Providence

COVID-19 Resource Desk

#93 | 2.6.2022 to 2.12.2022

Prepared by System Library Services Retraction Watch

New Research

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

COVID-19 related publications by Providence caregivers – see Digital Commons

Clinical Syndrome

1. **COVID-19 and Risk of Acute Ischemic Stroke Among Medicare Beneficiaries Aged 65 Years or Older: Self-Controlled Case Series Study.** Yang Q, et al. *Neurology.* 2022 Feb 3:10.1212/WNL.0000000000013184. doi: 10.1212/WNL.0000000000013184. https://n.neurology.org/content/early/2022/02/02/WNL.0000000000013184
Risk of AIS among Medicare FFS beneficiaries was ten times (day 0 cases in the risk period) as high during the first 3 days after diagnosis of COVID-19 as during the control period and the risk associated with COVID-19 appeared to be stronger among those aged 65-74 years and those without prior history of stroke. This study provides Class IV evidence that SARS-CoV-2 infection, the virus that causes COVID-19, is associated with increased risk of AIS in the first three days after diagnosis in Medicare FFS beneficiaries ≥ 65 years age.

2. **Clinical Characteristics and Outcomes Among Adults Hospitalized with Laboratory-Confirmed SARS-CoV-2 Infection During Periods of B.1.617.2 (Delta) and B.1.1.529 (Omicron) Variant Predominance — One Hospital, California, July 15–September 23, 2021, and December 21, 2021–January 27, 2022.** Modes ME, et al. *MMWR Morb Mortal Wkly Rep.* ePub: 4 February 2022. DOI: http://dx.doi.org/10.15585/mmwr.mm7106e2
Among adults hospitalized with SARS-CoV-2 infection during Omicron predominance, COVID-19 vaccination, including with a booster dose, was associated with lower likelihood of intensive care unit admission. Compared with patients during the period of Delta predominance, Omicron-period patients had less severe illness, largely driven by an increased proportion who were fully vaccinated. Approximately 20% of early Omicron-period hospitalizations were for non–COVID-19 conditions, particularly among young and vaccinated adults.

Diagnostics & Screening

3. **Healthcare personnel frequently have positive severe acute respiratory syndrome coronavirus 2 antigen tests 5 days or more after diagnosis of coronavirus disease 2019.** Stiefel U, et al. *Infect Control Hosp Epidemiol.* 2022 Feb 8:1-6. doi: 10.1017/ice.2022.21. https://www.cambridge.org/core/journals/infection-control-and-hospital-epidemiology/article/healthcare-personnel-frequently-have-positive-severe-acute-respiratory-

syndrome-coronavirus-2-antigen-tests-5-days-or-more-after-diagnosis-of-coronavirus-disease-2019/BD24D887BB74860824A4F46D549336D7

The rationale for allowing healthcare personnel to return to work after 5 days is that the highest risk for transmission is the period 2 days before and 3 days after symptom onset.3-5 However, the duration of shedding of viable virus particles is unclear for the omicron variant, and the frequency of positive antigen tests 5 or more days after onset of illness is not known. Such information is urgently needed as positive antigen tests have been shown to correlate relatively well with shedding of viable virus and transmission risk.6-9 Here, we examined the percentage of healthcare personnel with positive antigen tests 5 or more days after diagnosis of COVID-19.

Epidemiology & Public Health

4. **Signals of significantly increased vaccine breakthrough, decreased hospitalization rates, and less severe disease in patients with COVID-19 caused by the Omicron variant of SARS-CoV-2 in Houston, Texas.** Christensen PA et al. *Am J Pathol.* 2022 Feb 3:S0002-9440(22)00044-X. doi: 10.1016/j.ajpath.2022.01.007. https://ajp.amjpathol.org/article/S0002-9440(22)00044-X/fulltext

