OPINION

The importance of offering vaccine choice in the fight against COVID-19

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More than 25% of adults in the United States remain unvaccinated for coronavirus disease 2019 [COVID-19 (1)]. Although some of the unvaccinated are vaccine-resistant and may never be convinced that they should get the shot, the hope is that a sizable proportion of the unvaccinated will accept vaccination under the right circumstances. The recent US Food and Drug Administration (FDA) approval of the Pfizer vaccine—and Centers for Disease Control and Prevention (CDC) recommendation for a booster—may aid acceptance. And various incentives have been instituted to encourage vaccination, including free transportation to vaccination locations, time off from work, and monetary lotteries for those who have been vaccinated. Outreach has entailed the use of trusted messengers such as personal physicians, local community and faith leaders, and social media influencers; partnering with familiar community sites such as houses of worship;

The speed and efficiency of vaccination programs are very important values. But vaccination efforts must also promote justice and mitigate health inequities. We should find ways to respect individual decision-making and offer people a choice of vaccines. Image credit: Dave Cutler (artist).

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and expanding vaccination sites to include pharmacies, primary care offices, and mobile units (2–4). An increasing number of private businesses and universities have announced vaccination mandates as part of returns to in-person work and school (5). Hopefully, many more people will elect to get vaccinated. And when they do, they should have a choice of vaccines. Whether vaccinating in hard-to-reach communities or requiring vaccination as a condition of employment or on-campus education, we argue that offering a choice of vaccine should be an essential component of COVID-19 vaccination strategies.

Vaccine administration in underserved communities often requires mobile units to facilitate vaccination clinics in urban or rural communities or to deliver vaccine directly into the homes of people who cannot access centralized vaccination sites (e.g., owing to age, disability, or lack of transportation; inability to access registration sites because of internet access; language barriers; or inability to take off work). Some have suggested that the Johnson & Johnson (J&J)/Janssen vaccine be selectively targeted to these populations to maximize operational efficiency in light of its single-dose delivery and lack of cold storage requirements (6). But this argument is tempered by CDC guidance that the Pfizer vaccine may be stored in the refrigerator for up to 31 days before mixing—thus making it easier to administer through mobile units (7). The Moderna vaccine still relies on cold storage. Thus far, of the fully vaccinated in the United States, 54% have received the Pfizer-BioNTech vaccine, 38% the Moderna vaccine, and 8% the J&J/Janssen vaccine (1).

Shortly after the FDA's emergency use authorization of the J&J/Janssen vaccine, leading US organizations advocated that all three vaccines should be regarded as equivalent in preventing major outcomes of public health interest: COVID-19 hospitalizations and mortality (8). Early in the vaccination distribution process, when vaccine supplies were limited, the Advisory Committee on Immunization Practices (ACIP) argued that public health officials should not offer patients a choice because the vaccine supply was limited and unreliable (9).

As a general matter, when different treatments can have different outcomes, individuals should have the freedom to choose among the alternatives.

Although the speed and efficiency of vaccination programs are undoubtedly important values, it is critical that vaccination efforts also promote justice and mitigate health inequities (10). Now that vaccine supplies in the United States are not as constrained as earlier in the pandemic and even more vaccines are in development, speed and efficiency must also be weighed against respect for individual decision-making and the prospect of offering people a choice.

The Value of Choice

Choice in the informed consent process has inherent value as a sign of respect for persons. For voluntary vaccination programs, offering choice may decrease vaccine hesitancy by showing people that they are not being forced into a "take it or leave it" decision. Based on research conducted in Black and Hispanic/Latino communities in six distinct sites across the United States, some vaccine hesitancy may arise from individuals opting out when they are not offered the vaccine they prefer (11). Individuals may opt in when the vaccine options meet their personal preference around brand-specific attributes—namely, the number of doses required, timing, underlying mechanism, concerns about side effects, religious objections, and even (however inaccurate) misconceptions about a specific brand. Giving people the freedom to choose, no matter their reasons for a particular option, is crucial for fostering and earning trust. Community engagement is all about building trust and demonstrating trustworthiness (12). Furthermore, limiting choice when options exist raises justice concerns—even more so as resource scarcity becomes less of an issue.

Failing to accommodate individual preferences reinforces the healthcare system's history of paternalism and the violations of trust experienced by marginalized communities. For example, Black communities' trust in the medical establishment has not only been eroded as a result of infamous cases like the Tuskegee Syphilis Study but also by the everyday challenges that Black patients face when navigating the structural racism of the health-care system (13). Proactively addressing vaccine hesitancy can be a mechanism to reduce health disparities (14).

