

Structural Factors Related to COVID-19 Disparities

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I INTRODUCTION

In December 2019, an outbreak of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) began spreading across the world.¹ Its clinical syndrome, COVID-19, has led to significant morbidity and mortality in the United States.² On the one-year anniversary of the pandemic, more than 31 million people had been infected and almost 560,000 people had died due to COVID-19 in the United States;³ both of these statistics are probably underestimates. Reports have revealed stark disparities in infection, severe illness, and mortality from COVID-19 among racial and ethnic minority populations in the United States, particularly African American and Latino populations, but also American Indian and Alaska Native as well as Native Hawaiian and Pacific Islander populations.⁴ The observation of this dramatically disproportionate burden of illness from COVID-19 has shone a bright light on long-standing health disparities in the United States.

The principal reason for excess infections among racial and ethnic minorities is structural. A larger proportion of these populations are employed in essential jobs that require a physical presence in settings such as food markets and public transportation. Working from home and sheltering in place are privileges that are not available to many. In addition, other important factors include: (1) living in single-family homes with spacing between structures, as opposed to densely populated urban

* This analysis was supported by the Divisions of Intramural Research at the National Heart, Lung, and Blood Institute and the National Institute on Minority Health and Health Disparities, National Institutes of Health. The authors do not have either conflicts of interest or financial relationships relevant to this article to disclose. The corresponding author is Eliseo J. Pérez-Stable, MD; 6707 Democracy Boulevard, Suite 800, Bethesda, Maryland 20892; eliseo.perez-stable@nih.gov.

¹ Brad Boserup et al., Disproportionate Impact of COVID-19 Pandemic on Racial and Ethnic Minorities, 86 *Am. J. Surg.* 1615 (2020).

² *Id.*

³ Johns Hopkins Univ. & Med., Coronavirus Resource Center, <https://coronavirus.jhu.edu/>.

⁴ Ankur K. Dalsania et al., The Relationship Between Social Determinants of Health and Racial Disparities in COVID-19 Mortality, 9 *J. of Racial & Ethnic Health Disparities* 288 (2021); Boserup et al., *supra* note 1.

communities, such as apartment buildings; (2) fewer individuals sharing a household; and (3) larger physical living space. Self-isolation after a potential COVID-19 exposure or initial symptoms becomes almost impossible when extended families of, for example, ten persons share a living space with two bedrooms and one bathroom. Higher poverty rates and less access to broadband Internet, or ownership of a computer, create additional barriers to accessing information and services. Once infected, a higher prevalence of underlying comorbidities, lack of health care insurance or access, and delay or avoidance of medical care has led to persons presenting with more advanced COVID-19 disease, and has led to more hospitalizations and subsequently a higher share of mortality. Such preexisting disparities have been amplified by the pandemic, resulting in worse health outcomes related to COVID-19 among racial and ethnic minority groups. It is important to understand the populations at most risk and the factors that have contributed to COVID-19 disparities.

II WHAT ARE HEALTH DISPARITIES AND WHO IS AFFECTED?

The National Institute on Minority Health and Health Disparities (NIMHD) defines a health disparity as “a health difference, on the basis of one or more health outcomes, that adversely affects disadvantaged populations.”⁵ Health disparities adversely affect groups of people who have systematically experienced greater obstacles to health based on a social disadvantage, in part due to discrimination or racism and in part due to being underserved in health care.⁶ Populations with health disparities include racial and ethnic minorities, as defined by the US Census, underserved rural populations, socioeconomically disadvantaged populations of any background, and sexual and gender minorities.

The complexity of how or why these factors influence health outcomes is at the core of the science of minority health and health disparities. Self-identified race or ethnicity and social class are the fundamental pillars of this science and interact in ways that are not entirely clear in terms of how they produce disparities. Rarely does one factor fully account for the variance in a specific condition or outcome. As an example, data on obesity among youth between the ages of two and nineteen years show differences by race and ethnicity, with 8.6 percent of Asians, 19.5 percent of Blacks, 21.9 percent of Latinos, and 14.7 percent of Whites being obese. When these data are also stratified by the level of education of the head of household, the effects of both fundamental factors become evident. Among youth who live with a head of household who has a college education, 5.5 percent of Asians, 15.4 percent

⁵ Jennifer Alvidrez et al., The National Institute on Minority Health and Health Disparities Research Framework, 109 *Am. J. Pub. Health* S16 (2019).

⁶ Neeta Thakur et al., The Structural and Social Determinants of the Racial/Ethnic Disparities in the U.S. COVID-19 Pandemic. What's Our Role?, 202 *Am. J. of Respiratory & Critical Care Med.* 943 (2020).

of Blacks, 13.5 percent of Latinos, and 8.5 percent of Whites are obese.⁷ Racial and ethnic disparities persist in youth obesity prevalence, even among households with a college-educated head of household.

