

COVID-19 vaccination inequity in the United States: An intersectional issue

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Abstract

Disparities in healthcare access have been ever-present in the United States. The COVID-19 crisis has highlighted these nationwide disparities, as early vaccine scarcity has led to inequitable access to this key resource. This paper explores the background of four key barriers that have promoted vaccination inequities in the United States: Race, socioeconomic status, age, and geography. Mistrust between healthcare systems and minority communities have unveiled the need for greater collaboration between the two parties. Groups of higher socioeconomic status are able to utilize their network to acquire a vaccine and are less susceptible to vaccine misinformation. A lack of technological competency has left several members of the elderly population unable to use online appointment systems. Additionally, rural populations without high-speed internet are not able to sign up for online appointments during the limited time windows. Contrarily, urban vaccination pop-up sites are oftentimes overcrowded by outsiders. These barriers have resulted in lagging vaccination rates among several minority groups who tend to be more vulnerable to severe infection. In this viewpoint, I propose four recommendations to increase future equitability of vaccinations in the United States, including greater collaboration of community institutions, development of educational programming, online appointment system assistance programs, and safeguarded pop-up vaccination sites. This paper aims to serve as a starting point for analyzing current barriers to healthcare resource access in the United States, and improvements in programs and policies that can diminish these nationwide disparities.

KEY WORDS: Vaccination; crisis resource allocation; COVID-19; health disparity; racial barriers; socio-economic barriers.

INTRODUCTION

In a time where masks are essential, the COVID-19 pandemic has ironically unmasked everyday social inequities in the United States (U.S.). COVID-19-related hospitalizations, testing availability, housing instability, and unemployment have all disproportionately impacted groups of different races, classes, ages, and geographies. In the dire crisis of a pandemic, the news of an effective vaccine is undoubtedly great. As the U.S. vaccine rollout progresses, the economics surrounding the distribution process has raised several questions about supply, transportation, storage, and administration of vaccine doses. However, one question stands out above all: Who in the public actually gets the vaccine first? While economics draws the broader picture of vaccine distribution, it is sociology and epidemiology that provides insights into which individuals are most likely to be at the top of the list. Race, socioeconomic status (SES), geography, and age barriers unfortunately play out to be key determinants of vaccine distribution. Racial disparities in COVID-19 infections and mortality during the pandemic have been

alarming. In the U.S., the mortality rate of American Indians, African Americans, and Latinos with COVID-19 has been nearly twice as high as Whites [1]. Minority groups are at increased risk of developing severe COVID-19 illness, yet they have been subject to lower vaccination rates in the early stages of vaccine administration [2]. Fear and mistrust over the vaccine by several minority groups highlight the unfulfilled need of collaboration between health officials and community leaders. Differences in vaccination attitudes among lower SES groups can partly be attributed to the spread of misinformation [3]. It is essential that public health officials focus on shifting these attitudes as lower SES and minority groups remain more vulnerable to severe COVID-19 illness due to greater underlying conditions. Lastly, age and geographic barriers persist as several U.S. states and health systems use lottery systems in determining the first recipients of vaccines [4]. This method exploits technological gaps among elderly and rural populations. It is unknown how the inequitable distribution of vaccines will affect the outcomes of

TAKE-HOME MESSAGE

COVID-19 infection has disproportionately impacted minority groups in the United States. However, inequitable vaccination distribution has left behind these vulnerable populations due to barriers of race, socioeconomic status, geography, and age. Greater dialogue about these barriers is needed to create all-inclusive and equitable vaccine rollout programs in the United States.

Competing interests - none declared.

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the groups who find themselves at the end of the vaccination queue. The most important lessons learned from this public health crisis may be learned in hindsight, however, it is important to begin reflecting on the apparent shortcomings of the current systems. In the midst of a pandemic, the scarcity of vaccines makes it difficult to allocate resources equitably when barriers remain in place. The aim of this paper is to take an in-depth look at these systemic barriers in order to explain who is prioritized within U.S. society and the remaining work to be done by public health officials, epidemiologists, sociologists, and economists in improving future crisis resource distribution.

