

COVID-19 VACCINE HESITANCY AND
STRATEGIES FOR BUILDING VACCINE CONFIDENCE IN THE COVID-19 VACCINES

Statement of

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UNDERSTANDING COVID-19 VACCINE HESITANCY

Ensuring strong demand for and promoting acceptance of the COVID-19 vaccines is critical to achieving herd immunity, protecting the most vulnerable populations, and reopening social and economic life (NASEM, 2020a). This rapid expert consultation is intended to assist decision makers in building public confidence in the COVID-19 vaccines and in communicating with the public about the vaccination process and rollout by highlighting strategies for public engagement and message delivery to ensure demand and promote acceptance.¹ While it does not outline a national vaccine marketing strategy, the principles and strategies outlined herein will be critical in the design of such a campaign.

Evidence from the behavioral, psychological, and social sciences demonstrates that people’s motivations—their readiness, willingness, intention, or hesitancy—are informed by the information they process; by how they think and feel (their perceived risk, worry, confidence, trust, and safety concerns); and by social processes (recommendations from health care providers, social norms, gender norms, equity, and information processing and sharing). Evidence from anthropology indicates that individuals’ motivations are further influenced by cultural understandings of the body, disease, and appropriate types of health care. Motivations can also be influenced by perceptions and beliefs about equitable allocation, distribution, and delivery of services as early vaccination programs roll out. Research from New Jersey’s and

¹A number of other organizations and agencies have produced guidance on this issue, and those references may also be of use to state and local decision makers. See, for example, “Language That Works to Improve Vaccine Acceptance Communications Cheat Sheet” (www.changingthecovidconversation.org) (accessed January 19, 2021); “COVID-19 Vaccination Communications Toolkit” (<https://www.cdc.gov/vaccines/covid-19/health-systems-communication-toolkit.html>) (accessed January 19, 2021); and “A Communicator’s Tip Sheet for COVID-19 Vaccination” (https://obssr.od.nih.gov/wp-content/uploads/2020/12/COVIDTipSheet_Final.pdf) (accessed January 19, 2021).

Rhode Island's COVID-19 testing programs, for example, showed that customer experience challenges at point-of-care testing sites deterred some individuals intending to receive a COVID-19 diagnostic test and discouraged others from repeat testing (Policy Lab et al., 2020). Motivations thus formed interact with practical considerations (e.g., vaccine availability, costs, service quality) to determine vaccination uptake (Brewer et al., 2017).

Of course, context is also important. In particular, it is critical that the efforts of trusted messengers be coordinated. The public has already been receiving information about the COVID-19 vaccines and vaccination efforts from multiple sources, including state and local government entities, local news and community channels, physicians, and employers, among others. The messaging from these sources can be conflicting, which helps to undermine vaccine confidence and trust in public health authorities. Therefore, efforts to influence the shape of public discussion of vaccine issues may be as important as any direct persuasive communication.

Moreover, the pandemic conditions are dynamic and will continue to change as distribution of the COVID-19 vaccines continues and evolves, and ongoing monitoring of beliefs and attitudes will be needed so that messaging can be adjusted as the vaccines become widely available. The ways in which the principles described herein are operationalized will vary based on local context, so that ongoing testing of messages to learn which work best may be needed to optimize communication efforts. Dedicating more resources and technical assistance to local efforts in conjunction with national campaigns could support rapid learning and ultimately increase vaccine acceptance at the community level.

The public's opinions on vaccination fall along a continuum, ranging from those who fully accept vaccines, to those who are vaccine hesitant (two groups that collectively represent the majority of the population), to those strongly or unequivocally opposed to vaccination (a very

small minority of the population). It is the middle group that is most likely to respond positively to intervention (Gust et al., 2008a, 2008b). Previous research has found that communications focused on reaching those who are hesitant rather than those firmly opposed to vaccination will be most effective at increasing uptake (NASEM, 2020b), while focusing on those firmly opposed to vaccination will exaggerate and may contribute to the problem.

