

27 May 2020

## **BRIEF19**

*A daily review of covid-19 research and policy.*

### **RESEARCH BRIEFING**

#### **Neurologic disease in covid-19 patients with acute respiratory distress syndrome.**

There have been reports that some patients with covid-19 develop neurologic symptoms. In April, [a study](#) appearing in *JAMA* found that patients with more severe cases of SARS-CoV-2 were more likely to develop neurologic signs including strokes, loss of consciousness (or changes in general levels of alertness) and injury to the muscles of the body. A new study in *The New England Journal of Medicine* adds to this [body of knowledge](#). The researchers gathered data on 64 SARS-CoV-2 positive patients who had been admitted to an intensive care unit in France with acute respiratory distress syndrome, a life-threatening complication of many diseases including covid-19. Concerning findings included evidence of disease to the corticospinal tract of the central nervous system, which is responsible for voluntary muscles, in 67 percent of the patients. These patients were seen to have more brisk reflexes, muscle spasms at the ankle (known as “clonus”), and abnormal reflexes on the soles of the feet. Amongst the patients, two were found to have experienced a stroke, and of eight who were considered at high risk of seizures, one had an abnormal EEG (electroencephalogram) which demonstrated findings that while abnormal, were not specific to a specific disease. Interpretation of these findings poses significant challenges. It remains unclear whether these neurologic findings are specific to SARS-CoV-2 (including inflammatory crises caused by cytokines, for example), or whether such findings are only being detected because the “magnifying glass” is being applied to patients in ICUs such as the one described in this study. It is known, for example, that prolonged critical illnesses that require ICU medicine are associated with changes in brain cognition and neurologic function. Some of these changes are caused by powerful medications that must be used to keep patients alive and some are caused simply by the fact that the human mind and body are not “designed” to function in an environment like an ICU. —*Jeremy Samuel Faust, MD MS*

#### **Not all PPE recycling works.**

The US Centers for Disease Control and Prevention published [guidance](#) on the reuse of PPE during the covid-19 pandemic in late March, adding further recommendations regarding specific methods of [decontamination](#) in April. While previous guidelines to address this were issued during the 2009 H1N1 pandemic, the adoption of the practices was limited at that time, due to the relatively smaller impact that that outbreak had on the healthcare system. Given the current and anticipated needs, studies such as one published in *JAMA Network Open* yesterday will be necessary. The authors tested gamma irradiation as a means of decontaminating used N95 respirators. The investigators subjected masks to different amounts of radiation, in the hopes that the masks would maintain structural integrity—the concern is that the radiation would make the crosslinking polymer fibers of the masks too brittle, thereby decreasing how effective they are at keeping viral particles from reaching the users’ mouths and noses. After radiation, the masks were donned by healthcare workers who then underwent fit testing (note: fit testing is done by having workers wear a mask; they then are exposed to harmless but intense odors. If the mask fits properly, the subjects report very little odor or taste during the test). The radiated masks all passed the qualitative fit tests. However, when the masks were subjected to quantitative filtration

test (particles were blown at the mask at speeds *lower* than the peak air speed of a cough), the masks did not perform well, especially with smaller particles. –*Jeremy Samuel Faust, MD MS*

## **POLICY BRIEFING**

### **C.D.C. combining active infection and recovery tests for the nation’s testing total.**

The Centers for Disease Control and Prevention has been [combining](#) tests that detect active infections with tests that detect whether a person has recovered from the coronavirus in nationwide testing totals. On May 18, the C.D.C.’s testing tracker reported 10.2 million viral tests had been performed. After tests that detect whether a person has recovered (as evidenced by the presence of antibodies), known as serology tests, were added, the number increased to 10.8 million. Epidemiologists say combining the tests is misleading. Including serology tests muddies the picture and could make it appear that a given state is better able to identify active cases than it truly is. Some officials said the error was simply the result of overworked local and state public health departments scrambling to produce data that they have not had to produce before. Other states seem to have been trying to match similar practices in other states in an apparent effort to avoid unfairly unflattering comparisons. *The New York Times*.

–*Aida Haddad, MDiv*

### **Pandemic sharpens argument that the U.S. needs the “Dreamers.”**

Last fall the United States Supreme Court [heard arguments](#) on whether to allow the Trump administration to end the Deferred Action for Childhood Arrivals (DACA) program, which protects about 700,000 immigrants, known as “Dreamers,” who were brought to the country as small children. The University of California had [challenged](#) the Department of Homeland Security’s decision to terminate the program. At the time, the American Medical Association and over thirty other organizations filed an [amicus brief](#) warning that the loss of the thousands of healthcare workers who are protected by the program would be devastating for the healthcare system, especially in the event that the nation face a pandemic. (This was before the first reports of a novel coronavirus emerged from Wuhan, China). Now that we are in the midst of just such a pandemic, the Supreme Court recently [allowed](#) a new filing from Yale Law School and the National Immigration Law Center on behalf of the approximately 27,000 DACA recipients who work in healthcare, arguing that “termination of DACA during this national emergency would be catastrophic.” *Various*.

–*Joshua Lesko, MD*

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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.