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BRIEF19

A daily review of covid-19 research and policy

BREAKING NEWS

What is the prognosis for the President of the United States?

Ever since news broke that President Trump has contracted SARS-CoV-2, the virus that causes covid-19, one question has preoccupied us all: what is his prognosis?

His age, gender and the presence of one pre-existing condition (obesity) give us some sense of his risks. At 74 years old, his risk of a fatal outcome, simply due to his age, is 90 times greater than that of a person 18-29. Various estimates related to President Trump's age alone stake his mortality [risk](#) somewhere between 4.8% and 15%. While, in the United States at least, white race has been associated with lower death rates overall than Black and Latino people, among patients requiring hospitalization, the outcomes have been similar. Though the Centers for Disease Control and Prevention [displays](#) the case fatality rate (that is the percent of patients who die after being infected) for patients in the President's age bracket as around 8 percent, we know that the real number is likely lower, due to under testing. We may be missing some of the covid-19 deaths, but we are missing far more cases.

Male gender has also been associated with [worse outcomes](#). In fact, in the United States, [52 percent](#) of SARS-CoV-2 infections have been in women, but 54 percent of deaths have been in men. In particular, among persons similarly aged to President Trump (ages 70-79), men appear to be well more than *twice* as likely to die from covid-19, once infected by SARS-CoV-2 (i.e. infection rates among men and women are roughly equal, but the outcomes are not).

Finally, the President has the pre-existing condition of obesity. Obesity is a major risk factor for developing a more serious covid-19 illness. One [study](#) that combined data from 75 others, found that covid-19 patients with obesity were more likely to become infected with and hospitalized for covid-19. Of course, the President has already been infected and hospitalized. Beyond that, patients with obesity were 74 percent more likely to require admission to an intensive care unit and 48 percent more likely to have a fatal outcome than non-obese patients.

Beyond President Trump's demographic risks, his prognosis now also depends on his clinical course. While many were interested to learn that he had experienced a "high fever" (which was initially described as a "low-grade temperature"), that by itself does not change the severity of illness. Fevers can occur in covid-19 illnesses and the case can still be categorized as mild. But on Sunday, we learned what many had suspected—that the President required supplemental oxygen on at least two occasions, including at least one event when his levels apparently dropped precipitously. Low oxygen levels can place patients into moderate and severe categories, which carry far worse prognoses. For example, in the Recovery Trial published in the New England Journal of Medicine, hospitalized patients who needed supplemental oxygen (though not mechanical ventilation, whose outcomes were worse) had a mortality rate of 23 percent within 28 days of enrolling in the trial after treatment with dexamethasone, which the President is now taking daily. A towering majority of those deaths occurred after the first two days, and only around half had occurred by day 10. In addition, he is taking Remdesivir which has no proven mortality benefit, and an experimental antibody cocktail which, while sounding good on paper, is essentially an experimental Hail-Mary with no track record whatsoever.

The good news for Trump is that improvements, even in the short term, are always good signs. However, we still cannot determine whether his greatest risks have come and gone, or whether they lie ahead.

—Jeremy Samuel Faust MD MS

POLICY BRIEFING

“Warp Speed” may have blown past solutions.

Since President Trump’s hospitalization, there has been a renewed focus on different coronavirus treatment modalities. Monoclonal antibodies in particular have drawn interest, as therapy experts are now saying was passed over by Operation Warp Speed given its narrow focus on developing a vaccine. While a vaccine would eventually prevent future outbreaks, treatments would allow for reactive solutions to limit the spread of confirmed cases and serve as an augmentation to a prevention campaign.

Monoclonal antibody therapy mimics the body’s natural immune response and shows promise as a therapy and potential prophylaxis for high risk populations. While currently under development, President Trump was treated with monoclonals developed by Regeneron under a special access program. Like most of the efforts in diagnosis and therapy during the pandemic, wider use would require an Emergency Use Authorization by the Food and Drug Administration, which allows a line-jumping of sorts, while more rigorous data is collected to confirm efficacy.

Under Operation Warp Speed, the administration has spent less than \$1 billion on therapeutic options, representing just 10 percent of vaccine development spending. Despite the limited federal funding, pharmaceutical companies say variations in infection prevalence have also delayed their efforts in enrolling adequate patients for study. Finally, even if an EUA is granted, initial supply scarcity and a high price tag may limit the actual benefits. *Politico*.

—Joshua Lesko, MD

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