Since the first COVID-19 vaccine was authorized in December 2020 in the United States, public confidence in COVID-19 vaccines has risen relative to reported attitudes regarding a hypothetical vaccine in early 2020 (Hamel et al., 2020). Hesitant individuals are not a monolithic group, and hesitancy is not static. Much of the existing hesitancy regarding COVID-19 vaccination revolves around a desire to wait and see how others will respond physically to being vaccinated, as well as technical questions related to the vaccine's safety and efficacy (e.g., "Should I get the vaccine if I'm pregnant?"), which in some cases are accompanied by mistrust of medicine, public health, and government.

The desire to "wait and see" is not unique to the COVID-19 vaccination experience. Research on H1N1 vaccine uptake in 2009–2010 shows that, at least in some populations, concerns about the new vaccine affected confidence in the vaccine (Hausman et al., 2020). Although the H1N1 vaccine was approved through the standard FDA process, there were initial concerns that it could have been released under the Emergency Use Authorization mechanism. Quinn and colleagues (2009) found that in that case, intent to take such a vaccine was extremely low, with African Americans being the most reluctant. The phased rollout of available COVID-19 vaccines, all authorized under the EUA mechanism, may provide an opportunity for responding to hesitancy in this respect: officials can make safety and effectiveness data transparent and accessible, especially as additional vaccines are authorized. Acknowledging

people's uncertainty and their desire for more data becomes possible as vaccination programs continue.

Specific concerns among those who are vaccine hesitant vary widely, although they tend to cluster geographically and/or culturally. Mistrust of a vaccine in communities of color is of particular concern given that ethnic and racial minority groups in the United States have been disproportionately harmed by the pandemic: individuals from Black, Hispanic, and American Indian/Alaska Native communities all have experienced COVID-19 mortality rates nearly three times higher than the rate among White individuals, as well as higher rates of hospitalization due to the disease. These groups are also more likely to have underlying conditions that place them at higher risk for severe outcomes and complications related to the virus (CDC, 2020a, 2020b).

Mistrust of a vaccine in communities of color is grounded in current experience with structural inequities that permeate public health, medicine, and social services in the United States. Beyond a system that is not reliably trustworthy for many populations, a painful legacy of health care discrimination, medical research exploitation, and unconsented experimentation on Black, American Indian/Alaska Native, Latinx, and other communities that have experienced racism has contributed to justified distrust of government-sponsored medical research and resultant reluctance to become vaccinated (Frakt, 2020; Gamble, 1997; Hoffman, 2020; NASEM, 2020a).² This distrust will not be easy to overcome, but the glaring racial and ethnic disparities in the impact of the pandemic will only worsen if decision makers fail to address it.

²“Examples include the infamous Tuskegee study—in which hundreds of Black men in Alabama were lied to about being treated for syphilis while the disease was allowed to run its course; the Edmonston-Zagreb vaccine trial, during which parents of immunized infants (mostly Black and Latinx) were not informed that the vaccine used was an unapproved experimental vaccine; and less well known but equally abhorrent instances of unconsented sterilization of Latinx and American Indian and Alaska Native women (Carpio, 2004; Gamble, 1997; University of Wisconsin, 2018). This legacy leaves many communities of color wary of participation in medical research, suspicious of initiatives to engage them in health promotion or surveillance efforts, and, in many cases, reluctant to become vaccinated (Hoffman, 2020)” (NASEM, 2020a, p. 190).

STRATEGIES FOR PUBLIC ENGAGEMENT TO COMBAT MISTRUST AND BUILD CONFIDENCE IN THE COVID-19 VACCINES

BOX 1

Six Strategies for Engaging Communities to Combat Mistrust and Build Public Confidence in COVID-19 Vaccines

1. Form Partnerships with Community Organizations
2. Engage with and Center the Voices and Perspectives of Trusted Messengers Who Have Roots in the Community
3. Engage across Multiple, Accessible Channels
4. Begin or Continue Working toward Racial Equity
5. Allow and Encourage Public Ownership of COVID-19 Vaccination
6. Measure and Communicate Inequities in Vaccine Distribution

Public engagement is critical to overcoming mistrust and building confidence in the COVID-19 vaccines. Public engagement is more likely to be impactful (and build trust beyond COVID-19 vaccination programs) if the process is established and designed so that public values (ascertained through engagement) can be translated into practice and policy. Public health practitioners—if given the necessary resources—can create a strong infrastructure that helps earn community trust by building relationships that encompass organizing for policy change, providing accessible COVID-19 testing and treatment, listening to the needs of communities, addressing the structural factors that create greater exposure to and poorer treatment for COVID-19, and ensuring the equitable allocation of vaccines. This section summarizes six public engagement strategies designed to combat mistrust and build confidence in the COVID-19 vaccines.