   Genetic variants of SARS-CoV-2 continue to dramatically alter the landscape of the COVID-19 pandemic. The recently described variant of concern designated Omicron (B.1.1.529) has rapidly spread worldwide and is now responsible for the majority of COVID-19 cases in many countries. Because Omicron was recognized very recently, many knowledge gaps exist about its epidemiology, clinical severity, and disease course. A genome sequencing study of SARS-CoV-2 in the Houston Methodist healthcare system identified 4,468 symptomatic patients with infections caused by Omicron from late November 2021 through January 5, 2022. Omicron very rapidly increased in only three weeks to cause 90% of all new COVID-19 cases, and at the end of the study period caused 98% of new cases. Compared to patients infected with either Alpha or Delta variants in our healthcare system, Omicron patients were significantly younger, had significantly increased vaccine breakthrough rates, and were significantly less likely to be hospitalized. Omicron patients required less intense respiratory support and had a shorter length of hospital stay, consistent with on average decreased disease severity. Two patients with Omicron "stealth" sublineage BA.2 also were identified. The data document the unusually rapid spread and increased occurrence of COVID-19 caused by the Omicron variant in metropolitan Houston, and address the lack of information about disease character among US patients.

5. **Pandemic preparedness and COVID-19: an exploratory analysis of infection and fatality rates, and contextual factors associated with preparedness in 177 countries, from Jan 1, 2020, to Sept 30, 2021.** COVID-19 National Preparedness Collaborators. *Lancet.* 2022 Feb 1:S0140-6736(22)00172-6. doi: 10.1016/S0140-6736(22)00172-6. https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(22)00172-6/fulltext

   Efforts to improve pandemic preparedness and response for the next pandemic might benefit from greater investment in risk communication and community engagement strategies to boost the confidence that individuals have in public health guidance. Our results suggest that

increasing health promotion for key modifiable risks is associated with a reduction of fatalities in such a scenario.

6. **A Test-to-Stay Modified Quarantine Program for COVID-19 in Schools.** Schecter-Perkins EM et al. *Pediatrics.* 2022 Feb 8. doi: 10.1542/peds.2021-055727.https://publications.aap.org/pediatrics/article/doi/10.1542/peds.2021-055727/184750/A-Test-to-Stay-Modified-Quarantine-Program-for
2,298 schools signed up for TTS, and 504,167 individuals out of a total population of 860,457 consented. During the first thirteen weeks with complete data, 1,959 schools activated the program at least once for 102,373 individual, exposed students. Out of 328,271 tests performed, 2,943 positive cases were identified (per person positivity rate, 2.9%, 95% CI 2.8%, 3.0%). A minimum of 325,328 and a maximum of 497,150 days of in-person school were saved through participation in the program. Daily, rapid on-site antigen testing is a safe and feasible alternative to mandatory quarantine and can be used to maximize safe in-person learning time during the pandemic.

7. **Genomic Surveillance for SARS-CoV-2 Variants: Predominance of the Delta (B.1.617.2) and Omicron (B.1.1.529) Variants — United States, June 2021–January 2022.** Lambrou AS, et al. *MMWR Morb Mortal Wkly Rep* 2022;71:206–211. DOI: http://dx.doi.org/10.15585/mmwr.mm7106a4
The data in this report are a summary of findings of recent proportions of circulating variants that are updated weekly on CDC's COVID Data Tracker website to enable timely public health action. The SARS-CoV-2 Delta (B.1.617.2 and AY sublineages) variant rose from 1% to >50% of viral lineages circulating nationally during 8 weeks, from May 1–June 26, 2021. Delta-associated infections remained predominant until being rapidly overtaken by infections associated with the Omicron (B.1.1.529 and BA sublineages) variant in December 2021, when Omicron increased from 1% to >50% of circulating viral lineages during a 2-week period. As of the week ending January 22, 2022, Omicron was estimated to account for 99.2% (95% CI = 99.0%–99.5%) of SARS-CoV-2 infections nationwide, and Delta for 0.7% (95% CI = 0.5%–1.0%). The dynamic landscape of SARS-CoV-2 variants in 2021, including Delta- and Omicron-driven resurgences of SARS-CoV-2 transmission across the United States, underscores the importance of robust genomic surveillance efforts to inform public health planning and practice.

