

BRIEF19

A daily review of covid-19 research and policy.

RESEARCH BRIEFING

Two studies of pediatric outcomes in hospitalized patients. Infants, children, and adolescents have been spared the higher mortality rates seen in adults and especially seniors during the covid-19 pandemic. The percent of pediatric cases is thought to be approximately 1.7% in the U.S.; [global estimates](#) range from 1 to 6%, which again may reflect testing capacity and testing policy. Early in the SARS-CoV-2 outbreak, [reports](#) out of China found that infants and children generally experienced excellent outcomes, including a 15% rate of asymptomatic disease among the youngest age groups. However, such observations may have been influenced by the testing strategies in use. In recent days, two new entries in the medical literature have appeared describing outcomes of pediatric infections among patients seen in New York City and in ten regions of Italy. The New York study, appearing in *JAMA Pediatrics* describes the features and outcomes of 50 patients who were found to be positive for SARS-CoV-2 who were ill enough to require hospitalization. During the study period (March 1 through April 15), testing was performed on 387 unique patients; 73 of the patients were eventually found to be positive for the virus (15%). Of these 73, fifty patients (68%) were hospitalized. One finding different from what has been seen in adults is the shorter timespan between first symptoms and hospital admission; 1 to 5 days in children overall (average of 2 days), with adolescents having a longer period of symptoms prior to hospitalization and younger children and infants having shorter durations of illness prior to admission (1-2 days). It is unclear whether this difference reflects that pediatric patients with more serious illnesses progress more quickly than adults do, or rather, that the pattern results from physicians and parents preferring admission for monitoring even among milder cases. There is some suggestion that these cases were more severe than adult cases, though; some degree of breathing support was needed for 32% of the hospitalized children, and 18% required mechanical ventilation. A previous study of [hospitalized adults](#) in the New York City area found somewhat lower rates of mechanical ventilation (12%). The most important risk factor for children developing particularly serious disease was obesity (22%). Obesity also figured into higher rates of mechanical ventilation in patients older than 2 years of age. Most patients (80%) had fever. Only 6% had the characteristic loss of smell, though among young children, subtle differences in smell may have been challenging to detect. Meanwhile, the study out of Italy found slightly lower rates of hospitalization (58%), and fewer children needed any kind of support for breathing (12%). Whether these differences reflect differences in the relative health of American and Italian children or differences in physician and parent preferences in the two nations remains an open question. *Abbreviated from Brief19 for [9 June 2020](#).* *—Jeremy Samuel Faust MD, MS*

*The after-effects of covid-19 among a small group of children has made news headlines. We asked the authors of [a recent paper](#) appearing in the *American Journal of Emergency Medicine*, including Jennifer Sanders, MD, to summarize their work studying covid-19 post-infectious cytokine release syndrome, also known as Multi-System Inflammatory Syndrome in Children (MIS-C). Please see [Brief19 for 8 June 2020](#) for the full briefing.*

C-section or vaginal delivery and the risk of transmission of SARS-CoV-2. Whether pregnant women with SARS-CoV-2 can transmit the virus during childbirth—a process known as vertical transmission—has been an area of great interest. Relatively little is known. To address that,

researchers from Spain also [studied](#) the question of vertical transmission. Women with a singleton pregnancy and laboratory confirmed SARS-CoV-2 infection were included in the study. Newborns underwent a nasopharyngeal swab within the first six hours of life. Of the 78 women who had with none to mild symptoms of covid-19, 53% delivered vaginally and 47% delivered via c-section. Among the women who delivered by c-section, 21.6% delivered via this method because of symptoms of covid-19, including the need for oxygen at the time of admission or because of abnormal findings on chest x-rays. The researchers reported both on the outcomes of the SARS-CoV-2 positive mother and their newborns. There were no bad outcomes related to covid-19 among women who delivered vaginally. On the other hand, 13.5% of women who underwent a c-section eventually developed symptoms severe enough to require admission to the ICU. As for the newborns, those born by c-section had an increased risk of needing admission to the neonatal ICU. Interestingly, only 3 of 72 newborns (4.2%) tested positive for SARS-CoV-2 within 6 hours of birth, but repeat tests performed within 48 hours were all negative and none developed covid-19 symptoms within 10 days. Of note, two other newborns who tested negative at birth later developed symptoms and were found to have contracted the virus. However, those babies were in physical contact with their parents shortly after birth, and so it may be that these infections occurred not via “vertical transmission” during birth but rather through typical means. Overall, the data presented in this important study provide important insight into vertical transmission of SARS-CoV-2. Whether this study should be taken as a warning against c-section, however, is less clear. Often, the choice to proceed with c-section instead of vaginal delivery has to do with other risks, and covid-19 may not actually influence these choices. The topline finding of the paper is that no newborns developed covid-19 during the study period, other than two babies whose symptoms resolved. These are encouraging findings and they suggest that both vaginal delivery and c-section are safe options with respect to SARS-CoV-2 transmission. *Abbreviated from Brief19 for [10 June 2020](#).*

–Joshua Niforatos, MD Research Section Editor

Here comes the sun. Will weather help covid-19? A new study appearing in [JAMA Network Open](#) reports on the possible effects of local climates during the SARS-CoV-2 outbreak. Researchers found that community spread was been limited to a relatively narrow band of latitude as of March 10, where temperatures ranged in the 5 to 11C (41-52F) and relatively lower humidity, approximately along the 30° N to 50° N corridor. The authors state that these patterns are all the more impressive because proximity to Wuhan, China seems to have been less important than climate. This could provide a possible explanation for why places like New York were hard hit, while cities closer to Wuhan such as Moscow were not. However, these data are admittedly undermined by more recent observations of increased spread in areas with far warmer weather. It could be that weather played a role, along with other features like travel patterns, differences in approach among the many nations, and even change. The authors expressed hope that this meant that SARS-CoV-2 might have some seasonality to it. If so, containing it in the summer months would be an important opportunity. *[11 June 2020](#).*

–Jeremy Samuel Faust MD, MS.

Kane Elfman PhD, Publishing and design.

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Brief19 is a daily executive summary of covid-19-related medical research, news, and public policy. It was founded and created by frontline emergency medicine physicians with expertise in medical research critique, health policy, and public policy.