III RACIAL AND ETHNIC DISPARITIES AND COVID-19

The COVID-19 pandemic has greatly exacerbated existing racial and ethnic disparities among US populations with health disparities and has had a disproportionate impact on these communities across the country.⁸ In addition to a higher risk of infection due to structural factors, conditions associated with severe COVID-19-related morbidity and mortality, such as diabetes and cardiovascular diseases, are more prevalent among African American and Latino populations than among Whites, and are more prevalent among sexual and gender minorities than among heterosexual and cisgender individuals.⁹ These chronic conditions lead to a higher risk of COVID-19-related hospitalization, exacerbated by less access to health care.¹⁰ Other comorbidities, such as hypertension and severe obesity, are also higher in prevalence among low-income, minority populations.¹¹

Within six months of the original outbreak, national data were consistently showing that African American, American Indian and Alaska Native, and Latino populations were much more likely to contract and suffer from COVID-19 than their White counterparts.¹² Despite these three groups representing only about 33 percent of the US population at the time,¹³ they constituted more than 50 percent of cases and 45 percent of deaths.¹⁴ National data indicate that American Indians and Alaska Natives, as well as Latinos, have had the highest age-adjusted and standardized prevalence

⁷ Cynthia L. Ogden et al., Prevalence of Obesity Among Youths by Household Income and Education Level of Head of Household – United States 2011–2014, 67 *Morbidity & Mortality Wkly. Rep.* 186 (2018).

⁸ Sonu Bhaskar et al., Call for Action to Address Equity and Justice Divide During COVID-19, 11 *Front Psychiatry* (2020); George B. Cunningham & Lisa T. Wigfall, Race, Explicit Racial Attitudes, Implicit Racial Attitudes, and COVID-19 Cases and Deaths: An Analysis of Counties in the United States, 15 *PLoS One* (2020).

⁹ Timothy J. Cunningham et al., Vital Signs: Racial Disparities in Age-Specific Mortality Among Blacks or African Americans – United States, 1999–2015, 66 *Morbidity & Mortality Wkly. Rep.* 444 (2017); Kenneth Dominguez et al., Vital Signs: Leading Causes of Death, Prevalence of Diseases and Risk Factors, and Use of Health Services Among Hispanics in the United States – 2009–2013, 64 *Morbidity & Mortality Wkly. Rep.* 469 (2015).

¹⁰ Dalsania et al., *supra* note 4.

¹¹ Boserup et al., *supra* note 1; J. M. Carethers, Insights into Disparities Observed with COVID-19, 289 *J. of Internal Med.* 463 (2020).

¹² Jazmyn T. Moore et al., Disparities in Incidence of COVID-19 Among Underrepresented Racial/Ethnic Groups in Counties Identified as Hotspots During June 5–18, 2020–22 States, February–June 2020, 69 *Morbidity & Mortality Wkly. Rep.* 1122 (2020).

¹³ US Census Bureau & US Dep't of Com., QuickFacts, www.census.gov/quickfacts/fact/table/US/PST045219.

¹⁴ Jeremy A.W. Gold et al., Race, Ethnicity, and Age Trends in Persons Who Died from COVID-19 – United States, May–August 2020, 69 *Morbidity & Mortality Wkly. Rep.* 1517 (2020).

of COVID-19 infection: 1.5 times higher for both compared to Whites (Table 5.1).¹⁵ Hospitalization data have shown that African Americans, American Indians and Alaska Natives, and Latinos all experienced a higher age-adjusted and standardized prevalence of COVID-19-related hospitalization than Whites (2.85–3.70 times higher) (Table 5.1).¹⁶

These disparities have been observed in mortality data as well. Age-specific percentages of COVID-19 deaths by race and ethnicity, compared to the percentage of each racial and ethnic group in the US population, have revealed that Latinos in every age group have been the most affected by COVID-19, followed by African Americans, American Indians and Alaska Natives, and Native Hawaiians and Pacific Islanders.¹⁷ More specifically, the proportion of deaths from COVID-19 among persons aged 25–54 who are Latino is at least 10 percent higher than would be suggested by their overall proportion in the population.¹⁸ For Whites aged 25–54 years, the death rates are lower by as much as 20 percent than would be suggested by their population representation.¹⁹ Latinos had the largest increase in the number of deaths per week in 2020 compared to the average number of deaths per week between 2015 and 2019 (53.9 percent), as compared to Whites (11.9 percent).²⁰ Asians (36.6 percent), African Americans (32.9 percent), and American Indians and Alaska Natives (28.9 percent) also experienced dramatic increases in deaths per week compared to prior years.²¹ Furthermore, COVID-19-related death rates among African Americans, American Indians and Alaska Natives, and Latinos are more than 1.5 times higher those among Whites (Table 5.1).²² Although national data on COVID-19 among

¹⁵ Ctrs. for Disease Control & Prevention, Risk for COVID-19 Infection, Hospitalization, and Death by Race/Ethnicity, www.cdc.gov/coronavirus/2019-ncov/covid-data/investigations-discovery/hospitalization-death-by-race-ethnicity.html.

