

## COVID-19 Resource Desk

#145 | 2.26.2023 to 3.4.2023

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](#)**

### Diagnostics & Screening

1. **Evaluation of eight lateral flow tests for the detection of anti-SARS-CoV-2 antibodies in a vaccinated population.** Greenland-Bews C et al. *BMC Infect Dis.* 2023 Feb 23;23(1):110. doi: 10.1186/s12879-023-08033-1.

<https://bmcinfectdis.biomedcentral.com/articles/10.1186/s12879-023-08033-1>

These tests are demonstrated to be highly sensitive to detect raised antibody levels in vaccinated individuals. RDTs are low cost and rapid alternatives to ELISA based systems.

### Epidemiology & Public Health

2. **Human Immunodeficiency Virus Status, Tenofovir Exposure, and the Risk of Poor Coronavirus Disease 19 (COVID-19) Outcomes: Real-World Analysis From 6 United States Cohorts Before Vaccine Rollout.** Lea AN et al. *Clin Infect Dis.* 2023 Mar 2:ciad084. doi: 10.1093/cid/ciad084.

<https://academic.oup.com/cid/advance-article/doi/10.1093/cid/ciad084/7067275>

Before COVID-19 vaccine availability, PWH were at greater risk for severe outcomes than PWOH. Tenofovir was associated with a significant reduction in clinical events for both PWH and PWOH.

### Vaccines / Immunology

3. **Estimated Effectiveness of Postpartum Maternal Messenger RNA COVID-19 Vaccination Against Delta and Omicron SARS-CoV-2 Infection and Hospitalization in Infants Younger Than 6 Months.** Jorgensen SCJ, et al. *JAMA Pediatr.* 2023 Feb 27. doi:

10.1001/jamapediatrics.2022.6134. <https://doi.org/10.1001/jamapediatrics.2022.6134>

Postpartum maternal COVID-19 vaccination was moderately effective against Delta infection in infants younger than 6 months but conferred little protection against Omicron. Indirect comparisons suggest postpartum maternal COVID-19 vaccination may be inferior to maternal vaccination during pregnancy, particularly against Omicron. Study limitations include (1) testing eligibility varying over the study period; (2) unavailability of home SARS-CoV-2 rapid antigen test results; (3) unmeasured confounders, including breastfeeding and vaccination status of other close contacts; and (4) inability to evaluate waning VE or third doses.

4. **Predicting the efficacy of variant-modified COVID-19 vaccine boosters.** Khoury DS, et al. *Nat Med.* 2023 Mar 2. doi: 10.1038/s41591-023-02228-4. <https://www.nature.com/articles/s41591-023-02228-4>

Booster vaccination for the prevention of Coronavirus Disease 2019 (COVID-19) is required to overcome loss of protection due to waning immunity and the spread of novel severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) variants. Studies have assessed the ability of existing ancestral-based vaccines as well as novel variant-modified vaccine regimens to boost immunity to different variants, and a crucial question is to assess the relative benefits of these different approaches. Here we aggregate data on neutralization titers from 14 reports (three published papers, eight preprints, two press releases and notes of one advisory committee meeting) comparing booster vaccination with the current ancestral-based vaccines or variant-modified vaccines. Using these data, we compare the immunogenicity of different vaccination regimens and predict the relative protection of booster vaccines under different scenarios. We predict that boosting with ancestral vaccines can markedly enhance protection against both symptomatic and severe disease from SARS-CoV-2 variant viruses, although variant-modified vaccines may provide additional protection, even if not matched to the circulating variants. This work provides an evidence-based framework to inform choices on future SARS-CoV-2 vaccine regimens.

### Women & Children

5. **Pulse Oximetry and Arterial Saturation Difference in Pediatric COVID-19 Patients: Retrospective Analysis by Race.** Savorgnan F, et al. *Pediatr Crit Care Med.* 2023 Feb 24:e003208. doi: 10.1097/PCC.0000000000003208. [https://journals.lww.com/pccmjournal/Abstract/9900/Pulse\\_Oximetry\\_and\\_Arterial\\_Saturation\\_Difference.155.aspx](https://journals.lww.com/pccmjournal/Abstract/9900/Pulse_Oximetry_and_Arterial_Saturation_Difference.155.aspx)

We found an oximetry bias in the measurement of Spo<sub>2</sub> with respect to Sao<sub>2</sub> in symptomatic hospitalized pediatric patients with the diagnosis of COVID-19. Furthermore, race is related to an increased oximetry bias. However, we did not find a relationship between oximetry bias and the LOS in the hospital in this cohort of patients.

