1 September 2020

BRIEF19

A daily review of covid-19 research and policy.

RESEARCH BRIEFING

Airborne transmission of covid-19 demonstrated among bus riders China.

Since the outbreak of covid-19, researchers and physicians have been speculating about the mode of transmission of the culprit virus, SARS-CoV-2. The Centers for Disease Control and the World Health Organization have suggested various methods of spread over time, via respiratory droplets, aerosols or surfaces, and both agencies made safety recommendations for healthcare providers to wear surgical masks as opposed to N95 masks based on these theories. Prior knowledge of Severe Acute Respiratory Syndrome (SARS) and Middle Eastern Respiratory Syndrome (MERS), which are airborne viruses, have provided some clues to SARS-CoV-2, but its mechanism of usual spread is still not fully elucidated.

Today, researchers from China published a cohort study in the *Journal of the American Medical Association,* which appears to suggest that the virus indeed may have an important component of airborne spread in real world settings. The study examined a community outbreak in Zhejiang province in January amongst a group of Buddhists attending a worship event on January 19, 2020. Of the 300 people who traveled to the event, 126 arrived via two buses, one of which carried a source patient, who started developing symptoms consistent with covid-19 the day after the event. The analysis conducted in this study examined the relative risk of developing covid-19 between the two buses, and also among those who arrived separately. The researchers found that those exposed on the bus were 42 times more likely to develop covid-19 than passengers who travelled on the other bus.

Additionally, those on the affected bus were more than 11 times more likely to develop covid-19 compared to all individuals at the event. Of note, none of the passengers on the second bus developed covid-19, and of those who arrived via other methods of transportation, each of the infected individuals reported close contact with the source patient during the event.

Most interestingly however, the researchers examined the likelihood of transmission while riding the bus based on seating proximity to the source patient and seating next to a window or door. While they did find a moderately increased risk based on proximity to the source patient, the relative risk was statistically insignificant. Furthermore, only one of the individuals sitting next to a window developed covid-19.

In sum, the analysis showed that patients throughout the entire bus were susceptible to infection, suggesting some component of airborne transmission.

This cohort study has potentially important public health ramifications, and could lead to new recommendations regarding efforts at prevention of spread. Particularly in environments where air is recirculated, such as in modes of public transportation, the potential for airborne transmission cannot be excluded.

—Fred Milgrim, MD

.

POLICY BRIEFING

Federal government expands rapid testing footprint.

Last week, the Food and Drug Administration issued an Emergency Use Authorization (EUA) for the BinaxNOW COVID-19 Ag Card from Abbott Diagnostics Scarborough, Inc. This test, marketed as taking only fifteen minutes to run and requiring no special equipment, is self-contained, is about the size of a credit card and can be run practically anywhere. Remarkably, it reportedly costs only $5. While such an accessible price will make it feasible to widely distribute screening programs, rapid tests tend to be less sensitive and negative results may need to be confirmed by more rigorous methods.

In light of the ease of use and EUA, the federal government has spent $750 million to purchase 150 million of these tests, which represents almost the entire stock Abbott Laboratories was slated to produce this year. The company stated that it is currently set up to manufacture approximately 50 million devices each month and will develop an app allowing patients to track their status in real time. *Various*.

—Joshua Lesko, MD

Top physicians turning against FDA commissioner.

Yesterday, Dr. Eric Topol, the editor-in-chief of *Medscape* published an open letter to FDA commissioner Stephen Hahn that skewered him for three important decisions he has made during the covid-19 pandemic. The first was the Emergency Use Authorization for hydroxychloroquine, which was later revoked due to futility. The second was the plasma announcement. A few days later, Hahn announced an expanded EUA for remdesivir, permitting the drug's use in milder cases. This decision came despite recent underwhelming evidence related to milder cases.

Many experts are concerned that the public's trust in the FDA has been undermined by these misadventures, often based on politics and not science. That lack of trust could undermine American's confidence in an eventual vaccine. Topol called for Hahn to come clean with the American people or else resign. *Medscape.*

—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.