DISCUSSION

Racial barriers

Racial healthcare disparities during the COVID-19 pandemic have foreshadowed the gap in racially equitable vaccine distribution. The emergence of racial disparities in COVID-19 positivity rates, hospitalizations, and mortality rates in the U.S. have been alarming to health experts [1]. However, these disparities were predictable considering the historic health inequities faced by these racial groups. A few of the underlying conditions most susceptible to severe COVID-19 illness have been identified as diabetes, heart conditions, and obesity [5]. African Americans, in particular, are more likely to be diagnosed with these same problems when compared to non-Hispanic Whites [6, 7]. Similar disparities in underlying health conditions have been found amongst Hispanic and American Indian groups. Logically, these minority groups require a certain degree of prioritization in vaccination efforts. Although several U.S. states have issued vaccine rollouts based on patient preexisting conditions, institutionalized racial inequities and biases faced by BIPOC communities at the hands of healthcare systems deter minority groups from seeking out vaccinations.

There has been a longstanding sense of mistrust between U.S. healthcare systems and

minority groups. The Tuskegee Syphilis Study, which began in 1932, was an ethical abusive study for setting the foundation for this mistrust within the Black community [8]. For 40 years the U.S. Public Health Service (PHS) and Center for Disease Control and Prevention (CDC) deceived African American males with the false promise of providing them with free treatment for syphilis [9]. Hundreds of deaths from this experiment sparked mistrust and fear within the African American community against government and medical professionals. A snowball of rumors has persisted within the community ever since. A prime example of this was observed in the 1980s when African Americans believed that the HIV/AIDS crisis was introduced into their community deliberately by the U.S. government [10].

This evident mistrust is now affecting attitudes towards vaccinations among U.S. minority groups who remain most vulnerable to severe COVID-19 illness. As highlighted by early data from the Kaiser Family Foundation, significantly more Whites have already been vaccinated or plan to get the COVID-19 vaccine as soon as they can in comparison to Hispanics and Blacks [3]. While Blacks and Hispanics account for significant percentages of cases in several areas, they have not received an equivalent percentage of vaccines [2]. For example, Blacks and Hispanics in Georgia have received 23% and 3% of vaccinations, while accounting for 32% and 6% of cases, respectively. Contrarily, Whites in Georgia have received 65% of vaccinations, while accounting for only 47% of cases. Counterarguments for these disparities are occasionally raised by citing the US population distribution of race. In a country that is predominantly White, it seems logical that more Whites have received the vaccine. However, the percentage of administered vaccines to Whites is greater than their respective population percentage within several states [3, 11]. More programs must be organized by public health officials and government figures in collaboration with local leaders within the respective ethnic communities to promote more trust. Although progress has

been made from December 2020 to February 2021 in increased enthusiasm over the vaccine among Whites, Hispanics, and Blacks, gaps still persist between these races [3].

Socioeconomic status barriers

Higher socioeconomic status has historically been associated with positive health outcomes and the COVID-19 pandemic may reinforce this finding [12, 13]. The health-wealth gradient displays the unfortunate imbalance of health outcomes between the upper, middle, and lower class. While part of the issue lies in lack of access to care and living in more disease-prone conditions, the problem goes beyond this. The Whitehall Studies previously identified differences in health outcomes between people who have access to universal healthcare in the United Kingdom (U.K.). This unveiled the greater stress faced by those lower on the socioeconomic ladder which resulted in greater susceptibility to health problems [14]. Regardless of healthcare access, individuals in lower socioeconomic classes remain at greater risk of developing severe illness from COVID-19 but they remain less likely to receive vaccinations first.

The global vaccine distribution provides a macro-level model of how wealth influences resource allocation. Rich countries, like the U.S. and U.K., have taken significant numbers of vaccines leaving behind low-income countries. As of March 30, 86 percent of vaccines administered worldwide have been in high- and upper-middle-income countries [15]. Early data about vaccinations within the U.S. reemphasizes the association between vaccinations and social class. Those with household incomes of > \$ 90,000 are most likely of any socioeconomic class to have received a dose of the vaccine or know a household member or close friend/family who has gotten a dose [3]. This value goes down when the income is between \$ 40,000 to \$ 89,999, and then further down when the income is less than \$ 40,000. While various factors contribute to this, a partial explanation may be the ability of higher SES individuals to utilize their network and skip ahead in the

vaccination line. Despite vaccinations being available at no cost to the public as declared by the government, income-related concerns of missing work or needing to pay out-of-pocket remain as forefront concerns for the American public.

