

Access to Scarce Interventions

Age and Disability

Govind Persad and Jessica L. Roberts*

I INTRODUCTION

The COVID-19 pandemic placed older people and people with certain disabilities at especially acute risk of death. This risk did not stem merely from the virus, but from unfair policies during the pandemic. This chapter focuses on two resources that were scarce at different points in the pandemic: (1) critical care interventions; and (2) vaccines. We explore both formal allocation guidelines and their implementation, focusing on older adults and people with disabilities.¹ We conclude that while inclusive, non-discriminatory policies are necessary, they are insufficient alone. True fairness and equality require addressing biases and inequities in implementation.

II CRITICAL CARE RESOURCES

Patients who are severely ill, whether with COVID-19 or other conditions, often need critical care. When need exceeds availability, difficult choices among patients arise. Ventilator scarcity was publicized early in the US pandemic response, but rarely materialized. More common has been scarcity of staff, intensive care unit (ICU) beds, equipment such as dialysis machines, and supplies such as oxygen. This part explores US crisis standards of care, starting with written policies and then turning to implementation.

Crisis standards of care are formalized resource allocation protocols designed to guide health care providers in emergencies. They articulate how scarce, potentially life-saving health care should be distributed when need outstrips availability. How can we ensure that protocols for responding to scarcity treat older people, or people with preexisting medical conditions or disabilities, fairly? Three concerns about protocols should be distinguished: (1) whether an outcome is fundamentally

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¹ Of course, these two categories are not mutually exclusive. People of any age may have disabilities. However, for purpose of our analysis here, we treat age and disability as distinct statuses.

inappropriate to consider; (2) whether considering an outcome may exacerbate disadvantage; and (3) whether predictions regarding an outcome may be inaccurate.

Some fairness concerns may apply more broadly than others. Legally, protections against disparate *treatment* (for instance, exclusion of specific medical conditions) often apply to individuals rather than groups. In contrast, protections against disparate *impact* – protocols that may create unequal outcomes – require considering population-level effects.

A Benefit-Based Frameworks

Unfairness charges have been leveled at protocols that aim to achieve three different types of outcomes: (1) quality of life; (2) years of life preserved; and (3) deaths prevented. These aims could be pursued through individualized assessments – for instance, use of Sequential Organ Failure Assessment (SOFA) scores. They could also be pursued through less individualized approaches.² We discuss each of these three outcomes in turn.

1 Quality of Life

Outside of scarcity contexts, there is little disagreement that treatments' effect on quality of life matters. That a treatment lacks painful side effects, for instance, is a point in its favor. Almost all recognized frameworks, however, regard using preexisting quality of life to distribute scarce resources among individuals as inadvisable.³ Individuals are typically best placed to judge their own past and present quality of life, which makes present quality of life a poor basis for choosing among individuals. In addition, distributing scarce resources based on preexisting quality of life will likely worsen disadvantage by providing fewer resources to people whose preexisting quality of life is lower.⁴ No states proposed using expected quality-adjusted life-years to allocate critical care treatments. Some, however, initially used criteria that referenced medical conditions, such as intellectual disabilities, that might be thought to reflect quality of life factors. These criteria have now been removed, some after legal challenges were announced though not by court order. One ethically defensible exception to a general rule against using others' quality of life judgments to allocate treatments among individuals under scarcity might involve individuals to whom the concept of a quality of life does not apply, such as those who are persistently unconscious.⁵

² Janet Malek, Defending the Inclusion of Categorical Exclusion Criteria in Crisis Standard of Care Frameworks, 20 *Am. J. Bioethics* 156, 156–57 (2020).

³ E.g. Ezekiel J. Emanuel et al., Fair Allocation of Scarce Medical Resources in the Time of COVID-19, 382 *New Eng. J. Med.* 2049, 2052 (2020).

⁴ Paul T. Menzel, Bias Adjustment and the Nature of Health-State Utility, 7 *J. L. Biosciences* 8 n.15 (2020).

⁵ Ryan H. Nelson & Leslie P. Francis, Justice and Intellectual Disability in a Pandemic, 30 *Kennedy Inst. Ethics J.* 319 (2020).

