Supplement to

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Racial Disparities in Cancer Care | Access to Care for Transgender Veterans | Hepatitis C Among US Veterans | Battling Tobacco Use at Home | HEALTH EQUITY | How Might the Provision of Culturally Competent Services Be Enhanced for American Indian and Alaska Native Veterans? | Improving Trends in Gender Disparities | Suicidality Among Hispanic and African American Veterans Following Surgery

APHA

# AJPH

A PUBLICATION OF THE
AMERICAN PUBLIC HEALTH ASSOCIATION

COVER: Teaming up for public health action among groups with differing viewpoints, values, ideologies, or perspectives has become more challenging – too many exist in bubbles. In this issue of *AJPH* we offer a new paradigm for expanding the notion of diversity to include diversity of thought and perspective from lived experiences.

Cover image and selection by Aleisha Kropf, Image Editor. Illustration by Lightspring/Shutterstock, printed with permission.

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*For science. For action. For health.*

Promoting public health research, policy, practice, and education is the *AJPH* mission. As we widen our scope to embrace global issues, we also sharpen our focus to support the needs of public health practitioners. We invite contributions of original unpublished research, opinion and commentary, and letters to the editor.

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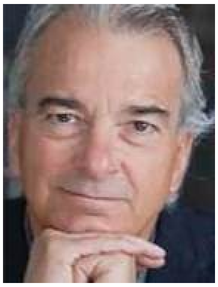
# Public Health Common Ground: The Proof by COVID-19



The theme of the *AJPH* special section "Building Common Ground," curated by associate editor Tanya Telfair LeBlanc and guest editors William Kassler and Michael Fine, is not novel for this journal. The idea is that people can team up and act together to improve public health even when different reasons motivate them.

In 2018, we began to promote the "public health dialogue" and invited points and counterpoints from experts with shared concerns but vastly different opinions about key issues, such as public health advocacy, the environment, health insurance, and structural racism (https://bit.ly/3Qf5CYa).

In 2020, pairs of public health professionals with different political leanings discussed issues such as vaccine hesitancy, the future of the Centers for Disease Control and Prevention (CDC), the 10 essential public health services, the future of state and local health departments, whether there is still a role for primary care, and the pathway to health care equity (https://bit.ly/3KfrQFu).

In 2021, the exchanges covered sensitive issues, such as racism and structural racism, gun violence prevention, single-payer health insurance, public health advocacy, the Environmental Protection Agency, and more (https://bit.ly/3OatBVx).

In 2023, we had different opinions expressed about what could be done to support pregnant persons following the 2022 decision of the US Supreme Court abrogating *Roe v Wade*: the federally protected right to abortion (https://bit.ly/3rLfMWa).

The public health response to COVID-19 has brought a new collection of evidence that, when the health of the public is at risk, public health personnel rally to act using the same strategies, such as mass vaccination in the case of COVID-19. It was quickly scientifically obvious that the vaccine saved lives and that older people were at greatest risk for morbidity and mortality from COVID-19. All US states rushed to vaccinate those aged 65 years and older. The national coverage was 97% (https://bit.ly/3Ki0FKe).

Even states that achieved the least coverage, Arkansas (83%) and Alabama (84%), made major efforts to protect their populations. The efforts were even greater than state averages suggest because these two states also have large fractions of their populations living in rural areas: Arkansas is 41% rural and Alabama is 44% rural (much more than California at 5%, Massachusetts at 8%, and New York at 12%; US Census, 2010). Consider urban areas where access to vaccination is easier: coverage in Little Rock (Pulaski County, AR) was 86% and in Birmingham (Jefferson County, AL) was 93%.

When it came to protecting older persons, there was no ideological polemic or political polarization. The job was just done. It could have been done better. It could have been done more equitably. But the numbers irrefutably show that the COVID-19 vaccination undertaking was a national effort that the public health leadership helped coordinate and achieve.

Also, public health progress cannot be assigned to a specific party: the Occupational Safety and Health Administration (Richard Nixon, R), the President's Emergency Plan for AIDS Relief (George W. Bush, R), the different parts of Medicare (Lyndon B. Johnson, D; George W. Bush, R), the Affordable Care Act (Barack Obama, D), the Environmental Protection Agency (Richard Nixon, R), and so on. Unfortunately, policymakers are sometimes united in degrading public health, as in the case of the weakening and marginalization of the CDC that has been evolving for decades across Republican and Democratic administrations.

Everyone contributing to *AJPH* agrees that disagreement should be overcome using current and historical evidence. Publishing such evidence is precisely the mission of *AJPH*. It is an attempt to link people of radically different political views who have in common a dedication to public health and an agreement that policy should be anchored as much as possible in objective bases. Dialoguing may sometimes be frustrating, but it enriches our understanding of how others live and think. It helps everyone to be more effective. AJPH

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## 47 Years Ago

### The Cigarette Smoking/Lung Cancer Hypothesis

The persistent controversy regarding the role of smoking in lung cancer cannot be resolved merely by escalating the force of arguments pro and con. . . . Study of the arguments from all sides reveals some common ground upon which we might proceed more dispassionately. While debating the relative *importance* of smoking, we, can, nevertheless, agree that cigarette smoking is at least *included* in the array of causal factors. A concern for appropriate public health policies and activities relevant to smoking and cancer follows from this agreement. Continued divisiveness around the precise contribution of smoking has potentially two tragic consequences for policy. On the one hand, to insist that smoking independently accounts for lung cancer is to construct an obstacle to future investigations and reappraisals of environmental carcinogens. On the other hand, there can be no question that widespread cessation of smoking would result in more good than harm. To dilute the importance of smoking is to foolishly divert us from an important goal.

*From* AJPH, *February 1976, pp. 132–133.*

## 53 Years Ago

### Public Health and the Political Process—Lessons From the Passage of Medicaid

Though the APHA may differ with the other groups on certain matters, it is nonetheless urgent that specific effort be directed at building coalitions for specific public health measures wherever possible. To a much greater extent than in the past, public health must take the leadership to develop these alliances with diverse types of organizations, not only for research and training but also to develop health delivery programs. . . . Political strategy must be developed and potential allies sought. . . . It is interesting that in so many fields involving public-interest subjects, political strategy is left to the opposition. Does public health wish the AMA and its state and local counterparts, the chambers of commerce, or the commercial insurance industry, or even consumers to be the dominant voices on health and medical care? If not, what is public health doing to organize public health advocates?

*From* AJPH, *September 1970, p. 1697.*

# US Supreme Court Doctrines in COVID-19 Cases Threaten Public Health

*Mark A. Rothstein, JD*

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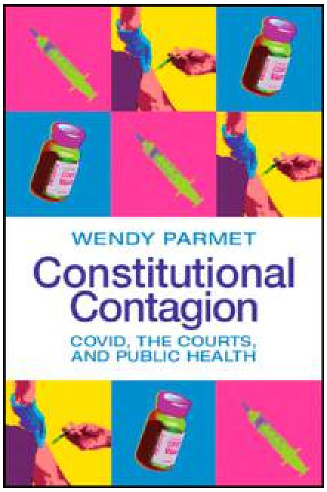

**Constitutional Contagion: COVID, the Courts, and Public Health**
**By Wendy E. Parmet**
Cambridge, UK: Cambridge University Press; 2023
248 pp; $24.99 (paperback), $75.00 (hardcover)
ISBN-10: 1009093835; ISBN-13: 978-1009093835

The mission of public health is to protect, preserve, and promote the health of the population. The challenge is to advance public health while also respecting such individual concerns as autonomy, privacy, and liberty in a diverse society. The conflict between population and individual interests also characterizes the inevitable legal disputes over public health policies, especially during public health emergencies. Historically, US courts have been highly deferential to reasonable and necessary public health measures to combat contagious diseases, even if they restrict individual liberties. That is no longer the case.

In her important and disquieting new book *Constitutional Contagion: COVID, the Courts, and Public Health*, Professor Wendy E. Parmet, JD, of Northeastern University reviews the history of constitutional law decisions on public health by the US Supreme Court and concludes that a series of COVID-19 era decisions markedly depart from longstanding and beneficial holdings, with dire consequences for public health.

The book's nine chapters include a discussion of *Roman Catholic Diocese of Brooklyn v Cuomo*,[1] the 2020 Supreme Court case in which the newly expanded conservative majority invalidated social distancing measures ordered by the State of New York (chapter 1); the principle of *salus populi suprema lex* ("the health of the people is the highest law"; chapter 2); the cases ending deferral to public health measures (chapter 3); the initial COVID-19 cases before the Supreme Court (chapter 4); the "negative liberty" rationale used in striking down mandatory masking and vaccination requirements (chapter 5); the lack of "positive liberty" public health protections (e.g., clean air and water; chapter 6); the unequal effects of the pandemic on minority and vulnerable groups (chapter 7); the deadly consequences of COVID-19 misinformation (chapter 8); and the politics of the pandemic (chapter 9). Each of these topics would justify a separate volume, but Parmet succeeds in weaving them together in a compelling, but depressing narrative.

To put the coverage of the book in context, in the US Constitution the previously independent colonies ceded certain limited powers to the new federal government, including foreign affairs and interstate commerce. All other powers not expressly given to the federal government remained with the states, including the "police power" to protect the health, safety, and morals of the people. That is why the states still have primary jurisdiction over public health.

The Bill of Rights granted individuals important liberties, including prohibiting the government from limiting freedom of speech, press, religion, and assembly and establishing the right to be free from unreasonable searches and seizures. These are considered negative rights because they restrict what the government may do. By contrast, the Constitution does not contain such positive rights as an individual right to education, health care, housing, or employment.

Parmet makes the tension between negative and positive rights and liberties a central focus of her book. I share my perspectives on some of the major themes explored in the book.

## NEGATIVE LIBERTY

Constitutional contagion, the first part of the book's title, is described as "the prioritization of some conceptions of liberty over others in ways that endanger our health" (p. 221). The rationale for judicially favoring public health measures over individual liberties is eloquently captured by Justice John Marshall Harlan's famous 1905 opinion in *Jacobson v Massachusetts*, which upheld compulsory vaccination against smallpox: "There are manifold restraints to which every person is necessarily subject for the common good. On any other basis organized society could not exist with safety to its members."[2] Judicial deference to the exercise of police powers by the states, reluctance to second-guess public health experts, and recognition of the primacy of the common good characterized Supreme Court precedent for more than a century.

By late 2020, the newly dominant conservative bloc on the Supreme Court, including three new justices appointed by President Donald Trump, replaced common good with negative liberty as the driving force in deciding COVID-19 cases, primarily based on freedom of expression, religion, and bodily integrity. Although nonconformity and rugged individualism are cherished American values, prioritizing individual interests over the common good, especially during a pandemic, represents a grievous threat to public health.[3]

COVID-19 era judicial decisions have been especially deferential to claims of religious liberty in challenges to vaccination mandates, notwithstanding the fact that the leaders of virtually all major religions in the United States endorsed COVID-19 vaccination, including Catholics, Protestants, Mormons, Buddhists, Jews, and Muslims.[4] According to Pope Francis, being vaccinated was "the moral choice because it is about your life but also the lives of others."[5]

As a legal principle, religious liberty has never been absolute, and courts weigh it against other compelling interests, including public health. The duty to accommodate religion, based on First Amendment freedom of religion and statutory nondiscrimination provisions (e.g., Title VII of the 1964 Civil Rights Act, prohibiting employment discrimination), is not limited to established religions or dependent on specific religious doctrines. Although opposition to public health measures based on personal, political, or moral views is not in the ambit of religious liberty, many public officials and employers find it uncomfortable to interrogate individuals about the nature and sincerity of their beliefs and therefore grant religious exemptions from public health requirements.[6]

Irrespective of an individual's reason for opposing social distancing, masking, vaccination, and other measures necessary during a serious disease outbreak, public health experts have urged that the health of the population should take precedence over negative liberty claims.

## MAJOR QUESTIONS

In the early part of the 20th century, the Supreme Court held that the authority of state and local governments to regulate public health was limited and did not extend to economic regulations, such as maximum work hours and child labor.[7] The Supreme Court abandoned this restrictive view of government power in a series of cases upholding congressional enactments during the New Deal. Courts consistently upheld federal and state laws regulating economic and public health issues if there was a constitutional basis for the enactment, such as the Commerce Clause, which gives the federal government the authority to regulate interstate commerce.

Furthermore, because of the increased complexity of regulatory matters, administrative agencies with technical expertise (e.g., US Food and Drug Administration, US Environmental Protection Agency) were authorized to clarify and implement statutory language, and courts upheld these regulations if they were reasonable and within the statutory delegation of authority. The Supreme Court stated that courts should defer to administrative agencies if the agency's interpretation of its enabling legislation was "not unreasonable."[8]

COVID-19 era Supreme Court decisions reversed course in striking down several public health regulations. In *Alabama Association of Realtors v Department of Health and Human Services*,[9] the Supreme Court invalidated a nationwide moratorium on evictions in counties with high levels of COVID-19 transmission in an effort to prevent further spread of the virus. Relying on the new "major questions doctrine," the majority opinion stated there was no evidence that Congress intended the Public Health Service Act to authorize the regulation of landlord–tenant relations. "We expect Congress to speak clearly when authorizing an agency to exercise powers of vast economic and political significance."[9]

Similarly, in *National Federation of Independent Business v Department of Labor*,[10] the Supreme Court struck down the Occupational Safety and Health Administration's emergency temporary standard for COVID-19, holding that the secretary of labor lacked the statutory authority to issue such a sweeping standard in the absence of an explicit congressional directive.[11] Thus, a statute specifically designed to protect occupational safety and health was deemed not to authorize regulating workplace exposures to a deadly virus that had already killed thousands of workers because transmission also occurred beyond the workplace.

The major questions doctrine, applied in these and other cases, represents extraordinary judicial activism that undermines the separation of powers and threatens to curtail an incomprehensibly broad range of government actions to protect public health.

## IMPORTANCE OF PUBLIC HEALTH LAW

Alexis de Tocqueville's classic study, *Democracy in America*, was published in 1835. Among his keen observations about American life, he wrote, "There is almost no political question in the United States that is not resolved sooner or later into a judicial question."[12(p257)] Nearly two centuries later, this statement is even more apropos, especially as applied to public health. During the first 18 months of the COVID-19 pandemic, more than 1000 lawsuits were brought to challenge state and local public health actions.[13] There is little doubt that litigation will continue to play a pivotal role in nearly every public health issue for the foreseeable future, including abortion, contraception, childhood immunization, and responses to disease outbreaks.

For those immersed in public health law, Parmet's insightful scholarship provides an unparalleled history of doctrinal development, connecting the dots from the classic cases of the last century to the present. For nonlawyers, it may be a more challenging read, but it is worth the effort, and her analysis of the historical context and political implications of the cases rings true.

The book illustrates for all readers that public health measures are authorized by law, implemented pursuant to law, and constrained by law. For better or worse, the future of public health in the United States will depend not only on scientific advances and equitable access to essential public health measures but also on whether the courts rely on legal doctrines based on the common good or individual liberty. AJPH

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The author has no conflicts of interest to declare.

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# Letting the Past Speak to the Present (and the Future)

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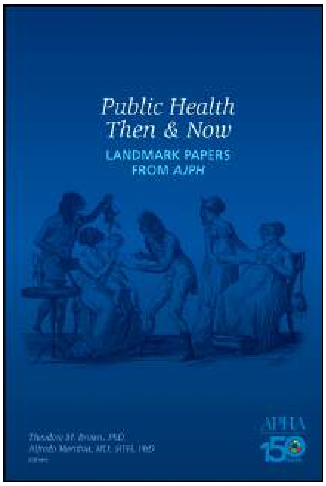

**Public Health Then & Now: Landmark Papers From *AJPH***
**By Theodore M. Brown and Alfredo Morabia**
Washington, DC: American Public Health Association; 2022
600 pp.; nonmember price: $110.00, member price: $77.00
ISBN(s): 978-0875533261; 978-0875533278

The edited volume with its collection of articles reviewed here is a worthwhile reading journey through time and a multidimensional broadening of horizons. To commemorate the 150th anniversary of the American Public Health Association (APHA) in 2022, the association's official journal, *AJPH*, has published a special issue in the form of an edited book that presents 30 selected articles from *AJPH*'s "Public Health Then and Now" (PHTN) article category.

