

I hope everyone had a great weekend.

Today I start with an editorial on opening schools linking to 2 articles I reviewed today. I also included an article on maternal SARS-CoV-2 and neonatal outcomes. The next article examines the NBA closed campus model in Orlando last year and confirmation of the CDC guidance on symptom-based guidelines for discontinuing isolation. The last article demonstrates the value of even 1 dose of vaccine on household transmission.

### **VII: The Time for Debating if Schools Can Open Safely Has Passed**

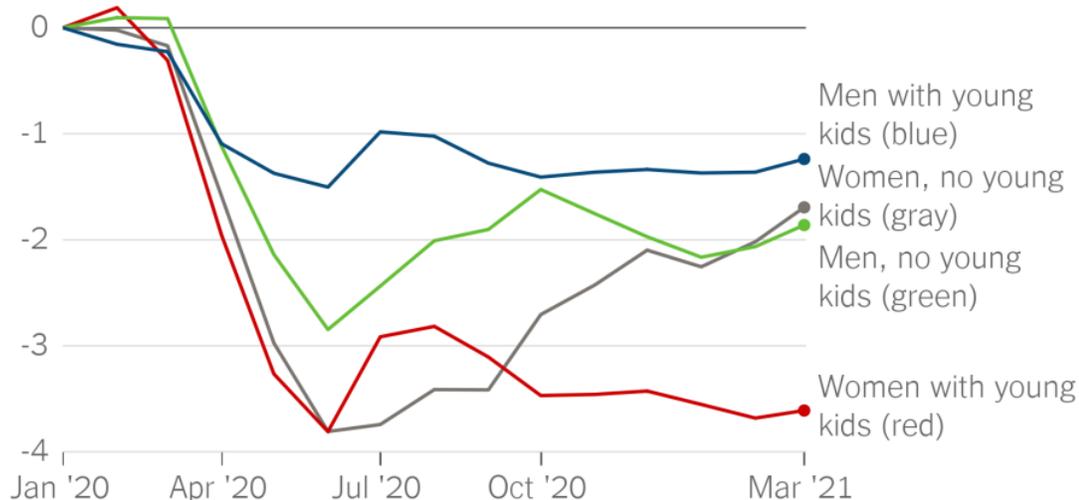
Today I have chosen several articles around the health and wellbeing of our children. Most students still have not returned to anything resembling a “normal school schedule”. Nearly 30% of all students are still doing a mix of in-person and virtual instruction, with all the learning challenges that we now know go with such a hybrid. Teachers often stream lessons virtually even while students are in classrooms! In Los Angeles, middle- and high-schoolers spend only two to three days a week in a physical school building. In New York City, the teachers are still missing from 75% of the classrooms and 75% of the children attending these so-called ‘open schools’ are subjected to remote learning within the classroom also dubbed “zoom in a room”.

There has been a significant negative impact on the psychological wellbeing of our children including suicides rates. The study reviewed below found that Black or Latinx respondents or respondents from low-earning households, were more likely to report Covid-19 exposures and family impacts. Other studies have found children with disabilities and English language learners were also impacted, and last year studies also demonstrated the disproportionate consequences of the pandemic and learning loss for children who live in poverty. Talk about disparities.

Unfortunately, after one year, some school districts continue to debate over reopening as students continue to fall further behind. The toll both short-term and long-term are significant. Some students may never catch up. **The time for debating if schools can open safely has passed.** The science is clear, schools can safely open for in person learning if appropriate mitigation strategies are in place. As we begin to reimagine in-person classes in the Fall, we need to recognize the disruption in learning and the negative impact on children’s health. Therefore, we cannot open school as usual. No longer can the health and education sectors work in siloes. We must have an honest conversation between families, school districts, and teachers’ unions regarding what constitutes acceptable risk related to school openings. It will never be zero, and that cannot be the starting point for opening.

With the U.S. economy growing, millions of people have returned to work. Yet there is still one large group of Americans whose employment rates remain far below their pre-pandemic levels — the mothers of young children.

## Percent change in labor force participation, since Jan. 2020



Young children defined as those 13 and under. Chart shows three-month moving averages.

Source: Moody's Analytics

This situation is made worse since many schools and day care centers have not returned to normal operations. They are open for only a few hours a day, a few days a week or on alternating weeks, making it difficult for parents to return to a full-time job. And parenting responsibilities still fall disproportionately on women. This situation is unlikely to change over the final month or two of the current school year. A major question about the start of the next school year, in August and September: Will schools fully reopen? A hybrid approach will exact a heavy cost on American women. Talk about gender equality!