2 Years of Life Preserved

How much a treatment extends life typically matters greatly in medicine – achieving even an extra year of survival is regarded as a breakthrough. Efforts to prolong life avoid the problem of overriding individual experience involved in attempts to assess quality of life, since individuals are typically not best placed to predict their future life expectancy. But considering future life expectancy may sometimes exacerbate disadvantage. Certain medical conditions tend to decrease future life expectancy, which means that considering future life expectancy may disproportionately exclude people with such conditions. How to weigh the risk of disproportionate exclusion against the preservation of future life is complex. Some take the position that life expectancy should be completely irrelevant to resource allocation. Others believe that where medical resources are scarce, it is ethically defensible to prioritize someone with Down syndrome or cystic fibrosis over someone with a drastically life-shortening condition such as terminal cancer, but not to prioritize someone facing no impediments to lifespan over someone with Down syndrome or cystic fibrosis. Still others do not regard life expectancy as fundamentally irrelevant, but worry that using present health status to estimate future life expectancy is too inaccurate or allows for the introduction of bias.

Although no court has found that considering how much a treatment would extend a patient's life violates the law, several states have elected to remove its consideration from crisis standards of care because of concerns about disproportionately excluding candidates with life-shortening conditions. There is, however, no reported case law rejecting the legality of considering future life expectancy in crisis standards of care to allocate ventilators or other treatments. Some studies have indicated strong public support (upwards of 75 percent) for considering life expectancy,⁶ but others suggest lower levels of support.

Notably, using age as a predictor of future life expectancy is less likely to exacerbate overall disadvantage than using health status as a predictor.⁷ This is true for several reasons: (1) having already lived a long time means one is less likely to have experienced many years of discrimination or poor health; (2) people who are medically or socially vulnerable are likely to become ill earlier in life, when they still have a long future life expectancy; and (3) it is more disadvantaging to die earlier in life. The outsized toll of lost years of life in US minority communities,⁸ for instance, suggests that preserving future life by prioritizing the prevention of early deaths may remediate rather than exacerbate disadvantage.⁹ Metrics such as Standardized

⁶ Dominic Wilkinson et al., Which Factors Should Be Included in Triage? An Online Survey of the Attitudes of the UK General Public to Pandemic Triage Dilemmas, 10 *BMJ Open*, 2020, at 4.

⁷ David Wasserman et al., Setting Priorities Fairly in Response to COVID-19: Identifying Overlapping Consensus and Reasonable Disagreement, 7 *J. Law Biosciences* 44 (2020).

⁸ Mary T. Bassett et al., Variation in Racial/Ethnic Disparities in COVID-19 Mortality by Age in the United States: A Cross-Sectional Study, 17 *PLOS Med.*, Oct. 2020, at 5.

⁹ Govind Persad & Steven Joffe, Allocating Scarce Life-Saving Resources: The Proper Role of Age, *J. Med. Ethics*, 2020, at 1–2; Govind Persad, Prioritizing the Prevention of Early Deaths during COVID-19, 51 *Hastings Ctr. Rep.* 42, 42 (2021).

Expected Years of Life Lost, which uses the global highest life expectancy at the time of death as a comparator rather than individuals' actual life expectancy, could capture the importance of preventing early deaths without disadvantaging individuals who have life-shortening medical conditions or face shorter life expectancies due to structural racism, and without categorically excluding older adults.¹⁰

3 Deaths Prevented

To prevent more deaths with a limited supply of resources, many protocols consider recipients' probability of survival, and some also consider the quantity of resources (e.g. time on dialysis) they are expected to need in order to benefit. Almost everyone agrees that preventing more deaths matters. But considering probability of survival or quantity of resources required could also exacerbate some forms of disadvantage, if those who are less likely to benefit or who need more resources also tend to be more disadvantaged. This presents a question about how to weigh saving more lives against not exacerbating disadvantage. In assessing this question, it matters whether some of the additional people saved by considering probability of survival or quantity of resources needed are themselves disadvantaged, as appears plausible given the connection between disadvantage and various health risks. For instance, considering quantity of resources used may not exacerbate disadvantage if more disadvantaged patients (for instance, people needing regular dialysis or ICU care for illnesses other than COVID-19) require fewer resources to obtain the same quantum of benefit, compared to COVID-19 patients who are very sick right now but who were not previously disadvantaged. Predictions about future resource use, which are less certain, may also be differentiable from facts about actual resource use – for instance, whether a patient's condition has improved after seven days of ICU treatment.

B *Benefit-Downplaying Frameworks*

Allocation protocols that completely reject the relevance of quality of life, preserving future life, and preventing more deaths might be termed *benefit-insensitive*: a patient's prospect of benefit is irrelevant to whether they receive treatment. Benefit-insensitive approaches include first-come, first-served and random selection of treatment candidates.¹¹ While these approaches claim to avoid biased decisions, they countenance more loss of life and do not make individualized judgments. Benefit-insensitive approaches may also fail to prevent the magnification of prior disadvantage because disadvantaged people have been more likely to contract and be

¹⁰ Dietrich Plass et al., 'Quantifying the Burden of Disease Due to Premature Mortality in Hong Kong Using Standard Expected Years of Life Lost', 13 *BMC Public Health* 1, 3 (2013).

