



A Tale of Two Crises: Addressing Covid-19 Vaccine Hesitancy as Promoting Racial Justice

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Abstract

The year 2020 has yielded twin crises in the United States: a global pandemic and a public reckoning with racism brought about by a series of publicized instances of police violence toward Black men and women. Current data indicate that nationally, Black Americans are three times more likely than White Americans to contract Covid-19 (with further variance by state), a pattern that underscores the more general phenomenon of health disparity among Black and White Americans (Oppel et al. in *The New York Times* 2020; APM Research Lab Staff in *APM Research Lab* 2020). Once exposed, Black Americans are twice as likely to die of the virus. Unsurprisingly, Black Americans report higher levels of fear of Covid-19 than their White peers, but they also report higher levels of hesitancy toward a Covid-19 vaccine. This paper explores why this apparent discrepancy exists. It also provides practical recommendations for how government and public health leaders might address vaccine hesitancy in the context of the twin crises of 2020.

Keywords Covid-19 · Vaccine hesitancy · Racial disparities · Trust

Introduction

The year 2020 has yielded twin crises in the United States: a global pandemic and a public reckoning with racism brought about by a series of publicized instances of police violence toward Black men and women. Current data indicate that Black Americans are three times more likely than White Americans to contract Covid-19, a pattern that underscores the more general phenomenon of health disparity among Black and White Americans. The differences in infection and survival rates of Covid-19 among Black and White Americans are but

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another manifestation of the way that systemic issues in the functioning of society in the United States marginalize Black people. Black Americans are more likely than White Americans to have conditions like obesity (Petersen et al. 2019) and type 2 diabetes mellitus (Brancati et al. 2000) that are associated with increased risk for serious illness from Covid-19. The higher rates of medical comorbidities among Black Americans, paired with their overrepresentation in frontline and essential jobs that increase their exposure to other (potentially infected) people all lead to increased vulnerability to infection (Rho et al. 2020). Once exposed, Black Americans are more than twice as likely to die of the virus (APM Research Lab Staff 2020). One of the many lessons from these two crises is that we must address problems through an intersectional lens and prioritize the perspectives and needs of those who are the least well-off among us.

The possibility of a vaccine for Covid-19 is on the horizon, and with it the possibility that the pandemic, and the race-based disparities in morbidity and mortality, could be halted. At the time of this article's writing, two vaccines have been granted emergency use authorization in the United States (Zimmer et al. 2020). The speed with which vaccine candidates have gone through the evaluation process is the result of the tremendous efforts and resources that have been devoted to developing a vaccine.

But even the best vaccine will only be successful if a sufficient number of people opt to receive it. Vaccine hesitancy, or the tendency to delay or decline vaccination due to concerns about a vaccine's safety and/or efficacy, poses a threat to achieving the number of vaccinated individuals necessary to achieve herd immunity. Vaccine hesitancy has existed ever since Edward Jenner invented the first vaccine in 1796. But it has become increasingly prominent and visible in the United States in recent years, particularly following publication of the now-retracted and discredited article in *The Lancet* purporting to show a link between the MMR vaccine and autism (Wakefield et al. 1998 RETRACTED). And the fast-tracking of vaccine candidates for Covid-19 has added another reason for vaccine hesitancy, even among those who might otherwise be very confident in vaccine safety and efficacy.

Individuals who fundamentally oppose all vaccines have come to be known as "anti-vaxxers". This most extreme and most visible brand of vaccine hesitancy ought to be taken seriously. But the anti-vaxxer stance is not the only type of vaccine hesitancy, since the term 'vaccine hesitancy' characterizes a heterogeneous group of individuals, including those who accept vaccines but have some qualms about doing so, those who accept vaccines according to an alternative schedule, and those who refuse some vaccines but accept others (Benin et al. 2006). While anti-vaxxers get a substantial amount of media attention, it is the individuals occupying this continuum between complete refusal and complete acceptance who are the most likely to be swayed by educational initiatives to receive a Covid-19 vaccine, since they indicate some degree of open-mindedness regarding vaccination. Furthermore, people occupying this middle ground are more likely to have nuanced and vaccine-specific concerns and are, therefore, more likely to be receptive to receiving information from and engaging in dialogue with medical professionals. Trust in a child's pediatrician has been documented as an important factor in parental decisions about childhood vaccinations (Benin et al. 2006). It is reasonable to predict that relationships of trust

will similarly be critical to many adults' decisions of whether to receive a Covid-19 vaccine.

