



## Reference of the Week

- Norman M. Association of Maternal SARS-CoV-2 Infection in Pregnancy with Neonatal Outcomes. JAMA. 05.29.2021. <https://jamanetwork.com/journals/jama/fullarticle/2779586> pdf

**Premise/Methods:** **1.** Mother-infant interactions can suffer from policies that are too restrictive for lack of data on neonatal outcomes following birth to a SARS-CoV-2 infected mother. **2.** This study tests the hypothesis that maternal SARS-CoV-2 positivity in pregnancy may be associated with adverse outcomes. **3.** This is a nationwide Swedish, prospective cohort study based on linkage of the Swedish Pregnancy Register, the Neonatal Quality Register, and the Register for Communicable Diseases. **4.** Infants of women who tested positive for SARS-CoV-2 were matched, directly and using propensity scores, on maternal characteristics with up to 4 comparator infants.

**Results:** **1.** 88,159 infants (49.0% girls), 2,323 (1.6%) were delivered by mothers who tested positive for SARS-CoV-2. **2.** A major finding consistent with case reports and single center reviews was that the proportions of preterm infants (gestational age <37 weeks) were 205/2323 (8.8%) among infants of SARS-CoV-2–positive mothers and 4719/85 836 (5.5%) among comparator infants. **3.** Additional findings of significance included SARS-CoV-2 infants having more admissions to the NICU; respiratory distress syndrome; and hyperbilirubinemia. No infants had congenital pneumonia. **4.** Importantly, there was no difference between the two groups' hospital LOS or mortality.

*Although it is too early for long term follow-up of neonates born to SARS-CoV-2 mothers, it is reassuring that these infants are at low risk for congenital infection, morbidity, and mortality.*

## Other References:

- Plotkin SA and Levy O. Considering Mandatory Vaccination of Children for COVID-19. Pediatrics. 05.2021 (perspective). [Considering Mandatory Vaccination of Children for COVID-19 | American Academy of Pediatrics \(aappublications.org\)](https://aappublications.org/considering-mandatory-vaccination-of-children-for-covid-19) pdf

### TABLE: Rationale for Eventual Mandatory Pediatric SARS-CoV-2 Immunization (modified)

1. Although uncommon, severe COVID does occur in children in the form of MIS-C and pulmonary disease, particularly in young children and adolescents.
2. Children do become infected, have heavy viral loads, and excrete virus that could infect parents, teachers, and other children.
3. Because childhood infection is often asymptomatic, a large viral reservoir exists in children and other precautions will not suffice.
4. If strain change decreases long-lasting immunity, children will at least be primed for an accelerated response to infection or revaccination.
5. Vaccination of children will be needed to reach high coverage and, potentially, herd immunity. The alternative is persistence of transmission vulnerability.
6. Viral mutations are generating variants, such as the one from the United Kingdom, that are spreading more readily to children. Persistent replication promotes emergence of variants.
7. Pediatric vaccination programs have a highly successful international track record in making major advances in reducing infectious diseases not only in children, but pregnant women, and other adults.
8. There is a well-developed international infrastructure for pediatric immunization that will be a practical path to ensure global immunization against SARS-CoV-2.



9. After immunizing teachers and school staff, pediatric vaccination will further accelerate opening of schools and normalizing children's activities key to their well-being and parental work productivity.

10. As is the case for other vaccines, mandatory vaccination of children guarantees high coverage, as opposed to strictly voluntary vaccination.