¹¹ Ari Ne'eman, 'I Will Not Apologize for My Needs,' *NY Times* (Mar. 23, 2020), www.nytimes.com/2020/03/23/opinion/coronavirus-ventilators-triage-disability.html; Diego S. Silva, 'Ventilators by Lottery: The Least Unjust Form of Allocation in the COVID-19 Pandemic,' *Chest* (Sept. 2020).

hospitalized for COVID-19, meaning that the additional loss of life countenanced by benefit-insensitive approaches may fall disproportionately on disadvantaged people.

An alternative approach might be called *benefit-binary*.¹² Unlike the wholesale rejection of the ability to benefit of the benefit-insensitive model, this approach sorts patients into two categories: “unable to benefit” and “able to benefit.” Those able to benefit can be prioritized over those who are unable to do so, but there is no further benefit-based prioritization among those able to benefit – instead, benefit-insensitive approaches such as lotteries or first-come, first-served distribution are used to choose among them. This approach is more individualized and could therefore result in fewer deaths than completely benefit-insensitive approaches. But, because it ignores individual variations in the ability to benefit, it would tolerate substantially more loss of life – again, concentrated among those more exposed to COVID-19 – than benefit-based views. It is also unclear whether benefit-binary approaches will address disadvantage or disability discrimination, since non-COVID-19 patients with disabilities or who are disadvantaged may sometimes be *more* likely to benefit from an intervention (such as a ventilator or dialysis treatment) than previously healthy or advantaged acute COVID-19 patients who are also *able* to benefit but less likely to do so. Last, benefit-binary approaches create a sharp distinction between being “unable” and “able” to benefit that treats people with similar prospect of benefit very differently, and may generate pressure to expand the category of people “unable to benefit,” since few patients truly have zero prospect of any benefit from an intervention.

C Frameworks That Remediate Disadvantage

Rather than eliminating or reducing consideration of benefit in the hope that doing so will treat disadvantaged people more fairly, disadvantage could instead be addressed through intentional efforts. Some have suggested a “reserve” or categorized priority system that would set aside a subset of available resources for priority access for people who are disadvantaged.¹³ Others object to approaches such as reserve systems, however, because they address disadvantage at a community rather than an individual level.¹⁴ Even if a reserve system that considers both disadvantage and prospect of benefit is better for disadvantaged people overall than a

¹² Samuel R. Bagenstos, Who Gets the Ventilator? Disability Discrimination in COVID-19 Medical-Rationing Protocols, 130 *Yale L. J. Forum* 1, 4 (2020).

¹³ Tayfun Sönmez et al., Categorized Priority Systems: A New Tool for Fairly Allocating Scarce Medical Resources in the Face of Profound Social Inequities, 159 *Chest* 1294, 1297 (2021). This approach has been supported by normative theorists as well. Deborah Hellman & Kate Nicholson, Rationing and Disability: The Civil Rights and Wrongs of State Triage Protocols, 4 *Wash. Lee L. Rev.* 1207 (2021); Govind Persad, Disability Law and the Case for Evidence-Based Triage in a Pandemic, 130 *Yale L. J. F.* 26, 45 (2020).

¹⁴ Ari Ne’eman et al., The Treatment of Disability Under Crisis Standards of Care: An Empirical and Normative Analysis of Change Over Time During COVID-19, 46 *J. Health Pol. Pol’y L.* 831 (2021).

benefit-insensitive approach, those specific individuals who are less likely to benefit from treatment may have better chances of receiving treatment under a benefit-insensitive approach.