The beginnings of the PHTN section in *AJPH* date back to 1971, when George Rosen was editor-in-chief. Rosen emphasized the combination of historical and public health perspectives.[1] After Rosen's death in 1977, several generations of APHA leadership and the *AJPH* Editorial Board continued Rosen's mission.[2] Today, PHTN articles remain an essential feature of *AJPH*, contributing "fundamental perspectives on the past, present, and future of public health."[3(p2)] The primary motivation for the PHTN section is to provide a link between public health historians and practitioners and thus between "historical events and current public health realities."[3(p2)] PHTN articles are historical analyses of issues that have current relevance or can in some way be related to the present or the future.[2] Thus, PHTN articles are historical contextualizations of today's challenges, characteristics of past events, successes and failures, breaks and continuities, and similarities and differences between "then" and "now."

The book under review is edited by Theodore M. Brown and Alfredo Morabia (*AJPH*'s current editor-in-chief), who, as renowned experts in the history of public health and epidemiology, have decades of experience in these fields and thus embody the bridge between history and public health. From more than 350 PHTN articles published since the 1970s, the editors selected 30 landmark essays written by eminent experts in history, public health, or both. To make this selection, the editors each took the effort to reread all PHTN articles and then rate them according to their preferences. After reconciliation, they eliminated articles that covered similar topics. The articles finally selected are presented in order of their publication date. Although there is one article from the 1970s and two from the 1980s, most were published since the 1990s (up to and including 2019). The selected articles focus on the United States in the 20th century. The articles were only slightly modified and reprinted more or less in their original form.

A landmark, by definition, is an object that is easily seen from a distance and that allows someone to determine their location. Reading through the articles, it is immediately clear that, indeed, these landmark articles have been seen. If we take citations as a (limited) measure of visibility, the 30 selected articles bring together more than 3200 Google Scholar citations (as of June 2023). But visibility is of course much broader than citations, and impact is even harder to measure. I am convinced that these and many other PHTN articles have been read by thousands of public health scientists and practitioners or have been incorporated into teaching, thus influencing younger generations of public health professionals.

The selected articles are testimonies of their time—products of the period and the context in which they were written—not only in terms of the topics, concepts, and methods addressed but also in their argumentation and wording. In this sense, the articles themselves are quasihistorical sources. Each generation makes new historical assessments of the past. The timeless basis for this has been created in this impressive book by reproducing the articles in their original form. The past is left to speak for itself, and the interpretation is left to present and future readers, who will read these articles anew and differently as their distance from them increases.

In addition to the careful, diversified, and stimulating selection of articles, the main achievement of the two editors lies in their introduction, in which they map the 30 selected articles into major thematic areas and briefly summarize the main arguments of all the articles.[3] Because the editors' selections are one of the strengths of the book and should therefore be respected, this review will not highlight individual articles from the book in the sense of a further selection (all details can be found on the official Web site: https://ajph.aphapublications.org/doi/book/10.2105/9780875533278). Although the selected articles look back, the themes identified by the editors read like an agenda of contemporary major issues in public health:

- the relationship between public health and medicine (three articles),
- infectious diseases in a social context (e.g., tuberculosis, malaria, pandemics; six articles),
- chronic diseases (three articles),
- challenges to public health authority (four articles),
- addictions and harm reduction (three articles),
- occupational health (three articles),
- social labeling and racial and ethnic stigma (two articles),
- environmental challenges and opportunities (two articles),
- social movements and social critique (two articles), and
- data collection (two articles).

In the reviewer's opinion, this is a thematic panorama that does not leave many gaps with regard to the history of public health in the United States across the 20th century.

The selection of 30 articles is both the strength of the book and inevitably its only "limitation": the 30 selected articles represent only about 10% of all PHTN articles published to date. And the 90% of articles not in the book are no less worth reading. In addition, new PHTN articles are being published all the time. Interested readers will have to search for themselves to benefit from the full range of the PHTN treasury. Hopefully, as many public health professionals as possible will do so.

In public health, every new challenge is a mixture of what is already known and experienced, on the one hand, and what is new and surprising, on the other, in a context that may have changed. For the known part, it would be negligent not to draw on experience and experiential knowledge (that would be making the same mistakes over and over again). And also for the new and surprising part, it helps to have a toolbox of possible courses of action that can be adapted to the new context. The ability to draw on experience (both positive and negative) and thus on history (whether recent or distant) is, therefore, essential in the field of public health. And this experiential knowledge is acquired by professionals, institutions, and a field as a whole over decades of work and is passed on to subsequent generations.

But how does this knowledge transfer work in public health? Public health experts often report that there is a kind of trainee program in which experienced experts pass on their quasipersonalized experiential knowledge to younger colleagues. Then there is education and training, where it depends on how much importance teachers and curriculum developers attach to the inclusion of the historical perspective. On a more mediated and collective level, there are literature and data, which, thanks to the open access movement and increasing digitization, are becoming increasingly accessible, even retrospectively. Another possibility is public health journals that open the door to historical perspectives, for example with special sections. *AJPH*, with its PHTN section, has been a pioneer in this regard. And the book reviewed here is just another testimony to this vital commitment.

However, when it comes to bridging history and public health, too much still depends on interested individuals or editors. This connection should be more institutionalized, and more journals should follow *AJPH*'s lead to carry these bridges into the future. As history continues to be written, one can only hope that future editors of *AJPH* (and other journals) will keep the doors wide open to historical perspectives so that public health history continues to be heard and disseminated more often than just a little now and then. AJPH

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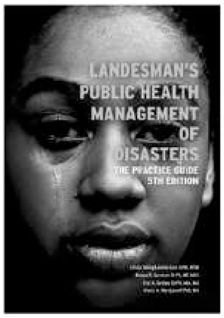

# Looking Back: Victimization of Transgender Persons and the Criminal Legal System

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Until 2016, the National Crime Victimization Survey (NCVS) lacked adequate data on gender identity, a prerequisite for measuring and understanding the victimization of transgender persons. The measure newly introduced in that year asked about sex assigned at birth and offered transgender as a response option to the question about gender identity. Although there continues to be no measure of nonbinary identity and transgender persons appear to be undercounted in the NCVS,[1] this is a major improvement. In their analysis, Flores et al.[2] were the first to leverage the newly available measure by pooling the 2017–2018 NCVS data, and they described rates of personal and household victimization of transgender persons nationally.

Given the quality and the weight of the NCVS in academic and policy conversations around crime and public safety, the study by Flores et al. was timely and valuable. They found that transgender persons reported personal victimization at a rate four times higher than cisgender individuals and twice the rate of household property victimization. Only about half of victimizations were reported to law enforcement. These findings will serve as a springboard as I highlight the endemic victimization of transgender persons in and by the criminal legal system ostensibly designed to provide them, like all citizens, with protection and safety.

According to national estimates from the 2011–2012 National Inmate Survey, the largest-ever survey of incarcerated individuals in the United States, 40% of transgender persons incarcerated in state and federal prisons have been sexually victimized over the past year (or since admission to the facility, if they were incarcerated for < 12 months) by another incarcerated person or facility staff member, as compared with 4% of their cisgender counterparts.[3] This disparity in the prevalence of victimization is many times higher than the disparity in the NCVS community-based sample reported by Flores et al.[2] In jails, sexual victimization of transgender persons was estimated at 27%, in comparison with slightly more than 3% among cisgender persons.

In community samples, rates of victimization are high but much lower than in jails and prisons. The largest and most reliable source of self-reported data on transgender persons in the community is the 2015 US Transgender Survey.[4] Among the survey participants who reported having been incarcerated in jail, prison, or juvenile detention in the year preceding the survey, 20% were sexually assaulted by facility staff or other incarcerated individuals, and 23% were assaulted physically. When asked about victimization in the community, 13% reported having been physically attacked in the past year, whereas 10% were assaulted sexually. Rates are consistently higher among transgender persons of color and those involved in the underground economy.

These figures unequivocally depict American jails and prisons as much more dangerous spaces than the community. Yet, institutions of the criminal legal system increase the risk of victimization in the community as well, as police and other law enforcement agencies engage in practices similar to those that take place inside jails and prisons.[5]

In the US Transgender Survey sample of 27 715 participants, 40% reported having interacted with police or other law enforcement officers in the past year.[4] Of these participants, 58% (who also reported that officers thought or knew they were transgender) reported mistreatment or harassment by police, ranging from misgendering to sexual assault. Furthermore, 57% of the participants reported that they were somewhat or very uncomfortable asking the police for help if they needed help. One third of Black transgender women who interacted with law enforcement officers who thought or knew they were transgender reported that officers assumed they were sex workers.

These findings are devastating for public health in general and transgender health specifically. Because of high rates of bias-motivated violence, discrimination, and barriers in accessing adequate health care, transgender persons are at an increased risk of poor mental health.[6] At the same time, incarcerated persons with psychiatric disorders are at higher risk of being victims of crime and suicide inside jails and prisons.[7] It is for these reasons that the transgender population depends perhaps more than any other population on protection and care while incarcerated, yet it appears to receive the least of both. Even though prisons are the only places with a legal mandate to provide health care, they are notorious for delivering substandard care, and this is especially the case for transgender persons, who rarely have access to gender-affirming treatments by adequately trained medical personnel.[8]

Victimization in jails and prisons also has consequences for recidivism by reducing the ability of formerly incarcerated individuals to successfully reintegrate into the community after serving time behind bars.[7] It entraps transgender persons in the revolving door of incarceration as they contend with the weight of trauma and associated psychological distress, often left untreated because of low rates of health care coverage[9] in comparison with cisgender individuals. Transgender persons may also avoid medical settings, where they are often exposed to prejudice, disrespectful behavior, and inadequately trained medical professionals, among other barriers.[6]

Moreover, victimization and neglect send a political message when violence is motivated by hate or bias and when it predominantly takes place in public institutions. The message loudly conveys that the lives of transgender persons and their status as citizens in a democratic society matter less. It should thus be no surprise that transgender victims avoid seeking help from public institutions essential to their well-being, whether law enforcement institutions or hospitals.[10]

In addition to the physical victimization examined by Flores et al., transgender persons are exposed to less obvious and insidious forms of institutional mistreatment that underlie individual acts of bias-motivated violence. The role of the criminal legal system must be considered more broadly within what sociologists have described as legal violence, "the normalized but cumulatively injurious effects of the law."[11(p1380)] In a similar vein, law professor Dean Spade used the term administrative violence to describe the harmful impact of "purportedly banal and innocuous daily administration of programs, policies, and institutions."[12(p73)] Although these forms of violence cannot be easily measured, their effects are wide-ranging and profound, and without them more obvious forms of physical and psychological violence would be much less likely. We must invest in research agendas that consider these institutional and individual forms of violence as connected and mutually dependent.

A consequential instance in which administrative violence meets physical force is at the point of gender classification in jails and prisons; this is where administrative violence sets the stage for other forms of violence.[12] Most jails and prisons assign incarcerated transgender persons according to sex assigned at birth.[13] This practice continues despite the 2003 Prison Rape Elimination Act guidelines, which stipulate that housing and programming decisions involving transgender and intersex persons cannot be based solely on genital status and that facility staff must give serious consideration to the individuals' views regarding their safety. Implementation of these guidelines is rare and falls far short of protecting incarcerated transgender persons. The continuing practice of assigning transgender persons to housing facilities on the basis of external genitalia or sex assigned at birth has horrific consequences.[14] A study in California showed that the prevalence of sexual assault among transgender women housed in a prison for men was 13 times greater than the rate among cisgender men.[15]

But even if gender classification and housing decisions in jails and prisons start to change, that can only be a relatively small step forward. These institutions will continue to be infused with harmful and consequential binary conceptions of gender and sexuality that devalue individuals who do not fit dominant norms around what it means to be a man or a woman. These practices are especially harmful to poor and Black transgender persons who have to contend with the intersecting disadvantage of transphobia and structural racism inherent to carceral institutions.[8]

This violence takes place in a country where the incarceration rate among transgender persons is at least twice the rate of incarceration in the general population and several times higher among poor and transgender persons of color.[4] With this context in mind and the staggering rates of violence that clearly show how jails and prisons make transgender persons even less safe than in the community, we must ask whether incarceration constitutes cruel and unusual punishment that violates their fundamental human rights. As there continues to be no structural change and little accountability for institutions that expose transgender lives to extreme rates of social suffering, is it reasonable to expect that the same system will create and enforce fair and effective solutions to the crisis of its own making? AJPH

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# Policies Have Consequences: Measuring Excess Deaths During the COVID-19 Pandemic

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On September 20, 2017, Hurricane Maria, a category 5 hurricane, swept through Puerto Rico. Official reports claimed that 67 people had died, but experts worried that the storm might have claimed far more lives. Researchers turned to an established epidemiologic tool, the measurement of excess deaths, to address these concerns. The term *excess deaths* refers to the difference between observed deaths from all causes and the number that would be expected under normal circumstances. In the case of Hurricane Maria, excess death calculations revealed that the storm had actually claimed more than 1200 lives.[1]

## EXCESS DEATHS DURING THE COVID-19 PANDEMIC

The COVID-19 pandemic also raised fears of uncounted deaths, almost as soon as its virulence and lethality became apparent in spring 2020. The multisystem organ damage produced by the virus was not immediately clear to physicians, who first considered it a respiratory illness. Medical examiners used inconsistent methods to code causes of death. Concerns arose that some proportion of deaths attributed to other causes, such as heart disease or stroke, might have been miscoded COVID-19 deaths.

In addition to uncounted COVID-19 deaths, an increase in non–COVID-19 deaths was expected. Patients with life-threatening emergencies (e.g., unstable angina) were hesitant or unable to receive acute care, those with chronic illnesses often lacked access to providers or prescription medications, and acute psychological stresses induced by the pandemic, lockdowns, and socioeconomic upheaval precipitated fatal behavioral health crises (e.g., suicides, drug overdoses).

Excess death studies were launched around the world to quantify the number of uncounted deaths, and they immediately demonstrated that the pandemic was claiming more lives than news accounts suggested. In the United States, the Centers for Disease Control and Prevention (CDC) began reporting weekly death counts. The CDC also posted historical data on death counts for the same weeks in previous years, enabling researchers to model normal seasonal variation during prepandemic years and to use this benchmark of expected deaths to calculate excess deaths during the pandemic.[2–4]

The results were striking. For example, in an analysis published in this journal, Tatar et al.[5] estimated that total deaths in Florida during March to September 2020 were 15.5% higher than historical norms. Other studies reported that deaths were 20% to 40% higher than normal.[2–4] Explanations for the sizable gap included (1) uncounted or miscoded COVID-19 deaths in which the role of the virus was undocumented, or (2) deaths among people without COVID-19 who died from other causes because of complications induced by the pandemic, such as delayed access to care or emotional distress. (Conspiracy theorists—citing dubious evidence—claimed that the gap reflected deliberate underreporting of deaths to downplay COVID-19 or the alleged dangers of lockdowns, vaccines, or masks.)

## LESSONS LEARNED

A strength of excess death calculations is their objectivity. Deaths are a hard metric; they transcend debates about how causes of death are coded. During the pandemic, researchers could estimate the number of excess deaths with confidence, even when the precise causes of these deaths had yet to be clarified. The same was true for studies of all-cause mortality or life expectancy, metrics that were also agnostic to cause-of-death attribution. During the COVID-19 pandemic, all these studies—those examining excess deaths, all-cause mortality, and life expectancy—sounded the same warning: the United States was experiencing a massive death toll that was larger than widely believed, highly racialized, and far greater than losses in other high-income countries.[6–8]

Sadly, racialized health outcomes are nothing new in the United States, but the inequities during the COVID-19 pandemic were particularly horrific. People of color were more likely to be frontline workers, live in low-income communities, and have limited access to care. They were more vulnerable to infection, complications, hospitalizations, and excess deaths and experienced enormous losses in life expectancy.[9] Decreases in life expectancy in 2020 were as high as 3.70 years and 3.22 years in Hispanic and non-Hispanic Black populations, respectively, compared with 1.38 years in the non-Hispanic White population.[6]

The heavy death toll among people of color drew public attention to longstanding racial/ethnic inequities and the legacy of systemic racism, and it came at an interesting time. The George Floyd murder occurred in May 2020, soon after the pandemic began, unleashing a summer of social unrest and public outcry for meaningful systemic change. The moment energized nationwide antiracism initiatives but also incited a backlash from an increasingly hostile White supremacy movement.