The extent to which vaccine hesitancy will be a force in the context of a Covid-19 vaccine remains to be seen. On the one hand, vaccine hesitancy may *decrease* because people are now witnessing, either firsthand or through the media, the devastating effects of Covid-19. One reason that people give for explaining the increase in vaccine hesitancy in the United States in recent decades is the fact that most vaccine-preventable diseases (e.g., polio, measles) have become so nearly eradicated as to have faded from the population's collective memory. Simply put, vaccines have become victims of their own success. In contrast, Covid-19 weighs in the minds and experiences of Americans in a way that most vaccine-preventable diseases do not.

On the other hand, vaccine hesitancy may *increase* as a result of Covid-19 because of the dangers—whether real or perceived—of a fast-tracked vaccine. People who are otherwise minimally vaccine-hesitant may experience a drop in confidence in the Covid-19 vaccine due to concerns that, in expediting the testing and production of the vaccine in order to stem the pandemic, scientists, pharmaceutical companies, and regulatory bodies may be cutting corners in a dangerous way. Survey data from the Kaiser Family Foundation bear out this concern. As of December 2020, 27% of respondents indicated that they would probably not or definitely not get a Covid-19 vaccine even if one were made available at no cost and deemed by scientists to be safe. Among those 27% of Covid-19 vaccine hesitant respondents, 55% indicated they did not trust the government to ensure a vaccine's safety and efficacy, 53% indicated concerns about the vaccine's newness, and 51% indicated concerns about the involvement of politics in vaccine development (Hamel et al. 2020).

It takes, on average, ten years to develop a vaccine (Mullard 2020); given predictions from the President and others that we might have a successful vaccine on the market in less than a year,¹ many people may understandably balk at the possibility of being among the early cohort of vaccinated individuals. Even the name of the initiative behind the expedited vaccines, "Operation Warp Speed," may be enough to stoke fears that things have progressed too quickly. Trust in vaccination, one of the most important components of vaccine uptake, may be eroding at a time when it is most needed.

The World Health Organization (WHO)'s Strategic Advisory Group of Experts (SAGE) Working Group identifies three components of vaccine hesitancy: confidence, convenience, and complacency (MacDonald 2015). Vaccine confidence characterizes degrees of trust in the safety and efficacy of vaccines as well as trust in the health care workers, scientists, and politicians who help to deliver, craft, and regulate them. Vaccine convenience describes factors like the availability, accessibility, and affordability of vaccines. Vaccine complacency characterizes the perceived risk of a vaccine-preventable disease and, as a consequence, the extent to which vaccination is perceived as necessary or worthwhile. The concept of trust,

¹ See, e.g., a mid-September interview on Fox News in which Donald Trump said that a vaccine would be ready "in a matter of weeks" (Olson 2020) and Anthony Fauci saying, in an interview on CBS Early Morning, that a vaccine is likely to be ready by early 2021 (Segers 2020).

which has become particularly salient in discussions of a possible Covid-19 vaccine, most clearly fits into the concept of vaccine confidence, but it notably plays a role in vaccine complacency as well: people must trust that a vaccine is actually beneficial in order for them to be convinced that vaccination is, all things considered, worth receiving. Confidence most often encompasses concerns about a vaccine's safety, while complacency most commonly flags concerns about a vaccine's efficacy.

Trust, as considered in this paper, can thus be understood to touch on both the confidence and the complacency components of the WHO's definition. Given the health disparities in morbidity and mortality associated with Covid-19, Black Americans especially stand to benefit from the availability of a safe and effective vaccine. But because a vaccine is successful only if an adequate portion of the population opts to receive the vaccine, it is important that we pay attention to the potential barriers to vaccination, including vaccine hesitancy. Media portrayals of vaccine hesitancy often depict it as a phenomenon exclusive to white communities, which is misleading.² Not only does vaccine hesitancy exist within the Black community, but there is evidence to suggest that the reasons for vaccine hesitancy among Black Americans are often different than the reasons for vaccine hesitancy among White Americans.