1. Form Partnerships with Community Organizations

Partnerships with community organizations that have strong existing community relationships are critical. These organizations are close to their audiences; know how to tailor information to those audiences effectively; and, most important, have trusted leaders who can be effective spokespersons. Research shows that credible partnerships require early two-way dialogue to establish trust and build a shared vision for addressing a problem, citizen involvement in the decision-making process, and sharing of information in a way that is understandable and responsive to local needs (NASEM, 2020a; Quinn et al., 2020). A good example is a communication planning strategy for building partnerships at a New Jersey environmental agency, which included the following steps: identify the issue; set goals; know the issue, audience, and constraints; assess audiences; identify messages and methods; implement a communication strategy; and evaluate, debrief, and follow up (Pflugh et al., 1992). Local governments thus could utilize or leverage existing relationships, social capital, and resources to build vaccine confidence. Potential partners might include faith-based networks, existing community health worker programs, or local advocacy and activism groups (e.g., organizers of get-out-the-vote efforts or the census, or neighborhood coalitions formed to improve walkability or green spaces).

2. Engage with and Center the Voices and Perspectives of Trusted Messengers Who Have Roots in the Community

Evidence suggests that efforts to counter vaccine hesitancy and promote vaccination need to emphasize putting “people at the center” of those efforts (Schoch-Spana et al., 2020). Research has highlighted the potential effectiveness of dialogue-based interventions, including social mobilization and engagement with community leaders and trusted community

representatives, as well as the importance of community involvement in creating, adjusting, and implementing these solutions to ensure adequate buy-in and trust (Dubé et al., 2015; Jarrett et al., 2015; NASEM, 2020a). Social media or advertising campaigns encouraging community members to share why they choose to get vaccinated—such as the “whatsyourwhy” factor and “blackwhysmatter” social media hashtags—can be persuasive.

Central to this strategy is developing long-term relationships with trusted community members—a process that takes time but is essential. If such relationships are not already in place, local health departments can begin by listening to community members’ concerns and providing support and resources to ensure that they have culturally appropriate information about the vaccines and, most critically, equitable access to vaccination.

3. Engage across Multiple, Accessible Channels

Community engagement will need to occur across a variety of channels well suited to reaching vulnerable populations, including people who cannot attend public meetings (e.g., because they work, live remotely, are incarcerated, or are undocumented), who have limited broadband service, who speak languages other than English, or who cannot use written text (NASEM, 2020a). Determining which channels are most appropriate for particular populations is essential. State and local leaders can choose to communicate through town hall meetings, special community events, or faith-based gatherings.

4. Begin or Continue Working toward Racial Equity

Public engagement around vaccination, particularly with communities of color, needs to begin with acknowledgment of existing inequities. A health department could, for example,

garner supporters and allies—and elevate racial equity—by recognizing how systemic racism has disadvantaged these communities and explaining how the department is working to create health for all communities.

Talking about vaccines in isolation risks reinforcing deeply held beliefs that health (or ill health) is purely a matter of individual behaviors (such as choosing to get vaccinated) and obscuring the broader structural factors—such as housing, jobs, and health care access—that also impact health. It is critical for authorities to acknowledge these broader shortcomings in health equity, to frame the COVID-19 vaccines as one of several tools that can help advance equity in communities most affected by the pandemic, and to reassure those communities that this type of work will continue beyond the pandemic. The pandemic has exposed myriad health disparities, and public health policies and action, including vaccination, need to reflect a deeper commitment to equity (Berkowitz et al., 2020).