The pandemic also drew international attention to the poor performance of the United States, arguably the richest country in the world. This too was nothing new. For decades, the United States has had a “health disadvantage”: Americans experience shorter lives and poorer health than people in other high-income nations, and the problem has worsened over time.[10] The disadvantage is not for lack of spending on health care, at which the United States excels, nor can it be blamed on singular causes such as obesity, opioids, or guns, as the evidence indicates something more systemic is to blame. Among the potential explanations are deficiencies in health care and public health services, a higher prevalence of unhealthy and risky behaviors, greater socioeconomic precarity, harmful physical and social environmental factors, and—at the macrostructural level—policies and social values that adversely affect downstream determinants of health.

## HOW STATES CONTRIBUTED TO EXCESS DEATHS

It is worth remembering that US health statistics are the product of 50 states. The COVID-19 pandemic offered a vivid reminder of the strong influence of state policies on health outcomes. The Constitution vests public health authority with the states, which have always made decisions on matters affecting health. Examples range from tobacco taxes and Medicaid expansion to speed limits, firearm legislation, and policies affecting the social determinants of health (e.g., minimum wage, earned income tax credits). Over time, the influence of state policy on health has deepened and states have become more politically polarized, resulting in a widening divergence in state health trajectories.[11] For example, the range in life expectancy among the 50 states has widened since the 1990s, partly because of divergent policy choices. Montez et al. demonstrated that states that embraced more conservative policy orientations experienced larger losses in life expectancy than those with more progressive orientations.[11]

State influence on health policy was illustrated vividly during the COVID-19 pandemic, when response plans divided sharply along party lines. Whereas “blue” states often adopted more proactive policies to reduce viral transmission, “red” states often challenged public health guidance and scientific data and resisted pandemic control measures, such as masking and vaccination mandates. The partisan divide created a macabre natural experiment in which the effects of state policy on death rates could be measured in real time in two groups of comparison states. The “control group,” states that weakly embraced or discouraged pandemic control measures, experienced longer surges in excess deaths during the initial outbreak in 2020.[4] They also experienced more excess deaths in 2021, when COVID-19 variants placed unvaccinated individuals at heightened risk. For example, during the Delta variant surge in fall 2021, Florida experienced more than triple the number of excess deaths as New York, even though the states had similar population counts.[12]

One mystery about 2021 is why the non-Hispanic White population—which should have been at lower medical risk (and was so in 2020)—experienced a larger decrease in life expectancy in 2021 (1.0 year) than the high-risk Hispanic and non-Hispanic Black populations (0.2 year and 0.7 year, respectively).[13] Although research is needed to fully explain why this occurred, one possibility is that those who rejected COVID-19 vaccinations and public health guidance were more likely to be White. Some conservative politicians and social media stoked an ideological fervor that demonized public health and may have hardened resistance among some White people, potentially costing lives. Studies show that death

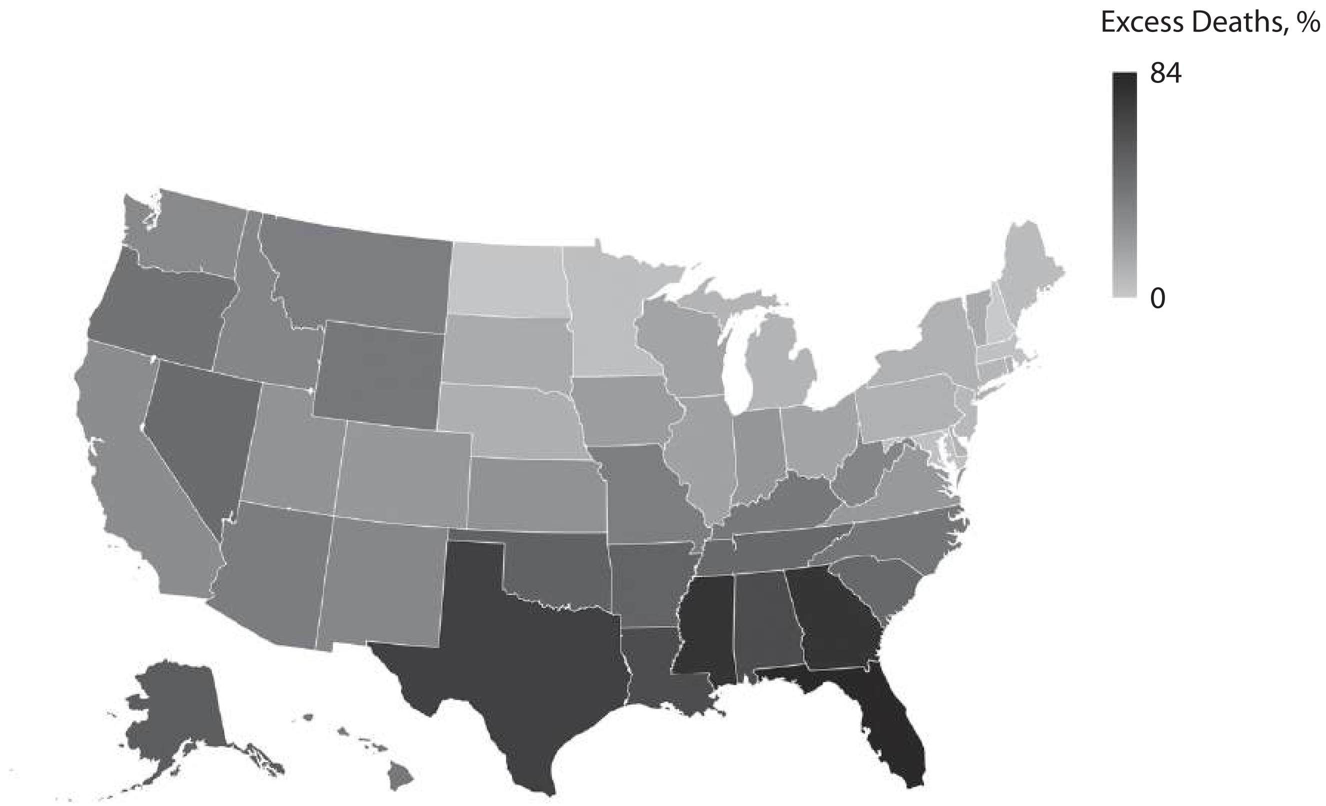

**FIGURE 1—** **Percentage of Excess Deaths by State at Height of COVID-19 Delta Variant Surge: United States, Week Ending August 28, 2021**

*Source*. Percentages calculated from excess death estimates from the Centers for Disease Control and Prevention, https://data.cdc.gov/NCHS/Excess-Deaths-Associated-with-COVID-19/xkkf-xrst, accessed July 4, 2023.

rates in 2021 were highest in states with Republican voting majorities and in rural counties, particularly in the South (Figure 1).[14,15]

The prospect of state policymakers putting lives at risk will not end with the COVID-19 pandemic. State legislation and court rulings that could adversely affect population health are sweeping the nation, notably those affecting women's reproductive health, LGBTQ (lesbian, gay, bisexual, transgender/-sexual, queer or questioning) rights, and transgender youths. These states are making it easier to own and carry firearms at a time when firearm-related deaths are increasing, easing regulations on industry and potentially reducing protections for workers and environmental health as the threat of climate change deepens, reducing the power of public health agencies, rolling back policies that promote the social determinants of health (e.g., social welfare programs), and resisting civil rights and antiracism reforms, if not challenging the very existence of racism.

While this is occurring, the US health disadvantage continues to worsen. As of 2021, more than 50 countries had achieved higher life expectancy than the United States—17 of them having done so for more than 50 years—demonstrating that it is possible for countries with far less wealth to protect the health of their populations.[10] What the United States lacks is not potential solutions but political will. Unless Americans get serious about protecting population health, studies of excess deaths will continue to deliver disappointing news. AJPH

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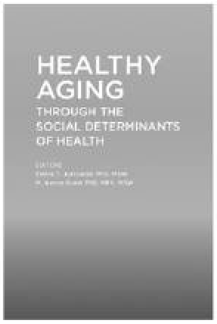

# Looking Back: Comment on “Economic Crisis, Restrictive Policies, and the Population’s Health and Health Care: The Greek Case”

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How do we calculate, and place at the center of the public conversation, the return on investment of spending to protect human health? What is the role of nonhealth policymaking in preserving and elevating health? How do we avoid repeating cycles of health-adverse policymaking? The 2013 article by Kondilis et al., documenting the impact of the late-aughts economic crisis and attendant economic restructuring on population health in Greece, pushes us to consider the persistent and perhaps heightened importance of these questions, 10 years after the article was first published.

Kondilis et al. documented changes in health in Greece between 2007 and 2011.[1] The late-aughts global economic crisis severely affected the Greek economy, and Greece had to rely on loans from the International Monetary Fund (IMF) to finance the country’s debt. The IMF loans came with conditions, including privatization of public enterprises and limits on public spending in sectors like health and education. Data by Kondilis et al. show how, coincident with these changes, a broad range of health indicators in Greece deteriorated. Suicide and homicide mortality, mental disorders, substance abuse, and infectious disease morbidity all worsened, and use of public inpatient and primary care services rose. A decade ago, this was a sentinel analysis showing the relationship between austerity economic policies and health.

The Greek data documented by Kondilis et al. are consistent with other data that illustrate how macro-level austerity economic policies are associated with poor health. Data from Russia, the Caribbean, and New York City show similar findings.[2–4] Conversely, data from countries in Latin America that went through economic crises without succumbing to austerity economic measures show that these countries did not have a commensurate downturn in health,[4,5] further suggesting a link between economic policies and health.

That macro-level economic policies affect the health of populations is not in any way surprising. Any number of conceptualizations of the role of social determinants of health consider upstream factors like economic and social policies as foundational to population health.[6,7] Canonical reasoning in the field, including the work of Geoffrey Rose, suggests that policies set the foundations for the production of health and can shift the distribution of health in populations.[8] Whereas investment in prohealth policies can result in improvements in health,[9] policies that limit social and economic achievement can harm health.[10] Revisiting this article by Kondilis et al. a decade after its writing is a reminder of the importance of documenting the consequences of economic changes on health, and of how little has changed in the past decade, despite knowing the impact of economic conditions on health. Their work highlights three important questions that may merit academic and public discussion, to the end of protecting human health from inevitable future economic crises.

## SPENDING TO PROTECT HUMAN HEALTH

Our academic and public conversation about spending to protect human health is limited and halting, especially when we expand the scope to focus not only on the prevention or treatment of disease. Although we recognize that there is substantial spending on health and health care—including, for example, US annual health expenditures in excess of $4 trillion—we are much more constrained in thinking strategically about what we are willing to spend to preserve and protect health for longer-term consequences. The most recent example of this is the COVID-19 pandemic in the United States, which has cost the country an estimated $16 trillion, or roughly the annual GDP of China.[11] In no small part, the costs of COVID-19 reflect decades of underinvestment in public health and the resulting vulnerability to a previously unknown virus.[12] Similarly, austerity policies are driven in part by a perception that the cost of maintaining good health is too high, even though the cost of poor health is greater in the long term. A key challenge to our ability to countenance spending on health protection is that of time lags. Spending that is largely on medical care becomes "health" in the immediate present; we are spending on imaging machines that are used in the current year. Conversely, spending on public health, much as spending on social and economic infrastructure, can influence health many years down the road. This separates spending in the short term from the benefits that accrue in the long term. The time lag between spending and its consequences separates decision-makers, who have to make difficult decisions in the present, from the potential positive health benefits of their actions. Therefore, we remain limited in our critical thinking about return on investment from health spending, particularly when that return happens on a different time frame than our investment. This was the case during the Greek economic crisis and in the run-up to the COVID-19 pandemic, and it continues to be the case in the present postpandemic reality.

## THE ROLE OF NONHEALTH POLICYMAKING IN PRESERVING HEALTH

The social, economic, and political determinants of the health agenda have become broadly established within public health thinking. It is now well understood that policies, urban environments, power, place, structural racism—all macro-level features of the world around us—influence the health of populations and, as such, should be part of the remit of anyone interested in population health and its application to the health of the public. A Health in All Policies approach is the operational manifestation of social determinants thinking, whereby we recognize that to promote health we need to think of and involve sectors—financial, housing, sanitation, law enforcement—that have not historically been seen as "health" sectors.[13] This recognition has implications both for those who are in the business of promoting health and for those who are in the nonhealth sectors. For the former, it means engaging with different sectors, including policymakers who are socialized to think rather differently, and encouraging them to see consequences of their actions through the lens of health. For the latter, it means making the effort to take on health as an outcome of interest in their deliberations. As the Greek economic crisis and similar case studies show, this is far easier said than done, particularly when coupled, as noted here, with time lags between actions of the nonhealth actors and results in health.[14] However, as this particular case shows, nonhealth sectors have an ineluctable role to play, and health cannot advance without their engagement. This puts the onus on health actors to engage counterparts in thinking about health, and to clarify, to nonhealth actors, the importance of having health as one of the key factors to be balanced in their thinking.

## AVOIDING REPEATING CYCLES OF HEALTH-ADVERSE POLICYMAKING

This brings us to the third and perhaps most important implication of the Kondilis et al. analysis a decade later: how do we avoid future policymaking that puts health at risk? Recognizing both that protecting population health requires the engagement of nonhealth actors and that such engagement is difficult to do, particularly when the health benefits are temporally distant from the policy decisions, what are the levers that those in public health can use to mitigate the risk of repeated adverse-policy cycles?

Three thoughts might be helpful in this regard. First, greater and sharper clarity about the role of social and political factors in determining health is a helpful step toward diffusing these ideas. Not long ago, the notion that social factors mattered for health was relatively novel in medicine. That this is no longer the case is good, but it is also true that it has been widely accepted only in relatively recent years. The establishment of social determinants at the center of the health conversation is a necessary first step toward the broader communication of the role of such factors to nonhealth actors.

Second, those concerned with the health of populations need to become substantially better at telling the story of health. This story is still told principally through the lens of medicine, with narratives that center on individual clinicians healing individual, sick patients. Part of changing the public conversation will require better narratives about how investments in the prevention of disease and promotion of health and welfare are far preferable for societies, and well worth the cost.

Third, we need to highlight the moral and pragmatic need for nonhealth policies that advance health. This means empirical and expository scholarship that makes clear the essentialness of health as a human value, and the tremendous societal advantages of healthier populations. It will require this kind of scholarship to change the policy conversation, and to counter historical ideologies that have advanced austerity ideas without regard for their health consequences.

## TEN YEARS AFTER THE ECONOMIC CRISIS

It is both sobering and motivating to revisit an analysis, 10 years later, that highlights the health consequences of economic crises, and to realize that such consequences would be the case today in another such crisis, much as we have seen after the recent pandemic. This should both sharpen our focus on investing in prohealth policies and energize the next generation of population health scholars to do the work that can shift the public conversation away from austerity economics once and for all. AJPH

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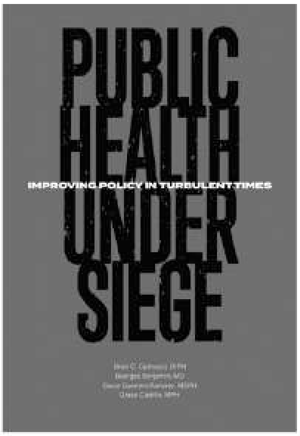

# Climate Justice and Health Equity: A Public Health of Consequence, October 2023

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The year 2023 may well be remembered for the multiple and intense climate crises that wreaked havoc across the world. From scorching heat domes that gripped the western and southern United States and major cities across the world to wildfires that burned large swaths of Canadian, European, and North American forests, these escalating climate crises are having devastating impacts on our environment and population. In this past year alone, the Northeast United States witnessed highly toxic air quality caused by forest fires in Canada, parts of Vermont experienced catastrophic flooding, and more tornadoes and hurricanes struck suburban and rural areas across the world. And as of this writing, the full extent of the devastation and loss of life from the wildfires that ravaged parts of Lahaina, Maui, an area that was formerly a wetland, is still being assessed. One common thread across these climate crises is that they will continue to bring more extreme weather and endanger our natural resources and physical spaces, in turn undermining any progress that has been made in reducing health inequities among vulnerable populations. Thus, among structurally marginalized people and communities—those who contribute the least to causing climate crises yet who are most often impacted first and worst—the need for actions that reduce the impact of climate crises is a matter not only of climate justice but also of reducing further health inequities.

In reviewing the evidence base in *AJPH* on the health impacts of climate crises, we see that they can be categorized into two collections. First is a collection on the numerous adverse health impacts resulting from climate crises. And a second collection includes a growing number of reports on action plans and behavioral modifications that can allow communities and individuals to adapt or prepare for climate crises.