For policymakers concerned about the fairness of a purely benefit-based approach, the choice between an approach that explicitly incorporates both harm prevention and addressing disadvantage, such as a reserve system, and one that deemphasizes or removes consideration of either value, as benefit-insensitive approaches do, depends on a more fundamental question. If what policymakers value is protecting from the harms of COVID-19 people who are unfairly disadvantaged, including by ableism or ageism, a reserve system is an appealing modification to benefit-based approaches. Under conditions of scarcity, a reserve system can improve the fairness of distribution compared to a purely benefit-based approach, while averting a similar amount of harm. Or it could give further priority to disadvantaged people while averting modestly less harm than purely benefit-based approaches. Under either design, a reserve system can better address overall disadvantage and avert more harm than an outcome-insensitive approach. But benefit-insensitive approaches are preferable if policymakers instead regard treating everyone identically or providing a treatment to those specific individuals who are less likely to benefit from that treatment (as opposed to providing treatments to individuals who are disadvantaged more broadly) as fundamentally important. Similar questions about the relative priority of disadvantaged communities' interests and individual anti-discrimination claims have arisen elsewhere, such as in debates over allowable health benefit designs.¹⁵

The widespread use of age as a factor in vaccine allocation, meanwhile, suggests inconsistency with objections to the use of age in critical care allocation. Notably, one recent study suggested that assessments of expected ventilator benefit using the SOFA score were “significantly inferior to simply using age” to prioritize younger patients; another found that a youngest-first allocation both saved more lives and reduced disparities compared to SOFA or random allocation; and yet another concluded that data from a scoring system based on SOFA alone “strongly suggest the score was biased against younger people.”¹⁶ While using age as the *sole* basis for allocation is not consistent with current legal guidance, that guidance also explicitly permits the

¹⁵ Compare *Lenox v. Healthwise of Kentucky, Ltd.*, 149 F.3d 453, 457–58 (6th Cir. 1998), and *Equal Emp. Opportunity Comm’n v. Staten Island Sav. Bank*, 207 F.3d 144, 148 (2d Cir. 2000), with *Boots v. Nw. Mut. Life Ins. Co.*, 77 F.Supp.2d 211, 219 (D.N.H. 1999).

¹⁶ Robert A. Raschke et al., Discriminant Accuracy of the SOFA Score for Determining the Probable Mortality of Patients With COVID-19 Pneumonia Requiring Mechanical Ventilation, *JAMA* (Feb. 17, 2021), <https://jamanetwork.com/journals/jama/fullarticle/2776737>; S.V. Bhavani et al., Simulation of Ventilator Allocation in Critically Ill Patients with COVID-19, *Am. J. of Respiratory & Critical Care Med.*, Sept. 9, 2021; Sarah M. Kesler et al., Operationalizing Ethical Guidance for Ventilator Allocation in Minnesota: Saving the Most Lives or Exacerbating Health Disparities?, 3 *Critical Care Explorations* 1 (2021), www.ncbi.nlm.nih.gov/pmc/articles/PMC8202637/.

use of age as one factor.¹⁷ If age is predictive of benefit – albeit in opposite directions – for both ventilators and vaccines, it is difficult to defend its use in one context but not the other. Using age as a factor in distributing scarce ICU beds or ventilators could improve benefit while remediating disadvantage, by protecting younger but very ill people – often people with life-shortening disabilities or members of minority communities – who can benefit from treatment and who were excluded by the age-based prioritization of older patients for vaccines and therapeutics. One study concluded that a SOFA-only approach that excluded consideration of age would likely lead to “giving an older person with a poor prognosis a ventilator instead of a younger patient with a better prognosis” and to “prioritizing older White patients at the expense of younger BIPOC [Black, Indigenous, and People of Color] patients.”¹⁸

III VACCINES

As the pandemic progressed, interventions that forestall the need for critical care – ranging from new therapies for COVID-19 patients to vaccines that could prevent COVID-19 infection – became available but were often scarce. This part turns to the allocation of therapeutics and preventatives with a focus on vaccine prioritization and access. In this context, older Americans and Americans with disabilities were often given formal *priority* in written protocols, but this priority often did not translate into actual priority in access.

Few advocated benefit-insensitive (first-come, first-served or random) vaccine distribution. Nor was individualized assessment required: categorical inclusions and exclusions based on health status or age were typical. This likely reflects the fact that vaccines and therapeutics present less tension between addressing disadvantage and preventing harm: those whose disadvantage worsens their prospect of benefit from a ventilator or ICU bed also gain most in relative safety by becoming vaccinated.

Debates over vaccine prioritization focused on the list of categorical inclusions: which medical vulnerabilities would make a person eligible for early vaccination. The Centers for Disease Control and Prevention (CDC) listed specific medical conditions associated with greater COVID-19 risk, and many studies identified similar high-risk conditions.¹⁹ These studies, however, typically focused on infection fatality rates – that is, risk among those infected – rather than risk of exposure to COVID-19.

¹⁷ US Dep’t of Health & Hum. Servs., Section 1557: Frequently Asked Questions, HHS.gov: Civil Rights, www.hhs.gov/civil-rights/for-individuals/section-1557/1557faqs/index.html (last visited May 18, 2017).