6. **Changes in preterm birth and stillbirth during COVID-19 lockdowns in 26 countries.** Calvert C, et al. *Nat Hum Behav.* 2023 Feb 27. doi: 10.1038/s41562-023-01522-y. <https://doi.org/10.1038/s41562-023-01522-y>

Here we present interrupted time series and meta-analyses using harmonized data from 52 million births in 26 countries, 18 of which had representative population-based data, with overall PTB rates ranging from 6% to 12% and stillbirth ranging from 2.5 to 10.5 per 1,000 births. We show small reductions in PTB in the first, second and third months of lockdown, but not in the fourth month of lockdown, although there were some between-country differences after the first month.

7. **Maternal SARS-CoV-2 vaccination and infant protection against SARS-CoV-2 during the first six months of life.** Zerbo O, et al. *Nat Commun.* 2023 Feb 28;14(1):894. doi: 10.1038/s41467-023-36547-4. <https://www.nature.com/articles/s41467-023-36547-4>

We examined the effectiveness of maternal vaccination against SARS-CoV-2 infection in 30,311 infants born at Kaiser Permanente Northern California from December 15, 2020, to May 31, 2022. Using Cox regression, the effectiveness of  $\geq 2$  doses of COVID-19 vaccine received during pregnancy was 84% (95% confidence interval [CI]: 66, 93), 62% (CI: 39, 77) and 56% (CI: 34,71) during months 0-2, 0-4 and 0- 6 of a child's life, respectively, in the Delta variant period. In the Omicron variant period, the effectiveness of maternal vaccination in these three age intervals was 21% (CI: -21,48), 14% (CI: -9,32) and 13% (CI: -3,26), respectively. Over the entire study period, the incidence of hospitalization for COVID-19 was lower during the first 6 months of life among infants of vaccinated mothers compared with infants of unvaccinated mothers (21/100,000 person-years vs. 100/100,000 person-years). Maternal vaccination was protective, but protection was lower during Omicron than during Delta. Protection during both periods decreased as infants aged.

- 8. Risk for Stillbirth among Pregnant Individuals with SARS-CoV-2 Infection Varied by Gestational Age.** National COVID Cohort Collaborative Consortium. *Am J Obstet Gynecol.* 2023 Feb 28:S0002-9378(23)00132-1. doi: 10.1016/j.ajog.2023.02.022.  
[https://www.ajog.org/article/S0002-9378\(23\)00132-1/fulltext](https://www.ajog.org/article/S0002-9378(23)00132-1/fulltext)

The increased risk of stillbirth is associated with COVID-19 only when pregnant individuals were infected during early and mid-pregnancy, not any time before the delivery or during the 3rd trimester, suggesting the potential vulnerability of the fetus to the SARS-CoV-2 infection in early pregnancies. Our findings underscore the importance of proactive COVID-19 prevention and timely medical intervention for individuals infected with SARS-CoV-2 during early and mid-pregnancy.

- 9. Characteristics and predictors of persistent symptoms post-COVID-19 in children and young people: a large community cross-sectional study in England.** Atchison CJ, et al. *Arch Dis Child.* 2023 Mar 2:archdischild-2022-325152. doi: 10.1136/archdischild-2022-325152.  
<https://adc.bmj.com/content/early/2023/03/01/archdischild-2022-325152>

One in 23 5-11 year-olds and one in eight 12-17 year-olds post-COVID-19 report persistent symptoms lasting  $\geq 3$  months, of which one in nine report a large impact on performing day-to-day activities.

- 10. Effectiveness of BNT162b2 Vaccine against Omicron Variant Infection among Children 5-11 Years of Age, Israel.** Glatman-Freedman A, et al. *Emerg Infect Dis.* 2023 Mar 2;29(4). doi: 10.3201/eid2904.221285. [https://wwwnc.cdc.gov/eid/article/29/4/22-1285\\_article](https://wwwnc.cdc.gov/eid/article/29/4/22-1285_article)

We assessed effectiveness of the BNT162b2 vaccine against infection with the B.1.1.529 (Omicron) variant (mostly BA.1 subvariant), among children 5-11 years of age in Israel. Using a matched case-control design, we matched SARS-CoV-2-positive children (cases) and SARS-CoV-2-negative children (controls) by age, sex, population group, socioeconomic status, and epidemiologic week. Vaccine effectiveness estimates after the second vaccine dose were 58.1% for days 8-14, 53.9% for days 15-21, 46.7% for days 22-28, 44.8% for days 29-35, and 39.5% for days 36-42. Sensitivity analyses by age group and period demonstrated similar results. Vaccine effectiveness against Omicron infection among children 5-11 years of age was lower than vaccine efficacy and vaccine effectiveness against non-Omicron variants, and effectiveness rapidly declined early.

---

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

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

CDC: [Guidance for Certifying Deaths Due to Coronavirus Disease 2019 \(COVID-19\)](#)

---

If you would like to receive a **customized COVID-19 Topic Alert** related to your specialty or area of interest, would like a **literature search** conducted, or have difficulty **accessing** any of the above articles please contact us at [librarian@providence.org](mailto:librarian@providence.org)

Find previous weeks [here](#).