

30 July 2020

BRIEF19

A daily review of covid-19 research and policy.

RESEARCH BRIEFING

School closures correlate with decreased covid-19 incidence.

Amongst the many changes to daily life during the early covid-19 pandemic, school closures may have been the most noticeable and most hotly debated. A [study](#) in *JAMA* sought to elicit the effects of school closures on incidence of covid-19 cases and deaths. By examining the timing of school closures across all 50 U.S. states, the study's authors hoped to determine if there was a temporal component to such an effect. In a time series analysis performed from March 9, 2020 and May 7, 2020 they found a decline in incidence of cases and mortality by 62 percent and 58 percent, respectively. Furthermore, the data revealed that states where closures occurred early, when cumulative incidence was low, had the largest reductions—72 percent for the states in the lowest quartile for incidence versus 49 percent for the highest. Based on these percentages, the authors' model predicted an overall decrease of 1.4 million cases over a 26-day period and 40,000 fewer deaths over a 16-day period.

Of course, time series (before-and-after) studies are fraught with limitations as a number of behavioral (“non-pharmaceutical”) interventions were enacted in quick succession across many states. As states started to take the drastic measure of closing schools, they were also educating the public about improved hand hygiene, social distancing, and mask usage, not to mention restaurant, office and public space closures. While the authors made statistical adjustments for many of these factors, not all of them could be directly accounted for with data, making it difficult to accurately separate out school closures from many other simultaneous interventions. Another limitation included analysis at the state level, which can't account for differences amongst counties or individuals who traveled between states. Furthermore, as has been a centerpiece of all covid-19 related discussions, testing ability and reporting between states can vary greatly, possibly misrepresenting the number of actual cases in each state.

Ultimately, closing schools seemed an unavoidable step in the fight against the covid-19 pandemic and coincided with a significant decrease in disease burden and mortality, as this study shows. While adjusting for many other factors still resulted in a statistically significant difference, one would be hard pressed to take this data as decisive or definitive given the variety of measures each state enacted concurrently with school closures.

—Fred Milgrim, MD

Knowledge gaps on covid-19 are also pandemic. The Aussies weigh in.

A new study summarizing a [national survey](#) conducted in Australia was posted on the preprint server *MedRxIV* yesterday. The results (from surveys taken in May) are concerning. Similar to a studies done in the [United States](#) and elsewhere, a majority (92 percent) of participants knew that handwashing can limit the spread of SARS-CoV-2. However, any number under 100 percent is alarming. Among participants, 42 percent had the mistaken belief that being unable to hold one's breath for 10 seconds without coughing implied coronavirus infection. Mask wearing was views were mixed, with only 23 percent understanding that surgical masks mainly prevent outward spread of an already infected individual. 33 percent either falsely believed or were unsure as to whether antibiotics would decrease the chance of infection. The survey excluded persons who had already been infected. Gender, age, and regional representation among the 1500 participants was appropriately balanced. However, only 1 percent of participants self-identified as Aboriginal, compared to 3.3 percent of Australia's population.

—Jeremy Samuel Faust, MD MS

POLICY BRIEFING

The FDA seeks home-based coronavirus tests. Will they work?

The United States Food and Drug Administration released a [statement](#) Wednesday calling for commercial developers to create and send proposals for home-based SARS-CoV-2 tests. The FDA specified that the tests should be able to be completely performed at home or anywhere that is not a laboratory or medical facility and that interpreting the results should not require any external help. In other words, non-medical professionals should be able to take the tests themselves and read the results, without any additional assistance other than what the test kit contains. Interested companies are invited to send the FDA proposals requesting emergency use authorization for these home testing products.

The agency also released a [document](#) with a template and guidelines for would-be manufacturers of such tests. Among other requirements, manufacturers must describe to the FDA how the tests work. The tests would not necessarily require a prescription and could be sold over-the-counter. The FDA outlined different requirements depending on whether the tests are intended for symptomatic or asymptomatic people. For example, tests intended for symptomatic people only would be available by prescription while tests meant for both symptomatic and symptom-free persons would not necessarily require a prescription. For each type of test, the manufacturers must report the product's agreement with existing tests that have already been approved. While agreement of positive results must be at least 80 or 90 percent with established tests currently on the market, negative results must be more than 99 percent in agreement with currently approved tests. This makes sense as the implications of a false positive are less dangerous than false negatives. Additionally, for every test, there must be a clear way for persons taking the test report positive test results to officials. Finally, applicants must have evaluated how the tests perform (and whether they remain accurate) in various temperatures, humidity, and light. Given all of the complexities (and in some cases software for apps that would be used for reporting of results), [some experts worry](#) that the FDA's template will be too difficult for most manufacturers to achieve in a way that is not prohibitively expensive for most people.

The need to expand testing for SARS-CoV-2 infection has been an ongoing challenge in the United States and elsewhere. While the U.S. has now administered more tests per capita than any other nation in the world, it also has the highest number of cases of any country. However, the fact that that U.S. has the highest number of cases is not, as some including President Trump have falsely claimed, solely due to the fact that we have administered more tests. In fact, the U.S. test positivity rates—the percent of administered tests that are positive—that exceed the rates of many nations and remains above 5 percent, a line many experts see as important.

As the Fall approaches, many Americans now believe that re-opening schools is a priority. While the CDC has outlined reasons why in-person school is preferable, it has not made specific recommendations. The ability to test at home or in schools could prove beneficial. *The Food and Drug Administration*.
—Jeremy Samuel Faust, MD MS

*Kimi Chernoby, MD, JD, Policy Section Editor. Joshua Niforatos, MD Research Section Editor
Frederick Milgrim, MD, Kate Taylor, Editors-at-Large.
Kane Elfman PhD, Publishing and Design. Jeremy Samuel Faust MD MS, Editor-in-Chief.*

<http://www.brief19.com/>

Twitter: [@brief_19](#)

submissions@brief19.com

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.