Vaccines Prevented Nearly 140,000 COVID-19 Deaths in the U.S.

The findings underscore the need for policies to expand vaccine administration, especially for low-income and minority populations.

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As of May 9, the U.S. COVID-19 vaccination campaign is associated with an estimated reduction of 139,393 pandemic deaths, according to an NIA-supported study published Aug. 18 in Health Affairs.

While the rate and number of COVID-19 vaccinations varied among states, the RAND Corporation and Indiana University researchers concluded that these results underscore the need for policies and public health actions to expand vaccine administration to benefit larger populations, especially low-income and minority populations.

As of July 18, more than 4 million people died from COVID-19 worldwide, including more than 600,000 people in the United States. In addition to the devastating loss of life, there have been extensive social and economic costs that have worsened health disparities in low-income and minority populations. Between December 11, 2020, and February 27, 2021, three COVID-19 vaccines received emergency use approval by the Food and Drug Administration. During clinical trials, these vaccines were shown to be highly effective against COVID-19.

To determine the speed of vaccination efforts in each state between Dec. 21, 2020, and May 9, 2021 — the first five months of the U.S. campaign — the researchers used vaccination data from government websites and official statements. Specifically, they compared the amount of time each state took to reach a series of milestones — starting with five vaccine doses per 100 adults up to 120 doses per 100 adults. They found that the speed of distribution and the number of people vaccinated varied across states over time.

Equipped with the weekly state-level vaccination rates, the researchers created a model to measure the association between the varying intensity of state and national vaccination campaigns and COVID-19 deaths. Their model indicated that by May 9, approximately 570,000 COVID-19 deaths had occurred in the U.S., and they projected that 709,000 deaths would have occurred without the vaccines. The strength of the association varied among states: The largest estimated reduction in deaths was 11.7 fewer COVID-19 deaths per 10,000 adults in New York, and the smallest estimated reduction was 1.1 fewer COVID-19 deaths per 10,000 adults in Hawaii.

The researchers acknowledge some study limitations. For example, they could not distinguish the roles of vaccination from increases in natural immunity and social distancing policies on the numbers of COVID-19 deaths. Also, they did not look at the effects of the first and second vaccine doses and were not able to measure the effects on vulnerable subpopulations, such as the elderly or racial minorities.

Despite these limitations, the study results support the crucial role of vaccinations in saving lives and curtailing the COVID-19 pandemic. Additional research will be essential to evaluating the disparities in vaccine access and the consequences for disease spread and health inequities.

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