¹⁶ Anna M. Acosta et al., Racial and Ethnic Disparities in Rates of COVID-19-Associated Hospitalization, Intensive Care Unit Admission, and In-Hospital Death in the United States from March 2020 to February 2021, 4 *JAMA Network Open* (2021); Ctrs. for Disease Control & Prevention, Coronavirus Disease 2019 (COVID-19) – Associated Hospitalization Surveillance Network (COVID-NET), www.cdc.gov/coronavirus/2019-ncov/covid-data/covid-net/purpose-methods.html.

¹⁷ Nat'l Ctr. for Health Stat. & Ctrs. for Disease Control & Prevention, Health Disparities: Race and Hispanic Origin, Provisional Death Counts for Coronavirus Disease 2019 (COVID-19), fig. 3a, www.cdc.gov/nchs/nvss/srr/covid19/health_disparities.htm.

¹⁸ Nat'l Ctr. for Health Stat. & Ctrs. for Disease Control & Prevention, Health Disparities: Race and Hispanic Origin, Provisional Death Counts for Coronavirus Disease 2019 (COVID-19), fig. 3b, www.cdc.gov/nchs/nvss/srr/covid19/health_disparities.htm.

¹⁹ Id.

²⁰ Lauren M. Rossen et al., Excess Deaths Associated with COVID-19, by Age and Race and Ethnicity – United States, January 26–October 3, 2020, 69 *Morbidity & Mortality Wkly. Rep.* 1522 (2020) [hereinafter, Excess Deaths Associated with COVID-19]; Lauren M. Rossen et al., Disparities in Excess Mortality Associated with COVID-19 – United States, 2020, 70 *Morbidity & Mortality Wkly. Rep.* 1114 (2021) [hereinafter, Disparities in Excess Mortality].

²¹ Excess Deaths Associated with COVID-19, supra note 20; Disparities in Excess Mortality, supra note 20.

²² Ctrs. for Disease Control & Prevention, Provisional COVID-19 Deaths by Race and Hispanic Origin, and Age, <https://data.cdc.gov/NCHS/Provisional-COVID-19-Deaths-by-Race-and-Hispanic-Origin> ks3g-spdg.

TABLE 5.1 Risk of COVID-19 infection, hospitalization, and death by race and ethnicity, updated February 1, 2022

	American Indian or Alaska Native	Asian	Black or African American	Hispanic or Latino
Cases	1.5x	0.7x	1.0x	1.5x
Hospitalized	3.2x	0.8x	2.5x	2.4x
Deaths	2.2x	0.8x	1.7x	1.9x

Source: www.cdc.gov/coronavirus/2019-ncov/covid-data/investigations-discovery/hospitalization-death-by-race-ethnicity.html

sexual and gender minority populations are not available, there is evidence that risk factors for severe disease are more frequent.²³

IV THE SOCIAL DETERMINANTS OF HEALTH AND COVID-19

The COVID-19 pandemic has proven that the driving force behind racial and ethnic disparities stems from the social and structural factors that put minority populations at a significant disadvantage. Such factors, labeled the social determinants of health, are powerful drivers of health outcomes, can be influenced by governmental policies, and have been shown to influence COVID-19 disparities.²⁴ The US Department of Health and Human Services organizes the social determinants of health into the following five key domains: (1) health care access and quality; (2) economic stability; (3) education assets and quality; (4) neighborhood and the built environment; and (5) the social and community context.²⁵ Demographic characteristics and individually measured factors (e.g., health literacy) are also important to consider. While these disparities have been alarming to many, for others they have illuminated the unfortunate inequities in health and health care that have persisted in the United States for decades. These inequities do not arise on their own and are not independent of other factors. They are driven by underlying causes that contribute to the disproportionate burden of disparities among racial and ethnic minorities.

²³ Kristen D. Krause, Implications of the COVID-19 Pandemic on LGBTQ Communities, 27 *J. Pub. Health Mgmt. Prac.* S-69 (2021); Megan M. Ruprecht et al., Evidence of Social and Structural COVID-19 Disparities by Sexual Orientation, Gender Identity, and Race/Ethnicity in an Urban Environment, 98 *J. Urb. Health* 27 (2021).

²⁴ Ahmad Khanijahani, Racial, Ethnic, and Socioeconomic Disparities in Confirmed COVID-19 Cases and Deaths in the United States: A County-Level Analysis as of November 2020, 26 *Ethnic Health* 22 (2021).

