the overall risk for hospitalization among vaccinated individuals remains low.

- 9. Outcomes at least 90 days since onset of myocarditis after mRNA COVID-19 vaccination in adolescents and young adults in the USA: a follow-up surveillance study.** Kralick I et al. *Lancet Child Adolesc Health.* 2022 Sep 21:S2352-4642(22)00244-9. doi: 10.1016/S2352-4642(22)00244-9. [https://www.thelancet.com/journals/lanchi/article/PIIS2352-4642\(22\)00244-9/fulltext](https://www.thelancet.com/journals/lanchi/article/PIIS2352-4642(22)00244-9/fulltext)

After at least 90 days since onset of myocarditis after mRNA COVID-19 vaccination, most individuals in our cohort were considered recovered by health-care providers, and quality of life measures were comparable to those in pre-pandemic and early pandemic populations of a similar age. These findings might not be generalisable given the small sample size and further follow-up is needed for the subset of patients with atypical test results or not considered recovered.

10. **Protection against omicron (B.1.1.529) BA.2 reinfection conferred by primary omicron BA.1 or pre-omicron SARS-CoV-2 infection among health-care workers with and without mRNA vaccination: a test-negative case-control study.** Carazo S et al. *Lancet Infect Dis.* 2022 Sep 21:S1473-3099(22)00578-3. doi: 10.1016/S1473-3099(22)00578-3.

[https://www.thelancet.com/journals/laninf/article/PIIS1473-3099\(22\)00578-3/fulltext](https://www.thelancet.com/journals/laninf/article/PIIS1473-3099(22)00578-3/fulltext)

Health-care workers who had received two doses of mRNA vaccine and had previous BA.1 infection were subsequently well protected for a prolonged period against BA.2 reinfection, with a third vaccine dose conferring no improvement to that hybrid protection. If this protection also pertains to future variants, there might be limited benefit from additional vaccine doses for people with hybrid immunity, depending on timing and variant.

FUNDING: Ministère de la Santé et des Services Sociaux du Québec.

11. **The number of COVID-19 vaccine doses and severe clinical outcomes in older patients infected with a SARS-CoV-2 Omicron variant.** Furukawa K, et al. *J Infect Dis.* 2022 Sep 26:jjac395. doi: 10.1093/infdis/jiac395. <https://academic.oup.com/jid/advance-article/doi/10.1093/infdis/jiac395/6717967>

Older adults and individuals with comorbidities are at increased risk of lethal COVID-19 disease caused by SARS-CoV-2 infection. SARS-CoV-2 Omicron variants, the transmission of which is greater than those of previous variants, have appeared with several mutations, especially in the spike protein; some of the mutations are important for immune escape, and Omicron variants have, thus, spread rapidly and become an important, worldwide problem.

12. **Incidence of Severe COVID-19 Illness Following Vaccination and Booster With BNT162b2, mRNA-1273, and Ad26.COV2.S Vaccines.** Kelly JD et al. *JAMA.* 2022 Sep 26. doi: 10.1001/jama.2022.17985. <https://jamanetwork.com/journals/jama/fullarticle/2796892>

In a US cohort of patients receiving care at Veterans Health Administration facilities during a period of Delta and Omicron variant predominance, there was a low incidence of hospitalization with COVID-19 pneumonia or death following vaccination and booster with any of BNT162b2, mRNA-1273, or Ad26.COV2.S vaccines.

13. **Association of Primary and Booster Vaccination and Prior Infection With SARS-CoV-2 Infection and Severe COVID-19 Outcomes.** Lin DY, et al. *JAMA.* 2022 Sep 26. doi: 10.1001/jama.2022.17876. <https://jamanetwork.com/journals/jama/fullarticle/2796893>

Receipt of primary COVID-19 vaccine series compared with being unvaccinated, receipt of boosters compared with primary vaccination, and prior infection compared with no prior infection were all significantly associated with lower risk of SARS-CoV-2 infection (including Omicron) and resulting hospitalization and death. The associated protection waned over time, especially against infection.