Although public health experts justifiably focus on hospitalizations and deaths to argue that the FDA-approved Pfizer vaccine and the two COVID-19 vaccines in the United States under Emergency Use Authorization are considered equivalent, vaccine-hesitant individuals may be skeptical. To date, there have not been any head-to-head trials among the available vaccines. The Phase III efficacy trials were conducted during different points in the pandemic with varying rates of infection and circulating variants. Some individuals are concerned about the differences in side effects among the three vaccines, most notably the potential for vaccine-induced immune thrombotic thrombocytopenia in the case of the J&J/Janssen vaccine (which led to its temporary pause) or its association with Guillain-Barre Syndrome (15, 16). Others may have reservations owing to uncertain associations with adverse events, such as the potential for myocarditis after mRNA vaccinations (17). Some people may observe that the vaccines have differences in their efficacy at preventing minor illness.

And for some individuals, avoiding infection may be as essential as preventing hospitalization from a public health perspective. Loss of two weeks of work or wages, the challenges in quarantining, and potential long-term effects of even a minor COVID-19 illness may be harder to bear for those with limited resources. Thus, preventing even minor COVID-19 illness may be

a determining factor when it comes to vaccine choice. Offering only one choice of vaccine to residents of communities with limited vaccine access means that they will be treated differently than individuals in communities with greater resources and access to vaccine sites. In many cases, the limitations to access are the result of established structural inequities. Often, these are the same communities of color in which the impacts of COVID-19 have been most significant and inequities of care are a longstanding reality. Data from Washington, DC, in May 2021 found that 80% of new COVID-19 cases were in Black individuals, although they make up only about 45% of the population (18). In short, allowing some to choose when others cannot undermines equity.

There may be important practical considerations for preferring a single-dose vaccine over a two-dose regimen, especially for groups with barriers to follow-up. However, expediency does not justify telling individuals in underserved communities that they will not be afforded the same selection of vaccines as others. The American Public Health Association (APHA) Public Health Code of Ethics stipulates that "health justice does not pertain only to the distribution of scarce resources in transactions among individuals; it also involves remediation of structural and institutional forms of domination that arise from inequalities related to voice, power, and wealth" (19).

Although limited anecdotal experience suggests that some members of the hardest-hit communities will accept the first vaccine available, this does not necessarily imply that these communities do not value choice or have preferences. Accepting the first vaccine offered may be more reflective of the disparities that have repeatedly precluded choice in their community. For those community members who want a choice, even if they are not accustomed to having one, respecting them means making choice a viable possibility.

Vaccine programs should invest in more resources and overcome logistical hurdles to bring vaccine options to communities in need. Realizing the commitment to equity should not require telling individuals in areas of social deprivation that the vaccine brought to them is "just as good" as the multiple options offered to other communities. Investments of time, attention, and funding in the vaccination process can serve as an opportunity for economic revitalization in marginalized communities (20). For instance, recruiting community-based workers for vaccination programs can create "career ladder" programs to encourage health-care institutions and community-based organizations to employ these workers after the pandemic (20). Doing so will go a long way toward earning the trust within those communities most affected by the pandemic (21).

Another principle in public health ethics is "least infringement." Public health ethics are built on general moral considerations such as producing maximal balance of benefits over burdens, distributing benefits and burdens fairly, and respecting autonomous choices and actions (22). Circumstances necessarily dictate that these prima facie considerations cannot all be met and therefore require balancing and prioritization depending on the context. In choosing a particular public health policy, it is important to minimize infringement on general moral considerations. For instance, when a public health measure such as quarantining infringes autonomy, the least restrictive alternative should be sought. For vaccination, whether voluntary or mandatory, one means of lessening the infringement on liberty rights is to offer people a choice of vaccine. The most effective way to protect public health is to adhere, when possible, to our general moral considerations, such as respecting autonomous choices and actions and building and maintaining trust (22).

To take seriously the commitment to address the health disparities of the past and present, help right past research-related wrongs perpetrated against communities of color, and serve equity in action, rather than mere rhetoric, requires offering the same choice to all. We should not default to actions that restrict choices otherwise available to members of better-resourced communities in the name of efficiency. Ensuring that everyone has an equal level of choice will undoubtedly lead to extra costs in time, money, and personnel—but those are the costs of achieving true health equity.