## HEALTH IMPACTS OF CLIMATE CRISES

In 2011, Knowlton et al. presented simulations of heat-related mortality in the Northeast. While their findings suggested that premature mortality among urban residents would increase with little attention to reducing the causes of climate change, they also predicted increases in premature mortality among suburban and rural areas.[1]

Fast-forward and simulations like that conducted by Knowlton et al. are no longer necessary. The immediate health impacts of climate crises are undeniable as a growing number of studies continue to document increased morbidity and mortality following catastrophic climate crises. Periods of excessive heat are linked to excess mortality among the elderly[2] as well as increased risk of infant mortality.[3] And this excess mortality, while initially thought to disproportionately affect persons residing in dense, urban areas,[4] also affects individuals in suburban and rural areas that lack infrastructure and resources to provide or support heat action plans (HAPs).[5]

The broader health-related impacts of excessive heat among vulnerable persons cannot be ignored. Excess temperatures are linked to increased hospitalizations among persons experiencing homelessness[6,7] as well as farmworkers,[8] both where they work and in the often-substandard housing they are made to reside in. In addition, a report examining poor air quality as a function of days of heavy wildfire smoke documented increased burden from wildfire smoke to have an impact on communities with a higher proportion of structurally marginalized and vulnerable people living in underresourced settings and at greater risk for respiratory and cardiac distress.[9] Climate crises intensify already existing health and social disparities in vulnerable communities, adding multiple and overlapping shocks—loss of housing and shelter as well as access to safe water and food—that further entrench people in poverty and widen health inequalities.

Finally, climate crises are associated with increases in unintentional and intentional injury-related deaths.[10] And in already vulnerable settings, where emergency services are already stretched thin, extreme heat events place an even greater burden on police, fire, and emergency services.[11]

## ACTION PLANS FOR CLIMATE CRISES

In 2004, Bernard and McGeehin reported on their efforts to identify and review HAPs across major US cities; their findings indicated either a lack of any planning or cursory plans to mitigate the health impacts of excessive heat.[12] Fast-forward to 2023, and Randazza et al. completed a review of HAPs representing 21 large cities and counties across the United States and representing seven of the 10 US Department of Health and Human Services administrative regions.[13] Their review suggests that HAPs can serve as templates for building strategies to facilitate cooperation across multiple agencies to mitigate the multilevel harms wrought by climate crises. However, their review also highlights key gaps that must be shored up to meet the needs of vulnerable groups that are often left behind but most often the hardest impacted by heat-related climate crises. Specifically, fostering greater outreach to and collaboration with community organizations serving vulnerable communities can build greater trust and understanding of how to manage during climate crises. In addition, providing information in multiple languages, as well as in multiple locations—in community-based organizations, places of worship, places of employment, etc.—can extend the reach as well as acceptability of information. Such efforts will yield greater impact in fostering resilience to climate crises in vulnerable populations and vulnerable settings.

## CONCLUSION

Now is our time to fully and actively embrace a public health agenda that promotes comprehensive and equitable strategies to reduce the causes of climate crises and fight for environmental justice. These actions can no longer be sidelined if we seek to mitigate adverse health impacts and to slow the growing health inequities resulting from climate crises. While locally relevant and appropriate action plans will play a critical role in fostering greater resilience to climate threats, for the most vulnerable in our population, alone they are insufficient. Equally if not more necessary are the structural and societal changes that we clearly must make, and can no longer ignore, to prevent the continued rise of global temperatures. The United Nations Sustainable Development Goals (https://bit.ly/47pLHvJ) provide actions that we can take to reduce greenhouse gas emissions, prevent rising temperatures, and protect our air, water, and global home. And as evidenced by the August 2023 ruling in *Held v Montana* (https://bit.ly/3OM23WU), US courts are beginning to recognize the harmful impact of climate change on the constitutional right to “a clean and healthful environment.” This legal challenge is one of many that tests US states’ recognition of industry activities that continue to fuel climate crises as harmful to the health and well-being of its populations (https://bit.ly/3qSp7vd).

Living through the Anthropocene means that we are the first generation to bear witness to the devastation wrought by climate crises. It also means that we may be the last generation that has some hope for effecting the change we need. AJPH

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# Indigenous Peoples and Cultural Safety in Public Health

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There is a growing consciousness in the United States regarding the need to address structural root causes of health inequities for marginalized populations.[1] Addressing structural root causes are particularly imperative for Indigenous Peoples in the United States, who experience some of the highest rates of health inequities of any ethnic or racial group.[2] Public health (PH) literature has echoed the need for structural change, with calls for antiracist and transformative PH practices centered on and in the pursuit of equity.[3] There has also been increasing and urgent calls for health equity to be more firmly centered in PH education and practice.

Cultural safety is an applied equity concept that has received little attention in the PH field in the United States despite its uptake in other international contexts. "Cultural safety can be viewed on a continuum" that moves from cultural awareness to cultural sensitivity to cultural safety; it "is inherently reflexive as a practice" and requires health care providers to identify and understand their own sets of values and norms while considering how these values and norms might influence how their patients receive health care services.[4(p2)] Indigenous Peoples in the United States may benefit from the operationalizing of cultural safety within PH education and practice as it steers its focus from cultural othering to the clear recognition of the power and privilege of the PH field in relation to tribal communities. PH professionals in the United States, however, require cultural safety frameworks and tools for transformation toward true equity for Indigenous Peoples.

In this article, we propose that such frameworks and tools should not seek to create only awareness of or perceptions of being competent with the cultural norms and practices of marginalized communities. We have seen the harm of falsely embodied cultural competence and exotic othering that occurs within many Indigenous PH spaces, instead of providing PH professionals the resources to look at themselves with the intent to move forward toward true equity.[5] We premise that an internal assessment of dominant cultural beliefs and practices is necessary to create a transformation toward equity.[5]

## POSITIONALITY

Because this article discusses cultural safety as it applies to Indigenous Peoples, it is appropriate and expected to provide insight into the contexts and structures influencing the authors.[6] The first author (M. C.) grew up in a White, middle-class, agricultural family within a community of strong Protestant and Catholic traditions and political conservatism. She moved to a metropolitan community in Alaska, where for the first time she lived within a diverse community with a significant Indigenous community presence. The senior author (N. R.) is an enrolled member of the Deninu K'ue First Nation, an Indigenous public health scholar, and former clinician. As authors, we embody within this article the words of renowned Indigenous PH physician and scholar Donald Warne, MD, MPH, who states if "we are ever going to get to equity, we have to walk through truth, even when it's unpleasant. Even when it makes us uncomfortable."[7]

## BACKGROUND

Two primary documents, the *10 Essential Public Health Services* and the *Public Health Code of Ethics*, guide PH professional aspirations, key functions, and roles in the United States. Both the *Code of Ethics* and the *10 Essential Services* have recently been revised (in 2019 and 2020, respectively) after extensive input from PH professionals.[3,8] Within the most recent revision to the *10 Essential Services*, which are framed within a circle, a significant edit resulted in the centering of "equity" within the circle (ph.phnci.net/10ephs). The revision also updated language to reflect the embedding of equity into each respective essential service. Additional edits included a call to "correct historical injustices," build a skilled and diverse workforce encompassing "cultural competencies," and place an emphasis on the role of PH in the development or reformation of infrastructures and systems as opposed to the previous focus on innovation and research.[3]

Updates to the *Code of Ethics* also reflect more explicit identification of the need to address health equity, inclusivity, and justice.[8] Although the *Code of Ethics* is not a checklist or rulebook, it does lay out guidance for organizational and individual reflection as well as for the professional development necessary to correct the structural and cultural factors adversely affecting PH services and population health outcomes.[9] The equity calls within the core PH documents echo a national trend to recognize the structural factors, or determinants of health, integral to addressing health inequities within the United States.[1] Other PH-specific literature notes that health inequities can only be corrected by addressing root structural issues underlying population health.[10]

## Indigenous Peoples

Indigenous Peoples experience notable health inequities in the United States and associated territories. Globally, Indigenous Peoples are identified as distinct social, cultural, and political groups or nations who were the original residents and stewards within a region long before settler colonization and modern-day political boundaries.[11] For the purposes of this article, "Indigenous Peoples" refers to the original residents of the United States and associated territories, including persons commonly identified as American Indian, Alaska Native, Native Hawaiian, Chamorro, Samoan, or other Pacific Islanders. However, it must be noted that these identifiers (e.g., Pacific Islanders, Alaska Native) were created for the purpose and convenience of racist and colonial policies rather than directed by Indigenous Peoples themselves.[12]

Although distinctive and autonomous, Indigenous Peoples do share overlapping experiences of colonization.[12,13] Colonization refers to the forced process and worldview in which so-called "superior" or "universal" cultural norms, expectations, and teachings are imposed by non-Indigenous settlers to a region.[14] Colonization established—often violently—new conditions for Indigenous Peoples within a White, male, and human supremacy–orientated society, often labeling them either explicitly or implicitly as an inferior or "other" with consequential experiences of genocide, exploitation, racism, and historical trauma.[14]

Colonization's outcomes of genocide, exploitation, racism, and historical trauma have reverberating effects on current-day health inequities for Indigenous Peoples.[14] Compared with non-Hispanic Whites in the United States, Indigenous Peoples have increased rates of chronic conditions, including cancer, diabetes, and heart disease.[2] Indigenous Peoples also have lower educational attainment and are much more likely to be low-income or impoverished.[2] These health inequities are not the result of individual, community, biological, or genetic predispositions but are the direct result of the cumulative impacts of colonization and racism as key determinants of health.[15]

Colonization creates conditions that undermine fundamental determinants of health within Indigenous communities. For instance, the United States has demonstrated historically poor adherence to treaties with Indigenous Peoples, leading to significant gaps and underfunding within educational and health care systems.[2,13] One contributing factor to underfunding can be traced to undercounting within the US Census,[16] which plays an integral role in funding allocation and resource planning. Undercounting of Indigenous Peoples in health monitoring and surveillance systems was powerfully demonstrated during the COVID-19 pandemic.[17] Indigenous Peoples' case counts and mortality reports were underreported because of arbitrary aggregation thresholds requiring grassroots efforts to identify and track case and mortality inequities to ensure equitable distribution of vaccines.[17]

There are additional policy factors contributing to the data obfuscation of Indigenous Peoples beyond the Census, including those facilitating diaspora. Many Indigenous Peoples have been forcibly removed from their traditional homelands, with later relocation to urban centers,[18] or have had other treaty rights allowing relocation for educational or economic purposes.[13] PH professionals work in communities with Indigenous Peoples and may be unaware that they do so. PH professionals need to be aware not only of the presence and histories of Indigenous Peoples in their communities but also of the systems and power dynamics affecting the Indigenous determinants of health. The existing PH literature and developed interventions often continue to neglect many of the root causes of the determinants of Indigenous Peoples' health (e.g., colonialism as a determinant of health), prioritizing individual or interpersonal interventions rather than addressing the systems creating health inequities.[10]

## Cultural Safety

Cultural safety is one applied equity concept that may support the improvement of health outcomes and the relationship between Indigenous Peoples and PH. Cultural safety was originally conceptualized by nurses in response to the inequities experienced by Māori Peoples of Aotearoa (New Zealand) that needed to be addressed by examining the power imbalance between patients and providers.[19] Although there is no singular definition or operationalization of cultural safety,[20] a consistent element that separates cultural safety from cultural competency or humility is the individual and organizational responsibility to recognize and examine the structural relationships of power in every context.[21] Anderson et al.[21] additionally stated that

> [r]ather than focusing on exotic belief systems of people from different ethnocultural backgrounds and treating each group as a distinct entity, we are challenged, instead, to examine the unequal relations of power that are the legacy of the colonial past and neocolonial present.[21(pp196–197)]

The recent increase in cultural safety literature has paralleled the increase in literature on the need to recognize and address biases, prejudice, and racism.[22] Cultural safety, however, has had less traction within the United States compared with the international context to date. There is some speculation that this has roots in the United States' identity as an independent nation rather than a Commonwealth country as well as difficulty in acknowledging existing structures as inequitable.[23]

Cultural safety requires more than acknowledgment of implicit or internalized biases or racism. Cultural safety demands recognition of and action upon the relationships of racism, colonization, and power at the institutional levels of society where immense privileges and power are conferred to the select few.[19,21] Cultural safety shifts the solution of power imbalances and health inequities from Indigenous Peoples to the non-Indigenous culture, as the latter is the main contributor to the problem and therefore is also key to any solutions.[5]

As colonization is the imposition of practices and worldviews creating conditions of superiority or universal cultural norms, decolonization may therefore be described as the process of countering Western-imposed ideals of superiority and homogeneity. Decolonization respects the rights and autonomy of Indigenous Peoples to develop and practice social and organizational structures (i.e., family, health, governance, education) embedded within cultural values as equal to those within Western or European systems of thought and practice.[14] Supporting Indigenous Peoples' decolonization alongside Western-based PH system transformation toward true equity requires ongoing acknowledgment, key actions, and adjustments made to the existing relationships of unbalanced power between Indigenous Nations and the PH profession.

## KEY CONCEPTS OF CULTURAL SAFETY

Although cultural safety does not have a universal definition or procedure, several elements are noted consistently within the literature. First, cultural safety is different from cultural competency or humility in its demands to both recognize and transform the existing power relationships within systems. The relationships of power between people and between people and institutions are consistently identified as key components of cultural safety.[20,21,23] Cultural safety goes beyond acknowledging or learning about other cultures, bias, or racism; it requires "personal recognition and then action"[5] upon the imbalances of power that are the foundational root of health inequities. Cultural safety addresses the imbalances of power formed within colonization that are the structural underpinnings of health inequities, particularly for Indigenous Peoples.[20,23] Box 1 provides a summary comparison between key aspects of cultural competency and cultural safety.

Reflexivity is another key element identified within the cultural safety literature.[4,23,24] Reflexivity as both a term and process has long-documented use

### BOX 1— Comparison of Key Concepts Between Cultural Safety and Cultural Competency

| Cultural Competency | Cultural Safety |
|---|---|
| • Ethnic or cultural knowledge<br>• Skills and attitudes<br>• Implies achievement<br>• Checking boxes<br>• Implies expertise<br>• Individualized<br>• Indigenous culture holds the solution<br>• Asks: What knowledge do I have? | • Historical contexts<br>• Reflexivity<br>• Process<br>• Power relationships and structures<br>• Decolonization<br>• Systemic and individual<br>• Non-Indigenous culture created the problem and holds the solution<br>• Asks: How was this knowledge produced? |

*Source.* Adapted from information provided by references 5, 19–21, 23, and 24.

in qualitative research areas, having a more recent presence in PH and health literature.[24] Reflexivity is the process of recognizing one's position within a system's context and translating that examination into systemic change of norms, values, and structures.[4,25] Reflexivity is an advancement beyond reflection because reflection ultimately focuses on internal, individualistic processes and outcomes rather than systems.[25] Reflexivity also challenges the implied neutrality or objectivity of reflection, as cultural norms and values are neither neutral or apolitical.[24]

Another main element in cultural safety literature is the concept of space. Space has been described as the process of maintaining openings or opportunities for other perspectives, voices, and realities.[21] Leaving space emphasizes a deliberate process of not knowing or not being an expert,[19] which reduces the current privileging of Western (White) ways of knowing and doing. Many PH practitioners are trained in Western-based contexts, and space can open power sharing with those not grounded within Western or formalized academic ways of knowing or doing.[23] Space making removes the demands of expertise and provides the opportunity for PH professionals to be allies and share the work of cultural safety even when they are not Indigenous or another minority person.[5]

Finally, cultural safety is a process. Compared with the implied achievements or expertise within cultural competency, cultural safety has no checklist or arrival.[19] It is instead the ongoing work and commitment of individuals and institutions toward health equity, power sharing, systems change, and decolonization.[19,24] Cultural safety develops from the cumulative impact of numerous small decisions or behaviors rather than a singular event, training, or workshop.[5,22]

## THE JOURNEY FORWARD

As noted in the section on "Cultural Safety," the concept of cultural safety is not currently prevalent in US-based resources or literature; however, it seems well-suited for meeting the calls for equity within PH. Although gaps remain in cultural safety interventions and implementation,[20] cultural safety may be the equity framework that best parallels the calls in PH core documents to address population health inequities at their foundational levels.