²⁵ Healthy People 2030 et al., Social Determinants of Health, <https://health.gov/healthypeople/objectives-and-data/social-determinants-health>.

V HEALTH CARE ACCESS INEQUITIES

It has been well documented that there are inequities and disparities in health care access and quality in the United States.²⁶ COVID-19 has amplified existing health care disparities in highly visible ways, with issues such as a lack of or inadequate health insurance and hard-to-access health care facilities becoming even more pertinent for racial and ethnic minorities.

Compared to Whites, racial and ethnic minority populations are more likely to experience delays in receiving routine and emergency care and are less likely to have a primary care clinician.²⁷ Since the start of the pandemic, millions of Latinos have lost access to health care coverage due to the abrupt loss of employment.²⁸ African American and Latino individuals are less likely to seek care due to cost, lack of insurance, medical mistrust, concerns about immigration status, and a lack of appropriate health care facilities in one's own community.²⁹ A study in Chicago showed that racial and ethnic minorities and sexual and gender minority populations reported even greater disparities in accessing high-quality, culturally competent care.³⁰

Patients with limited English proficiency and health literacy are also more likely to have worse health outcomes.³¹ The lack of patient–clinician language concordance, limited access to professional interpreters, and a singular communication type may also contribute to ineffective and/or misunderstood health communication.³² Part of these concerns were highlighted in a study that found African American men were less likely than White men to have health-related knowledge about the symptoms and the mechanisms of the spread of COVID-19.³³ These findings suggest that public health information may not be disseminated in ways that are equitable or equally understandable to different groups. In fact, due to concerns

²⁶ Thomas M. Selden & Terceira A. Berdahl, COVID-19 and Racial/Ethnic Disparities in Health Risk, Employment, and Household Composition, 39 *Health Affs.* 1624 (2020); Carethers, *supra* note 11; Charles Ellis et al., The Impact of COVID-19 on Racial-Ethnic Health Disparities in the US: Now Is the Time to Address the Problem, 113 *J. Nat'l Med. Ass'n* 195 (2020).

²⁷ Hyunsung Oh et al., Addressing Barriers to Primary Care Access for Latinos in the U.S.: An Agent-Based Model, 11 *J. of the Soc'y for Soc. Work and Rsch.* 165 (2020); Lonnie R. Snowden & Genevieve Graaf, COVID-19, Social Determinants Past, Present, and Future, and African Americans' Health, 8 *J. of Racial & Ethnic Health Disparities* 12 (2021).

²⁸ Leo Lopez, III et al., Racial and Ethnic Health Disparities Related to COVID-19, 325 *JAMA* 719 (2021).

²⁹ Allan S. Noonan et al., Improving the Health of African Americans in the USA: An Overdue Opportunity for Social Justice, 37 *Pub. Health Revs.* (2016); Dominguez et al., *supra* note 9; Oh et al., *supra* note 29; Snowden & Graaf, *supra* note 29.

³⁰ Ruprecht et al., *supra* note 25.

³¹ Lopez, III et al., *supra* note 30.

³² Rebecca L. Sudore et al., Unraveling the Relationship Between Literacy, Language Proficiency, and Patient-Physician Communication, 75 *Patient Educ. & Counseling* 398 (2009).

³³ Lopez, III et al., *supra* note 30; Marcella Alsan et al., Disparities in Coronavirus 2019 Reported Incidence, Knowledge, and Behavior Among US Adults, 3 *JAMA Network Open* (2020).

around COVID-19 exposure, 40.9 percent of US adults, disproportionately African American and Latino adults, persons with disabilities, and persons with underlying health conditions, delayed or avoided seeking medical care for urgent problems.³⁴ Concerns about COVID-19 exposure, and potentially delays to care once a person becomes ill, could potentially increase the risk of severe illness and death once medical care is sought. Delay or avoidance of medical care, including emergency and routine care, could contribute to reported excess deaths directly or indirectly related to COVID-19.³⁵

VI ECONOMIC FACTORS DRIVING DISPARITIES

Due to existing economic inequality, African American and Latino populations have been disproportionately impacted by the social and financial effects of the COVID-19 pandemic.

Across the United States, racial and ethnic minorities are overrepresented in the critical infrastructure workforce, such as food retail and grocery, public transportation, and allied health professions, areas that offer no option to telework, thus making it difficult to physically distance outside of the home and therefore increasing the risk of being exposed to COVID-19.³⁶ Although racial and ethnic minority populations are at a higher risk of getting infected since they are more likely to be essential workers and, as a result, in constant contact with other people, they are dependent on their jobs in order to financially support themselves and/or their families. Dependency on essential work can pose a serious issue for these populations, particularly when it comes to self-isolation after a potential COVID-19 exposure. After exposure to the virus, symptoms may take from two to fourteen days to appear, although the Omicron variant causes symptoms to appear in one to three days. A variable proportion of infected persons may remain asymptomatic or experience only very mild symptoms.

