

COVID-19 Resource Desk

#146 | 3.5.2023 to 3.11.2023

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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. **Hemorrhage, Disseminated Intravascular Coagulopathy, and Thrombosis Complications Among Critically Ill Patients with COVID-19: An International COVID-19 Critical Care Consortium Study.** Fanning JP et al. *Crit Care Med.* 2023 Feb 28:e005798. doi: 10.1097/CCM.0000000000005798.

https://journals.lww.com/ccmjournal/Fulltext/9900/Hemorrhage,_Disseminated_Intravascular.103.aspx

HECTOR events are frequent complications of severe COVID-19 in ICU patients. Patients receiving ECMO are at particular risk of hemorrhagic complications. Hemorrhagic, but not thrombotic complications, are associated with increased ICU mortality.

2. **Risk factors of pneumothorax and pneumomediastinum in COVID-19: a matched case-control study.** Lee SJ et al. *BMC Infect Dis.* 2023 Mar 7;23(1):137. doi: 10.1186/s12879-023-08104-3.

<https://bmcinfectdis.biomedcentral.com/articles/10.1186/s12879-023-08104-3>

Higher BMI tended to show a protective effect against PNX/PNM due to COVID-19 and delayed application of IMV might be a contributive factor for this complication.

Epidemiology & Public Health

3. **Incidence and outcomes of hospital-associated coronavirus disease 2019 (COVID-19) before and after emergence of the severe acute respiratory coronavirus virus 2 (SARS-CoV-2) omicron variant.** Williams VR, et al. *Infect Control Hosp Epidemiol.* 2023 Mar 6:1-3. doi: 10.1017/ice.2023.29. <https://www.cambridge.org/core/journals/infection-control-and-hospital-epidemiology/article/incidence-and-outcomes-of-hospital-associated-coronavirus-disease-2019-covid19-before-and-after-emergence-of-the-severe-acute-respiratory-coronavirus-virus-2-sarscov2-omicron-variant/710793254A6C5082EC907A69DFC2AF83>

The severe acute respiratory coronavirus virus 2 (SARS-CoV-2) o (omicron) variant has been associated with broader community transmission compared to earlier variants but lower mortality. Reference Guo, Han and Zhang¹, Reference Adjei, Hong and Molinari² We sought to determine whether similar trends apply to hospital-associated coronavirus disease 2019 (HA–COVID-19) cases.

- 4. Comparison of mental health symptoms before and during the covid-19 pandemic: evidence from a systematic review and meta-analysis of 134 cohorts.** Sun Y et al. *BMJ*. 2023 Mar 8;380:e074224. doi: 10.1136/bmj-2022-074224. <https://www.bmj.com/content/380/bmj-2022-074224>

High risk of bias in many studies and substantial heterogeneity suggest caution in interpreting results. Nonetheless, most symptom change estimates for general mental health, anxiety symptoms, and depression symptoms were close to zero and not statistically significant, and significant changes were of minimal to small magnitudes. Small negative changes occurred for women or female participants in all domains. The authors will update the results of this systematic review as more evidence accrues, with study results posted online (<https://www.depressd.ca/covid-19-mental-health>).

REVIEW REGISTRATION: PROSPERO CRD42020179703.

Survivorship & Rehabilitation

- 5. Long-term gastrointestinal outcomes of COVID-19.** Xu E, Xie Y, Al-Aly Z. *Nat Commun*. 2023 Mar 7;14(1):983. doi: 10.1038/s41467-023-36223-7. <https://www.nature.com/articles/s41467-023-36223-7>

A comprehensive evaluation of the risks and 1-year burdens of gastrointestinal disorders in the post-acute phase of COVID-19 is needed but is not yet available. Here we use the US Department of Veterans Affairs national health care databases to build a cohort of 154,068 people with COVID-19, 5,638,795 contemporary controls, and 5,859,621 historical controls to estimate the risks and 1-year burdens of a set of pre-specified incident gastrointestinal outcomes. We show that beyond the first 30 days of infection, people with COVID-19 exhibited increased risks and 1-year burdens of incident gastrointestinal disorders spanning several disease categories including motility disorders, acid related disorders (dyspepsia, gastroesophageal reflux disease, peptic ulcer disease), functional intestinal disorders, acute pancreatitis, hepatic and biliary disease. The risks were evident in people who were not hospitalized during the acute phase of COVID-19 and increased in a graded fashion across the severity spectrum of the acute phase of COVID-19 (non-hospitalized, hospitalized, and admitted to intensive care). The risks were consistent in comparisons including the COVID-19 vs the contemporary control group and COVID-19 vs the historical control group as the referent category. Altogether, our results show that people with SARS-CoV-2 infection are at increased risk of gastrointestinal disorders in the post-acute phase of COVID-19. Post-covid care should involve attention to gastrointestinal health and disease.