1 Centers for Disease Control and Prevention, COVID data tracker. https://covid.cdc.gov/covid-data-tracker/#vaccinations. Accessed 2 September 2021.
2 J. C. Abdul-Mutakabbir *et al.*, A three-tiered approach to address barriers to COVID-19 vaccine delivery in the Black community. *Lancet Glob. Health* **9**, e749–e750. (2021).
3 M. Jean-Jacques, H. Bauchner, Vaccine distribution-equity left behind? *JAMA* **325**, 829–830 (2021).
4 National Institute of Health, NIH Community Engagement Alliance (CEAL). https://covid19community.nih.gov/. Accessed 2 September 2021.
5 L. O. Gostin, J. Shaw, D. A. Salmon, Mandatory SARS-CoV-2 vaccinations in K-12 schools, colleges/universities, and businesses. *JAMA* **326**, 25–26 (2021).
6 J. R. MacNeil *et al.*, Updated Recommendations from the Advisory Committee on Immunization Practices for use of the Janssen (Johnson & Johnson) COVID-19 Vaccine after reports of thrombosis with thrombocytopenia syndrome among vaccine recipients - United States, April 2021. *MMWR Morb. Mortal. Wkly. Rep.* **70**, 651–656 (2021).
7 Centers for Disease Control and Prevention, Pfizer-BioNTech COVID-19 vaccine: Storage and handling summary. https://www.cdc.gov/vaccines/covid-19/info-by-product/pfizer/downloads/storage-summary.pdf. Accessed 2 September 2021.
8 S. E. Oliver *et al.*, The Advisory Committee on Immunization Practices' interim recommendation for use of Janssen COVID-19 vaccine - United States, February 2021. *MMWR Morb. Mortal. Wkly. Rep.* **70**, 329–332 (2021).
9 N. McClung *et al.*, The Advisory Committee on Immunization Practices' ethical principles for allocating initial supplies of COVID-19 vaccine - United States, 2020. *MMWR Morb. Mortal. Wkly. Rep.* **69**, 1782–1786 (2020).

10 D. B. Kramer, D. J. Opel, E. Parasidis, M. M. Mello, Choices in a crisis - Individual preferences among SARS-CoV-2 vaccines. *N. Engl. J. Med.* **384**, e62 (2021).
11 E. K. Brunson *et al.*, on behalf of the CommuniVax Coalition, *Carrying Equity in COVID-19 Vaccination Forward: Guidance Informed by Communities of Color* (Johns Hopkins Center for Health Security, Baltimore, MD, 2021).
12 D. M. Gray, 2nd, T. S. Nolan, O. N. R. Bignall, 2nd, J. Gregory, J. J. Joseph, Reckoning with our trustworthiness, leveraging community engagement. *Popul. Health Manag.* 10.1089/pop.2021.0158 (2021).
13 S. S. Bajaj, F. C. Stanford, Beyond Tuskegee - Vaccine distrust and everyday racism. *N. Engl. J. Med.* **384**, e12 (2021).
14 M. Webb Hooper, A. M. Nápoles, E. J. Pérez-Stable, No populations left behind: Vaccine hesitancy and equitable diffusion of effective COVID-19 vaccines. *J. Gen. Intern. Med.* **36**, 2130–2133 (2021).
15 D. B. Cines, J. B. Bussel, SARS-CoV-2 vaccine-induced immune thrombotic thrombocytopenia. *N. Engl. J. Med.* **384**, 2254–2256 (2021).
16 Johnson & Johnson, Johnson & Johnson statement on COVID-19 vaccine. https://www.jnj.com/johnson-johnson-july-12-statement-on-covid-19-vaccine. Accessed 2 September 2021.
17 S. T. O'Leary, Y. A. Maldonado, Myocarditis after SARS-CoV-2 vaccination: True, true, and… related? *Pediatrics* **148**, e2021052644 (2021).
18 L. Fadula, D. Keating, Black residents now account for more than 8 in 10 D.C. coronavirus cases. *Washington Post*, 25 May 2021. https://www.washingtonpost.com/local/dc-coronavirus-blacks-vaccine/2021/05/25/1b6208da-bd6d-11eb-9c90-731aff7d9a0d_story.html. Accessed 2 September 2021.
19 American Public Health Association, Public Health Code of Ethics. https://www.apha.org/-/media/files/pdf/membergroups/ethics/code_of_ethics.ashx. Accessed 2 September 2021.
20 M. Schoch-Spana *et al.*, on behalf of the Working Group on Equity in COVID-19 Vaccination, *Equity in Vaccination: A Plan to Work with Communities of Color Toward COVID-19 Recovery and Beyond* (Johns Hopkins Center for Health Security, Baltimore, MD, 2021).
21 K. W. Strully, T. M. Harrison, T. A. Pardo, J. Carleo-Evangelist, Strategies to address COVID-19 vaccine hesitancy and mitigate health disparities in minority populations. *Front. Public Health* **9**, 645268 (2021).
22 J. F. Childress *et al.*, Public health ethics: Mapping the terrain. *J. Law Med. Ethics* **30**, 170–178 (2002).