¹⁸ Kesler et al., *supra* note 16, at 6.

¹⁹ Elizabeth J. Williamson et al., Factors Associated with COVID-19-Related Death Using OpenSAFELY, 584 *Nature* 430, 433 (2020), www.nature.com/articles/s41586-020-2521-4.pdf; Lyudmyla Kompaniyets et al., Underlying Medical Conditions Associated with Severe COVID-19 Illness Among Children, *JAMA Network: Open*, 4–6 (June 7, 2021), <https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2780706>.

Considering exposure risk would also recommend prioritizing people living in congregate settings and potentially those whose medical vulnerabilities preclude effective protective measures, such as masking or socially distancing. In contrast, conditions that do not affect exposure risk or risk if infected were not a basis for accelerated eligibility. Just as certain disabilities, such as those affecting mobility, qualify individuals for parking permits but others do not, conditions such as Down syndrome that increase risk of severe outcomes if infected should support early eligibility for COVID-19 vaccines, while conditions that do not increase risk should not.

Most states used an “honor system,” requiring only self-attestation of medical risk.²⁰ This approach avoided the need for documentation. But it allowed people at lower risk who misinterpreted guidance or willfully misrepresented their status to receive vaccines before people at higher risk. Additionally, while some states prioritized people with multiple risk-increasing conditions, few prioritized among risk-increasing conditions, even though certain conditions (such as Down syndrome or cancer) appeared to increase risk much more than others. Some states allowed providers discretion to manage medical eligibility.²¹ This approach might be superior to an “honor system” at matching eligibility to actual risk and be more inclusive of people at high risk because of uncommon conditions, but could present challenges for individuals without providers and introduce subjective judgment by providers. An alternative approach would be active outreach and provision of vaccine appointments to people with documented high-risk conditions, rather than requiring individuals to assess their own risk or provide proof.²² This approach was used in some health systems but presents challenges due to health system fragmentation.

In contrast to many states’ total removal of age from critical care distribution protocols, vaccine eligibility was often based on older age alone. Age was a reasonable access criterion given the sharply increasing risk of COVID-19 death at older ages. However, one-size-fits-all age cutoffs, such as 75, were criticized for exacerbating disadvantage and health disparities, given that disadvantaged people and people with certain disabilities face shorter life expectancies and higher COVID-19 risk earlier in life than others.²³ Empirical research also demonstrated that including factors other

²⁰ WBUR Newsroom, WBUR Town Hall Recap: Ethics and the Vaccine, WBUR News (Mar. 3, 2021), www.wbur.org/news/2021/03/02/vaccine-town-hall-part-3-qa.

²¹ Jeffrey Schweers, Florida Hospital to Receive COVID Vaccine for ‘Extremely Vulnerable,’ Tallahassee Democrat (Feb. 2, 2021), www.tallahassee.com/story/news/local/state/2021/02/01/florida-hospitals-covid-vaccine-coronavirus-extremely-vulnerable/4335840001/.

²² William F. Parker et al., Four Recommendations to Efficiently and Equitably Accelerate the COVID-19 Vaccine Rollout, *Health Affs.* (Feb. 10, 2021), www.healthaffairs.org/doi/10.1377/hblog20210204.166874/full/.

²³ Wendi C. Thomas & Hannah Grabenstein, People Over 75 Are First in Line to Be Vaccinated Against COVID-19. The Average Black Person Here Doesn’t Live That Long, ProPublica (Feb. 12, 2021), www.propublica.org/article/people-over-75-are-first-in-line-to-be-vaccinated-against-covid-19-the-average-black-person-doesnt-live-that-long.

than age was both more equitable and prevented more harm than age cutoffs.²⁴ In response, some states lowered age thresholds or permitted universal eligibility for certain populations, such as Federally Qualified Health Center patients.²⁵

A few states even attempted to use age as the only criterion for vaccine access, touting its administrative simplicity and strong correlation with risk.²⁶ These approaches quickly faced challenges for excluding individuals at high medical risk,²⁷ and they may have also been inconsistent with regulatory language interpreting the Age Discrimination Act, which prohibits the use of age as the sole determinant of access to treatment. These approaches were either revised or became moot with universal vaccine eligibility.

IV BARRIERS TO IMPLEMENTATION

While attempts to adopt non-discriminatory allocation policies are laudatory, these efforts alone will not be sufficient to ensure that older Americans and Americans with disabilities receive the care that they deserve during a public health crisis.