Fortunately, the evidence clearly indicates that schools can open safely. See below. By August, all children who are at least 12 are also likely to have had the opportunity to be vaccinated. (The FDA appears set to approve it for 12- to 15-year-olds in coming weeks, I hope.) Younger children (<12) will not be vaccinated by the fall. The good news: Covid-19 tends to be mild for younger children, making them less likely to be symptomatic and contagious. Even more important, Covid-19 rarely causes significant harm in children. For them, the death rate resembles that of a normal flu and some studies show a higher mortality rate for flu in children K-5 compared to Covid-19. A child who is driven to school almost certainly faces a bigger risk from that car trip than from the virus! Of course, the risk from Covid will never be zero, but that cannot be the starting point for opening. It will be a tragedy if schools do not open fully in the fall. If schools do not open fully, America and our children will suffer the consequences for decades.

### COVID-19 Infections Among Students and Staff in New York City Public Schools

Pediatrics Volume 147, Number 5, May 2021:e2021050605

<https://doi.org/10.1542/peds.2021-050605>

The investigators collected data about COVID-19 cases associated with New York City (NYC) public schools from polymerase chain reaction testing performed in each school on a sample of asymptomatic students and staff and from routine reporting. They compared prevalence from testing done in schools to community prevalence estimates from statistical models. They then compared cumulative incidence for school-associated cases to all cases reported to the city. School-based contacts were monitored to estimate the secondary attack rate and possible direction of transmission. The schools had implemented rigorously protective measures (such as mask wearing, physical distancing, and hand hygiene).

In summary, they analyzed data from 234,132 persons tested for SARS-CoV-2 infection in 1,594 NYC public schools during October 9 to December 18, 2020; 986 (0.4%) tested positive. COVID-19 prevalence in schools was similar to or less than estimates of prevalence in the community for all weeks. To assess cumulative incidence, they analyzed data for 2,231 COVID-19 cases that occurred in students and staff compared with the 86,576 persons in NYC diagnosed with COVID-19 during the same period; the overall incidence was lower for persons in public schools compared with the general community. Of 36,423 school-based close contacts, 191 (0.5%) subsequently tested positive for COVID-19; the likely index case was an adult for 78.0% of secondary cases.

**Comment:** This is another study that in-person learning in public schools was not associated with increased prevalence or incidence overall of COVID-19 infection compared with the general community when appropriate mitigation strategies were executed. During the October to November period, only 41% of parents provided consent to have their children tested so it is possible results could underestimate prevalence (but not incidence for that period) if those students were systematically more likely to have undiagnosed COVID-19 infection. In addition, more than one-third of school-associated cases had missing data about age, making it necessary to interpret analysis of school incidence by age strata with caution. Despite these limitations, this study supports opening schools to in person learning as it's so important to the overall wellbeing of our children. [see next article]

### **Caregiver Perceptions of Children's Psychological Well-Being During the COVID-19 Pandemic**

JAMA Netw Open published online April 29, 2021

[doi:10.1001/jamanetworkopen.2021.11103](https://doi.org/10.1001/jamanetworkopen.2021.11103)

This study examined caregiver-reported changes in the psychological well-being of their children 3 to 4 months after the start of COVID-19 stay-at-home orders. The study used a survey sent anonymously via email from June 24 to July 15, 2020, to 350,000 families of students attending public schools in Chicago, Illinois. The hypotheses were that caregivers would report worsening in child psychological well-being during the closure period compared with pre-closure and that exposure to COVID-19-related stressors would be associated with a higher probability of worsening child psychological well-being. Data were analyzed from September 10, 2020, to March 15, 2021. Among 350,000 families invited to participate, 32,217 caregivers (10,827 [39.3%] White, 8,320 [30.2%] Latinx, 6,168 [22.4%] Black; 2,223 [8.1%] with multiple or other races/ethnicities) completed the survey on behalf of 49,397 children in prekindergarten through 12th grade. Child specific outcomes were reported for 40,723 to 40,852 children depending on the specific question. The frequency of caregiver endorsement of youth mental health concerns ranged from 0.1 percentage point (suicidal ideation or self-harm, reported by 191 caregivers [0.5%] pre-closure vs 246 caregivers [0.6%] during closure;  $P < 0.001$ ) to 28.3 percentage points (loneliness, reported by 1,452 caregivers [3.6%] pre-closure vs 13,019 caregivers [31.9%] during closure;  $P < 0.001$ ) higher after the end of in-person instruction compared with pre-closure. Significant differences in COVID-19 exposure were observed across racial/ethnic ( $P < 0.001$ ) and household income strata ( $P < 0.001$ ). After accounting for covariates, all mental health concerns increased in probability (e.g., angry: odds ratio, 1.55 [95% CI, 1.48-1.62];  $P < 0.001$ ) and all the positive adjustment characteristics

decreased in probability (e.g., hopeful, or positive: odds ratio, 0.88 [95% CI, 0.84-0.92];  $P < 0.001$ ) as COVID-19 exposure and family stressors increased.

