

Vaccination, politics and COVID-19 impacts: update

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Abstract

In an earlier manuscript, the author found a strong relationship between political views, vaccination levels and COVID-19 death rates. This study revealed that in U.S. counties where large proportions of voters cast their ballot for Donald Trump in the 2020 presidential election, vaccination levels were lower and COVID-19 death rates were higher. This update explores this relationship six months later when more recent data are available. The updated analysis found that with the passage of time, the relationship between political views, vaccination levels and COVID-19 death rates became even stronger. From March 1, 2021 until March 1, 2022 (the Vaccine Era), COVID-19 deaths per 100,000 residents in counties where Trump received 75 percent or more of the vote were more than 3 times greater than in counties where Trump received less than 25 percent of the vote.

Keywords: COVID-19, Vaccination, Politics

Introduction

After initially emerging in late 2019, the COVID-19 virus spread around the world with devastating health, economic, educational and other consequences [1-3]. As of March 2022, the known worldwide death toll from the disease had surpassed 6 million people. In an effort to combat the disease, safe and effective vaccines were developed in record time [4-6]. COVID-19 vaccines provide a clear path to dramatically limit disease spread and allow the world to return to pre-pandemic circumstances more quickly [7]. Unfortunately, millions of eligible people have chosen not to be vaccinated [8-10]. Research has found political views are a critical factor in explaining and understanding vaccine hesitancy [11-15]. In a previous article [16], the author's research revealed that political views were strongly related to vaccination levels, which then greatly impact COVID-19 death rates across the more than 3,000 U.S. counties. In counties with a higher share of persons who voted for Donald Trump in the 2020 presidential election, COVID-19 vaccination levels tended to be lower and death rates higher.

The author's previous article was based on data up to September 1, 2021. Since that time, the pandemic has continued to rage and thousands more people have died. Consequently, an update of research with more recent data is pertinent. This commentary provides an update on the relationship between political views, vaccination levels and COVID-19 death rates in U.S. counties by examining data for an additional six months, through March 1, 2022. This update divides the pandemic into two distinct periods. The first is from pandemic beginnings until March 1, 2021 (the Pre-Vaccine era), while the second is from March 1, 2021 until March 1, 2022 (the Vaccine Era). March 1, 2021 is used as the cutoff between the two periods because by that date vaccines were generally available to most American adults.

Methods

In this study, data from 3,112 U.S. counties are analyzed. Political views are determined by the percent of voters in each county who cast their ballot for Donald Trump in the 2020 presidential election. Election data are obtained from the New York Times. Vaccination rates are based on the percent of eligible residents (persons age 5 and older) in each county who are fully vaccinated against COVID-19 as of March 1, 2022. Being fully vaccinated is defined as having at least two shots of Moderna or Pfizer vaccines or at least one shot of the Johnson and Johnson vaccine. Vaccination data were obtained from the U.S. Centers for Disease Control and Prevention (CDC). The dependent

Variable	Percent Voting or Trump					
	Less than 25 Percent (N=54)	25-45 Percent (N=328)	45-55 Percent (N=317)	55-75 Percent (N=1,310)	75 Percent or More (N=1,103)	Total (N=3,112)
Percent of Eligible Persons Fully Vaccinated	78.9	71.3	67.1	57.9	47.8	
March 1, 2021						
Total COVID-19 Deaths	45,514	1,82,121	97,774	1,33,636	41,841	5,00,886
Deaths Per 100,000	152.8	148.5	146.4	156.6	181.6	152.9
March 1, 2021 - March 1, 2022						
Total COVID-19 Deaths	21,918	1,24,453	83,280	1,44,074	51,453	4,25,178
Deaths Per 100,000	73.6	101.6	124.6	168.9	223.4	129.8
Total Pandemic						
Total COVID-19 Deaths	67,432	3,06,574	1,81,054	2,77,710	93,294	9,26,064
Deaths Per 100,000	226.4	250.1	271.0	325.5	405.0	282.7
Total Population	2,97,78,394	12,25,72,218	6,68,01,292	8,53,19,109	2,30,36,379	32,75,07,892

variable is number of COVID-19 deaths per 100,000 residents in each county as of March 1, 2021 and March 1, 2022. The Pre-Vaccine Era is the number of deaths per 100,000 residents from pandemic beginnings until March 1, 2021. The Vaccine Era death rate is determined by the number of COVID-19 deaths per 100,000 residents from March 1, 2021 to March 1, 2022. These data were obtained from the New York Times (see Albrecht 2022 [16] for more detail on data and research methods). In this analysis, counties are categorized into 5 groups based on the percent of votes for Trump. These categories include: 1) counties where Trump received less than 25 percent of the vote; 2) counties where Trump received from 25 to less than 45 percent of the vote; 3) counties where Trump received from 45 to less than 55 percent of the vote; 4) counties where Trump received from 55 percent to less than 75 percent of the vote; and 5) counties where Trump received 75 percent or more of the vote.

Findings

In Table 1, data are presented showing the percent of persons fully vaccinated and COVID-19 deaths per 100,000 residents as of March 1, 2021 and March 1, 2022 by the percent voting for Trump in the 2020 presidential election. The top panel shows that there is a strong relationship between political views and vaccination rates. In counties where Trump received less than 25 percent of the votes, 78.9 percent of eligible persons were fully vaccinated. As the percent voting for Trump increased, vaccination levels tended to decline. In counties where Trump received more than 75 percent of the vote, less than one-half (47.8 percent) of eligible persons were fully vaccinated.

The impacts of low vaccination rates are apparent in COVID-19 death rates (Table 1). During the Pre-Vaccine era, death rate differences across counties with varying political views were not especially great. Circumstances, however, were dramatically different during the Vaccine Era when people had a more effective means of combatting the disease. After the availability of vaccines, death rates varied extensively across counties with different political views, with death rates increasing rapidly as the proportion of Trump voters

increased. During the Vaccine Era, in counties where Trump received 75 percent of the vote or more, the number of COVID-19 deaths per 100,000 residents was more than 3 times higher than in counties where Trump received less than 25 percent of the vote (223.4 to 73.6).

Conclusions

My earlier article found a strong relationship between political views, vaccination rates and COVID-19 outcomes. This commentary explores an additional 6 months of data. The results are insightful. With the passage of time, the relationships between political views, vaccination rates and COVID-19 death rates became much stronger. Between March 1, 2021 and March 1, 2022 (the Vaccine Era), the COVID-19 death rate in counties where 75 percent or more of voters cast their ballot for Trump, was more than three times higher than in counties where Trump received less than 25 percent of the vote. In counties where Trump received less than 25 percent of the vote, the death rate during the Vaccine Era was less than one-half of what it had been during the Pre-Vaccine Era. In comparison, in counties where Trump received more than 75 percent of the vote, the death rate was higher during the Vaccine Era year than during the Pre-Vaccine Era.

The consequences of these findings are profound. In counties with high proportions of Trump voters, large numbers of people failed to get vaccinated. No question, many of these people also failed to behave in other ways that could keep themselves safe from the COVID-19 virus such as wearing masks and social distancing. The result is that thousands of people died unnecessarily. Scientific and medical facts should not be political. The benefits of the tremendous medical breakthroughs that are occurring are severely limited if large segments of the population refuse to take advantage of them, especially for political reasons. Clearly, extensive efforts should be made to build trust in science and medical expertise, especially with the political right.

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