Survivorship & Rehabilitation

8. **Prevalence of post-acute COVID-19 syndrome symptoms at different follow-up periods: A systematic review and meta-analysis.** Alkodaymi MS et al. *Clin Microbiol Infect*. 2022 Feb 3:S1198-743X(22)00038-6. doi: 10.1016/j.cmi.2022.01.014.
https://www.clinicalmicrobiologyandinfection.com/article/S1198-743X(22)00038-6/fulltext
This systematic review found that a large proportion of patients experience PACS 3 to 12 months after recovery from the acute phase of COVD-19. However, available studies of PACS are highly heterogeneous. Future studies need to have appropriate comparator groups, standardized symptoms definitions and measurements and longer follow-up.

9. **Long-term cardiovascular outcomes of COVID-19.** Xie, Y., et al. *Nat Med* (2022). https://doi.org/10.1038/s41591-022-01689-3
   The cardiovascular complications of acute coronavirus disease 2019 (COVID-19) are well described, but the post-acute cardiovascular manifestations of COVID-19 have not yet been comprehensively characterized. Here we used national healthcare databases from the US Department of Veterans Affairs to build a cohort of 153,760 individuals with COVID-19, as well as two sets of control cohorts with 5,637,647 (contemporary controls) and 5,859,411 (historical controls) individuals, to estimate risks and 1-year burdens of a set of pre-specified incident cardiovascular outcomes. We show that, beyond the first 30 d after infection, individuals with COVID-19 are at increased risk of incident cardiovascular disease spanning several categories, including cerebrovascular disorders, dysrhythmias, ischemic and non-ischemic heart disease, pericarditis, myocarditis, heart failure and thromboembolic disease. These risks and burdens were evident even among individuals who were not hospitalized during the acute phase of the infection and increased in a graded fashion according to the care setting during the acute phase (non-hospitalized, hospitalized and admitted to intensive care). Our results provide evidence that the risk and 1-year burden of cardiovascular disease in survivors of acute COVID-19 are substantial. Care pathways of those surviving the acute episode of COVID-19 should include attention to cardiovascular health and disease.

10. **Risk of persistent and new clinical sequelae among adults aged 65 years and older during the post-acute phase of SARS-CoV-2 infection: retrospective cohort study.** Cohen K, et al. *BMJ* 2022; 376 :e068414 doi:10.1136/bmj-2021-068414 https://www.bmj.com/content/376/bmj-2021-068414
    The results confirm an excess risk for persistent and new sequelae in adults aged ≥65 years after acute infection with SARS-CoV-2. Other than respiratory failure, dementia, and post-viral fatigue, the sequelae resembled those of viral lower respiratory tract illness in older adults. These findings further highlight the wide range of important sequelae after acute infection with the SARS-CoV-2 virus.

11. **Long COVID symptoms in SARS-CoV-2-positive adolescents and matched controls (LongCOVIDKidsDK): a national, cross-sectional study.** Kikkenborg Berg S, et al. *Lancet Child Adolesc Health.* 2022 Feb 7:S2352-4642(22)00004-9. doi: 10.1016/S2352-4642(22)00004-9. https://www.thelancet.com/journals/lanchi/article/PIIS2352-4642(22)00004-9/fulltext
    Participants with SARS-CoV-2-positive tests had more long-lasting symptoms and sick leave, whereas participants in the control group had more short-lasting symptoms and worse quality of life. Knowledge of long COVID in adolescents is important to guide clinical recognition and management of this condition.

12. **Physical and mental health 3 months after SARS-CoV-2 infection (long COVID) among adolescents in England (CLoCk): a national matched cohort study.** Stephenson T et al. *Lancet Child Adolesc Health*. 2022 Feb 7:S2352-4642(22)00022-0. doi: 10.1016/S2352-4642(22)00022-0. https://www.thelancet.com/journals/lanchi/article/PIIS2352-4642(22)00022-0/fulltext
    Adolescents who tested positive for SARS-CoV-2 had similar symptoms to those who tested negative, but had a higher prevalence of single and, particularly, multiple symptoms at the time

of PCR testing and 3 months later. Clinicians should consider multiple symptoms that affect functioning and recognise different clusters of symptoms. The multiple and varied symptoms show that a multicomponent intervention will be required, and that mental and physical health symptoms occur concurrently, reflecting their close relationship.