Cultural safety differs from its two predecessors, cultural competency and cultural humility, in its key themes of power, reflexivity, space, and process.[19,20] Cultural safety places the onus on PH professionals and organizations to transform both themselves and the systems in which they work. PH services must move beyond individual and interpersonal levels and begin to address the structural and systemic foundations of health, particularly for Indigenous Peoples. Cultural safety is an embodied skill that all PH providers need to develop, as Indigenous Peoples live, work, and play in all parts of the United States and are therefore affected by PH policies and practices. PH professionals must be aware of how internal and professional power dynamics influence Indigenous health. Given indications that some PH organizations may be practicing cultural safety without realizing they do so,[23] research about cultural safety understanding and practice in the US context is important. It will also be important to further define and operationalize cultural safety as it applies to Indigenous Peoples themselves as copartners.[20] Evaluation is needed of both the process and the outcomes of how PH transforms individual and organizational practice toward decolonization and equity.

Indigenous health inequities will continue to flourish until PH addresses and corrects the privileged and inequitable systems of power and relationships innate within the field.[10,12] The ability of PH to practice cultural safety requires education, training, and resources to develop the necessary skills to support decolonized systems while also uplifting and acknowledging the inherent strengths within Indigenous Nations. AJPH

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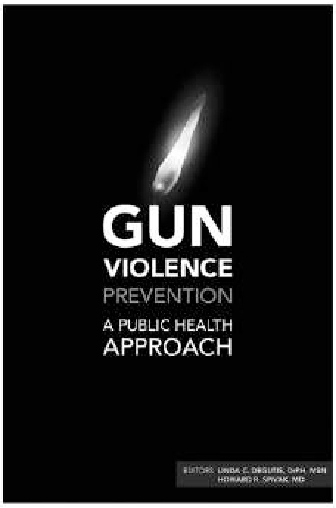

# Teaching Systems Thinking as a Foundational Public Health Competency Can Be Improved

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Public health decision-making often deals with problems that do not have a single perfect solution; the solutions' effectiveness depends highly on the context in which they are applied, and they often unfold in uncertain, complex environments. The recent COVID-19 pandemic response provides a perfect example of a "wicked problem."[1–3] At the height of the pandemic, public health professionals had to make decisions without perfect information or sufficient resources, and that at times were at odds with political priorities. Wicked problems like this one are exactly what our graduate education programs should prepare the future public health workforce for.[4–8]

Locally and globally, we have seen increasing calls for problem solving in health to move away from linear thinking and "cookie-cutter" solutions and toward systems thinking and a holistic discourse around identifying and implementing solutions. This approach allows us to better appreciate the richness that arises from the diverse, interrelated, and interdependent components of systems designed to sustain health and well-being.[7,9,10] Systems thinking is defined in varied ways; in practice, its key features involve iterative analysis and problem-solving processes to understand the context, history, and actors related to a particular problem and the pathways through which things influence one another in a whole—a system.[11] Systems thinking can be as much an art as a science and a skill honed though experience over time. The theories, methods, and approaches for systems thinking arise from many disciplines; although many have been applied to public health, the field remains diverse and there are ongoing calls for advancing the application of systems thinking in public health.[11–15] Graduate courses on this topic can help guide those new to the material through this vast territory, and they provide learners with the foundation upon which to apply systems thinking in their future careers.

The calls for advancing systems thinking in public health, however, have not been met with similar efforts to ensure that graduate education programs prepare future public health professionals to apply systems thinking. In fact, the evidence is scarce on how systems thinking should be taught as part of public health and on whether current graduate education programs should prepare graduates to apply systems thinking. Given the urgency to ensure that the public health workforce is prepared to respond to wicked problems, what is graduate public health education currently doing and what else is needed to better prepare future generations of public health systems thinkers?

## SYSTEMS THINKING COMPETENCY

The Council on Education for Public Health (CEPH) is an independent agency recognized by the US Department of Education to accredit schools of public health and public health programs outside of schools of public health.[16] The CEPH foundational knowledge areas, learning objectives, and competencies required for accredited public health programs have been a cornerstone advancing the development of a strong public health workforce.[17,18] CEPH requirements, which differ depending on the type of degree (i.e., bachelor's, professional graduate, academic graduate), serve to support the standardization of public health education and raise the bar on how public health is taught across public health programs in the United States. The competencies specific to master of public health (MPH) programs and other professional public health graduate degrees (i.e., some master of science in public health [MSPH] programs) currently recognize the importance of evidence-based approaches, understanding

### BOX 1— Council on Education for Public Health (CEPH) Systems Thinking Competency for Master of Public Health (MPH) Programs

2016 Competency description: Apply systems thinking tools to a public health issue

2021 Competency description: Apply a systems thinking tool to visually represent a public health issue in a format other than standard narrative[a]

[a] Systems thinking tools depict or map complex relationships, demonstrating, for example, how component parts of a system interact with and influence one another. Examples include causal loop diagrams, systems archetypes, network analyses, and concept maps. Logic models and evidence tables are not sufficient to address this competency.

public health and health care systems, planning and management to promote health, policy in public health, leadership, communication, interprofessional or intersectoral practice, and systems thinking. However, systems thinking competency was one of the most recently added and has little guidance associated with it.

The CEPH introduced the systems thinking competency in the 2016 revision of its accreditation criteria, as one of its 22 foundational competencies for the MPH and other professional public health graduate degrees. The initial language for this competency (Box 1) referred broadly to the application of systems thinking tools and provided no additional explanation about how graduate programs could implement this competency or assess their courses to demonstrate it was met. The CEPH amended this competency in 2021 to address some of these gaps and specifically require the use of a systems thinking tool to create a visual representation of a public health issue. This revised document also included a short footnote with additional guidance and examples to assist programs in understanding and assessing this competency. A review of how this competency has been implemented to date has not yet been identified in the literature.

## SYSTEMS THINKING IN ACCREDITATION APPLICATIONS

To gain a better understanding of how different programs are incorporating systems thinking into their curricula, we accessed the Self-Study and Accreditation Report database on the CEPH Web site[16] and reviewed the self-study applications submitted by all 90 MPH programs that applied for accreditation between 2018 and 2021, using the 2016 criteria that included the new systems thinking competency. Although most MSPH programs are considered academic degree programs, some are considered professional degree programs. Those MSPH programs that are considered professional degree programs are subject to the same CEPH accreditation standards as MPH programs. All 90 of the programs we included in our analysis were MPH programs since none of the professional MSPH programs applied for accreditation during our review period. Although 2018 was the first year in which programs were able to apply using the new (2016) criteria, they were permitted to choose between using the old or new criteria. Nine programs used the new criteria and 18 programs used the old criteria. In total, 108 MPH programs applied for accreditation during our review period. We reviewed only the 90 that applied using the new criteria. After 2018, all programs were required to use the new criteria. At the time of this review, no program had yet applied based on the revised 2021 competency. The CEPH considers programs to be compliant with a competency if they demonstrate that students are both taught a concept and assessed on it, based on supporting documentation such as syllabi and assignment instructions. The percentage of applications assessed by the CEPH as compliant with the systems thinking competency after the initial application submission increased each year during the timeframe of our analysis, from 33% in 2018 to 95% in 2021.

Our analysis resulted in two additional important observations. First, the systems thinking competency is being addressed in many ways across MPH programs. Although only three programs require students to take an entire course dedicated to systems thinking, most programs incorporate this competency into another required public health course. The most common courses in which the systems thinking competency is being covered are leadership and management courses (27/90 programs), environmental health courses (20/90 programs), health policy courses (19/90 programs), and health care systems courses (18/90 programs). However, the other programs addressed systems thinking in a wide variety of other types of courses, including epidemiology (14/90), global health (7/90), and behavioral health (9/90) courses. Many programs (27/90) reported addressing systems thinking in more than one course.

Second, the approaches for teaching systems thinking rely heavily on tools focused on visual representations, many of which specifically mention causal loop diagrams. Based on the applications we reviewed, 46 of the 90 programs assessed the systems thinking competency using a visual aid. Other methods of assessment were also used, the most common being a paper or essay (36/90 programs). This appears to be a main driver of the 2021 competency revision to require the use of a visual aid and provide causal loop diagrams as an illustrative example. Because of the heterogeneity in approaches to integrating systems thinking in the curriculum, it is difficult to tell whether sufficient time is spent on the topic. It is also difficult to determine whether students are introduced to concepts and tools or also have the opportunity to apply them.

## FUTURE OPPORTUNITIES

Although systems thinking is listed last among the CEPH MPH foundational competencies, we argue that it should be considered a cross-cutting skill, critical for the achievement of all other competencies. Based on our review of MPH CEPH accreditation applications and our experience teaching future generations of public health professionals to apply systems thinking to their work, we offer the following suggestions:

1. The CEPH should expand the current systems thinking competency to strengthen the connection to the current evidence base and practice for applying systems thinking.
2. The CEPH and public health educators should invest in efforts to generate evidence on ways in which applied systems thinking is benefiting public health initiatives and on how the needed skills can be taught and assessed in a graduate school setting.
3. Educators, practitioners, and the CEPH can do more to promote systems thinking practices and resources and encourage their integration into graduate public health training curricula.

### Expand Competency

We applaud the CEPH and all accredited MPH programs for prioritizing systems thinking and moving the field forward by establishing the systems thinking competency, but the overemphasis on visual aids in an attempt to standardize the assessment is a reductionist approach that is contrary to the core idea of systems thinking as a lens that helps public health professionals address complexity. We see the cross-cutting systems thinking competency as unique among the MPH competencies in that it does not always lend itself to operationalization and assessment in the same way as the others. An expanded systems thinking competency could shift the emphasis away from tools and approaches to map and understand complex systems to strategies used to manage complexity, make decisions under uncertain conditions, and influence system transformation. A single course or lecture may not single-handedly satisfy an expanded requirement. Rather than meeting the criteria by demonstrating how systems thinking is assessed in at least one course (as is done with the other competencies), the CEPH could encourage or even require programs to explain how systems thinking (beyond just visual aids) is integrated at multiple points within a curriculum.

### Generate Evidence

Given the variety of ways in which systems thinking is taught and assessed, it is unclear whether the systems thinking competency fully captures learners' readiness and confidence to apply a systems approach to solving complex problems in their future public health endeavors. Employers can be tapped to help inform what systems thinking skills are specifically in demand given the current public health climate and postpandemic recovery efforts in particular.

### Promote Practices and Resources

Although the introduction of a CEPH competency on systems thinking is an important step in advancing its use in public health among the next generation of practitioners, we observe an opportunity to leverage learning from one another to the benefit of advancing public health education. Illustrative, not comprehensive, actions that educators, practitioners, and public health professional organizations could take include the following:

- Create linkages with broader communities who have taught systems thinking in practice in other contexts (e.g., systems engineering, systems thinking in practice [or STIP] programs at Open University).
- Engage in monitoring and learning from experiences by linking with the American Public Health Association and others to highlight systems thinking at mainstream public health conferences and events.
- Strengthen ties between academia and practice through adaptation of systems thinking curricula beyond

schools and programs of public health into training for the public health workforce.
- Create a repository of teaching systems thinking resources (e.g., learning objectives associated with systems thinking classes and assignments, teaching cases, and strategies for facilitating systems thinking), ideally linked to an existing repository with teaching resources for public health, such as the one hosted by the Association of Schools and Programs of Public Health.[19]

The potential value of systems thinking will not be realized until its use becomes normalized across the field. Identifying and sharing good practices in teaching systems thinking, including ways for teachers and nonteachers of systems thinking to connect with and expand their own teaching portfolio beyond a basic tool set, is a good place to start. More research beyond our brief review is needed into the way systems thinking is taught and assessed in US-based graduate public health programs. Additional opportunities involve learning about how other disciplines and non-US universities approach this topic. AJPH

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# The Abortion Double Bind

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In March 2023, patients and doctors sued Texas for criminalizing abortion care in the face of catastrophic health risks associated with continued pregnancy. Lead plaintiff Amanda Zurawski suffered a dangerous complication at 18 weeks' gestation—preterm premature rupture of membranes—that left no chance her baby could be born alive. But fetal cardiac activity could still be detected, so physicians were legally forbidden from safely ending her pregnancy, or at least they had plausible reason to think that providing Zurawski with an abortion could subject them to felony prosecution. That delayed medical intervention to the point that she became septic and nearly died. The lawsuit asks state courts to make clear that the Texas ban on abortion makes space for clinicians to end a pregnancy when doing so is medically necessary.[1]

Texas does not defend its prohibition by claiming that every such abortion is unlawful. Instead, it says that there is no need to clarify a ban whose medical exceptions already authorize clinicians to end a pregnancy if doing so is necessary to save a patient's life. For all that they disagree about, both sides see eye to eye on the question at issue: whether and when the state's ban allows abortion to avoid serious injury or death. But neither considers a related question that has gotten short shrift in larger debates about abortion since the Supreme Court overruled *Roe v Wade* (*Roe*) last summer in *Dobbs v Jackson Women's Health Organization* (*Dobbs*).

This neglected question goes beyond the rare conditions under which abortion restrictions would still allow clinicians to provide one. Namely, do other parts of the legal system actually demand abortion to save a patient's life or preserve her health? The answer is sometimes yes: that is, when the very procedure that a state bans as first-degree homicide is nevertheless mandated by other laws governing medical practice as essential care. This leaves clinicians in a precarious double bind: trapped between (1) the risk of criminal conviction for ending a pregnancy that is not perilous enough to qualify for the medical exceptions to state abortion bans, and (2) the risk of civil liability for not ending a pregnancy that is too dangerous under either state malpractice law or a federal statute that requires emergency medical treatment.[2]

## BETWEEN FELONY AND NEGLIGENCE

There is historical precedent for a modified version of the double bind. It is not about failing to end a pregnancy when that is medically necessary but rather about performing an abortion in a way that is negligent. Before *Roe* was decided, roughly half of the courts that faced this question answered that, yes, malpractice lawsuits could proceed against anyone who harmed a pregnant person by botching the criminalized abortions that the woman herself had sought out. These cases cast her as the victim of misconduct and not as an accomplice who should be barred from recovery for having taken part in criminal activity gone awry. Criminal abortion lawsuits for negligence and wrongful death were permitted not only against back-alley quacks or well-meaning nonprofessionals. They were also allowed against licensed doctors in good standing. What is more, the plaintiff who could show she had been hurt by a badly performed abortion usually won. And so most of these cases awarded damages to injured women or their families if they were killed.[3]

But the double bind is not the same today. For one thing, during the 1950s and 1960s, tort reform did not yet significantly constrain liability and damages for medical malpractice. Since *Roe* was decided, malpractice threats have diminished, and criminal threats have intensified. Moreover, abortion suits for malpractice after the *Dobbs* decision will take on a different form. In the pre-*Roe* era, claims were for the negligent commission of medically unnecessary abortions that clearly violated criminal bans. The fact patterns involved slipshod procedures.

Today's negligence claims will instead be for the omission of medically necessary abortions that wary clinicians had delayed or denied precisely to avoid committing what they believed would be a crime. It is now the difference between a wrongful act and an omission or between wrongful doing and allowing. This distinction looms large in many areas of social and legal life, but it carries less purchase in the context of medicine, where clinicians routinely have not just negative duties (to avoid harming patients by undertaking misadvised interventions) but also affirmative duties (to prevent undue harm from befalling patients by failing to provide beneficial care).[4]

Health care professionals are stuck between the conflicting imperatives of abortion bans and potential civil malpractice suits. They are not setting out to defy the law or act with indifference to patient welfare. They are simply trying to follow confusing and conflicting rules while keeping those under their care safe. They might be able to expect enough sympathy from those who could sue or prosecute them. Perhaps injured patients and their families would not bring a lawsuit for failure to provide a medically necessary abortion if they appreciated that doctors felt their hands were tied. And even district attorneys who want to go after a doctor for performing a medical abortion might pass on trying a case that they are not confident of winning by convincing a jury to convict.

But maybe not.

Meanwhile, for the clinician who is stuck in the middle, the outcome of any such lawsuit or prosecution would be uncertain. What clinician wants to take that risk and be forced to justify their conduct in a trial proceeding? One with a high profile and higher stakes, especially against any criminal charges? Guessing wrong could not only invite harassment and even threats but could also lead to revocation of their medical license or land them in prison. Attorneys' fees alone could be daunting for many practitioners in abortion-restrictive states who are faced with the prospect of terminating a patient's pregnancy to preserve her health or potentially save her life. Malpractice insurance usually does not cover the cost of criminal defense.