A Unconscious Bias

Even health care providers who lack discriminatory intent may nonetheless make decisions based on unconscious beliefs or attitudes about particular groups.²⁸ Over the past decade, experts have recognized implicit bias as a potential contributor to health disparities.²⁹ While race has been the primary research focus,³⁰ studies have also documented implicit bias on the basis of age and disability in health care.³¹ Sadly, the pandemic has further exposed socially pervasive ageism and ableism.

Importantly, research shows that, when health care professionals exhibit implicit bias, it lowers the quality of care that they provide.³² Unconscious bias against older

²⁴ Elizabeth Wrigley-Field et al., Geographically Targeted COVID-19 Vaccination is More Equitable and Averts More Deaths than Age-Based Thresholds Alone, 7 *Sci. Advances* eabj2099 (2021), www.science.org/doi/pdf/10.1126/sciadv.abj2099.

²⁵ Federally Qualified Health Centers Can Vaccinate Anyone They Serve, or, Vaccine News (Mar. 31, 2021), <https://covidblog.oregon.gov/federally-qualified-health-centers-can-vaccinate-anyone-they-serve/>.

²⁶ Brenda Leon, Some States Drop CDC Guidelines and Vaccinate People By Age Group, NPR: The Coronavirus Crisis (Mar. 3, 2021), www.npr.org/2021/03/03/972973668/some-states-drop-cdc-guidelines-and-vaccinate-people-by-age-group.

²⁷ Emily Brindley, Disability Rights Connecticut Files Federal Civil Rights Complaint Claiming State's Age-Based Plan for COVID-19 Vaccinations is Discriminatory, Hartford Courant (Feb. 25, 2021), www.courant.com/coronavirus/hc-news-coronavirus-new-rollout-disability-discrimination-complaint-20210225-ybxtwlgdggffs7kzsjgn72dzhq-story.html [<https://perma.cc/L7BK-CVGZ>].

²⁸ Chloë FitzGerald & Samia Hurst, Implicit Bias in Healthcare Professionals: A Systematic Review, 19 *BMC Med. Ethics* 1, 1 (2017).

²⁹ Irene V. Blair et al., Unconscious (Implicit) Bias and Health Disparities: Where Do We Go from Here?, *The Permanente J.*, 2011, at 71, 72–73.

³⁰ *Id.* at 71.

³¹ FitzGerald & Hurst, *supra* note 28, at 4, 11.

³² *Id.* at 13.

people and people with disabilities could influence seemingly impartial medical judgments about the kinds of resources an individual might require (including potential accommodations during treatment), the prospects of long-term survival, or the effect of permanent disabilities on short-term recovery. Unconscious bias is particularly salient to approaches that allow for physician discretion rather than a formalized scoring system. These biases could influence the outcomes of allocation approaches that incorporate subjective medical judgment or rely on providers' intuition and affect the provision of non-scarce resources to COVID-19 patients throughout their interaction with health systems. Thus, even well-intentioned health care providers who wish to provide inclusive COVID-19 treatment that conforms with applicable standards and policies could still make biased decisions because of their unconscious negative beliefs about older people and people with disabilities.

B *Lack of Access to Technology*

Many public health authorities relied on digital tools to connect eligible individuals with vaccination appointments. For example, states offer online registration systems for eligible residents that promise to notify them of appointments, often by text or email.³³ Interactive, web-based maps allow people to locate nearby vaccine providers.³⁴ Unfortunately, relying too heavily on these technologies may exclude some of the most vulnerable Americans. While older adults are online more now than ever before, a digital divide still exists between older and younger Americans.³⁵ Older, poorer, and less educated seniors are even less likely to be comfortable with digital technology.³⁶ Troublingly, some of these differences fall on racial lines: older Black Americans are significantly less likely to go online or have broadband access.³⁷

Preexisting access barriers related to technology may likewise impede vaccination for people with certain kinds of disabilities and health conditions. Despite the Americans with Disabilities Act,³⁸ much of the Internet remains inaccessible for people with disabilities that affect vision, communication, and dexterity. One study found that 98 percent of the home pages of one million popular websites failed to meet web accessibility standards.³⁹ Thus, reliance on online tools to help locate vaccine sites and book appointments could inadvertently exclude people with disabilities.

³³ See, for example, COVID-19 Vaccinations in Maryland, Md. Dep't of Health, <https://coronavirus.maryland.gov/pages/vaccine> (last visited Apr. 29, 2021).