Therapeutics

13. **Efficacy and safety of baricitinib plus standard of care for the treatment of critically ill hospitalised adults with COVID-19 on invasive mechanical ventilation or extracorporeal membrane oxygenation: an exploratory, randomised, placebo-controlled trial.** COV-BARRIER Study Group. *Lancet Respir Med.* 2022 Feb 3:S2213-2600(22)00006-6. doi: 10.1016/S2213-2600(22)00006-6. https://www.thelancet.com/journals/lanres/article/PIIS2213-2600(22)00006-6/fulltext
    In critically ill hospitalised patients with COVID-19 who were receiving invasive mechanical ventilation or extracorporeal membrane oxygenation, treatment with baricitinib compared with placebo (in combination with standard of care, including corticosteroids) reduced mortality, which is consistent with the mortality reduction observed in less severely ill patients in the hospitalised primary COV-BARRIER study population. However, this was an exploratory trial with a relatively small sample size; therefore, further phase 3 trials are needed to confirm these findings.

14. **Efficacy of Niclosamide vs Placebo in SARS-CoV-2 Respiratory Viral Clearance, Viral Shedding, and Duration of Symptoms Among Patients with Mild to Moderate COVID-19: A Phase 2 Randomized Clinical Trial.** Cairns DM, et al. *JAMA Netw Open.* 2022 Feb 1;5(2):e2144942. doi: 10.1001/jamanetworkopen.2021.44942.
    https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2788857
    In this randomized clinical trial, there was no significant difference in oropharyngeal clearance of SARS-CoV-2 at day 3 between placebo and niclosamide groups. Confirmation in larger studies is warranted.

15. **CytoSorb Rescue for COVID-19 Patients with Vasoplegic Shock and Multiple Organ Failure: A Prospective, Open-Label, Randomized Controlled Pilot Study.** Stockmann H et al. *Crit Care Med.* 2022 Feb 9. doi: 10.1097/CCM.0000000000005493.
    https://journals.lww.com/ccmjournal/Abstract/9000/CytoSorb_Rescue_for_COVID_19_Patients_With.94994.aspx
    In severely ill COVID-19 patients, CytoSorb did not improve resolution of vasoplegic shock or predefined secondary endpoints.

16. **A Randomized Controlled Trial of Renin-Angiotensin-Aldosterone System Inhibitor Management in Patients Admitted in Hospital with COVID-19.** Sharma A et al. *Am Heart J*. 2022 Feb 7:S0002-8703(22)00024-2. doi: 10.1016/j.ahj.2022.01.015.
    https://www.clinicalkey.com/#!/content/playContent/1-s2.0-S0002870322000242

RAASi continuation in participants hospitalized with COVID-19 appears safe; discontinuation increased BNP levels and may increase risk of acute heart failure; where possible, RAASi should be continued.

Transmission / Infection Control

17. **Effectiveness of Face Mask or Respirator Use in Indoor Public Settings for Prevention of SARS-CoV-2 Infection — California, February–December 2021.** Andrejko KL, et al. *MMWR Morb Mortal Wkly Rep.* ePub: 4 February 2022. DOI: http://dx.doi.org/10.15585/mmwr.mm7106e1
Always using a face mask or respirator in indoor public settings was associated with lower adjusted odds of a positive test result compared with never wearing a face mask or respirator in these settings (adjusted odds ratio [aOR] = 0.44; 95% CI = 0.24–0.82). Among 534 participants who specified the type of face covering they typically used, wearing N95/KN95 respirators (aOR = 0.17; 95% CI = 0.05–0.64) or surgical masks (aOR = 0.34; 95% CI = 0.13–0.90) was associated with significantly lower adjusted odds of a positive test result compared with not wearing any face mask or respirator. These findings reinforce that in addition to being up to date with recommended COVID-19 vaccinations, consistently wearing a face mask or respirator in indoor public settings reduces the risk of acquiring SARS-CoV-2 infection. Using a respirator offers the highest level of personal protection against acquiring infection, although it is most important to wear a mask or respirator that is comfortable and can be used consistently.

