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Vaccine and antibody treatment approvals, long COVID risk factors

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COVID-19 Update

The Buzz This Week

Over a year after the emergency use approval, the Moderna COVID-19 vaccine has received full approval from the Food and Drug Administration (FDA). The Moderna vaccine, which will be marketed under the brand name Spikevax, joins Pfizer's Comirnaty as the second vaccine to receive full approval in the United States. Less than 60% of the U.S. is fully vaccinated, and just over 25% has received a booster vaccine. There is hope FDA approval will further increase those numbers. There was little growth in vaccination rates when Pfizer received full approval, but with the surge of Omicron cases, full approval may encourage more full vaccinations and booster doses.

The Omicron surge appears to be slowing down in many parts of the U.S., though hospitalization rates, which consistently lag spikes in new cases, are still high. However, the BA.2 subvariant, often referred to as "stealth" Omicron remain, may slow a further decline in new cases as epidemiologic uncertainties about the subvariant remain. Some of the initial positive indications are that BA.2 does not seem to cause more severe disease and that vaccines seem to offer the same level of protection as the initial Omicron subvariant based on studies from Denmark and the U.K. More worrisome is that "stealth" Omicron does seem to spread more quickly—one study indicated those with BA.2 were one third more likely to infect others than those with BA.1.

As variants evolve, treatments have evolved with them. Earlier this month, the FDA revised emergency use authorization for Lilly and Regeneron monoclonal antibodies to only those infected with a variant that is susceptible to treatments. The antibody treatments do not appear effective against the Omicron variant, which makes up more than 99% of new cases in the U.S. Instead, antibody treatment GlaxoSmithKline and Vir Biotechnology and two antivirals from Merck and Pfizer have shown to be effective against Omicron.

Why It Matters

Even as new Omicron cases slow, the death toll in the U.S. continues to climb. The U.S. has the highest death rate among large, high-income countries, both during the overall pandemic, and throughout the Omicron wave thus far. Since December 2021 alone, the death rate in the U.S. is over 60% higher than other similar nations. In large part this has to do with America's lagging vaccination and booster rates, despite early and continued access to the vaccination for many Americans. 12% of Americans over 65 are not fully vaccinated, and just over 40% of the same population has received a booster, compared to England, where only 4% of those over 65 remain unvaccinated, and over 90% have received a booster shot. Due to low vaccination rates, the U.S. was still recovering from Delta with comparatively high hospitalization rates when Omicron hit. Hospitals continue to be overwhelmed with cases, the vast majority of which are unvaccinated and non-boosted. High vaccination rates continue to be the best preventative measure against death. With two vaccinations having full approval, Americans can feel confident about safely accessing COVID-19 shots.

Death is not the only significant negative outcome from COVID-19. Long COVID can cause significant disruption and decline in quality of life. Current estimates are that 10% to 30% of those with COVID-19 will develop long COVID, though the estimates vary significantly by population, variant, and severity of disease. New data emerging may help to identify those who are at greater risk to develop long COVID. Key risk factors in various studies included autoantibodies, reactivated Epstein-Barr virus (the virus that causes mononucleosis), type 2 diabetes, genetic material from COVID-19 in the bloodstream indicating a spread from the lungs, low levels of immunoglobulins IgM and IgG3, asthma, less diverse gut microbiome, and more severe COVID-19 symptoms during the acute COVID case. Each of these possible key risk factors needs to be tested further in larger groups, but identifying key factors for the cause of long COVID can help in the identification of best treatments, some of which likely include the antivirals recently developed from Pfizer and Merck. Given people with more severe COVID-19 were more likely to also develop long COVID, vaccination may help to prevent some long COVID-19 cases.

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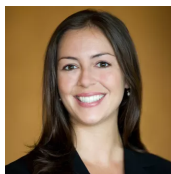
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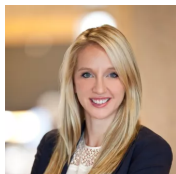
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