Furthermore, there is emerging research to suggest that the concerns Black Americans have about a potential Covid-19 vaccine are distinct from the concerns held by White Americans. This paper discusses some of the current data on racial differences in attitudes toward vaccination in the context of the nation's current twin crises of the Covid-19 pandemic and the reckoning with institutionalized racism. It also explores some of the historical and sociological reasons why Black Americans and White Americans might, on the whole, display different attitudes regarding vaccines in general and the Covid-19 vaccine in particular and why we ought to care about these differences. In light of these discussions, some practical recommendations are made regarding how hesitancy toward a possible Covid-19 vaccine might be judiciously addressed. Given the racial disparities that we see with Covid-19 and the fact that Black Americans stand to benefit significantly more than White Americans from a successful vaccine, it is morally imperative that we pay particular attention to vaccine attitudes among Black Americans and to tailor initiatives to address their concerns.

Data on Covid-19 Vaccine Hesitancy

Research on attitudes toward a possible Covid-19 vaccine is limited, in part, due to the novelty of SARS-CoV-2. At the time of this article's submission, two Covid-19 vaccines (one developed by Pfizer and BioNTech, the other by Moderna) have been

² See, e.g., Smith et al. (2004), which found that under-vaccinated children tended to be Black, while unvaccinated children tended to be White. Furthermore, there is an association of White celebrities like Jenny McCarthy, Jim Carey, Jessica Biel, and even an earlier version of Donald Trump with vaccine hesitancy.

granted Emergency Use Authorization by the United States Food and Drug Administration (FDA Take News Release 2020a, b). Attitudes are unlikely to completely track future behavior, and attitudes toward a Covid-19 vaccine are likely to evolve as these and perhaps other vaccines become available and people start receiving them.

The available data suggest that White and Hispanic Americans are significantly more likely to get a Covid-19 vaccine than Black Americans. In one study, 74% of White and Hispanic participants indicated they would definitely or probably get the vaccine, while only 54% of the Black participants indicated the same (Gramlich and Funk 2020). In another study, 40% of Black Americans indicated Covid-19 vaccine acceptance, defined as an individual's willingness to receive a vaccine should one become available and be recommended, compared to 68% of White Americans and 68% of Hispanic Americans (Malik et al. 2020). And in a poll by IPSOS/Axios, just 28% of Black Americans indicated a willingness to take the first version of a Covid-19 vaccine, compared with 51% of White Americans and 56% of Hispanic Americans (Walsh 2020). This data is all the more stark when viewed in the context of data that indicate that Black Americans are more likely to fear Covid-19 than White Americans (Pew Research Center 2020). Given their increased likelihood of contracting and dying from Covid-19, it is understandable that Black Americans would be particularly fearful of this disease. But this data makes their vaccine hesitancy and an all the more significant and urgent phenomenon to address. How might we account for increased Covid-19 vaccine hesitancy among Black Americans? To answer this, we can look to studies that pre-date the emergence of SARS-CoV-2.

Varieties of Mistrust

Not all mistrust is created equal, and this insight is a key to understanding the nuance of attitudes toward vaccines in general and a Covid-19 vaccine in particular. In “Exploring the Continuum of Vaccine Hesitancy Between African American and White Adults,” Quinn et al. observed that the types of distrust voiced by Black research study participants differed markedly from the distrust exhibited by White participants (2016). While these research studies explored vaccine hesitancy through the lens of the influenza vaccine, many of the responses they elicited suggest more general attitudes of trust and mistrust. For example, one Black participant indicated that “you don't trust a government vaccine”. Another stated, “Well, I've never went to try to get it. But I'm always told, you know, there's something behind that free. It's not completely free”. White participants, in contrast, were noted to display higher degrees of implicit trust in the government and in medical professionals. When they did display mistrust, it was noted that the mistrust tended to be about an entity's competence rather than its motives. For example, one White respondent commented, “I honestly don't know how the FDA can test to make sure that the vaccine works, but I do trust that they are testing it to make sure that it is safe”.