Therapeutics

- 6. Molnupiravir and risk of hospital admission or death in adults with covid-19: emulation of a randomized target trial using electronic health records.** Xie Y, Bowe B, Al-Aly Z. *BMJ*. 2023 Mar 7;380:e072705. doi: 10.1136/bmj-2022-072705. <https://www.bmj.com/content/380/bmj-2022-072705>

The findings of this emulation of a randomized target trial suggest that molnupiravir might have reduced hospital admission or death at 30 days in adults with SARS-CoV-2 infection in the community during the recent omicron predominant era who were at high risk of progression to severe covid-19 and eligible for treatment with molnupiravir.

- 7. Anticoagulation Strategies in Non-Critically Ill Patients Hospitalized with COVID-19: A Randomized Clinical Trial.** Stone GW et al. *J Am Coll Cardiol*. 2023 Feb 27:S0735-1097(23)04527-8. doi: 10.1016/j.jacc.2023.02.041.

<https://www.sciencedirect.com/science/article/pii/S0735109723045278>

Among non-critically ill patients hospitalized with COVID-19, the 30-day primary composite outcome was not significantly reduced with therapeutic-dose anticoagulation compared with prophylactic-dose anticoagulation. However, fewer patients who were treated with therapeutic-dose anticoagulation required intubation or died.

- 8. Report of the first seven agents in the I-SPY COVID trial: a phase 2, open label, adaptive platform randomised controlled trial.** I-SPY COVID Consortium. *EClinicalMedicine*. 2023 Apr;58:101889. doi: 10.1016/j.eclinm.2023.101889. Epub 2023 Mar 3.

[https://www.thelancet.com/journals/eclinm/article/PIIS2589-5370\(23\)00066-4/fulltext](https://www.thelancet.com/journals/eclinm/article/PIIS2589-5370(23)00066-4/fulltext)

None of the first 7 agents to enter the trial met the prespecified criteria for a large efficacy signal. Celecoxib/Famotidine was stopped early for potential harm. Adaptive platform trials may provide a useful approach to rapidly screen multiple agents during a pandemic.

FUNDING: Quantum Leap Healthcare Collaborative is the trial sponsor. Funding for this trial has come from: the COVID R&D Consortium, Allergan, Amgen Inc., Takeda Pharmaceutical Company, Implicit Bioscience, Johnson & Johnson, Pfizer Inc., Roche/Genentech, Apotex Inc., FAST Grant from Emergent Venture George Mason University, The DoD Defense Threat Reduction Agency (DTRA), The Department of Health and Human Services Biomedical Advanced Research and Development Authority (BARDA), and The Grove Foundation. Effort sponsored by the U.S. Government under Other Transaction number W15QKN-16-9-1002 between the MCDC, and the Government.

Vaccines / Immunology

- 9. COVID-19 Vaccine Effectiveness Against Omicron Infection and Hospitalization.** Piché-Renaud PP et al. *Pediatrics*. 2023 Mar 3:e2022059513. doi: 10.1542/peds.2022-059513.

<https://publications.aap.org/pediatrics/article/doi/10.1542/peds.2022-059513/190808/COVID-19-Vaccine-Effectiveness-Against-Omicron>

In children aged 5 to 11 years, 2 doses of BNT162b2 provide moderate protection against symptomatic Omicron infection within 4 months of vaccination and good protection against severe outcomes. Protection wanes more rapidly for infection than severe outcomes. Overall, longer dosing intervals confer higher protection against symptomatic infection, however protection decreases and becomes similar to shorter dosing interval starting 90 days after vaccination.