³⁴ See, for example, GISCorps COVID-19 Resources, <https://covid-19-giscorps.hub.arcgis.com/> [<https://perma.cc/T4TB-5BZG>] (last visited Apr. 6, 2023).

³⁵ Monica Anderson & Andrew Perrin, Technology Use Among Seniors, *Pew Rsch. Ctr.* (May 17, 2017), www.pewresearch.org/internet/2017/05/17/technology-use-among-seniors/.

³⁶ *Id.*

³⁷ Aaron Smith, African Americans and Technology Use, *Pew Rsch. Ctr.* (Jan. 6, 2014), www.pewresearch.org/internet/2014/01/06/african-americans-and-technology-use/.

³⁸ 42 U.S.C. §§ 12101 et seq.

³⁹ The WebAIM Million: An Annual Accessibility Analysis of the Top 1,000,000 Home Pages, WebAim (Mar. 30, 2020), <https://webaim.org/projects/million/#facts>.

C Lack of Access to Transportation

Despite a diversity of locations, both seniors and people with disabilities encounter serious transportation barriers getting to vaccination appointments. Many older adults no longer drive and lack access to convenient public transportation.⁴⁰ In fact, in the United States, about 1.6 million adults over 65 are homebound,⁴¹ and over half of homebound older Americans have at least one additional barrier to vaccination, such as living alone or not having access to technology.⁴² Complicating matters more, they may also not have friends or family members who can drive them places.⁴³ Vaccination sites, which are often hospitals or pharmacies, may be prohibitively far for seniors, who generally receive health care through individual physicians or health centers.⁴⁴ One study from late 2020 found that, in 12 percent of counties, about half of older adults would have to travel more than ten miles for a vaccine.⁴⁵ Again, race is a complicating factor. Only 3 percent of White older adults are homebound, compared to 15 percent of Hispanic older adults and 7 percent of Black older adults.⁴⁶

Similarly, over 25 million Americans with disabilities report travel limitations, and 3.6 million people with travel-limiting disabilities are homebound.⁴⁷ As a group, people with disabilities are less likely to drive than people without disabilities, meaning they may need assistance to reach vaccine sites.⁴⁸ People with disabilities also encounter barriers in both public transportation and in paratransit.⁴⁹ Stations may be inaccessible; lifts and ramps may be inoperable; drivers may not stop for people with visible disabilities; scheduled pick-ups may be difficult to book, run late, or be completely missed; and travel times may be excessively long.⁵⁰ In addition, buildings or medical equipment may be inaccessible,⁵¹ and medical facilities may lack

⁴⁰ Jenni Bergal, *Without a Ride, Many in Need Have No Shot at COVID-19 Vaccine*, Pew Charitable Tr. (Feb. 1, 2021), www.pewtrusts.org/en/research-and-analysis/blogs/stateline/2021/02/01/without-a-ride-many-in-need-have-no-shot-at-covid-19-vaccine.

⁴¹ Emma Nye & Martin Blanco, *Characteristics of Homebound Older Adults: Potential Barriers to Accessing the COVID-19 Vaccine Issue Brief*, US Dep't Health & Hum. Servs. (Apr. 6, 2021), aspe.hhs.gov/homebound-vaccine-covid.

⁴² *Id.*

⁴³ Bergal, *supra* note 40.

⁴⁴ Nye & Blanco, *supra* note 41.

⁴⁵ *Some States May Lack Facilities for Administering COVID-19 Vaccine to Residents*, W. Health (Dec. 16, 2020), www.westhealth.org/press-release/states-lack-facilities-for-administering-covid-19-vaccine/.

⁴⁶ Nye & Blanco, *supra* note 41.

⁴⁷ Stephen Brumbaugh, *Travel Patterns of American Adults with Disabilities*, US Dep't of Transp. (Sept. 2018), www.bts.gov/sites/bts.dot.gov/files/docs/explore-topics-and-geography/topics/passenger-travel/222466/travel-patterns-american-adults-disabilities-11-26-19.pdf.

⁴⁸ *Id.*

⁴⁹ Jill L. Bezyak et al., *Public Transportation: An Investigation of Barriers for People with Disabilities*, 28 *J. Disability Pol'y Stud.* 52 (2017).

⁵⁰ *Id.*

⁵¹ *Access to Medical Care for Individuals with Mobility Disabilities*, US Dep't of Just. (Feb. 28, 2021), www.ada.gov/medicare_mobility_ta/medicare_ta.htm.

sufficient communication supports such as interpreters, qualified readers, informational materials, and accessible kiosks.⁵² These same issues could likewise impede vaccine access, even after a person with a disability manages to secure transportation and arrive at the vaccination site.