While both of these types of doubt indicate a mistrust of various entities (e.g., pharmaceutical companies, government agencies, medical practitioners) and are likely to have an effect on vaccine hesitancy, they are different not only in degree but also in kind. One assumes that medical and government agencies are making a good

faith effort toward improving public health while the other does not. Demonstrating competence is easier than demonstrating trustworthiness. Competence can be convincingly demonstrated by appealing to numbers, credentials, or previous successes. But these things are unlikely by themselves to sway a person whose mistrust stems from a skepticism regarding an institution's motives. This is because a mistrust of motives is much more likely to have historical and/or relational components.

Attitudes toward the influenza vaccine cannot, of course, be assumed to be identical with attitudes toward a Covid-19 vaccine. But the influenza vaccine and the Covid-19 vaccine candidates do share some features that make the comparison apt. Most plainly, influenza and Covid-19 have similar disease presentation (respiratory disease), the severity of which ranges from mild or asymptomatic to severe or lethal. Second, the vaccines for these diseases both bear an element of novelty, the influenza vaccine because it must be updated every year, the Covid-19 vaccine because it does not yet exist. This novelty likely increases concerns among potential vaccine recipients, since, unlike other vaccines, there is not years' worth of data on these vaccines following their approval. Finally, for both influenza and Covid-19, public sentiment is widely divided along the complacency dimension of vaccine hesitancy, with some Americans viewing both diseases as significant threats, while others believe such concerns are overblown.

Furthermore, participants in these studies tended to speak in general and thematic terms about their vaccine hesitancy. So while the influenza vaccine was the impetus of the discussion, responses appeared to speak to general feelings of vaccine hesitancy.

Drivers of Mistrust of Motives

What might account for the questioning of motives that was found to be pronounced among Black study participants? A look to the history of medical practice in the United States is suggestive. The fact remains that experiences of Black Americans with the healthcare system have been significantly different from those of White Americans. With these differences in experiences, it is not implausible to think that there might be differences in the *degrees* as well as the *types* of trust that Black Americans and White Americans exhibit toward the medical establishment and the government, both of which are intricately involved in vaccine development.

In the same way that events in the recent and more distant past have supplied Black Americans with good reasons to be fearful about their general safety and well-being, there have also been events in the course of medical history in the United States that have, very reasonably, engendered fear and mistrust among Black Americans. Most notable and famous are the Tuskegee syphilis experiments that occurred from 1932–1972, in which Black men in Macon County, AL, many of whom had latent syphilis, were misled into believing that they would receive free health care in exchange for their participation (Jones 1993). Even after penicillin was deemed an effective treatment for syphilis, these men remained misled and untreated, all so the U.S. Public Health Service could study the natural progression of untreated syphilis. More recently, there have been revelations of implicit bias and institutional racism

in healthcare. In one study, data indicated that half of the surveyed White medical trainees harbored at least one false belief about differences in pain sensitivity among Black and White patients. Such false beliefs have significant consequences, as they in turn lead to unfounded discrepancies in treatment and pain management plans for Black and White patients (Hoffman et al. 2016). Another study found that Black newborn babies are three times more likely than White babies to die when under the care of a White physician (Greenwood et al. 2020). These findings are deeply troubling, and it is certainly understandable that they would lead some to regard the medical establishment with suspicion.

Practical Recommendations

How, then, ought public health officials and health educators respond in light of this discussion? In the same way that demonstrations for racial justice have called for empathy, humility, and perspective-taking from those in positions of power, the same ought to hold for medical leaders, government officials, and health educators who are charged with addressing Covid-19 vaccine hesitancy. Below are some practical recommendations regarding the promotion of a safe and effective Covid-19 vaccine, should one that is both safe and effective be developed and gain FDA approval. These recommendations are aimed at engaging with and dispelling vaccine hesitancy and promoting vaccine update.