Many essential workers simply cannot afford to miss any time away from work and may have limited access to at-home antigen tests, or a laboratory test, to establish the presence or absence of COVID-19 infection. Persons who work in essential sectors may also have greater difficulty in following evidence-based guidance, because of structural factors and a lower level of access to COVID-19 testing and care facilities.³⁷

The disproportionate representation of racial and ethnic minorities in these employment categories has increased their risk of exposure to the virus and thus led

³⁴ Mark É. Czeisler et al., Delay or Avoidance of Medical Care Because of COVID-19-Related Concerns – United States, June 2020, 69 *Morbidity & Mortality Wkly. Rep.* 1250 (2020).

³⁵ *Id.*

³⁶ Thakur et al., *supra* note 6.

³⁷ Bhaskar et al., *supra* note 8.

to higher COVID-19 infection rates in populations with health disparities. Although some individuals have been able to work remotely or shelter at home, people with lower incomes typically live with at least one household member who is an essential worker, resulting in a higher likelihood of exposure to COVID-19. Furthermore, racial and ethnic minority populations in the United States are more likely to live in more crowded conditions and multi-generational households, making it extremely difficult to isolate if and when a household member becomes exposed to or infected with the virus.³⁸ One study reported that among Latino adults at high risk of severe illness, about 64 percent lived in households with at least one worker who was unable to work from home, compared to approximately 56 percent among African Americans and 46 percent among Whites.³⁹

Distance learning, telework, and access to information has posed its own set of challenges for populations with health disparities. Remote learning and/or work requires a computer and/or a smartphone with an unlimited data plan, broadband Internet access, and the knowledge of how to use such technology.⁴⁰ The likelihood of having accessible and reliable home broadband Internet available is lower among non-White individuals, those with a lower income, and individuals living in a rural community.⁴¹ As a result, there is a greater reliance on smartphones for online access among younger adults, Latinos, African Americans, and lower-income individuals.⁴² In the first year of the pandemic, this digital divide was dramatic, particularly in distance learning for children. Households without access to the Internet, or that share a smartphone hotspot between multiple family members, had greater difficulties in attending online courses and completing homework assignments. Although some schools and cellphone companies offered mobile hotspots, policy efforts are needed to support affordable access to broadband Internet, particularly in underserved communities. The pandemic has revealed a structural inequity in society that can be addressed by making access to broadband Internet a public good that is managed like a utility, so that low-income households have sufficient access to it.

VII DISPARITIES-RELATED CHALLENGES

As vaccines became more widely available in the United States, there have been significant challenges with vaccine uptake by racial and ethnic minorities. National

³⁸ Thakur et al., *supra* note 6; Monica Webb Hooper et al., COVID-19 and Racial/Ethnic Disparities, 323 *JAMA* 2466 (2020).

³⁹ Selden & Berdahl, *supra* note 28.

⁴⁰ Angelica C. Scanzera et al., Teleophthalmology and the Digital Divide: Inequities Highlighted by the COVID-19 Pandemic, 35 *Eye* 1529 (2020); Elisabeth Beaunoyer et al., COVID-19 and Digital Inequalities: Reciprocal Impacts and Mitigation Strategies, 111 *Comp. Hum. Behav.* (2020).

⁴¹ Pew Rsch. Ctr., Internet/Broadband Fact Sheet (2019), www.pewresearch.org/internet/fact-sheet/internet-broadband/.

⁴² *Id.*

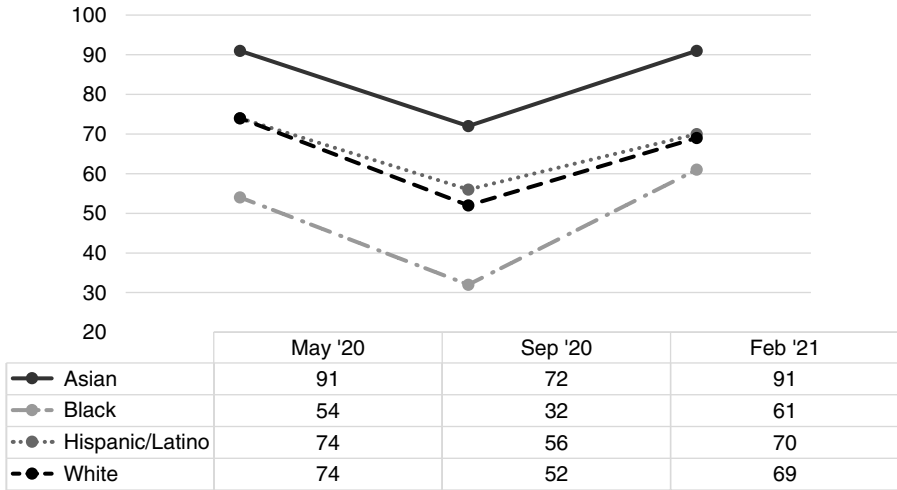


FIGURE 5.1 Percentage of US adults who say they will definitely/probably get a vaccine to prevent COVID-19 or have already received at least one dose
Source: www.pewresearch.org/science/2021/03/05/growing-share-of-americans-say-they-plan-to-get-a-covid-19-vaccine-or-already-have/