*Phase 2/3 trials for RNA vaccines for children 2 years – 12 years are currently underway with efficacy and safety results due in the fall 2021.*

- Faust JS. Mortality from Drug Overdoses, Homicides, Unintentional Injuries, Motor Vehicle Crashes, and Suicides during the Pandemic, March-August 2020. JAMA. 05.21.2021. <https://jamanetwork.com/journals/jama/fullarticle/2780436> pdf  
**Premise/Methods:** 1. Disruptions in usual behavior patterns throughout our society during the pandemic might have an impact on external causes of death. 2. This study analyzed monthly trends from 2015 – 2020 in deaths resulting from drug overdoses, homicide, unintentional injuries, motor vehicle crashes, and suicide during the first 6 months of the pandemic.  
**Findings:** 1. The ratio of observed / expected deaths (OER) were significantly higher than expected for drug overdoses (10,443 excess deaths), homicides (2,014 excess deaths), and unintentional injuries (7,497 excess deaths). 2. OER for motor vehicle crashes was unchanged (725 deaths) and death from suicides was lower (2,432 fewer deaths). 3. Causes for the changes during the pandemic are unclear: economic stress, less traffic, and more opportunity for high risk behaviors may be playing a role. 4. Paradoxically, suicides declined despite an increase in reports of mental health challenges and depression.
- Davogustto GE. Characteristics Associated With Multisystem Inflammatory Syndrome Among Adults With SARS-CoV-2 Infection. JAMA Open. 05.19.2021. <https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2779957> pdf  
**Premise/Methods:** 1. Findings indicate that adult patients of all ages with current or previous SARS-CoV-2 infection can develop a hyperinflammatory syndrome resembling MIS-C. 2. MIS-A case definition (CDC): 1) severe hospitalized illness, persons aged ≥21 years; 2) positive test for current or previous SARS-CoV-2 during admission or in the previous 12 weeks; 3) severe extrapulmonary dysfunction of one or more organ systems; 4) lab evidence of severe inflammation (e.g., elevated CRP, ferritin, D-dimer, or interleukin-6); and 5) absence of severe respiratory illness. 3. Single center (Vanderbilt) retrospective cohort study of patients who met CDC case definition from 03/2020 through 09/2020. 4. Detailed patient characteristics were compared to adults who experienced acute hospitalized COVID-19.  
**Results:** 1. There were 15 patients with MIS-A and 683 with acute COVID-19: MIS-A were younger, 45.1 vs 56.5 years; more likely to have + serologic testing; but other demographic features were the same. 2. Clinical characteristics of MIS-A patients: 9/15 had preceding acute COVID-19 symptoms (3 hospitalized); median interval between acute COVID-19 and MIS-A was 23 days (IQR, 16 – 24.5); 5/15 ICU care; median number of organ systems was 4 (IQR 2-4.5); GI, heme, and kidney systems were most affected. 3. Only 3 patients were formally diagnosed during the illness. 4. There were no deaths.  
*MIS-A appears (few numbers) less severe than MIS-C with less patients requiring advanced critical care interventions.*
- Bernal JL. Effectiveness of COVID-19 vaccines against the B.1.617.2 [Indian] variant. Public Health England (preprint). medRxiv. <https://www.medrxiv.org/content/10.1101/2021.05.22.21257658v1> pdf  
**Premise/Methods:** 1. The B.617 variant has predominated in the recent catastrophic COVID-19 surge in India and has been detected in 43 countries. 2. The two early vaccines approved in the UK, Pfizer-BioNTech BNT 162b2 mRNA and Oxford-Astrazeneca ChAdOx1, have shown high efficacy in both clinical trials and real world application against B.1.1.7, but the efficacy against B.617.2 is unknown. 3. A test negative case control design was used to estimate the effectiveness of vaccination against symptomatic disease with both B.617.2 and B.1.1.7 variants.  
**Results:** 1. Effectiveness was notably lower after 1 dose of vaccine with B.1.617.2 cases 33.5% (95%CI: 20.6 to 44.3) compared to B.1.1.7 cases 51.1% (95%CI: 47.3 to 54.7) with similar results for both vaccines. 2. After 2 doses of either vaccine there were only modest differences in vaccine effectiveness with the B.1.617.2 variant.  
*This study at least partially allays fears that the “Indian variant” would escape currently available vaccines.*

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