An example of such an effort is the Bay Area Regional Health Inequities Initiative, a coalition of health departments and community partners in California’s Bay Area focused explicitly on the advancement of health equity, racial justice, and economic opportunity. The group works across nine counties and has recently focused its efforts on COVID-19 response while continuing to highlight the importance of broader social determinants of health in shaping community health outcomes, particularly among communities of color (Bay Area Regional Health Inequities Initiative, 2020; Kritz, 2020).

5. Allow and Encourage Public Ownership of COVID-19 Vaccination

As noted earlier, while trust is critical to vaccine acceptance, trust in public health is low within some populations, including many communities of color. Public ownership of COVID-19

vaccination through public oversight and community engagement can inspire greater confidence in COVID-19 vaccination. Best practices for public ownership include actively seeking engagement with the public, listening to feedback and adapting accordingly, establishing local public oversight committees, and implementing bottom-up approaches with community members leading solutions. Research has also highlighted the benefits of public ownership of vaccination through governance structures that involve community members, noting the potential for those mechanisms to drive trust and improve access (Schoch-Spana et al., 2020). Also beneficial is emphasizing vaccination as a public good (e.g., “I am doing this because my vaccination helps the community at large, and I care about my fellow citizens”).

6. Measure and Communicate Inequities in Vaccine Distribution

Real-time measurement of inequities in vaccine distribution and communication of those findings to the public is critical to building trust. Communities could disaggregate vaccine distribution across the 15 factors that make up the Centers for Disease Control and Prevention’s (CDC’s) Social Vulnerability Index and publish that information on public dashboards, for example. Decision makers will need to monitor this information and work with community leaders to implement solutions as inequities arise.

COMMUNICATION STRATEGIES FOR PROMOTING ACCEPTANCE OF THE COVID-19 VACCINES

BOX 2

Nine Communication Strategies for Ensuring Demand for and Promoting Acceptance of COVID-19 Vaccines

1. Meet People Where They Are, and Don't Try to Persuade Everyone
2. Avoid Repeating False Claims
3. Tailor Messages to Specific Audiences
4. Adapt Messaging as Circumstances Change
5. Respond to Adverse Events in a Transparent, Timely Manner
6. Identify Trusted Messengers to Deliver Messages
7. Emphasize Support for Vaccination Instead of Focusing on Naysayers
8. Leverage Trusted Vaccine Endorsers
9. Pay Attention to Delivery Details That Also Convey Information

There is no single solution to vaccine hesitancy. Rather, multiple nuanced approaches are key to ensuring that those who are hesitant do not evolve to outright vaccine refusal and that existing health inequities are addressed. This section summarizes nine best practices for communication strategies designed to build confidence in the COVID-19 vaccines.

1. Meet People Where They Are, and Don't Try to Persuade Everyone

Models identifying stages of behavior change suggest that information and resource needs differ for people who are “considering” a particular self-protective action, such as vaccination (Why should I adopt it?) versus those who have decided to take the action (How do I go about doing it?). Thus, it is important to develop different messages for those who are willing to be vaccinated and need information on how to do so and those who are hesitant but open to learning more. Moreover, trying to persuade those who are completely opposed to vaccination is not a wise use of resources (Public Health Institute, 2020), especially given that, as noted earlier,

most people who are unwilling to get vaccinated immediately can be considered hesitant or skeptical, with just a small portion of the population being absolutely opposed to vaccination (Bruine de Bruin et al., 2019).

Research on COVID-19 vaccination, and routine vaccination more broadly, emphasizes the importance of empathy as key to interacting with those who may be vaccine hesitant or skeptical, including through such techniques as motivational interviewing between providers and patients (Ferreri, 2020; Gagneur, 2020; Martin, 2021; Maurici et al., 2019). For these exchanges, it is important to use such phrasing as, “I understand that you might have questions about the vaccine, and I’m here to answer them as best I can....”