**Comment:** Despite the limitations of a retrospective design relying on parental report, the study supports what has been observed in multiple health care centers, emergency departments, and inpatient units: children's mental health has been significantly affected by school closures during the COVID-19 pandemic. This study and others reviewed in the last month in the Daily Briefing all point to significant negative impact on the psychological wellbeing of our children including suicides rates.

This study was conducted approximately 3 months into the pandemic, in a school district that began reopening schools for its youngest students in February and March 2021. Now, 9 months after the survey was administered, the mental health concerns identified in this study have likely worsened. The COVID-19 pandemic has not affected all students and families equally. The study reviewed above also found that Black or Latinx respondents or respondents from low-earning households, were more likely to report COVID-19 exposures and family impacts. Other studies have found children with disabilities, and English language learners were also impacted and last year studies also demonstrated the disproportionate consequences of the pandemic and learning loss for children who live in poverty and that the prioritization of schooling and children's well-being continues to be overshadowed by a focus on opening workplaces, restaurants, and other businesses as well as on the needs of adults. [*JAMA Pediatr.* 2020;174(10):922-923] see editorial above

#### **Association of Maternal SARS-CoV-2 Infection in Pregnancy with Neonatal Outcomes**

JAMA published online April 29, 2021

[doi:10.1001/jama.2021.5775](https://doi.org/10.1001/jama.2021.5775)

This study was a nationwide, prospective cohort study based on linkage of the Swedish Pregnancy Register, the Neonatal Quality Register, and the Register for Communicable Diseases. Ninety-two percent of all live births in Sweden between March 11, 2020, and January 31, 2021, were investigated for neonatal outcomes by March 8, 2021. Main outcomes: In-hospital mortality; neonatal resuscitation; admission for neonatal care; respiratory, circulatory, neurologic, infectious, gastrointestinal, metabolic, and hematologic disorders and their treatments; length of hospital stay; breastfeeding; and infant test positivity for SARS-CoV-2.

The study reported on 88,159 infants born to 87,005 mothers between March 11, 2020, and January 31, 2021, representing 92% of all births in Sweden during this period. The maternal SARS-CoV-2-positivity rate was 2.6% in this sample. To assess main outcomes of neonatal morbidity and mortality, the investigators used a propensity score matching strategy to match up to 4 infants per positive case based on maternal characteristics and, appropriately, not on gestational age at delivery. They found an association of maternal SARS-CoV-2 infection in pregnancy with newborns' admission for neonatal care (11.7% vs 8.4%; odds ratio, 1.47; 95% CI, 1.26-1.70), any neonatal respiratory disorder (2.8% vs 2.0%; odds ratio, 1.42; 95% CI, 1.07-1.90), and hyperbilirubinemia (3.6% vs 2.5%; odds ratio, 1.47; 95% CI, 1.13-1.90). There were no differences in neonatal mortality, length of hospital stay, or breastfeeding rates. Twenty-one infants (0.90%) of SARS-CoV-2-positive mothers tested positive for SARS-CoV-2 in the neonatal period; 12 did not have neonatal morbidity, 9 had diagnoses with unclear relation to SARS-CoV-2, and none had congenital pneumonia. There was a higher rate of preterm delivery (gestational age <37 weeks) among infected mothers: 8.8% in the SARS-CoV-2-positive group compared with 5.5% in the comparison group.

**Comment:** This article adds to the growing understanding of the effects of in utero SARS-CoV-2 exposure on children and to the developing body of evidence showing an association between SARS-CoV-2 infection during pregnancy and preterm delivery. Additionally, this study offers further reassurance of a low risk of neonatal infection, morbidity, and mortality. A limitation of this work is the lack of detailed attention and analysis of race and ethnicity. Propensity match may not account for all variables. The numbers for some neonatal outcomes were small and the magnitude of the absolute risks was low. There was an imbalanced testing between health care regions and hospitals as well as regional variations attributed to clusters of COVID-19 infection. There was no information on severity of illness among SARS-CoV-2-positive women before or during delivery. Lastly, the neonatal tests on the day of birth may have been contaminated by maternal viral DNA, resulting in falsely high-test positivity among SARS-CoV-2-exposed infants. Overall studies continue to demonstrate extremely low intrauterine transmission.

