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BRIEF19

A daily review of covid-19 research and policy.

RESEARCH BRIEFING

More concerning findings regarding the aerosolization of SARS-CoV-2. A not yet peer-reviewed manuscript from the University of Nebraska Medical Center provides evidence of viral contamination in commonly used items, toilet facilities and air samples. Researchers studied thirteen covid-19 patients who were housed in the National Biocontainment Unit and National Quarantine Unit. All rooms were "negative pressure" rooms, which draw air in but not back out. In the study, cell phones (83%) were identified as substantial sources of contamination. Other contaminated sources included glasses and stool samples from toilets (of which 81% were positive for SARS-Cov-2). But most concerning is that SARS-Cov-2 particles were found in the air even at distances greater than six feet from patients and were found in the ambient air even when patients who were not coughing. Nasal oxygen tubes (cannulas), a device commonly used in hospitals was found to distribute the highest airborne concentrations of SARS-Cov-2. Although these are preliminary findings from only thirteen patients held in isolation, it is concerning that the SARS-Cov-2 virus may be aerosolized even in mildly ill patients, and without the provocation of so-called aerosolizing procedures (such as suctioning) which cause viral particles to be carried, briefly, in droplets in the air. While it is uncertain still how much is "too much" of the virus for an individual to inhale come in contact with, this study underscores the need for healthcare providers to wear the appropriate PPE around patients under investigation and covid-19 positive patients.

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What's the latest on N95 decontamination and re-use? With N95 masks in short supply, the notion of re-using these vital pieces of PPE has garnered attention. The use of ultraviolet light has been suggested. Yesterday, the U.S. Food and Drug Administration (FDA) approved the emergency use of a hydrogen peroxide vapor (HPV) decontamination system made by Battelle (a private nonprofit company for applied science and technology) for use in decontaminating N95 masks for re-use. This system draws on results from prior FDA-funded laboratory testing which showed N95 masks still met performance requirements after decontamination by HPV up to 50 times. In these tests, N95 masks were inoculated with spores via both aerosol and liquid droplets. HPV-decontamination led to a significant reduction in the number of viable spores on those N95 masks. Further, the masks themselves were not significantly degraded, with the exception of the elastic straps, which withstood up to 30 cycles of decontamination. Researchers at Duke Health recently confirmed these results in a preprint paper. Testing on humans found no losses in either mask fit or seal. Prior research showed that in laboratory settings, HPV works against viruses, including a strain of coronavirus found in pigs. Although encouraging, further research is needed to confirm that HPV works effectively to combat SARS-Cov-2. Currently, the FDA has authorized Battelle to decontaminate ten thousand N95 masks per day.

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POLICY BRIEFING

Don't discriminate, ventilate.

Earlier this week, *Brief19* reported on a lawsuit filed by disability rights groups aiming to prohibit certain health status considerations from affecting ventilator allocation in the case of severe shortages. On Saturday, the United States Department of Health and Human Services announced that its Office of Disability Rights would open investigations to ensure that states were not considering disability, age, race, or gender, when developing ventilator allocation plans. The move comes in response to proposed plans in Alabama and other states that have floated potential policies stating that patients with severe mental retardation or dementia should be considered "unlikely candidates" for ventilator support. *New York Times.*

Domestic travel advisory in effect.

On Saturday, President Trump proposed issuing a quarantine for the tri-state area of New York, New Jersey, and Connecticut. He stopped short however, and ultimately called on the Centers for Disease Control and Prevention to issue a travel advisory. The CDC did so, urging residents in the area not to embark on any non-essential domestic travel. Travel excluded from the advisory includes work-related travel for healthcare workers, finance workers, and those in the trucking and food industry. *CDC*.

--Kimi Chernoby MD, JD.

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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.