Vaccines / Immunology

18. **The effect of a third BNT162b2 vaccine on breakthrough infections in healthcare workers: a cohort analysis.** Oster Y, et al. *Clin Microbiol Infect.* 2022 Feb 7:S1198-743X(22)00043-X. doi: 10.1016/j.cmi.2022.01.019. https://www.clinicalmicrobiologyandinfection.com/article/S1198-743X(22)00043-X/fulltext
The rate of breakthrough infections among HCW who received only the 2-dose regimen, was 21.4% (85/398). The rate in the boosted group was 0.7% (35/4973; relative risk 30, 95% CI 20-50). Those results were seen in all age groups. The significantly lower rate of breakthrough infections in boosted HCW indicates substantial protection by a third vaccine dose.

19. **Waning 2-Dose and 3-Dose Effectiveness of mRNA Vaccines Against COVID-19–Associated Emergency Department and Urgent Care Encounters and Hospitalizations Among Adults During Periods of Delta and Omicron Variant Predominance — VISION Network, 10 States, August 2021–January 2022.** Ferdinands JM, et al. *MMWR Morb Mortal Wkly Rep.* ePub: 11 February 2022. DOI: http://dx.doi.org/10.15585/mmwr.mm7107e2
The VISION Network analyzed 241,204 ED/UC encounters** and 93,408 hospitalizations across 10 states during August 26, 2021–January 22, 2022. VE after receipt of both 2 and 3 doses was lower during the Omicron-predominant than during the Delta-predominant period at all time points evaluated. During both periods, VE after receipt of a third dose was higher than that after a second dose; however, VE waned with increasing time since vaccination. During the Omicron period, VE against ED/UC visits was 87% during the first 2 months after a third dose and decreased to 66% among those vaccinated 4–5 months earlier; VE against hospitalizations

was 91% during the first 2 months following a third dose and decreased to 78% ≥4 months after a third dose. For both Delta- and Omicron-predominant periods, VE was generally higher for protection against hospitalizations than against ED/UC visits. All eligible persons should remain up to date with recommended COVID-19 vaccinations to best protect against COVID-19–associated hospitalizations and ED/UC visits.

20. **Safety Monitoring of COVID-19 Vaccine Booster Doses Among Adults — United States, September 22, 2021–February 6, 2022.** Hause AM, et al. *MMWR Morb Mortal Wkly Rep*. ePub: 11 February 2022. DOI: http://dx.doi.org/10.15585/mmwr.mm7107
Review of surveillance data found that local and systemic reactions were less frequent after a homologous COVID-19 mRNA vaccine booster dose than after the second primary vaccine dose. Myocarditis was rarely reported following an mRNA vaccine booster dose. All persons aged ≥12 years should receive a COVID-19 booster dose. Vaccination providers should educate patients that local and systemic reactions are expected following a homologous COVID-19 mRNA vaccine booster; however, these reactions are less common than those following the second primary series dose.

21. **Delayed-interval BNT162b2 mRNA COVID-19 vaccination enhances humoral immunity and induces robust T cell responses.** Hall VG, et al. *Nat Immunol*. 2022 Feb 3. doi: 10.1038/s41590-021-01126-6. https://www.nature.com/articles/s41590-021-01126-6
Delayed dosing intervals are a strategy to immunize a greater proportion of the population. In an observational study, we compared humoral and cellular responses in health care workers receiving two doses of BNT162b2 (Pfizer-BioNTech) vaccine at standard (3- to 6-week) and delayed (8- to 16-week) intervals. In the delayed-interval group, anti-receptor-binding domain antibody titers were significantly enhanced compared to the standard-interval group. The 50% plaque reduction neutralization test (PRNT50) and PRNT90 titers against wild-type (ancestral) severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) and Alpha, Beta and Delta variants were higher in the delayed-interval group. Spike-specific polyfunctional CD4+ and CD8+ T cells expressing interferon-γ and interleukin-2 were comparable between the two groups. Here, we show that the strategy of delaying second doses of mRNA vaccination may lead to enhanced humoral immune responses, including improved virus neutralization against wild-type and variant SARS-CoV-2 viruses. This finding has potentially important implications as vaccine implementation continues across a greater proportion of the global population.