### **SARS-CoV-2 Transmission Risk Among National Basketball Association Players, Staff, and Vendors Exposed to Individuals with Positive Test Results After COVID-19 Recovery During the 2020 Regular and Postseason**

JAMA published online April 22, 2021

This is a retrospective cohort study using data collected from June 11, 2020, to October 19, 2020, as part of the NBA closed campus occupational health program in Orlando, Florida, which required daily PCR testing and ad hoc serological testing for SARS-CoV-2 IgG antibodies. Nearly 4,000 NBA players, staff, and vendors participated in the NBA's regular and postseason occupational health program in Orlando. Persistent positive cases were those who recovered from a documented SARS-CoV-2 infection, satisfied CDC criteria for discontinuation of isolation precautions, and had at least 1 post-infection positive PCR test(s) result. Exposure was defined person-days of participation in indoor, unmasked activities that involved direct exposure between persistent positive cases and noninfected individuals. Individuals were considered recovered after meeting CDC guidelines for discontinuation of isolation precautions, which changed July 20, 2020, from a test-based strategy that required 2 consecutive negative RT-PCR test results at least 24 hours apart to a time-based strategy that allowed discontinuation after 10 days from symptom onset or first RT-PCR positive test result if asymptomatic.

Among 3,648 individuals who participated, 36 (1%) were persistent positive cases, most of whom were younger than 30 years (24 [67%]) and male (34 [94%]). Antibodies were detected in 33 individuals (91.7%); all remained asymptomatic following the index persistent positive RT-PCR result. Cycle threshold values for persistent positive RT-PCR test results were typically above the Roche cobas SARS-CoV-2 limit of detection. Cases were monitored for up to 100 days (mean [SD], 51 [23.9] days), during which there were at least 1,480 person-days of direct exposure activities, with no transmission events or secondary infections of SARS-CoV-2 detected (0 new cases).

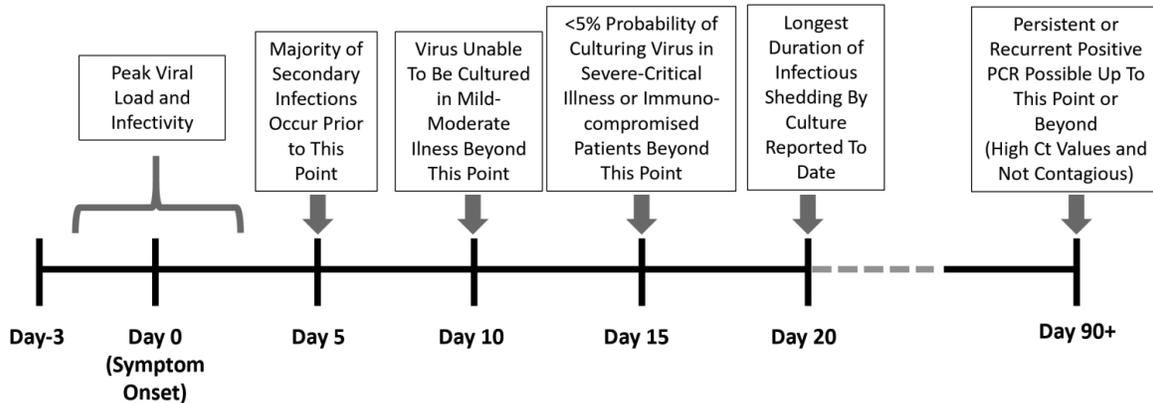
Among persistent positive COVID-19 cases in the closed-campus NBA occupational health program, there were:



**0 cases**

of SARS-CoV-2 transmission events or secondary infections

**Comment:** Recovered individuals who continued to test positive for SARS-CoV-2 following discontinuation of isolation were not infectious to others. These findings support time-based CDC recommendations for ending isolation. See figure below from an article in Clin Infect Dis 2021; 72:1467–74