2. Avoid Repeating False Claims

Correcting information that is inconsistent with scientific evidence is difficult under most circumstances (Cook and Lewandowsky, 2011; Lewandowsky et al., 2012; NASEM, 2017). It should be noted, moreover, that repeating false claims and misinformation risks inadvertently amplifying and strengthening that information. Occasionally, however, public health practitioners may have to address false claims (Ecker et al., 2017). In these situations, it is important to warn recipients before confronting them with the false information (e.g., “The following claim is misleading...”) and to emphasize the facts over the misinformation (MacFarlane and Rocha, 2020). Practitioners can also use a pivot approach to avoid addressing and correcting false claims and misinformation directly, instead diverting the listener to consider concerns about the risk of disease (Omer et al., 2017). According to MacFarlane and Rocha (2020), additional strategies for debunking misinformation and overcoming its effects include preemptively explaining flawed arguments, using visual representations to increase data

comprehension (Dixon et al., 2015), and providing alternative explanations of the debunked phenomenon (e.g., that purveyors of misinformation are interested in selling different remedies or support a political ideology) (Ecker et al., 2010).

The nation's polarized media environment also means that people are receiving very different messaging about the pandemic, and at the same time, the spread of information has become more "bottom-up" than "top-down." Evidence indicates that, instead of treating skeptics as the "other" and adopting a "those people" attitude toward vaccine-hesitant individuals, it is best to adopt an approach that encourages empathy (Hausman, 2020).

3. Tailor Messages to Specific Audiences

Messages will be received differently by different groups. To be effective, communication about the COVID-19 vaccines needs to reflect an understanding of the targeted audience, including their concerns and motivations and whom they trust. It is essential to recognize that the information needs of diverse audiences may or may not match communicators' assumptions about those needs. If the audience does not deem the information provided to be relevant or responsive to their information needs, they will ignore it.

Successful communication strategies therefore emphasize population segmentation, recognizing the need to develop different strategies for different subgroups, as characterized by epidemiological, psychographic, and demographic variables. Effective communication will use appropriate approaches to reach vaccine-hesitant audiences that differ by age, gender identity, marriage status, education level, refugee and immigration status, health behaviors/norms, and race and ethnicity, as well as the socially marginalized. Survey data can provide information relevant to target audiences, such as existing beliefs and content to avoid, which can inform

development of the messages they receive (see, e.g., Amin et al., 2017; Parvanta et al., 2013; Rutjens et al., 2018). Data from qualitative studies that rely on first-hand explanations can also be used to develop messages that will resonate with particular audiences.

It is important as well to consider tailored messaging needs down to the individual level, including through such strategies as the aforementioned motivational interviewing (Gagneur, 2020), despite the anticipated difficulty of widespread scale-up of such strategies. For example, messaging that explains why the COVID-19 vaccines cannot alter DNA might cause more harm than good if disseminated widely to an audience not already concerned about this misconception. However, particular individuals may benefit from hearing this message or others like it. This example highlights the importance of tailored individual conversations rather than broadly disseminated communications in certain contexts.

4. Adapt Messaging as Circumstances Change

Adaptive messaging is a core tenet of communication during the response to an infectious disease outbreak (Tumpey et al., 2018). Accordingly, what influences people's decisions is likely to shift as vaccine distribution goes forward, reflecting both individual experiences and months of media coverage. Ultimately, communication themes being emphasized today may be inappropriate or incomplete in several months as circumstances change, and campaigns will be forced to adapt accordingly. Recognition of the dynamism of COVID-19 vaccine hesitancy is key to the construction of effective communication strategies, which must mirror the dynamism of beliefs. Therefore, constant research to monitor and understand the addressable influences on vaccine confidence over time will be essential, as will feedback mechanisms to ensure that this information is used to inform planning processes. Rapid research methods will be needed to

identify relevant priorities, appropriate message formats, trusted messengers, and appropriate message frequency, along with funding to support this research (Schoch-Spana et al., 2020).

5. Respond to Adverse Events in a Transparent, Timely Manner

As vaccination becomes more common, people's experiences with the COVID-19 vaccines will become known. While the vaccines often cause mild and transitory side effects, serious adverse reactions are exceedingly rare (CDC, 2021; n.d.). The rarity of adverse events is not always appreciated, however, as such events are often disproportionately reported in the news media and spread widely on social media. Moreover, serious medical events may occur coincidentally soon after vaccination and be perceived as related to the vaccine (Salmon, 2020). It is important to communicate information about adverse events in a timely and transparent manner and to help people understand what is known, what is unknown, and what should be done. In addition, postvaccination surveillance is essential to identify rare adverse outcomes that may be vaccine related. Taking this approach will help mitigate concerns about safety, side effects, and adverse events moving forward.