22. **Risk of infection, hospitalisation, and death up to 9 months after a second dose of COVID-19 vaccine: a retrospective, total population cohort study in Sweden.** Nordström P, et al. *Lancet.* 2022 Feb 4:S0140-6736(22)00089-7. doi: 10.1016/S0140-6736(22)00089-7.
https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(22)00089-7/fulltext
We found progressively waning vaccine effectiveness against SARS-CoV-2 infection of any severity across all subgroups, but the rate of waning differed according to vaccine type. With respect to severe COVID-19, vaccine effectiveness seemed to be better maintained, although some waning became evident after 4 months. The results strengthen the evidence-based rationale for administration of a third vaccine dose as a booster.

23. **Final Analysis of Efficacy and Safety of Single-Dose Ad26.COV2.S.** Sadoff J et al. *N Engl J Med.* 2022 Feb 9. doi: 10.1056/NEJMoa2117608. https://www.nejm.org/doi/full/10.1056/NEJMoa2117608
A single dose of Ad26.COV2.S provided 52.9% protection against moderate to severe-critical Covid-19. Protection varied according to variant; higher protection was observed against severe Covid-19, medical intervention, and death than against other end points and lasted for 6 months or longer.

24. **Protection against the Omicron Variant from Previous SARS-CoV-2 Infection.** Altarawneh HN et al. *N Engl J Med.* 2022 Feb 9. doi: 10.1056/NEJMc2200133. https://www.nejm.org/doi/full/10.1056/NEJMc2200133
Natural infection with severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) elicits strong protection against reinfection with the B.1.1.7 (alpha),1,2 B.1.351 (beta),1 and B.1.617.2 (delta)3 variants. However, the B.1.1.529 (omicron) variant harbors multiple mutations that can mediate immune evasion. We estimated the effectiveness of previous infection in preventing symptomatic new cases caused by omicron and other SARS-CoV-2 variants in Qatar. In this study, we extracted data regarding coronavirus disease 2019 (Covid-19) laboratory testing, vaccination, clinical infection data, and related demographic details from the national SARS-CoV-2 databases, which include all results of polymerase-chain-reaction (PCR) testing, vaccinations, and hospitalizations and deaths for Covid-19 in Qatar since the start of the pandemic.

25. **Effectiveness of Homologous or Heterologous Covid-19 Boosters in Veterans.** Mayr FB, et al. *N Engl J Med.* 2022 Feb 9. doi: 10.1056/NEJMc2200415. https://www.nejm.org/doi/full/10.1056/NEJMc2200415
Vaccine effectiveness against coronavirus disease 2019 (Covid-19) wanes over time, and boosters are now recommended for residents of the United States starting at the age of 12 years. Clinical trials have shown that receipt of a booster that does not match the primary vaccination (heterologous booster) may result in a higher neutralizing-antibody response than the receipt of a matching (homologous) booster, particularly after primary vaccination with an adenoviral-vector vaccine. Whether the choice of booster affects real-world vaccine effectiveness is poorly understood.

26. **Effectiveness of BNT162b2 and mRNA-1273 Second Doses and Boosters for SARS-CoV-2 infection and SARS-CoV-2 Related Hospitalizations: A Statewide Report from the Minnesota Electronic Health Record Consortium.** Drawz PE et al. *Clin Infect Dis*. 2022 Feb 7:ciac110. doi: 10.1093/cid/ciac110. https://academic.oup.com/cid/advance-article/doi/10.1093/cid/ciac110/6523820
Using vaccine data combined with electronic health records, we report that mRNA boosters provide greater protection than a two-dose regimen against SARS-CoV-2 infection and related hospitalizations. The benefit of a booster was more evident in the elderly and those with comorbidities. These results support the case for COVID-19 boosters.

27. **Comparative Effectiveness of COVID-19 Vaccines against the Delta Variant.** Risk M, et al. *Clin Infect Dis.* 2022 Feb 7:ciac106. doi: 10.1093/cid/ciac106.
https://academic.oup.com/cid/advance-article/doi/10.1093/cid/ciac106/6523819
Although there is a substantial decline in effectiveness, the approved COVID-19 vaccines remain effective against infection and hospitalization due to the delta variant. The mRNA-based vaccines are more effective than the Ad26.COV2.S vaccine.

