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BRIEF19

A daily review of covid-19 research and policy

RESEARCH BRIEFING

Middle seats: bad. Airport-based testing: good.

The covid-19 pandemic has changed our way of life for over a year. Few industries have been harder hit than the travel sector. Two new studies appearing in the US Centers for Disease Control and Prevention's *Morbidity and Mortality Weekly Report* shed light on related areas of interest: Whether or not banning the use of middle seats might have any effect on viral transmission and airport-based testing for SARS-CoV-2.

The [first study](#) modelled the effect of empty middle seats on SARS-CoV-2 exposure on a commercial airliner. Recent real-world literature already suggests the obvious: the further someone is seated from a SARS-CoV-2 source patient on a plane, the lower their chances of picking up the infection are; 75 percent of those infected on a flight were seated within two rows of the source individual. This new study was, in essence, a model that used a surrogate for SARS-CoV-2 in order to estimate the effect of removing people in middle seats. The researchers found that in their model of a plane with a single-aisle configuration (3 seats, one aisle, 3 seats, the typical layout of a Boeing 737 or Airbus 319 or 320), removing middle seat passengers would reduce exposure to the passengers near an infected source individual by around 23 percent. For two-aisle configurations (including large jumbo jets such as Boeing 777s and Airbus 380s), the reduction in exposure by banning middle seat occupants would be closer to 57 percent. While this study supports what many of us might like to see during the pandemic (i.e. banning of middle seat use), it is important to note that this was a model of *exposure* only; the model did not capture whether that exposure would be synonymous with *infection*. Secondly, this was not a real-world trial that tracked infection rates in outbreaks occurring on real planes. Lastly, the effect of vaccinated versus unvaccinated travelers was not studied.

The [second study](#) looked at the effect of airport-based coronavirus testing in Alaska. If any US state had a good chance of understanding the effect of such an intervention, it would be Hawaii and Alaska, where entry to the state largely occurs via airports. In this case, officials monitored the number of positive SARS-CoV-2 tests that were picked up as part of testing regimens put in place during the re-opening phases of the pandemic. The testing program identified 951 SARS-CoV-2 infections during the period from June 6 to November 14, 2020, or around one out of every 406 arriving travelers. In general, the number of cases found at airports mirrored that in the state, implying that false positives were not driving these numbers. While 951 cases may not sound like much, realize that during that period only around 21,500 total infections were detected in Alaska. Depending on when in the course of the 951 travelers' infections the airport-identified cases were found, thousands of downstream cases may have been prevented, and many hospitalizations and deaths.

Of note, Alaska has had a far lower number of excess deaths than most US states, even adjusting for its small population. Some of that may result from geographic advantages; Alaska does not have a high population density. But at least some of that may be a result of its relatively intense testing at its major ports of entry. In the coming months, some nations around the world will continue to have low vaccination rates. However, rather than relying on hygiene theater (highly conspicuous "deep cleanings" of surfaces) or largely useless symptom checklists which hinge on the honor system, and also completely fail to detect asymptomatic disease, many countries could reap a substantial benefit in limiting new infections by more rigorous testing at their borders.

—Jeremy Samuel Faust, MD MS

POLICY BRIEFING

Slowing vaccination rate may mean trouble for herd immunity.

The United States overcame significant, often self-induced, hurdles in the creation of a vaccination plan. While federal [leadership](#) was lacking during the Trump administration, under President Biden, a more comprehensive national strategy was [developed](#), and a massive stimulus package was [passed](#) with funding to support the infrastructure needed to mobilize the resources necessary. As a result, over two hundred and twenty million doses have been [administered](#) out of a supply of two hundred and ninety million delivered. And with everyone over the age of [sixteen](#) now eligible to receive the vaccine, and with trials [underway](#) for children, could herd immunity be within reach?

Early April [saw](#) peak vaccination rates of nearly five million doses administered per day, before dropping to 1.8 million this past week. The administration had anticipated this drop would occur at some point, attributing it to a combination of hesitancy and difficulty in reaching vaccination centers. To address the former, the COVID-19 Community Corps was [formed](#) as a partnership with local ambassadors to amplify the message of the vaccine's safety. In addition, grassroots [efforts](#) across the country have popped up. The good news is that, according to independent surveys, vaccine hesitancy appears to be [dropping](#).

A new [concern](#), however, is vaccination centers that have begun to refuse vaccine shipments and even to [close](#) entirely due to decreased demand. The Biden administration has [created](#) tax incentives to small businesses to further increase the numbers of willing recipients. Meanwhile, reaching underserved populations also remains a priority. Of course, injecting healthcare into areas that have been historically identified as not having adequate healthcare is not a simple task, and more energy and funding will have to be put towards mobilization. This means logistics: either getting the necessary supplies to the individuals, or bringing the people to where the supplies are. Whether the provisions included in already-passed Congressional legislation will be enough to achieve this is still unclear. *Various*.

—*Brief19 Policy Team*

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