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BRIEF19

A daily review of covid-19 research and policy

RESEARCH BRIEFING

Drops in coronavirus fatality rates mostly hinge on age, study confirms.

One of the most common questions I am asked is, “why are fatality rates apparently dropping over time?” Has the virus mutated? Are treatments better? Did we cause harm early in the pandemic by mechanically ventilating too many patients?

The answer is that none of these explanations suffices and that the best explanation is that the average age of those newly infected matters most. Yes, the virus has mutated, as all viruses do. But there is no compelling evidence that these mutations rendered covid-19 more or less lethal. Yes, treatments have improved, but so far only dexamethasone has provided mortality benefit—and not enough to explain major drops in covid-19 mortality. And while physicians intubated many patients—we simply were not accustomed to seeing patients with such low oxygen levels—it is likely that most patients who were prematurely intubated either would have needed intubation later *or* that they did not but many of them were likely the easiest to wean back off of machines. In addition, as *Brief19* cofounder Joshua Niforatos and I [wrote](#) along with Ted Melnick in *The BMJ*, case fatality rates are often overestimated early in outbreaks, owing to limited testing early on.

A [recent study](#) in preprint provides the most compelling and likely explanation for changes in mortality over time and across different regions and countries: the age of those newly infected. As we all have learned, “infection fatality rates” are highest among older populations. If an outbreak occurs in a region where the geriatric population is high, the fatality rate will be high, compared to an outbreak in a region with a younger population. The risk of dying from SARS-CoV-2 for children appears to be approximately one in 50,000 for children (at age 10), one in 1,000 for persons aged 25 years, and one in 250 for persons aged 55. For those ages 65 and older, the risk exceeds 1%, starting at one in 70 at age 65, approximately one in 20 by age 75, worse than one in seven by age 85, and one in four for those 90 and older. The relationship between age and fatality risk appears *exponential*. These numbers largely hold steady regardless of country, from an array of nations around the world. Differences in overall fatality rate appear to depend less on any medical care and more on just how old the average person in an outbreak country is.

That does not mean that “shielding” is the best way forward. Shielding is the idea that in order to protect the most vulnerable members of the population, younger people should more-or-less be encouraged to acquire SARS-CoV-2, so that herd immunity occurs among a population that is far less likely to die. The problem is twofold. First, pursuing a herd immunity strategy when it is likely that a reasonably effective vaccine will soon be available is akin to shrugging off the needless deaths of tens if not hundreds of thousands of people. Second, we now know that young adults *are* dying from covid-19 at [historic rates](#). While a 25-year old might be 10 times less likely to die from infection than someone in their late 60s, the stand to lose decades more of life expectancy, let alone the economic effects on the workforce and the societal effects around the orphaning of young children that accompanies the deaths of many younger adults.

—Jeremy Samuel Faust MD MS

POLICY BRIEFING

A return to record-breaking days.

Amidst record-breaking voter turnout, the coronavirus pandemic has continued to set records of its own. Friday [saw](#) a third straight day of all-time highs, at 132,700, as well as more than 1,000 deaths for the fourth day in a row. 27 states have set weekly case records, and 17 states set one day case totals. Globally new daily cases have surpassed 605,000 for the first time, and countries are reinstating various lockdown measures. There is some good news, however. The increased enforcement and practice of social distancing seems to have [lowered](#) the prevalence of influenza cases as the Northern hemisphere moves into the winter season. This would seem to [support](#) data released by the Centers for Disease Control and Prevention (CDC), that looked at the Southern hemisphere case reports from March through September. *Various.*

—Joshua Lesko, MD

President-elect Joseph R. Biden assembling new coronavirus taskforce.

Last week, we wrote about the possibility that National Institute of Allergy and Infectious Diseases Director Dr. Anthony Fauci might be fired by President Trump if re-elected. Now that it is clear that Trump has not been re-elected, President-elect Joseph R. Biden's transition team has announced the formation of a new coronavirus task force, which will commence its work immediately in anticipation of the January 20th inauguration.

So far, the taskforce leadership includes Zeke Emanuel, Marcella Nunez-Smith, and former Surgeon General under President Obama, Vivek Murthy. Other members are expected to be announced this week.

We do not expect the work of the new taskforce to be perfect. However, Biden has signaled that he will let science lead policy, not the opposite. We at *Brief19* will continue to shine light on policy choices made by our elected officials, good or bad, regardless of their political origins.

That stated, we are relieved that our government leadership will likely cease to be a constant source of medical misinformation. It appears there will be no more hydroxychloroquine and bleach debacles. The Food and Drug Administration and Centers for Disease Control and Prevention leadership will not be pilloried by its own President.

In short, the work of bringing you expertise from the frontlines of covid-19 policy will go on. But it might just be a great deal easier from now on.

—Jeremy Samuel Faust MD MS

*Kimi Chernoby, MD, JD, Policy Section Founder. Joshua Niforatos, MD Research Section Editor
Frederick Milgrim, MD, Editor-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 and public policy.*