surveys showed that African American adults were less likely to say they would get the vaccine in May 2020, with only 54 percent reporting that they would definitely/probably get a vaccine to prevent COVID-19. By September 2020, there was a significant decline in the percentage of US adults who said they would definitely/probably get the vaccine, with the lowest percentage among African Americans compared to all other racial and ethnic groups (Figure 5.1). However, as of February 2021, an increase in the percentage of African Americans who reported they would definitely/probably get a vaccine to prevent COVID-19, or have already received at least one dose, was observed (Figure 5.1). An increase in willingness to get a COVID-19 vaccine could be tied to factors such as change of attitude toward the vaccine.⁴³ Efforts to increase trust in underserved communities are needed as vaccine willingness among racial and ethnic minorities has not been static over time (Figure 5.1).

Over the course of 2021, vaccination prevalence steadily increased for all racial and ethnic groups, although the prevalence among African Americans generally lagged behind that of other groups.⁴⁴ However, during the second half of 2021, the definition of being sufficiently vaccinated started to be questioned. As a new variant of the virus began to circulate, it became clear that a third dose of the vaccine

⁴³ Jeanine P.D. Guidry et al., Willingness to Get the COVID-19 Vaccine with and without Emergency Use Authorization, 49 *Am. J. Infection Control* 137 (2021).

⁴⁴ Nambi Ndugga et al. Latest Data on COVID-19 Vaccinations by Race/Ethnicity (2022), www.kff.org/coronavirus-covid-19/issue-brief/latest-data-on-covid-19-vaccinations-by-race-ethnicity/.

TABLE 5.2 Main reasons for not intending to get a COVID-19 vaccination if available today at no cost,^a by race and ethnicity, United States, September 2020

Reason	All Adults (n = 1,280)			Black or African American (n = 250)			Hispanic or Latino (n = 163)			Other (n = 156)			White (n = 711)		
	Weighted %	95% CI	Weighted %	95% CI	Weighted %	95% CI	Weighted %	95% CI	Weighted %	95% CI	Weighted %	95% CI	Weighted %	95% CI	
I am concerned about the side effects and safety of the COVID-19 vaccine	23.4	(21.0–26.0)	21.9	(16.9–27.8)	31.5	(24.4–39.4)	29.0	(21.7–37.7)	21.0	(18.0–24.4)					
I am concerned that the COVID-19 vaccine has been developed too fast	21.7	(19.4–24.2)	24.4	(19.3–30.3)	17.4	(12.3–24.0)	18.6	(12.6–26.4)	22.4	(19.4–25.8)					
I plan to wait and see if it is safe and may get it later	17.9	(15.8–20.3)	16.9	(12.5–22.5)	20.0	(14.4–27.2)	24	(17.1–32.3)	16.9	(14.2–19.9)					
I do not trust the government	10.0	(8.2–11.8)	15.0	(11.0–20.2)	9.7	(5.7–16.1)	6.4	(3.4–11.6)	8.8	(6.7–11.3)					
Something else	7.3	(5.9–8.8)	6.3	(3.9–10.0)	4.9	(2.5–9.2)	8.0	(4.5–13.3)	8.0	(6.3–10.4)					

Abbreviations: CI = confidence interval.

^a Respondents who indicated that they were not likely to get a COVID-19 vaccination if available today at no cost were asked about the reasons for their lack of intent, and then asked their main reason for not intending to get a COVID-19 vaccination.

Respondents who did not provide a response were excluded from this analysis (n = 79). All reasons included in the survey are listed in the table, except: “I don’t know where to get it”; “My doctor has not recommended a COVID-19 vaccine to me”; “I didn’t know I needed a vaccine against COVID-19”; “I am concerned about the costs associated with the vaccine (such as office visit costs or vaccine administration fees)”; “I don’t like needles”; “I plan to use masks and other precautions instead”; “I don’t like vaccines”; “I am not a member of any group that is at high risk from COVID-19”; “COVID-19 is not a serious illness”; “The vaccine could give me COVID-19”; “I think the COVID-19 vaccine will not work”; and “I already had COVID-19 and should be immune.”