6. Identify Trusted Messengers to Deliver Messages

Messages about a new COVID-19 vaccine will be novel to all target audiences. Trust in the person or institution that delivers a message, built over previous years, will boost its credibility. Different groups may have different trusted messengers and preferred mediums and channels. Decision makers can identify groups that represent trust gaps in their community and trusted sources within and outside their organization who can convey public health messages to those groups.

7. *Emphasize Support for Vaccination Instead of Focusing on Naysayers*

Research shows that people look to their peers for cues about how to behave in a wide range of areas, from voting to savings (Brunson, 2013; Schultz et al., 2007). Accordingly, making vaccine uptake visible will encourage a social norming of COVID-19 vaccine acceptance. Early on, one approach is to emphasize *increasing* support for vaccination as uptake increases, thus initiating a virtuous cycle. Just as voters receive “I voted” stickers after casting their ballots, vaccine distribution sites could provide “I got vaccinated” stickers, or encourage people to text their friends and family or post on social media that they received the vaccine (Milkman, 2020). Likewise, state and local jurisdictions could create publicly available dashboards with real-time data about the doses of vaccine administered in their communities or highlight evidence of community demand for vaccination (e.g., through news stories about people seeking vaccination).

8. *Leverage Trusted Vaccine Endorsers*

The immunization of thought leaders, community champions, and celebrities could help encourage members of the public to be vaccinated (Freed et al., 2011; Hoffman et al., 2017; Najera, 2019). Such vaccine promotion messengers should be relatable, trusted, and credible, and their messages should be consistent (Tumpey et al., 2018). This strategy could be paired with strategy 1 above.

A particularly effective way to implement this strategy could be to partner with people who have strong existing popular or community relationships with experts, adapting messages as needed. Examples of this approach include NBA star Stephen Curry’s hosting Dr. Anthony Fauci

on his video series and national vaccine experts participating in local town hall meetings. Likewise, in Baltimore, public health experts and researchers have partnered with faith leaders in the Black community to reach out to and educate community members about both COVID-19 and influenza (Sokolow, 2020), an approach that could be adapted elsewhere. And in Prince George's County, Maryland, a long-time partnership involving the Maryland Center for Health Equity has focused on having local health care providers talk about the vaccine with barbers and stylists to shift them toward vaccine acceptance, the idea being that these individuals can help clarify misinformation and set social norms in their community.

9. Pay Attention to Delivery Details That Also Convey Information

Trust in a vaccination program may be undermined if the user experience with enrolling and getting vaccinated is poor. If exposed to reports of online sign-up portals crashing, dirty clinic sites, or long wait times, for example, people may infer that the vaccine itself is also faulty.

CONCLUSION

Public engagement and messaging are critical to addressing the issues discussed herein to promote public confidence and trust in the COVID-19 vaccines. Given the prevalence of local concerns and information needs, it is important to support local communities by providing the resources they need to engage community members and reinforce accurate, clear information. Accessible, consistent, and transparent communication is crucial to converting hesitancy about vaccination to acceptance. Strong community engagement to identify and understand concerns will help in determining what messaging, delivered by whom, will be most effective.

Everyone—employers, health care providers, faith leaders, elected leaders, and public

health officials—has a role to play. All strategies for increasing vaccine confidence need to take into account that vaccine decision making is part of a nuanced ecological model in which individual beliefs and behaviors are influenced by experiences at the community, organizational, and policy levels. As the COVID-19 vaccination campaign continues, it will be important to employ a coordinated approach that is supported at the federal and state levels and invests in local resources, expertise, and involvement. A variety of strategies at the national, state, and local levels will be required to change the pattern of interactions with the public, address vaccine hesitancy, build trust, and ultimately ensure a successful COVID-19 vaccination campaign.

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