28. **Neutralization against Omicron SARS-CoV-2 from previous non-Omicron infection.** Zou J, et al. *Nat Commun.* 2022 Feb 9;13(1):852. doi: 10.1038/s41467-022-28544-w.
https://www.nature.com/articles/s41467-022-28544-w
The spread of the Omicron SARS-CoV-2 variant underscores the importance of analyzing the cross-protection from previous non-Omicron infection. We have developed a high-throughput neutralization assay for Omicron SARS-CoV-2 by engineering the Omicron spike gene into an mNeonGreen USA-WA1/2020 SARS-CoV-2 (isolated in January 2020). Using this assay, we determine the neutralization titers (defined as the maximal serum dilution that inhibited 50% of infectious virus) of patient sera collected at 1- or 6-months after infection with non-Omicron SARS-CoV-2. From 1- to 6-month post-infection, the neutralization titers against USA-WA1/2020 decrease from 601 to 142 (a 4.2-fold reduction), while the neutralization titers against Omicron-spike SARS-CoV-2 remain low at 38 and 32, respectively. Thus, at 1- and 6-months after non-Omicron SARS-CoV-2 infection, the neutralization titers against Omicron are 15.8- and 4.4-fold lower than those against USA-WA1/2020, respectively. The low cross-neutralization against Omicron from previous non-Omicron infection supports vaccination of formerly infected individuals to mitigate the health impact of the ongoing Omicron surge.

Women & Children

29. **Association of SARS-CoV-2 Infection with Serious Maternal Morbidity and Mortality from Obstetric Complications.** Metz TD et al. *JAMA*. 2022 Feb 7. doi: 10.1001/jama.2022.1190.
https://jamanetwork.com/journals/jama/fullarticle/2788985
Among pregnant and postpartum individuals at 17 US hospitals, SARS-CoV-2 infection was associated with an increased risk for a composite outcome of maternal mortality or serious morbidity from obstetric complications.

30. **Durability of Anti-Spike Antibodies in Infants After Maternal COVID-19 Vaccination or Natural Infection.** Shook LL, et al. *JAMA.* 2022 Feb 7. doi: 10.1001/jama.2022.1206.
https://jamanetwork.com/journals/jama/fullarticle/2788986
COVID-19 vaccination in pregnancy generates functional anti-spike (anti-S) IgG antibodies in maternal circulation that are detectable in umbilical cord blood at birth and can protect the newborn and infant from COVID-19. Anti-S IgG titers in the umbilical cord are correlated with maternal titers and are highest after late second and early third trimester vaccination. We characterized the persistence of vaccine-induced maternal anti-S IgG in infant blood and compared persistence of infant anti-S IgG after maternal vaccination vs natural infection.

31. **Association of BNT162b2 COVID-19 Vaccination During Pregnancy with Neonatal and Early Infant Outcomes.** Goldshtein I, et al. *JAMA Pediatr.* 2022 Feb 10. doi: 10.1001/jamapediatrics.2022.0001.
https://jamanetwork.com/journals/jamapediatrics/fullarticle/2788938
This large population-based study found no evident differences between newborns of women who received BNT162b2 mRNA vaccination during pregnancy, vs those of women who were not vaccinated, and contributes to current evidence in establishing the safety of prenatal vaccine exposure to the newborns. Interpretation of study findings is limited by the observational design.

GUIDELINES & CONSENSUS STATEMENTS

ESCMID guidelines on testing for SARS-CoV-2 in asymptomatic individuals to prevent transmission in the healthcare setting. *Clin Microbiol Infect*. 2022 Feb 3:S1198-743X(22)00030-1. doi: 10.1016/j.cmi.2022.01.007.

American College of Rheumatology Clinical Guidance for Multisystem Inflammatory Syndrome in Children Associated With SARS-CoV-2 and Hyperinflammation in Pediatric COVID-19: Version 3. *Arthritis Rheumatol.* 2022 Feb 3. doi: 10.1002/art.42062.

FDA / CDC / NIH / WHO Updates

FDA - February 11, 2022 - Coronavirus (COVID-19) Update: FDA Postpones Advisory Committee Meeting to Discuss Request for Authorization of Pfizer-BioNTech COVID-19 Vaccine for Children 6 Months Through 4 Years of Age

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