## BETWEEN FEDERAL AND STATE LAWS

It is not just individual doctors and nurses who might face competing legal obligations in medical emergencies during pregnancy now that *Roe* is gone. Health care institutions could too under a 1986 federal law, the Emergency Medical Treatment and Labor Act (EMTALA). EMTALA requires hospital emergency departments and staff to stabilize any patient in active labor or whose symptoms are so acute that "the absence of immediate medical attention could reasonably be expected" to place that person's health "in serious jeopardy."[5]

Hospitals that violate EMTALA—for example, by turning away an unstable patient who cannot afford care—risk losing their Medicare funding, which can put them out of business. Although EMTALA provides injured patients and their families a private right of action to sue institutions themselves, it is mostly up to the US Department of Health and Human Services (HHS) to implement statutory penalties. So when it comes to the emergency denial of politically contested care such as abortion, EMTALA violations are more likely to be enforced if HHS leadership is under the direction of a presidential administration that supports abortion access.

Indeed, in July 2022, President Biden's HHS clarified that EMTALA's treatment mandate includes ending a dangerous pregnancy, even in states that ban abortion.[6] The HHS guidance includes a nonexhaustive list of emergent conditions in pregnant patients—ultimately leaving it up to the judgment of clinicians to determine whether "the absence of immediate medical attention could reasonably be expected" to place a person's health "in serious jeopardy." The Constitution's Supremacy Clause says that when two laws—one of them federal, the other state—pull citizens in opposite directions, the federal law governs. Accordingly, EMTALA would seem to resolve the abortion double bind in hospital emergency departments because states cannot bar clinicians from providing the emergency abortion care that the federal government commands them to provide.

That is why a federal court enjoined Idaho's ban on providing abortion to the extent that its medical exceptions are less generous than "EMTALA-mandated care."[7] And in May 2023, HHS secretary Xavier Becerra announced active investigations into two hospitals for failing to provide the stabilizing abortion care EMTALA requires. Even so, uncertainty remains in other abortion-restrictive states about whether it is permissible to provide emergency abortion care. And Becerra's statement noted that the HHS lacks such enforcement power for now in Texas.[8]

A federal court there, faced with a similar case, suspended not the abortion ban but the HHS guidance instead, reasoning that EMTALA "is silent as to abortion" and "protects both mothers and unborn children."[9] Texas argued that EMTALA does not supersede or preempt states' power to regulate or prohibit abortion because, however dangerous it would be to continue a patient's pregnancy, ending it would not preserve the life or health of the unborn child, who is also a patient.[10] That Texas ruling has since been appealed to a higher court.

## AMBIGUOUS MEDICAL EXEMPTIONS

No matter the state, EMTALA applies only to emergency department care, so practitioners who provide an abortion in other clinical settings must rely on the medical exemptions in their state's ban. These carveouts use phrases such as "serious health risk" and "life-threatening impairment" of a "major bodily function," without narrowing down how bad, how likely, or how imminent a harm must be to qualify.

What if a delay in abortion care causes an unavoidable hysterectomy? How about cancer treatment that is not compatible with pregnancy? This point was also made in the *Dobbs* case by the dissenting justices of the US Supreme Court, who would have affirmed the constitutional right to abortion under *Roe*. They put the challenge like this: "Suppose a patient with pulmonary hypertension has a 30-to-50 percent risk of dying with ongoing pregnancy."[11] Is that enough? As Box 1 shows, these laws do not say.

## DELAYED CARE AND ARBITRARY PROSECUTION

Uncertain statutory language pervades medical exemptions, leaving clinicians fearful that providing standard of care abortions they see as clearly health or life preserving might look criminal to an uncompromising prosecutor. No wonder that abortion-restrictive states report vanishingly few abortions being performed under these exceptions—far fewer, the early evidence suggests, than the number required to keep medical crises during pregnancy from getting worse.[12]

Nine months before *Dobbs* overturned *Roe*, Texas first banned abortion in a civil law known as SB 8, the Texas Heartbeat Act. The law authorizes a private citizen to sue anyone else at all for $10 000 in damage awards if it is found that the other person either provided an abortion after about six weeks or facilitated one, for example, by counseling a pregnant person, funding her abortion, or even giving her a ride to the clinic.[13]

When SB 8 went into effect in September 2021, researchers began studying women with pregnancy complications at two Dallas, Texas, hospitals. The researchers found that, with SB 8 looming in the background, twice as many women ended up in the intensive care unit for avoidable life-threatening emergencies than would have before the ban. These are emergencies that could have been prevented if the patients had not been made to wait an average of nine extra days for their conditions to deteriorate.[14]

Medical exceptions to state bans on providing abortion were common before *Roe* was decided too, as was confusion about when and how those exceptions applied. In fact, the Supreme

### BOX 1— Representative Medical Exceptions From State Bans on Providing Abortion

| State | Statutory Language |
|---|---|
| Arkansas, Idaho, Mississippi, Oklahoma, South Dakota, and Wisconsin | Providing abortion is a crime unless "necessary" to "preserve the life" or "prevent the death" of a pregnant patient. No exception to preserve health. |
| Alabama code § 26–23H-3/4 | Providing abortion is a crime unless "necessary" to "avert death" or "serious risk of substantial physical impairment of a major bodily function." |
| Kentucky revised statutes § 311.772 | Providing abortion is a crime unless "necessary . . . to prevent the serious, permanent impairment of a life-sustaining organ of a pregnant woman." |
| Louisiana revised statutes § 40:1061 and 14:87.1 | Providing abortion is a crime unless "necessary . . . to prevent the serious, permanent impairment of a life-sustaining organ of a pregnant woman." |
| Missouri revised statutes § 188.015 and 188.017 | Providing abortion is a crime unless the defendant proves "by a preponderance of the evidence" that abortion was necessary "to avert the death of the pregnant woman or for which a delay will create a serious risk of substantial and irreversible physical impairment of a major bodily function." |
| Tennessee code § 39–15-213 | Providing abortion is a crime unless the defendant proves "by a preponderance of the evidence," "based upon the facts known to the physician at the time, that the abortion was necessary to prevent the death of the pregnant woman or to prevent serious risk of substantial and irreversible impairment of a major bodily function." |
| Texas health & safety code § 170A.002(b)/001(4) | Providing abortion is allowed only if "the pregnant female . . . has a life-threatening physical condition aggravated by, caused by, or arising from a pregnancy that places the female at risk of death or poses a serious risk of substantial impairment of a major bodily function unless the abortion is performed or induced." |
| West Virginia code § 16–2R-2/-4 | "An abortion may not be performed" unless necessary "to avert serious risk of the patient's death or . . . substantial life-threatening physical impairment of a major bodily function, not including psychological or emotional conditions." |

Court's first draft of that landmark decision offered a different justification for striking down Texas's ban on all but lifesaving abortions—not for violating a constitutional right of privacy but because the statute was "void for vagueness."[15] That alternative opinion would have invalidated the state's bar on nonemergency abortions on the ground that it gave clinicians insufficient guidance and an unfair lack of notice about what conduct is criminal, inviting arbitrary enforcement through selective prosecution. Obstetricians and gynecologists voice similar concerns about today's medical exemptions.

## THE PROBLEM WITH ENUMERATION

Medically needed abortion care is being delayed and denied because doctors are understandably anxious not to cross the line drawn by vague medical exceptions. But that does not mean it would be better for states to specify eligible conditions. Detailed lists might reassure tentative physicians that they would not be prosecuted for performing an abortion in particular circumstances. Yet such preclearance would also operate to suppress the case-by-case discretion that is appropriately responsive to medical context under time-sensitive conditions.[16]

It is precisely that open-ended statutory language about qualifying harms and risks that enables the crucial exercise of reasonable judgment and good faith professionalism—at any rate, for clinicians who are not psychiatrists. That is because most abortion bans limit medical exceptions to physical harms and explicitly exclude psychological and emotional conditions. Accordingly, diagnoses of a woman's depression or suicidality, however real and acute, would not make it legal to provide her with an abortion. Before *Roe* was decided, so-called psychiatric abortions were often deemed too vulnerable to subjectivity or pretext to justify ending unwanted pregnancies by people healthy enough to carry them to term.[17] Yet preserving this measure of clinical discretion is critical for preserving the individualized care that ordinarily resists straightforward preclassification into neatly defined categories.

But the ambiguity of medical exemptions is not the real problem with the abortion double bind. After all, one way out of that bind would be to legislate that clinicians cannot be sued for denying an emergency abortion. Thirty-three states already have far-reaching conscience clauses on the books that shield foreseeably harmful denials of abortion care by clinicians who invoke deeply held moral beliefs. These laws immunize conscientious refusers from being fired, disciplined, or held liable.[18] States could simply expand such liability shields to any withholding of abortion care, whether in the name of conscience or not. But this move would have a pernicious effect: to insulate clinicians from even modest consequences for hurting patients in foreseeable and serious ways that ordinarily amount to malpractice, patient abandonment, or wrongful death.

This points to what is actually a deeper conflict between, on the one hand, the professional obligations that animate those civil and statutory actions and, on the other, the crushing penalties set forth by modern bans that make abortion a crime. Again, the past is instructive. Before *Roe* was decided, police suspicion was rarely triggered by the criminal abortions that licensed clinicians performed safely. It helped that the majority of doctors back then practiced in the privacy of small mom-and-pop shops where no one would tell on them. Others received approval from "abortion committees." These committees operated in many private hospitals that served predominantly White patients who had insurance, thereby excluding many poor people in rural regions or marginalized communities.[19]

Under any medical setting, the legal peril today is more acute. In the pre-*Roe* era, abortions were simple misdemeanors. After *Dobbs*, criminal abortions are high-order felonies. And they are less likely to go under the radar today. A massive reorganization of health care in recent decades has left most doctors practicing in large institutions, where a team of co-workers look over their shoulders. Abortion bans are also enforced through electronic surveillance and bounty-style regimes that solicit informants to sue for a reward.

## FROM ASPIRATIONAL TO OPERATIONAL

Clinicians and the groups that represent them should take action both now and in the long term. First, there are ways for clinicians to reduce the legal risks of providing abortions under the discretion that EMTALA and medical exceptions afford them. They can seek free guidance about state law and specific counsel about particular facts, as well as legal representation if they end up being prosecuted for the reasonable exercise of clinical judgment to provide a life- or health-preserving abortion.

Resources at their disposal include the American Medical Association's legal defense fund, public interest coalitions such as the Abortion Defense Network, and private associations such as the Legal Alliance for Reproductive

Rights—even if hospital lawyers and risk managers are presumed to care about institutional liability risks too much to be trusted to reasonably weigh those risks against the medical and professional interests of patients and providers. Guidance on practice standards is also on offer from state medical boards and national organizations such as the American College of Obstetricians and Gynecologists and the Society for Maternal–Fetal Medicine.[20]

## LOBBYING FOR LEGISLATIVE REFORM

These medical groups should vigorously lobby legislatures to change bad laws. Beyond outright repeal of abortion bans, there are incremental reforms worth advocating. First is the addition of health-based exceptions to the abortion statutes in such states as Arkansas, Idaho, Mississippi, Oklahoma, South Dakota, and Wisconsin, whose exemptions are limited to saving a life. Second, in Missouri and Tennessee, doctors and nurses can be prosecuted for providing an abortion even if it clearly qualifies for medical exemption. There, groups should press for amendments that shift the burden of proof back to states to prove a clinician has actually violated the criminal law before hauling her into court.

## JUDICIAL DEFENSE TO PRACTICE MEDICINE

A final proposal is for state judges. They enjoy a measure of authority to mitigate criminal penalties by establishing justifications or excuses. Even if a prosecutor secured a conviction, judges could reduce the punishment based, for example, on a clinician's reasonable reliance on medical exemptions or good faith effort to heal patients and promote their health. A New Jersey court recognized these reasons in another context, referring to a clinician's charge to put patients first as a "clear mandate of public policy" that "deserves judicial protection" because "the ethical goals of professional conduct are of inestimable social value."[21]

It has been more than a century since courts last flexed their common-law muscles to fashion new affirmative defenses such as duress, entrapment, insanity, necessity, and self-defense. There is reason to recover that muscle memory today when the relationship between the practice of medicine and the rule of law has never felt so fragile. A common-law defense to criminal prosecution would vindicate the reasonable exercise of clinical discretion to respond to patient needs in the ways that medical exemptions and federal statutes like EMTALA were designed to authorize.[22]

## CONCLUSIONS

The abortion double bind is untenable. Doctors and nurses who practice medicine in good faith must not be trapped between criminal and civil law or state and federal law. Nor should fear of prosecution undermine professional obligations to exercise reasonable clinical judgment, lest the provision of emergent abortion care continue to be dangerously chilled. Although medical organizations urge critical legislative reforms, cost-free representation and guidance is available to help clinicians navigate these challenges for the sake of patients in need. AJPH

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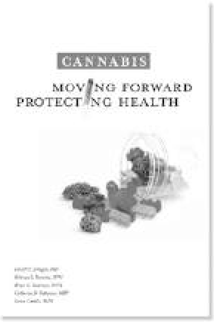

# Unpacking Cochrane's Update on Masks and COVID-19

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Recently, the Cochrane Library released its anticipated update on physical interventions to control the spread of respiratory viruses, including masks to contain the spread of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2).[1] The update was widely read and cited, becoming a point of controversy in the public debate about the efficacy of face masks, as it appeared to contradict both public health guidance[2] and research.[3] The appearance of controversy was in part owing to the methodological approach of Cochrane reviews, which allows inclusion of only randomized controlled trials (RCTs).

The authors added 11 new RCTs and cluster RCTs, of which six were conducted during the COVID-19 pandemic and evaluated various interventions for hygiene, including face masks and hand washing. Only two of the six studies compared use of face masks with no use of masks: one from Denmark, the DANMASK-19 RCT,[4] and one from Bangladesh.[5] But even with these limited, additional data, the appearance of disagreement between the Cochrane review results and public health guidance disappears if infectious disease models are applied, because the models calibrate quite well to the new Cochrane data and, when extrapolated, show that masks can reduce respiratory infections significantly.

## TWO NEW COCHRANE REVIEW STUDIES

The DANMASK-19 study had several flaws: it was underpowered; was not able to evaluate the impact of masks as source control (i.e., filtering viral particles directly from the source, the infected wearer); used SARS-CoV-2 antibody testing to detect infection instead of antigen testing, which is used to identify acute illness (so that infection could have happened at any time in the past, not necessarily during the study period); and was conducted at a time of low SARS-CoV-2 circulation.[6,7]

The cluster RCT in Bangladesh was a large study, with more than 340 000 participants, that demonstrated that villages receiving the intervention had increased mask use.[5] Although the study was not designed to demonstrate mask efficacy in reducing infections, it found that increases in mask use correlated with lower SARS-CoV-2 seroprevalence. Because evidence is weighted by the number of participants, the most heavily weighted data for face masks during the COVID-19 pandemic come from the RCT conducted in Bangladesh, representing more than 95% of the new data related to the pandemic that was used in the Cochrane update.

The Cochrane review mentioned many of its own limitations and weaknesses, particularly with regard to face masks and its limited number of robust studies; it, therefore, cautioned against drawing any strong conclusions. Given the strong opinions expressed about the study, Cochrane further clarified that their review should not be used as evidence against mask efficacy per se, noting that the data were not definitive and that masks might be effective at preventing respiratory virus infection.[8]

## MASKS AND MATERIALS ENGINEERING

From the standpoint of workplace safety and materials engineers, the debate on masks is something of an enigma: the utility of wearing masks should be obvious. Viruses like SARS-CoV-2 populate the respiratory tract.[9] During talking, singing, coughing, and sneezing, viruses are expelled into the ambient air in small droplets and aerosols.[10,11] Tight-fitting masks of various weaves and fiber content filter the droplets and aerosols from the air we breathe with various efficiencies.[12] Susceptible uninfected people are protected when the infectious, potentially asymptomatic shedder wears a mask (source control) or when wearing a mask themselves (wearer protection[13]). Every step in this causal chain of reasoning has been researched and documented and has been verified in studies of household transmission of SARS-CoV-2.[14,15]

The exact efficiency of transmission and filtration in each of the stages described can be measured, analyzed, and debated, but it is certainly not zero. From an engineering and materials standpoint, then, the question is not "Do masks work?" but "Do masks work as well as predicted, and if not, why not?" Of course, from immunological, epidemiological, and medical standpoints, we know that there are a host of modifiers that degrade face mask efficacy, including but not limited to the precise relationship between viral shedding and attack rates (i.e., the exact mathematical function connecting number of shed viral particles to number of secondary infections), mask contamination (e.g., wearers touching their masks and then rubbing their eyes), poor fitting around the nose and mouth, compensatory behaviors (mask wearers taking more risks because they think they are better protected than they are), and failure to maintain or use masks properly or at all (which has been a problem in most epidemiological studies of masks). Many of these modifiers contain a component of wearer training and practice, and these suggest that education about proper mask selection, use, and fit are important for improving public protection, as they are directly related to mask efficacy.

