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

**COVID-19 related publications by Providence caregivers** – see [Digital Commons](#)

**Diagnostics & Screening**


   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**


   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**


   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.
   [https://www.nature.com/articles/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**

   [https://journals.lww.com/pccmjournal/Abstract/9900/Pulse_Oximetry_and_Arterial_Saturatio n_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 Spo2 with respect to Sao2 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.

   [https://doi.org/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.

   [https://www.nature.com/articles/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 ≥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.


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.


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


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)

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