- 10. Risk of Incident Thromboembolic and Ischemic Events After COVID-19 Vaccination Compared With SARS-CoV-2 Infection.** Lassen MCH et al. *Circulation*. 2023 Mar 7;147(10):843-845. doi: 10.1161/CIRCULATIONAHA.122.063296. Epub 2023 Mar 6.

<https://www.ahajournals.org/doi/10.1161/CIRCULATIONAHA.122.063296>

The perceived risk of thromboembolic and ischemic events as possible complications of mRNA-based coronavirus disease 2019 (COVID-19) vaccines remains a reason for vaccine hesitancy for some individuals. Studies have reported a higher risk of ischemic and thromboembolic events during or after

severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection. We assessed the risk of incident thromboembolic and ischemic events after vaccination with mRNA-1273 and BNT162b2 and compared these with the risks during or after SARS-CoV-2 infection in a Danish nationwide registry-based cohort study.

11. Impact of Vaccination and the Omicron Variant on COVID-19-related Chest CT Findings: A Multicenter Study. Crombé A, Bensid L, Seux M, Fadli D, Arnaud F, Benhamed A, Banaste N, Gorincour G. *Radiology*. 2023 Mar 7:222730. doi: 10.1148/radiol.222730.

<https://pubs.rsna.org/doi/10.1148/radiol.222730>

Both the omicron variant and vaccination were associated with less typical chest CT manifestations for COVID-19 and lesser extent of disease. See also the editorial by Yoon and Goo in this issue.

12. Axillary Lymphadenopathy After a COVID-19 Vaccine Booster Dose: Time to Resolution on Ultrasound Follow-Up and Associated Factors. Mema E, et al. *AJR Am J Roentgenol*. 2023 Mar 8. doi: 10.2214/AJR.22.28970. <https://www.ajronline.org/doi/10.2214/AJR.22.28970>

Axillary lymphadenopathy after a COVID-19 vaccine booster dose has a mean time to resolution of 102 days, shorter than the time to resolution after the initial series. Clinical Impact: The time to resolution after a booster dose supports the current recommendation for a follow-up interval of at least 12 weeks for suspected vaccine-related lymphadenopathy.

13. Effectiveness of mRNA COVID-19 vaccine booster doses against Omicron severe outcomes.

Grewal R et al. *Nat Commun*. 2023 Mar 7;14(1):1273. doi: 10.1038/s41467-023-36566-1.

<https://www.nature.com/articles/s41467-023-36566-1>

We estimated the effectiveness of booster doses of monovalent mRNA COVID-19 vaccines against Omicron-associated severe outcomes among adults in Ontario, Canada. We used a test-negative design to estimate vaccine effectiveness (VE) against hospitalization or death among SARS-CoV-2-tested adults aged ≥ 50 years from January 2 to October 1, 2022, stratified by age and time since vaccination. We also compared VE during BA.1/BA.2 and BA.4/BA.5 sublineage predominance. We included 11,160 cases and 62,880 tests for test-negative controls. Depending on the age group, compared to unvaccinated adults, VE was 91-98% 7-59 days after a third dose, waned to 76-87% after ≥ 240 days, was restored to 92-97% 7-59 days after a fourth dose, and waned to 86-89% after ≥ 120 days. VE was lower and declined faster during BA.4/BA.5 versus BA.1/BA.2 predominance, particularly after ≥ 120 days. Here we show that booster doses of monovalent mRNA COVID-19 vaccines restored strong protection against severe outcomes for at least 3 months after vaccination. Across the entire study period, protection declined slightly over time, but waned more during BA.4/BA.5 predominance.

Women & Children

14. Long COVID-six months of prospective follow-up of changes in symptom profiles of non-hospitalised children and young people after SARS-CoV-2 testing: A national matched cohort study (The CLoCk) study. Stephenson T et al. *PLoS One*. 2023 Mar 6;18(3):e0277704. doi: 10.1371/journal.pone.0277704. eCollection 2023.

<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0277704>

In CYP, the prevalence of specific symptoms reported at time of PCR-testing declined with time. Similar patterns were observed among test-positives and test-negatives and new symptoms were reported six months post-test for both groups suggesting that symptoms are unlikely to exclusively be a specific consequence of SARS-COV-2 infection. Many CYP experienced unwanted symptoms that warrant investigation and potential intervention.

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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