Alongside socioeconomic status, disparities in regard to education levels have also emerged. An established body of literature supports a positive correlation between education and socioeconomic status [16]. Commutatively, higher education is positively associated with health outcomes [17]. In the context of COVID-19, U.S. college graduates are more likely to have received a vaccine dose, know a household member who has received a dose, and/or have a close friend/family that has been vaccinated [3]. Contrarily, those at lower education levels remain more vulnerable to misinformation from online sources resulting in greater vaccine reluctance. In the age of social media, it remains difficult to prevent the spread of misinformation. The spread of this misinformation is exacerbating the problem of vaccine hesitancy [18, 19]. One-third of the most vaccine reluctant individuals claim to have received information about the vaccine from Facebook [3]. Without proper information channels reaching vaccine hesitant populations, these groups place themselves and others at risk of infection.

Age and geographic barriers

Additional factors, like age and geographic location, cause further challenges for access to vaccines in the U.S. Older individuals have been prioritized in several U.S. state vaccination efforts but unequal access to vaccine appointments poses an obstacle for the elderly. In order to make appointments with several vaccine providers, online appointment systems must be used. However, one-third of adults aged 65+ claim to never use the internet and one-half lack internet access at home [20]. Therefore, heavy reliance on online appointment systems prevents those lacking internet access and digital literacy skills from signing up for vaccination appointments. Furthermore, many elderly

individuals who have access to the internet rely on younger family members to assist them. Without their help during the limited appointment sign-up windows, opportunities are missed.

Access to vaccines also differ based on whether an individual resides in a rural, suburban, or urban area. A larger share of rural adults in the U.S. have dismissive attitudes towards getting vaccinated [3]. This puts those geographic populations at higher risk. It is the responsibility of the government and public health officials to change these attitudes. Additionally, in rural areas, access to broadband and high-speed internet is less common in comparison to suburban and urban areas [21]. This is a key determinant of who is able to sign up on online appointment systems with limited availability. In terms of housing situations, urban areas are more likely to have susceptible populations to COVID-19 infection due to overcrowding of living spaces. As a result, urban areas require a more rapid vaccination response. Although pop-up vaccination sites have opened in specific areas of need, they have often been overtaken by individuals from outside of these locations [22]. These sites must be better safeguarded specifically for the population in need.

Recommendations for policymakers

Reflecting on the obstacles faced by populations of specific races, socioeconomic statuses, geographies, and ages is a must in order to better handle future public health crises. Many aspects of these problems are systemic and will require persistent long-term efforts to mitigate. As tragic as the COVID-19 pandemic has been, historic events like this are filled with humbling lessons. Here are a few important ones for U.S. policymakers and health officials to consider for the future:

1. Greater collaboration between community leaders, public health officials, physicians, and the government are mandatory for rebuilding trust around vaccinations within Black, Hispanic, and American Indian communities.
2. Health systems and public health officials

must develop authentic educational programming for lower SES and less educated individuals to mitigate misinformation. This programming must be distributed either through local officials, employers, or other well-trusted mediums.

3. Online appointment systems disadvantage subsets of the elderly and rural population due to lack of high-speed internet or any internet at all. Health officials must connect these groups with programs that take responsibility of signing these individuals up for appointments upon first availability.
4. Pop-up vaccination sites are important for providing highly vulnerable communities with immediate access to vaccinations. These sites must be reserved for people solely within the respective communities before opening up to outsiders.

This list of recommendations is far from comprehensive but is meant to serve as a starting point to much needed conversations in public health, general healthcare, and health policy in the U.S.

CONCLUSION

The COVID-19 pandemic has emphasized the ongoing disparities in the U.S. faced by disadvantaged groups at the hands of the government and healthcare systems. Times of crisis can exacerbate these disparities and put disadvantaged populations at much higher risk of falling victim to the crisis at hand. It is still unknown what will be the cumulative impact of inequitable vaccine distribution. It can be reasonably inferred that minority groups and those of lower socioeconomic statuses will be at higher risk of contracting infection, being hospitalized, and/or potentially dying as a result of delayed vaccinations. However, we must wait until after the pandemic to assess health outcomes in correlation with vaccination efforts within various social groups. Going forward, an equitable playing field must be created to allow for proper protection against COVID-19 infection for the most vulnerable groups. While the basics of economics assumes that resources are distributed efficiently within a free market or

society, this fails to be the case in a public health crisis. More must be done to consider social factors hindering groups from being protected from unpredictable diseases, like COVID-19. A consideration of the recom-

mendations from this overview of vaccination inequities will hopefully contribute to a more in-depth dialogue around vaccine distribution and healthcare shortcomings in the U.S. for future public health crises.

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