14. **Association of Influenza Vaccination With SARS-CoV-2 Infection and Associated Hospitalization and Mortality Among Patients Aged 66 Years or Older.** Hosseini-Moghaddam SM, et al. *JAMA Netw Open.* 2022 Sep 1;5(9):e2233730. doi: 10.1001/jamanetworkopen.2022.33730. <https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2796809>

The findings of this cohort study suggest that undergoing a PHE [periodic health examination] may at least partially modify the association between influenza vaccination and SARS-CoV-2-associated outcomes in individuals aged 66 years or older, providing evidence of the healthy vaccinee bias that may affect vaccine effectiveness studies.

15. **Effectiveness of a Second COVID-19 Vaccine Booster Dose Against Infection, Hospitalization, or Death Among Nursing Home Residents - 19 States, March 29-July 25, 2022.** McConeghy KW, et al. *MMWR Morb Mortal Wkly Rep.* 2022 Sep 30;71(39):1235-1238. doi: 10.15585/mmwr.mm7139a2.
https://www.cdc.gov/mmwr/volumes/71/wr/mm7139a2.htm?s_cid=mm7139a2_w

These findings suggest that among nursing home residents, second mRNA COVID-19 vaccine booster doses provided additional protection over first booster doses against severe COVID-19 outcomes during a time of emerging Omicron variants. Facilities should continue to ensure that nursing home residents remain up to date with COVID-19 vaccination, including bivalent vaccine booster doses, to prevent severe COVID-19 outcomes.

Women & Children

16. **Detection of Messenger RNA COVID-19 Vaccines in Human Breast Milk.** Hanna N, et al. *JAMA Pediatr.* 2022 Sep 26. doi: 10.1001/jamapediatrics.2022.3581.
<https://jamanetwork.com/journals/jamapediatrics/fullarticle/2796427>

Vaccination is a cornerstone in fighting the COVID-19 pandemic. However, the initial messenger RNA (mRNA) vaccine clinical trials excluded several vulnerable groups, including young children and lactating individuals.¹ The US Food and Drug Administration deferred the decision to authorize COVID-19 mRNA vaccines for infants younger than 6 months until more data are available because of the potential priming of the children's immune responses that may alter their immunity.² The Centers for Disease Control and Prevention recommends offering the COVID-19 mRNA vaccines to breastfeeding individuals,³ although the possible passage of vaccine mRNAs in breast milk resulting in infants' exposure at younger than 6 months was not investigated. This study investigated whether the COVID-19 vaccine mRNA can be detected in the expressed breast milk (EBM) of lactating individuals receiving the vaccination within 6 months after delivery.

17. **Association of SARS-CoV-2 Seropositivity with Myalgic Encephalomyelitis and/or Chronic Fatigue Syndrome Among Children and Adolescents in Germany.** Sorg AL et al. *JAMA Netw Open.* 2022 Sep 1;5(9):e2233454. doi: 10.1001/jamanetworkopen.2022.33454.
<https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2796733>

These findings suggest that the risk of ME/CFS in children and adolescents owing to SARS-CoV-2 infection may be very small. Recall bias may contribute to risk estimates of long COVID-19 symptoms in children. Extensive lockdowns must be considered as an alternative explanation for complex unspecific symptoms during the COVID-19 pandemic.

[Multi-Disciplinary Collaborative Consensus Guidance Statement on the Assessment and Treatment of Post-Acute Sequelae of SARS-CoV-2 Infection \(PASC\) in Children and Adolescents.](#) Malone LA et al. *PM R.* 2022 Sep 28. doi: 10.1002/pmrj.12890.

FDA / CDC / NIH / WHO Updates

CDC – Updated masking requirements, [Interim Infection Prevention and Control Recommendations for Healthcare Personnel During the Coronavirus Disease 2019 \(COVID-19\) Pandemic](#)

Commentary & Press Releases

[Study confirms link between COVID-19 vaccination and temporary increase in menstrual cycle length](#)

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