V RECOMMENDATIONS

Drawing from the lessons of the pandemic, we make the following recommendations for ensuring the fair allocation of limited health care resources.

A *Debiasing*

Given health care providers' reported biases regarding older adults and people with disabilities and the vulnerability of those populations during the pandemic, debiasing will be essential to ensuring fair treatment and better outcomes. Studies have shown that interventions can effectively reduce ageism and improve attitudes toward older adults.⁵³ Reducing or eliminating negative stereotypes could then, in turn, reduce the effects of implicit bias, including in the context of health care. Effective strategies consist of education, intergenerational interactions, or some combination of the two.⁵⁴ Similarly, incorporating disability perspectives into medical education and practice could have a debiasing effect.⁵⁵ In addition, removing barriers to equitable treatment for older adults and their caregivers is essential. These factors, for instance, might support allowing many older adults and patients with certain disabilities to be accompanied by appropriately protected companions, even during a pandemic.

B *Improving Access*

The use of specific disabilities as a priority factor in vaccine allocation is a welcome attempt to address the outsized burdens that people with certain disabilities have borne during the COVID-19 pandemic. Yet simply listing older adults and people with disabilities as priority groups in vaccination plans will not by itself ensure that these populations receive vaccines.

Offering more vaccines in settings used by people with risk-increasing disabilities, and reaching out proactively rather than requiring people to prove eligibility, could have both improved the fairness of allocation and practically eased the process of

⁵² Health Care and the Americans with Disabilities Act, ADA Nat'l Network, <https://adata.org/factsheet/health-care-and-ada> (last visited Apr. 29, 2021).

⁵³ David Burnes et al., Interventions to Reduce Ageism Against Older Adults: A Systematic Review and Meta-Analysis, 109 *Am. J. Pub. Health* e1, e5–e7 (2019).

⁵⁴ *Id.* at e1.

⁵⁵ Heidi L. Janz, Ableism: The Undiagnosed Malady Afflicting Medicine, 191 *Canadian Med. Ass'n J.* E478, E479 (2019).

obtaining vaccines for people with disabilities. In March 2021, President Biden took action to improve vaccine access for both older Americans and Americans with disabilities.⁵⁶ His plan includes a partnership between the CDC and the Administration for Community Living to provide almost \$100 million in grant funding to networks for seniors and people with disabilities across the country with the goal of addressing barriers to vaccination.⁵⁷ The Administration for Community Living has already identified a number of promising strategies for combating many of the challenges described above. States, municipalities, and community partners can ensure that websites and materials are accessible and easy to understand, and that hotlines are available as an alternative to schedule appointments.⁵⁸ Advocacy organizations and networks can act as partners to help schedule appointments, provide transportation, and offer reminders.⁵⁹ Organizations can also help to identify access barriers at vaccination sites and to locate vaccination sites friendly to older adults and people with disabilities.⁶⁰ And finally, all stakeholders – states, municipalities, and community partners – can collaborate to facilitate mobile and in-home vaccinations.⁶¹

VI CONCLUSION

Several states adopted openly discriminatory resource allocation policies, especially in the early days of the pandemic. Much attention was given to these policies, and they were revised before being put into place. Most disparities, however, appeared to stem from problems in implementation. Regardless of crisis standards of care and vaccine distribution policies, older Americans and Americans with disabilities may still experience disparities. These issues do not disappear in the course of a pandemic, when tensions run high and resources run low. We have certainly learned many lessons from the current public health crisis. However, if we are serious about health equity in the future, adopting non-discriminatory and inclusive policies will not be enough. We must address the causes of health disparities in health care delivery to ensure that these laudable standards do not falter at implementation.

⁵⁶ HHS to Expand Access to COVID-19 Vaccines for Older Adults and People with Disabilities, US Dep't Health & Hum. Servs. (Mar. 29, 2021), <http://web.archive.org/web/20210329191126/www.hhs.gov/about/news/2021/03/29/hhs-to-expand-access-to-covid-19-vaccines-for-older-adults-and-people-with-disabilities.html>.

⁵⁷ *Id.*

⁵⁸ Strategies for Helping Older Adults and People with Disabilities Access COVID-19 Vaccines, Admin. Cmty. Living (Apr. 2021), https://acl.gov/sites/default/files/2021-04/ACLStrategiesVaccineAccess_Final.pdf.

⁵⁹ *Id.*

⁶⁰ *Id.*

⁶¹ *Id.*