Source: www.cdc.gov/vaccines/imz-managers/coverage/adultvaxview/pubs-resources/COVID-online-report2020.html

(i.e., a booster) would be necessary for individuals to maintain their level of protective immunity. Despite vaccines being widely available from multiple sources, racial and ethnic disparities were observed. As of February 1, 2022, in twelve states, the prevalence of obtaining a booster dose of vaccine was lowest among Latinos, followed by American Indians and Alaska Natives as well as African Americans.⁴⁵

A critical factor in vaccine hesitancy and mistrust is the deep and justified lack of trust many populations have in the health care system and clinical research. This distrust is deeply rooted in decades of well-documented examples of racist exploitations that have affected African Americans,⁴⁶ as well as Latinos, American Indians, and Asian populations, who have also experienced unequal care and scientific mismanagement. Other key factors, such as the perceived risk of the disease and the perceived safety of the vaccine, influence an individual's willingness to be vaccinated against COVID-19.⁴⁷ Among US adults, the main reason people reported that they were not likely to get vaccinated was due to concerns about the side effects and safety of the COVID-19 vaccine, and these concerns were highest among Latino adults (Table 5.2).⁴⁸

VIII THE NATIONAL INSTITUTES OF HEALTH RESPONSE TO COVID-19 DISPARITIES: THE COMMUNITY ENGAGEMENT ALLIANCE AGAINST COVID-19 DISPARITIES

In response to the pandemic public health emergency and related disparities, NIMHD partnered with the National Heart, Lung, and Blood Institute and the National Institutes of Health (NIH) Office of the Director to develop and launch the Community Engagement Alliance (CEAL) Against COVID-19 Disparities.⁴⁹ The initial goal of CEAL was to promote the inclusive participation of underrepresented minorities in the COVID-19 vaccine trials, which were supported by NIH and subsidized by the US government. CEAL leveraged NIH-funded investigators with many years of experience in community-engaged research to form coalitions of community-academic-public health partnerships in eleven states to address misinformation, promote trust in science, and engage communities in the clinical

⁴⁵ Id.

⁴⁶ Noonan et al., *supra* note 31; Rueben C. Warren et al., Trustworthiness Before Trust – COVID-19 Vaccine Trials and the Black Community, 383 *New Eng. J. Med.* (2020); Crista E. Johnson-Agbakwu et al., Racism, COVID-19, and Health Inequity in the USA: A Call to Action, 9 *J. of Racial & Ethnic Health Disparities* 52 (2020).

⁴⁷ Linda C. Karlsson et al., Fearing the Disease or the Vaccine: The Case of COVID-19, 172 *Personality & Individual Differences* (2021).

⁴⁸ Kimberly H. Nguyen et al., COVID-19 Vaccination Intent, Perceptions, and Reasons for Not Vaccinating Among Groups Prioritized for Early Vaccination, United States, September 2020, www.cdc.gov/vaccines/imz-managers/coverage/adultvaxview/pubs-resources/COVID-online-report2020.html.

⁴⁹ Nat'l Insts. of Health, NIH CEAL, <https://covid19community.nih.gov/>.

trials. Through the CEAL initiative, the NIH expects to increase the use of mitigation practices that can reduce the spread of COVID-19, disseminate accurate information about the spread of the virus, the safety and efficacy of vaccines and treatments, and increase the public's understanding of how science works.

To address COVID-19 disparities, CEAL needed to address the widespread misinformation about the vaccine and the pandemic with transparent and easy-to-understand facts based on scientific evidence in the communities most affected by COVID-19. The high level of distrust in African American and Latino communities of any governmental-, pharmaceutical-, or university-sponsored study or therapeutic undergoing evaluation through clinical trials necessitated a strong message and campaign to promote trust in science. A key component was to deliver the message clearly and through trusted local messengers that knew their communities. These included clinicians, nurses, faith-based leaders, and leaders from the community who were respected role models. This diverse partnership network was leveraged by all the sites to engage in local and media events with widespread use of social media. CEAL is built on full partnerships with community-based organizations and is guided by the principle of "Move at the Speed of Trust." The CEAL initiative can be used as a model by other governmental and large organizations to develop partnerships with communities in the quest to mitigate COVID-19 disparities. In the future, CEAL may function as a community-engaged research platform to advance health equity by addressing other pandemics.