Boosting Transparency

One natural way to combat mistrust in motives is via transparency. But transparency is only effective if the material that becomes transparent is communicated in a way that is comprehensible to its audience. Releasing documents filled with scientific jargon is transparent in only a trivial sense; to be transparent in a way that combats mistrust and suspicion of motives, those involved in vaccine development and approval must craft their disclosures in such a way that non-expert audiences can readily understand their contents.

A major fear in the general population is that the expedited testing of Covid-19 vaccine candidates produces an incentive structure that could lead to cutting corners. Pharmaceutical companies are generally viewed with suspicion; respondents to a 2019 Gallup poll indicated that they viewed pharmaceutical companies more unfavorably than any other industry, with 58% of respondents rating the industry negatively (McCarthy 2019). The structuring of many of these Covid-19 vaccine trials provides reason for people to be even more suspicious: several manufacturers have begun production of vaccine candidates even before testing is complete and approval is granted, investing even more money than typically goes into early-stage research and development. Some might interpret this information as evidence of manufacturers' acting in good faith, with their willingness to begin manufacture of vaccine candidates ahead of approval a sign of confidence in their product and commitment to making the vaccines quickly available to the population. But such efforts

might plausibly raise suspicion, with some individuals worrying that the companies' incentive to recoup their funds could lead them to misrepresent their products to the public or to approval agencies. Furthermore, the fact that many of the companies developing vaccines, including Pfizer, Novavax, GlaxoSmithKline, Regeneron, and AstraZeneca have received government funding to aid their efforts might lead some citizens to worry that government agencies responsible for deciding whether to issue vaccine approval will be compromised by this financial involvement (U.S. Department of Health & Human Services 2020). Finally, the timing of vaccine development, which occurred during a contentious campaign ahead of the November 2020 presidential election, has led some scientific experts to worry that the Food and Drug Administration may experience political pressure to issue approval with insufficient data (LaFraniere et al. 2020).

In this context, meaningful transparency means not only making it clear how tests have been progressing and transparency about the data and numbers associated with these various vaccine trials, but also clear explanation of the ways in which the expedited trial and approval processes differ from normal processes. It also means providing reasons why the deviations from the norm are acceptable and not unreasonably compromises to public safety. Suitable disclosure, then, also requires contextualization of the disclosed information.

Openness About Uncertainty

There is always a degree of uncertainty with even well-established medical interventions, including vaccines. To the extent that this type of uncertainty exists, those involved in vaccine production and approval ought to be up front about this. Particularly in the context of politicization and suspicion about motives, it is imperative that this uncertainty be forthrightly acknowledged. Appropriate acknowledgements of uncertainty include: that previously undetected adverse reactions may occur after a vaccine has been approved; that sterilizing immunity is unlikely to occur; and that long-term efficacy will not immediately be known.

Glossing over this uncertainty will only further erode trust and increase suspicion about motives if (or when) adverse events or disappointing data are discovered after a vaccine candidate goes to market. Failure to acknowledge uncertainty stands to do immense damage to the already-eroding general trust that the public has in vaccines.

Accessibility

Accessibility of a possible Covid-19 vaccine, both globally and nationally, is already a major concern among public health experts. Some have suggested that the vaccine development and approval processes, despite their challenges, are actually the *easy* parts of vaccination when compared to the availability and delivery of a

vaccine (Danziger 2020). Refrigeration requirements and supply chain disruptions are one class of accessibility obstacle; another is vaccine affordability.

One drug company has already indicated that it will not sell a successful Covid-19 vaccine at cost, despite having received significant funding from the federal government (Lupkin 2020). It is not unreasonable to wonder whether the cost of a vaccine will be passed on to vaccine recipients. If this occurs, the uninsured are likely to pay the largest out-of-pocket costs for the vaccine. And since Black Americans, are more likely to be uninsured than White Americans—in 2019, 14.7% of non-Hispanic Black Americans adults were uninsured versus 10.5% of White American adults (Cohen et al. 2020)—a policy whereby individuals are responsible for paying out of pocket for a Covid-19 vaccine will prevent or deter many Americans, some of whom are already vulnerable in other ways, from receiving the vaccine. Requiring that Americans cover even a portion of the cost of the vaccine out of pocket will, in effect, stratify who gets the vaccine. Many of those most likely to benefit from the vaccine, due to health status and employment status as essential workers, will be those who are least likely to be able to afford it.