Although a detailed look at the Cochrane review demonstrates that the bias, methodological variations, and low adherence to interventions during the studies that were included preclude making firm conclusions about the effects of face masks, modeling the impact of mask wearing on transmission can make the case for masks even if we take the data added to the Cochrane review at face value. In the DANMASK-19 RCT, the authors estimated that no more than 5% of the general population used masks at the time of the study, thus masks were not a significant contribution to source control in the community.[4] The study was not powered to detect a wearer protection efficacy of less than 50%[7] and estimated a confidence interval (CI) ranging from a 46% reduction to a 23% increase in infections for the masked group, so that the effect was not statistically significant. Gurbaxani et al.[3] predicted an approximately 28% to 32% decrease in infections in the masked group, which corroborates the DANMASK-19 measured (but nonsignificant) decrease, although the modeling study assumptions do not closely align with the conditions of the DANMASK-19 study (e.g., the model assumed masks were worn indoors and more widely used in general).

Considering other limitations of the study beyond those discussed, for example, only wearing masks outdoors (where there is much less transmission because of better ventilation), low positive predictive value of testing given low prevalence of SARS-CoV-2 at the time of the study, and potential problems with adherence,[6] the fact that no statistically significant effects were observed for mask wearing was to be expected.

The other new RCT included in the Cochrane review that examined mask wearing to prevent SARS-CoV-2 infection, the Bangladesh RCT,[5] did find a statistically significant, but small, effect for mask wearing. About two orders of magnitude larger than the DANMASK-19 study, the Bangladesh RCT was powered to discern a small effect size and found an 11.5% (95% CI = 6.5%, 17%) reduction in symptomatic illness and 9.5% (95% CI = 1%, 19%) reduction in seropositivity in the masked group compared with the unmasked group.[5] It is notable that some symptomatic individuals did not consent to blood draws, reducing the seropositivity value. The study investigators were able to achieve a 42% adoption of surgical mask (medical procedure mask) wearing in the intervention communities versus 13% in the control communities (with ~180 000 people in each group), which correlated with reductions in seroprevalence.[5]

## MODEL CONSISTENCY

The Centers for Disease Control and Prevention (CDC) developed a detailed model that can predict the impact that various levels of masking would have for different types of masks, having measured the filtration efficacy of several different mask types in National Institute for Occupational Safety and Health laboratories.[3,12] The model includes the impact of both symptomatic and asymptomatic transmission; varying degrees of isolation for detected spreaders, including a Bayesian calculation for how well both symptomatic and asymptomatic people are detected; age-structured contact rates; and different levels of masking in each of those compartments.

Plugging the mask adoption rates for the intervention and control communities of the Abaluck et al. study into the model, the model results for reduced infections attributable to mask use are aligned with the Abaluck et al. results.[5] Depending on whether you assume the ancestral virus, or Alpha variant, circulating in Bangladesh at the time of the study (November 2020–April 2021), predictions are for an 8% to 15% drop in infections in the intervention communities (Figure 3 in Gurbaxani et al.[3]; Figure 1 herein). Although some of the parameters used as a default in

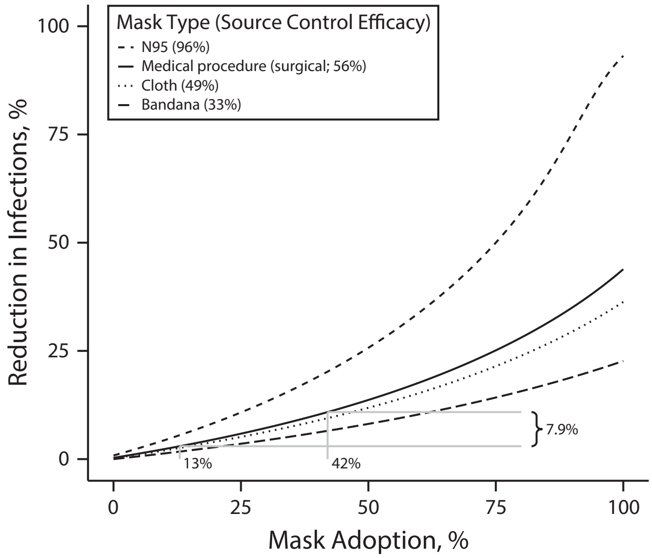

**FIGURE 1—** **Modeled Reduction in SARS-CoV-2 Infections Among the General Population, by Mask Type Relative to No Mask: United States, November 2020–April 2021**

*Note.* The figure shows the percentage reduction in cumulative infections after six months of simulation, relative to no mask use in the population, as mask use varies in the general, susceptible population for different types of face masks (using the model from Gurbaxani et al.[3]). Contact rates between age groups were taken from the POLYMOD study and therefore apply to the US population as of 2017, but other parameters used in the model were taken from a variety of sources[3] and could easily apply to Bangladesh as well as the United States in the 2020–2021 timeframe. Mask source control parameters were fixed according to estimates for the given types, and wearer protection efficacy was assumed to be half of the source control efficacy. Younger susceptible persons were assumed to use masks at 70% of the rate of persons aged 65 years or older. Known infected people aged 65 years or older were masked at a 90% rate, with younger persons at 70%. All parameters were kept the same as similar figures in Gurbaxani et al.,[3] except the baseline basic reproductive number ($R_0$, the average number of secondary infections resulting from each primary infection) in the absence of mask use was assumed to be 4.0, consistent with the Alpha variant of SARS-CoV-2. Vertical (gray) lines show mask prevalence for medical procedure (surgical) masks in the intervention and control groups of the Abaluck et al.[5] study, and corresponding horizontal lines show the model-predicted reduction in infections over the six-month study period.

the CDC model may or may not match those of the Abaluck et al. study (e.g., the contact rates in the POLYMOD study[16]), the calibration points are in the approximate effect sizes we see in both the DANMASK-19 and the Bangladesh RCT studies. The CDC model also predicts a much higher impact of better-quality masks (e.g., KN95 and KF94 respirators) when used by more than 70% of the population (Gurbaxani et al.[3]; Figure 1), which supports general mask use during times of high transmission to ensure a high population-level impact.

A study by Chikina et al.[17] has suggested that the Bangladesh RCT had an ascertainment bias, which could explain the weak positive result as an artifact of the experiment, given that nearly all of the differences in symptomatic rates between treatment and control groups was attributable to sample size. It is not clear how differences in enrollment and consent at the start of the trial create a significant bias when the outcome is symptomatic seroprevalence at the trial's end, the ratios of which (seropositive to symptomatic) were equal between treatment and control groups. Both Chikina et al.[17] and their publicly available reviewers suggest some possible mechanisms, but these are far from proven. Alternatively, it is quite possible, as Abaluck et al. suggest,[5] that the greater enrollment in the treatment group simply reflected that group's motivation to obtain more masks and the treatment group's surveillance workers' enthusiasm to distribute them. Also, the Chikina et al. article did not address the 23% and 35%, respectively, decreases in symptomatic seroprevalence among the groups aged 50 to 59 years and aged 60 years and older in the intervention group, which cannot be explained by differences in sample size alone and would be expected according to a generally higher symptomatic prevalence for SARS-CoV-2 in those age groups.

Moreover, mask studies inherently suffer from a lack of validation of proper or consistent mask use and of measures of fit and filtration, which would tend to bias the results toward the null hypothesis that masks do not work. Insufficient mask use has been measured even in places where compliance is emphasized and monitored.[18] Either way, neither positive nor negative sources of bias were supported in the Abaluck et al. study. If the Abaluck et al. study proves to be an accurate calibration point for the model, then the widespread use of high-quality, well-fitting masks during times of high transmission shows promise in slowing transmission and reducing the effective reproductive number ($R_e$).

One of the important criticisms of the Cochrane review is that the role of masks as source control—beyond their role of wearer protection (personal protective equipment)—is an effect that the large RCTs that Cochrane analyzes are not good at estimating.[19] Many types of masks are more effective as source control than they are as wearer protection,[3,12] and, although some have disparaged the distinction,[20] modeling can elucidate the relative impact of source control. In particular, source control is critically important when a respiratory virus is transmitted largely asymptomatically, as seen with SARS-CoV-2.[21]

A modeling study by Glasser et al.,[22] which fit high-quality national serological survey data to a metapopulation model of the spread of the virus, estimated the efficacy of nonpharmaceutical interventions (a combination of masking and social distancing) at 31% in the fall of 2020 (before vaccines were available). Overfitting is not a concern in this estimate, given that the effect of nonpharmaceutical interventions was the only parameter fit to the data in that metapopulation model (see the first table in Glasser et al.[22] for the origin of all the model parameters). This estimate is also in the ballpark of what would be expected given the percentage of cloth and medical procedure mask use in the general population at the time.

## MASK EPIDEMIOLOGY BEYOND MODELS

Beyond these modeling validations of the new data added to the Cochrane review of face masks, there are more than a dozen excellent observational epidemiological studies that demonstrate the positive effect of masking, with very sound data and statistical methods, that did not meet the inclusion criteria of the Cochrane framework, which favors large RCTs. Although RCTs are considered ideal, they are not without limitations. Therefore, considering many other data sources along with their strengths and weaknesses is necessary for informed policymaking.[23]

Examples of other studies include that of Donovan et al.,[24] who looked at schools in adjacent school districts in Arkansas—some of which had mask mandates in place, some of which had partial mask mandates, and some of which had none at all—and observed that the strength of the reduction in COVID-19 cases depended on the strength of the mandate, and the results were statistically significant. Other studies of mask mandates showed similar results.[25] Other types of studies, which include controlled laboratory-based experimental studies, epidemiological investigations, and population-level community studies, are detailed in Table A (available as a supplement to the online version of this article at http://www.ajph.org) and merit consideration in assessing the effect of mask use in reducing SARS-CoV-2 transmission.

## MORE IS MORE AND BETTER IS BETTER

The science of masking and its impact on SARS-CoV-2 transmission is complicated. Observational studies present valuable data that warrant consideration in informing policy with a full understanding of the utility of mask use in a variety of settings. The Cochrane review did not include a large body of evidence, and that resulted in a biased conclusion. If all types of studies are considered, it is clear that well-fitting, properly used masks do have a measurable and significant effect on reducing transmission when properly worn by the vast majority of the population during times of high community transmission.[3] Although the data in the two new studies included in the Cochrane update on masks are accurate, modeling studies correctly predict the small effect sizes that those studies observed; furthermore, the models predict that the effect size would be much larger with better masks more widely and correctly used. Taken together, these and other studies strongly indicate that masking is an effective intervention to reduce transmission of SARS-CoV-2 (source control) and should be considered to protect those most vulnerable from severe COVID-19 illness (wearer protection) as a general nonpharmaceutical intervention during times of high transmission. AJPH

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B. M. Gurbaxani conceptualized and wrote the initial draft of the article and helped develop the model. A. N. Hill coded the model and script to produce the figure and was the primary modeler. A. N. Hill and P. Patel contributed to article writing. P. Patel added the supplementary material. All authors reviewed and approved the final version.

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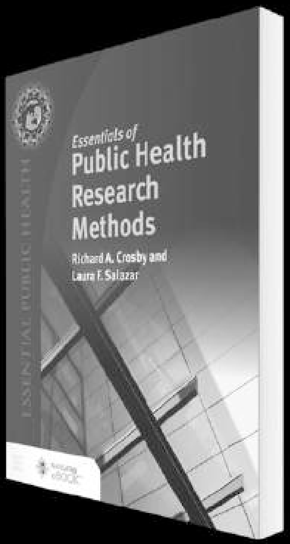

# Power Up: A Call for Public Health to Recognize, Analyze, and Shift the Balance in Power Relations to Advance Health and Racial Equity

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Strategies such as diversifying the public health workforce; building capacity related to diversity, equity, inclusion, and belonging; and conducting research on oppression are necessary but insufficient to improving health in communities that have been marginalized by systems of oppression. Working toward health and racial equity requires changing the structural drivers of health. Public health interventions must advance widespread and lasting structural change—changes in values and beliefs; culture and norms; governance; laws, policies, regulations, and budgets; and institutional practices.[1]

Structural interventions include, for example, shifting government budgets by increasing taxes on multinational corporations and the wealthy while increasing investment in low-opportunity neighborhoods of color and rural communities. They include changing the US electoral systems to reduce corporate influence, ensuring everyone has a voice that counts equally and can vote freely, and making our elected bodies more democratic and accountable. Structural interventions also include influencing narratives about the virtues of free markets and how the economy works so that the public understands that people govern the economy and can work toward an economy where all can thrive.

Structural interventions require the long-term work of shifting power—both building community power within marginalized communities and contesting the power of those who use it to maintain the status quo. Shifting power means changing who is making public decisions, controlling the political agenda, and influencing dominant narratives. If these are the changes needed to advance equity, does public health currently have the lens, know-how, and audacity to work toward these changes?

Public health needs a power lens: a common, nuanced, and critical understanding of how power works; the potential to mobilize collective power fieldwide; and strategies to shift the balance in power relations to address structural inequity and oppression. We submit that public health must increase its capacity to (1) recognize, (2) analyze, and (3) shift power.

## RECOGNIZING POWER

Power remains an underutilized and poorly understood concept in the public health field despite discussion of the topic for decades. Foundational public health frameworks[2,3] and papers[4–6] have described power as a fundamental cause of health inequities and balancing power as an important strategy in advancing health equity, yet those ideas have not been widely integrated into research and practice. Public health research has shown that power imbalance explains inequities across multiple determinants of health, though this insight has been muddied by overlapping terminology, such as “control” and “autonomy.”[7] Some in public health have developed and applied frameworks for analyzing power.[8,9] Despite this, a power lens is rarely applied.

Useful frameworks for conceptualizing power can inform how the field recognizes power. Feminist scholars and activists have introduced concepts such as power to, power with, and power within, considering power to be a capacity or a resource that can be redistributed.[10] Social theorist Steven Lukes described power as having three "faces."[11] As described elsewhere, these are (1) "Exercising influence in the political or public arena and amongst formal decision-making bodies to achieve a particular outcome"; (2) "Organizing the decision-making environment, including who can access decision-making and what issues are being considered by decision-making bodies"; and (3) "Shaping information, beliefs and worldviews about social issues."[12(p35)]

Black feminist sociologist Patricia Hill Collins articulated four domains of power: (1) structural: the social structures, such as laws, religion, and the economy, that organize power relations and maintain oppression; (2) disciplinary: control and organization of behavior through surveillance and routinization to manage oppression; (3) hegemonic: the shaping of beliefs through the development and normalization of ideology and culture to legitimize oppression; and (4) interpersonal: the personal relationships and interactions that are part of our daily life that uphold oppression.[13]

Each component of these conceptualizations is readily discernible in public health's external research and interventions and in its internal workings, with implications for public health training, research, practice, funding, publishing, and accreditation. As a first step, public health professionals can study these frameworks, critically reflect on how power is relevant to our work, and embed a recognition of power into our training and practice.

## ANALYZING POWER

Theoretical descriptions of power are most useful when they can guide research, policy, and practice, such as through the development and answering of questions that prompt analyses of power dynamics. For example, questions that can guide public health analysis based on the "three faces of power" include the following:

1. Who holds decision-making power? How do we influence them? What public health assets (e.g., evidence, framing) will influence them?
2. Who is influencing the decision-making agenda? What organizations need to be built or brought into relationship to move an equity agenda?
3. What dominant worldviews and narratives influence decisions and make harmful viewpoints seem like common sense? What transformative narratives can public health and partners in marginalized communities assert to shift what is considered common sense?