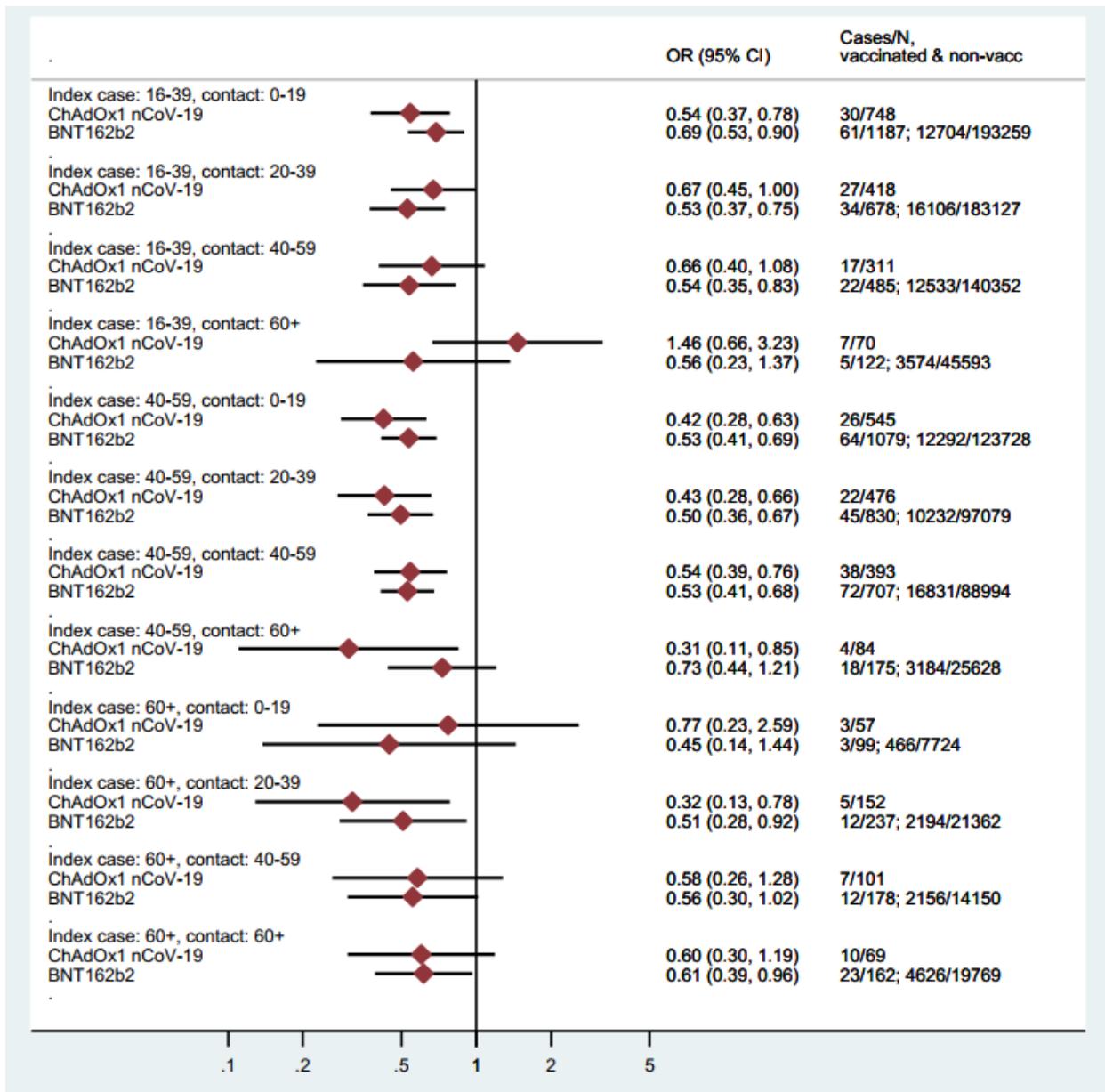


### Impact of Vaccination on Household Transmission of SARS-CoV-2 in England

Public Health England published online April 28, 2021

<https://bit.ly/3eAGfvn>

The study included over 57,000 contacts from 24,000 households in which there was a lab-confirmed case that had received a vaccination compared with nearly 1 million contacts of unvaccinated cases. There were 196 secondary cases in 3,424 contacts (5.72%) where the index case received the ChAdOx1 nCoV-19 vaccine (AstraZeneca) 21 days or more before testing positive, and 371 secondary cases in 5,939 contacts (6.25%) where the index case received the BNT162b2 vaccine (Pfizer) 21 days or more before testing positive. The unadjusted odds ratio for being a secondary case if the index case was vaccinated with ChAdOx1 nCoV-19 (vs. index case not vaccinated) was 0.55, and for BNT162b2, 0.57.



**Comment:** Investigators showed that people who became infected with SARS-CoV-2 three weeks after receiving one dose of Pfizer or AstraZeneca vaccine were between 38% to 49% less likely to pass it on to household contacts compared to those who were unvaccinated. The study also showed a vaccinated person developing symptomatic infection to start with was reduced by around 60% to 65% from four weeks after one dose of either vaccine.