IX THE NIH RESPONSE TO COVID-19 DISPARITIES: RAPID ACCELERATION OF DIAGNOSTICS FOR UNDERSERVED POPULATIONS

The NIH-wide effort to increase testing for COVID-19 in underserved and vulnerable populations was funded as a community-engaged research initiative in 2020 and named Rapid Acceleration of Diagnostics for Underserved Populations (RADx-UP).⁵⁰ Although RADx-UP was part of a larger effort to develop and implement tests for COVID-19, the decision to allocate substantial resources over the course of four years to this effort for underserved populations reflected NIH leadership's commitment to addressing COVID-19 disparities. To date, RADx-UP has funded seventy-nine testing projects in underserved and vulnerable communities, sixteen projects focused on school systems to promote safe return to school, twenty-one research studies on the social, ethical, and behavioral consequences of the pandemic, and a new Coordination and Data Collection Center. Collectively, these sites are in all fifty states, the District of Columbia, Puerto Rico, and the Pacific Island territories. This NIH-wide effort is co-led by NIMHD, the National Institute

⁵⁰ Bruce J. Tromberg et al., Rapid Scaling Up of COVID-19 Diagnostic Testing in the United States – The NIH RADx Initiative, 383 *New Eng. J. Med.* 1071 (2020).

on Aging, and the NIH Office of the Director. The goal is to understand factors that contribute to the high, disproportionate burden of COVID-19 in underserved communities and to develop strategies for addressing these disparities.

The funded projects are using principles of community-engaged outreach to work closely with communities that have been disproportionately affected by COVID-19. NIH has defined common data elements that all projects will be required to collect using standardized measures to subsequently share data in a common depository for general research use. School projects were funded to generate data on the risk of children returning to school in the 2021–22 school year; all the schools had at least 50 percent of their children who were eligible for free or reduced meals. As the pandemic has evolved, RADx-UP has launched programs that will include addressing vaccine uptake in these communities linked to the testing strategies. Efforts to create synergy between RADx-UP projects and CEAL teams are also underway.

X THE CENTERS FOR DISEASE CONTROL AND PREVENTION RESPONSE TO COVID-19 DISPARITIES: VACCINE AND HEALTH EQUITY

The Centers for Disease Control and Prevention (CDC) has responded to racial and ethnic disparities in COVID-19 by providing funding to jurisdictions, health departments, and organizations to promote COVID-19 vaccination among African Americans and Latinos.⁵¹ Funding has been spread across the United States and its territories, and has included awards to 64 jurisdictions, 108 health departments, and 71 organizations. The purpose of the funding has either been to (1) launch new programs and initiatives to increase vaccine access, acceptance, and uptake in communities disproportionately impacted by COVID-19; (2) support efforts to address COVID-19 health disparities; (3) support COVID-19 prevention and control using community health worker services; or (4) support training, technical assistance, and evaluation to community health worker services involved in COVID-19 response efforts.

Additionally, the CDC has prioritized vaccine equity for racial and ethnic minority groups through funding to thirty-four national, state, tribal, and community organizations through their existing Racial and Ethnic Approaches to Community Health (REACH) program, as well as eight national organizations, four medical organizations, and three national foundations.⁵² Originally launched in 1999 and most recently renewed in 2018, the goal of the REACH program has been to improve health, prevent chronic diseases, and reduce health disparities among racial and ethnic populations with the highest risk or burden of chronic

⁵¹ Ctrs. for Disease Control and Prevention, COVID-19 Vaccine Equity for Racial and Ethnic Minority Groups, www.cdc.gov/coronavirus/2019-ncov/community/health-equity/vaccine-equity.html.

⁵² *Id.*

disease using culturally tailored interventions to address preventable risk behaviors. By providing vaccine-specific funding through this program, the CDC has leveraged the network of organizations supported by REACH to further address disparities in COVID-19 vaccination.

XI CURRENT AND FUTURE DIRECTIONS

Further efforts must be made to build trust, dispel myths, and directly address the misinformation that exists. This can be done through the effective use of credible messengers within communities who should be credentialed professionals and community members. The key is that the information that is shared must be factual, reliable, and consistent, and generally avoid the subtlety of uncertainty that accompanies academic discourse. Elected representatives, policymakers, economists, educators, public health professionals, faith-based leaders, and local community leaders must join in a multidisciplinary, coordinated effort to actively and systematically advance health equity. Cultural competency training is fundamental to engage all entities, including local community leaders and stakeholders.

We have an obligation to take concrete steps to dismantle systematic inequities in order to improve the lives of people experiencing disparities. To reduce disparities in COVID-19 outcomes, structural and institutional racism and biases in health care systems must be addressed through policy and legal change, and proportionally representative inclusion at all levels of decision-making. Disparities and inequities in health are not caused by one factor and as such cannot be eliminated by a single intervention. Similarly, the root causes of disparities in any health indicator, including COVID-19, are multi-factorial and require both short- and long-term strategies. These strategic interventions and investments should focus not only on broader health insurance coverage and improvements in health care, but also on building healthy communities for all by addressing the social and structural issues affecting the neighborhoods of populations with health disparities; these issues include quality of schools, the availability of jobs paying a living wage, access to broadband Internet, and other structural determinants. The most sustainable impact will be achieved through long-term interventions and investments – those that are designed to achieve equity – that address the social and structural determinants of health.