A successful vaccine is an accessible vaccine, and accessibility means that the vaccine cannot be cost prohibitive. Particularly at a time in which finances have become even tighter for so many individuals, it is important that cost not present a barrier to vaccine uptake. In addition, requiring that individuals pay for a vaccine, particularly if pharmaceutical companies do not sell the vaccine at cost, could signal that the main focus is on profit making by the pharmaceutical company, which is likely to further erode trust and heighten suspicion about the primary motives behind making the vaccine available.

In discussion of accessibility, some writers (e.g., Schmidt 2020) have argued that population groups that historically have been worse off ought to receive priority when a Covid-19 vaccine becomes available. While such an approach is an admirable one, caution must be exercised; if this approach is adopted indelicately, it could raise suspicion, leading targeted recipients to wonder whether they are being used as “guinea pigs” before the vaccine is offered to more advantaged groups.

Establishing “Critical Distance” Between Pharmaceutical Companies and the Public

The practical recommendations being offered here all emphasize the importance of knowing one’s audience. Tailoring strategies based on audience also means being mindful of the entities engaging with that audience. Given the high levels of suspicion that Americans in general and Black Americans in particular have toward pharmaceutical companies (Jamison et al. 2019), we ought to ensure that communications about the efficacy, safety, and importance of vaccination are *not* coming from pharmaceutical companies. Such communications are apt to be much more convincing when instead delivered from public health officials and medical professionals.

There is, however, one category of information that ought to come from pharmaceutical companies themselves: the “bad news” of adverse events, delays, or setbacks in vaccine testing. Transparency from pharmaceutical companies about these inevitable features of vaccine development could serve to *boost* trust by undercutting the narrative that pharmaceutical companies are self-seeking and attempting to hide information that could negatively affect their bottom lines.

Thus, while a recent pledge from pharmaceutical companies promising not to seek premature approval of vaccine candidates (“Biopharma Leaders Unite to Stand with Science” 2020) came across mostly as a public relations stunt and thus rang hollow, AstraZeneca’s recent disclosure of an adverse outcome in one trial participant (Robbins and Feurstein 2020) might actually increase trust by demonstrating a willingness to disclose information that is not immediately in the company’s self-interest. This transparency should continue even after a vaccine gains approval or emergency use authorization. While the Food and Drug Administration will monitor vaccines via post-market drug safety monitoring, a pharmaceutical company’s willingness to publicly acknowledge adverse reactions to their vaccine will signal trustworthiness to the general population.

Conclusion

The Covid-19 pandemic has laid bare a reality that has existed for decades: the health outcomes for Black Americans across a host of conditions and diseases are significantly worse than the health outcomes of their White peers. The possibility of a Covid-19 vaccine gives us the opportunity to make strides toward reducing, with the hope of one day eliminating, these disparities. But success in this regard requires that our vaccine education, distribution, and financing decisions be made in ways that are sensitive to the needs and concerns of the people who we aim to benefit. This in turn requires that we tailor our efforts to our most vulnerable populations while being sensitive to their fears and concerns and recognizing the validity of these fears and concerns.

A running assumption in this paper has been that it is possible to produce an expedited vaccine in both a medically and an ethically sound way. This is, of course, a significant assumption, and some have called it into question (Iserson 2020). There may be very good reasons not to have expedited a vaccine, but that question has been set aside here.

The stakes of getting things right are high: if a vaccine that is ineffective is approved and released, more people will get sick as vaccination emboldens them to return to their previous ways of life. If a vaccine that is unsafe is approved, people will be harmed, and this harm will spur even greater skepticism in vaccines and the scientific communities and government agencies responsible for them.

In a similar vein, the stakes of reckoning with racial injustice are high. And perhaps these Covid-19-specific lessons are lessons that can (and ought) be applied to the general problems of inequality that Covid-19 has merely shone a light on and exacerbated. The strategies for restoring trust in a Covid-19 vaccine—listening to

those most disadvantaged, acknowledging reasons for mistrust, and maintaining transparency—may very well be strategies that can help bring about racial justice in the United States.

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