Similarly, questions can be developed from Hill's four domains of power. Examples relevant to public health training include the following:

1. Structural: What are the present and historical relationships between school or program of public health (SPPH) property ownership and land acquisition practices and community housing, and what have been and are the health impacts for residents? How are the SPPH's labor practices assessed and addressed? Are SPPH staff, faculty, and research and teaching assistants paid fairly?
2. Disciplinary: How is power operating to shape public health epistemologies and training requirements? How are various domains and types of knowledge valued within admissions criteria? Which forms of knowledge and ways of knowing are emphasized, prioritized, and centered?
3. Hegemonic: How is power operating in the determination of public health training competencies? Are accreditation entities and program directors sufficiently trained in matters of positionality, power, epistemology, and the social production of knowledge? Do curricula presume public health is an "objective" and "neutral" arbiter of facts, evidence, and health "truths"?
4. Interpersonal: How is power operating to support or inhibit inclusion and belonging within SPPHs? Are there policies in place to disrupt practices of silencing, erasure, and microaggressions in public health classrooms?

Using frameworks of power to develop and answer questions about the power dynamics at play on issues related to health equity is a second step for public health.

## SHIFTING THE BALANCE IN POWER RELATIONS

While some may conceive of power as dominance—power over—Dr Martin Luther King Jr defined power more affirmatively as "the ability to achieve purpose."[14(p199)] To advance equity, power must be shifted from those who use power to perpetuate inequity. This requires contesting their power as well as building power with and within marginalized communities.

Answers to the types of questions outlined previously must inform the strategic actions and interventions public health deploys to advance equity. While some in public health are already intentionally working to shift power—for example, using the "three faces" framework[12]—for many, this will mean working differently and starting new activities.

Public health will need to shift the balance in power relations through its community interventions. For example, public health departments can provide services while also building power among those they serve, bringing together marginalized individuals and communities to build relationships, develop a shared understanding of the root causes of the issues they face, and work together to identify and advance solutions that address those root causes. Through Health in All Policies and similar initiatives, public health can engage across sectors to build a shared understanding of equity and support work across sectors to shift power. Every aspect of our community work can be evaluated and shifted through a power lens: What public health assets and actions can be mobilized to grow power within marginalized communities to influence decisions, build the infrastructure necessary to set an equity-focused agenda, and change the narrative?

Shifting power will require new relationships and collaborations—for example, with community organizing groups that have long focused on shifting power to marginalized communities. It will require that public health researchers ask how research contributes to power-building and shift to more inclusive methods such as participatory research.[15] Public health will need to reconsider what is viewed as legitimate data and research, how knowledge is assessed and validated, and how to challenge dominant narratives that block progress toward structural change.[16]

To enable this externally facing work, public health practitioners will need to examine our own power and positionality, understanding the power we have and how it can be harnessed to advance equity. Public health organizations will need to transform institutional practices, critically examining processes for research, funding, publishing, administration, and training.[16] Public health training will need to reorient around advocacy, social action, and political engagement, and abandon teaching that we are "objective" and "neutral" arbiters of science.

Increasingly, public health practitioners recognize that to advance health and racial equity we must change the structures that cause and maintain inequity, addressing structural racism and other structures of oppression. Yet methods and interventions for making those changes are absent from public health's current toolbox. Using a power lens can reveal a way forward. The field of public health must learn to recognize and analyze power, harness our collective capacity, and change our strategies to correct power imbalances. AJPH

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J. C. Heller conceptualized this article, wrote the first draft, and oversaw the editing and review process. P. J. Fleming, R. J. Petteway, M. Givens, and K. M. Pollack Porter contributed conceptual elements, writing and editing, and review.

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# Time to End Racial Disparities in Buprenorphine Access

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On December 29, 2022, US President Joe Biden signed the Consolidated Appropriations Act of 2023, which eliminated the Drug Abuse Treatment Act of 2000 (DATA 2000) waiver requirement, commonly called the "X-waiver" requirement. This change to US drug policy means qualified providers can now prescribe buprenorphine, one of three medications that effectively treat opioid use disorder (OUD), without first obtaining an X-waiver.[1]

The X-waiver was a barrier to expanding access to buprenorphine treatment of OUD. Ending the X-waiver requirement could reshape medical treatment of OUD and help stem the course of the US drug overdose epidemic.[2] Importantly, it also presents an opportunity for government officials and health and public health practitioners to redress the harms of policies that disproportionately affect low-income communities and Black, Indigenous, and other People of Color (BIPOC).

## RACIAL DISPARITIES IN DRUG OVERDOSE IN THE UNITED STATES

Nationally, drug overdose deaths have increased markedly since the late 1990s, with some of the most pronounced increases occurring over the last decade. The epidemic has comprised three waves: starting in the 1990s, the first wave was an epidemic of prescription opioid overdose; starting in 2010, the second wave was marked by an increase in heroin-involved overdose deaths; and beginning in 2013, the third wave has been characterized by a drastic increase in overdose deaths driven by synthetic opioids, primarily fentanyl.[3] During each wave, the burden of overdose deaths has not been distributed evenly and has varied across race/ethnicity, gender, geography, and neighborhood-level wealth or income.[3,4]

Although overdose deaths have increased among all racial and ethnic groups over the last few years, overdose death rates were highest or have grown most in many BIPOC communities.[4–7] In 2021, age-adjusted overdose death rates were highest among non-Hispanic American Indian or Alaska Native persons (56.6 deaths per 100 000 people), followed by non-Hispanic Black persons (44.2 deaths per 100 000 people). From 2020 to 2021, the relative rate increase in overdose deaths among Hispanic persons (20%) was nearly double that of White persons (11%).[5]

Recent data also show that drug overdose rates increase as county-level income inequalities increase. From 2019 to 2020, non-Hispanic Black persons and Hispanic persons experienced the greatest burden of drug overdose deaths in communities with high income inequalities.[8]

Lastly, a history of substance use treatment was lowest among non-Hispanic Black, Hispanic, and non-Hispanic American Indian or Alaska Native decedents, groups that have experienced some of the greatest increases in drug overdose death rates.[8]

Consistent with causes of other health inequities, the disproportionate burden of overdose deaths in BIPOC communities is the result of decades-long, racist social policies and failed drug policies that structurally disadvantage and harm BIPOC communities.[4,9,10]

## DISPARATE ACCESS TO MEDICATIONS TO TREAT OPIOID USE DISORDER

Of the three medications approved for OUD treatment, methadone and buprenorphine are most commonly prescribed and both are effective at reducing opioid use, improving treatment retention, and reducing risk of overdose death.[11] Despite these benefits, both medications are carefully regulated to prevent diversion and, particularly in the case of methadone, misuse. The regulatory structures, however, have contributed to wide disparities in accessibility along geographic, socioeconomic, and racial and ethnic lines.[7,12]

Methadone for OUD treatment can only be prescribed and administered in specialized addiction treatment settings known as opioid treatment programs. Typically, people who are taking methadone must go to an opioid treatment program nearly daily to be administered a single dose under observation but can sometimes receive multiday doses at the discretion of a provider. In contrast to methadone, buprenorphine for OUD treatment can be administered and prescribed by providers (previously, only by X-waivered providers) in any setting, with medication dispensed by community pharmacies.[12]

Although the X-waiver requirement was designed to expand access to buprenorphine for OUD outside opioid treatment program settings, it created several restrictions.[13] To become waivered, a provider needed to complete eight to 24 hours of additional training as well as satisfy other administrative requirements. These requirements were a considerable hurdle, and partially explain the low numbers of waivered prescribers.[2,7,13] DATA 2000 also imposed limits on the number of patients that waivered providers could treat, and these limits could only be increased if providers submitted an application at least one year after receiving their waiver. These limits further constrained access to buprenorphine for OUD.[2,7,13]

In addition to the X-waiver requirement, several other factors discouraged providers from obtaining an X-waiver, prescribing buprenorphine once waivered, or treating the maximum allowable number of patients. These factors include concerns related to financial costs and compensation, a lack of institutional support, concerns about taking on OUD patients without additional training and support, and stigmatizing beliefs about people who use drugs or have OUD.[2,7,14]

Issues of stigma and racism have also been shown to deter engagement into treatment among BIPOC patients. Black patients delay seeking addiction treatment as a result of both previously experiencing racism and anticipating racial discrimination in health care settings, including the addiction treatment system,[15] where addiction physicians and psychiatrists are predominantly White.[16] These findings are consistent with the corpus of literature that shows how racism and lack of racial and cultural concordance drive poorer access, treatment, and health outcomes among BIPOC patients compared with their White counterparts.[15]

Unsurprising in this context, among providers with X-waivers, most serve White, middle- and upper-income communities, and only about half accept public insurance. Even among commercial insurance beneficiaries, Black and Hispanic patients are less likely to receive buprenorphine than White patients.[7,17] And, although the Affordable Care Act helped expand access to OUD treatment with both buprenorphine and methadone, buprenorphine remained comparatively inaccessible in BIPOC communities.[18]

In part driven by the regulatory environment, buprenorphine has been far more accessible to whiter and wealthier communities, yet BIPOC communities and communities experiencing poverty have less access to buprenorphine and much greater access to methadone. The benefits of receiving buprenorphine treatment have not been evenly distributed and have failed to keep pace with the growing number of people with OUD.[7]

## LOOKING FORWARD

Elimination of the X-waiver is a cause for rejoicing among clinicians, addiction experts, advocates, people who use drugs and their loved ones, public health professionals, and policymakers alike. It is an important step toward expanding access to OUD treatment, an urgent need at a time when drug overdose deaths have reached historically high numbers. It also represents a long-overdue step toward advancing health equity and addressing the structural racism deeply embedded in US drug policies as well as in the US health care system.

As others have noted,[19] and as history has shown, reducing regulatory barriers alone is unlikely to close the gaps between the need for and availability of OUD treatment, particularly the treatment gaps that exist along racial and ethnic divisions. It is unlikely that the removal of the X-waiver alone will generate large numbers of new prescribers nor grow existing prescriber caseloads. However, research has shed light on the need for other regulatory changes as well as the need for more provider education, training, and support. With one major obstacle out of the way, it is therefore incumbent upon health care providers, public health practitioners, and policymakers to implement new strategies to make buprenorphine readily available and attractive to those who want or need it; it is also critical that these strategies prioritize racial equity and serve to undo the effects of decades-long, de facto medical redlining policies. AJPH

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H. Rosen conceptualized the manuscript and led the writing. C. O. Cunningham conceptualized the manuscript and contributed to the writing.

## CONFLICTS OF INTEREST

The authors have no conflicts of interest to disclose.

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# Integrated COVID-19 Interventions in a Native American Community: Arizona, December 25, 2021–January 31, 2022

*Elizabeth A. Van Dyne, MD, MPH, Christopher Jentoft, MD, Thomas Boone, MD, and Ryan M. Close, MD, MPH*

COVID-19 has disproportionately affected Indigenous communities. The Whiteriver Service Unit (WRSU) took an integrated public health–health care system delivery approach in collaboration with the White Mountain Apache Tribe to decrease the case fatality rate (CFR). The WRSU performed daily data analyses identifying risk factors, expeditiously treating and proactively vaccinating people during at-home visits. The WRSU's CFR was 0.3% lower than Arizona's ($P = .04$). Among communities disproportionally affected, an integrated approach using data to drive real-time decision-making among a culturally competent workforce can contribute to decreased CFR. (*Am J Public Health*. 2023;113(10):1089–1092. https://doi.org/10.2105/AJPH.2023.307364)

During the December 2021–April 2022 COVID-19 surge, the Department of Preventative Medicine (DPM) of the Indian Health Service's Whiteriver Service Unit (WRSU) built upon and strengthened existing local processes to coordinate care across various public health and clinical teams, importantly involving community members, to mitigate the impact of disease. Real-time, data-driven, and efficiently communicated decisions allowed a nimble response embedded in the community that streamlined case identification, individual patient risk assessment, and early linkage to care and vaccination.

## INTERVENTION AND IMPLEMENTATION

After the first community COVID-19 case was detected on April 1, 2020, the WRSU's DPM coordinated the response to COVID-19, developing the high-risk team, contact tracing, case investigation, COVID-19 vaccination program, and high-risk home visit teams. The WRSU used a single, integrated electronic health record system for the DPM, ambulatory and inpatient care, the emergency department (ED), and community outreach. The DPM comprises physicians, nurses, medical assistants, pharmacists, physical therapists, health technicians, dental hygienists, and community health representatives performing public health system roles.

During the COVID-19 omicron (B.1.1.529 and descendant lineages) surge that began in December 2021, the DPM daily obtained laboratory COVID-19 test results, performed analyses to create reports of all positive results, and identified persons at increased risk for progression to severe disease, based on age, underlying conditions, and vaccination status. These persons were monitored at home visits (history, ambulatory and resting pulse oximetry, physical exam) and remotely (self-monitored pulse oximetry). Those who met specific, locally developed criteria were referred to the WRSU's ED for further evaluation.

The high-risk team reviewed the electronic health record of all patients who tested positive for COVID-19 to determine eligibility for early treatment with either monoclonal antibody or other antiviral medication (sotrovimab, combined casirivimab and imdevimab, and remdesivir) based on the Food and Drug Administration's Emergency Use Authorization and locally defined criteria. The WRSU developed a specific scoring system (the COVID-19 Treatment Allocation Score), adapting external allocation systems (Monoclonal

Allocation Screening Score and National Institutes of Health COVID-19 Treatment Guidelines Panel) based on local data and outcomes. These criteria were updated in real time through an Incident Command System, necessitated by the rapid influx of patients during the surge of cases. The COVID-19 Treatment Allocation Score was used to identify patients to contact for treatment, not to exclude patients from treatment; individual clinicians had independent authority to order treatments for patients based on individual, case-based, clinical discretion.

The WRSU engaged in aggressive, proactive COVID-19 vaccine efforts. Field team members, many of whom were from the community and spoke the local language, provided home vaccinations for persons at increased risk. Hospital-wide patient encounters were reviewed to identify opportunities to provide vaccination to prevent future surges.

## PLACE, TIME, AND PERSONS

The WRSU serves approximately 18 000 members of the White Mountain Apache Tribe (WMAT) and other tribes on the reservation and surrounding areas across approximately 2600 square miles in remote and mountainous east-central Arizona. During January 2022, 97% of test samples for SARS-CoV-2 (the virus that causes COVID-19) sequenced in Arizona were BA.1 omicron variant.[1] The WRSU and WMAT faced the highest case rates of the entire pandemic among a high-risk population remote from intensive care unit–level care (180 miles from nearest tertiary care centers). On December 20, 2021, near the start of the state omicron surge, the COVID-19 Pandemic Vulnerability Index of Navajo County, Arizona (where WMAT is located) was higher than those of 97% of US counties, predictive of higher incidence and mortality risk.[2] Arizona experienced the highest weekly case count of the entire pandemic (2.4 times the previous highest weekly case count for the state) and less than 5% intensive care unit bed availability.[3,4]

## PURPOSE

Native American communities endured great morbidity and mortality from the COVID-19 pandemic; in Arizona, 13% of COVID-19 cases and 18% of deaths were among Native Americans, who make up only 5.3% of the state's population.[3,5,6] To decrease the case fatality rate (CFR) and offer culturally competent care, the WRSU implemented a proactive COVID-19 risk management strategy, integrating public health, preventive medicine, and health care delivery.

## EVALUATION AND ADVERSE EFFECTS

During the BA.1 omicron surge (December 25, 2021–January 31, 2022), the COVID-19 CFR in the WRSU was significantly lower than that in the rest of Arizona. Despite a 69% higher COVID-19 incidence (incidence rate ratio [IRR] = 1.69; $P \leq .001$), the CFR in the WRSU (0.14%) was one third that in Arizona overall (0.44%).[7,8] These outcomes are notable; Indigenous communities have been disproportionately affected by COVID-19 with mortality rates consistently higher than the US average.[9]

A total of 2168 persons in the WRSU catchment area (12 044 per 100 000) received a positive SARS-CoV-2 test result (Table 1). Among these, 41 patients (1.9%) were hospitalized (228 per 100 000), and three patients (0.14%) died. Compared with Arizona, where the COVID-19 incidence was 7136 per 100 000, the WRSU incidence was significantly higher (IRR = 1.69) and correlates with the higher county COVID-19 Pandemic Vulnerability Index. The overall Arizona CFR (0.44%) was more than three times that of the WRSU (CFR difference = −0.3; $P = .04$). COVID-19–related mortality among WRSU patients (17 per 100 000) was 47% lower than that in Arizona overall (32 per 100 000), although the difference was not statistically significant (IRR = 0.53; $P = .26$).

Among 1616 persons aged 18 years or older with a positive SARS-CoV-2 test result, 528 (33%) received treatment, including 319 (20%), 186 (12%), and 23 (1%) who received sotrovimab, combined casirivimab and imdevimab, and a three-day outpatient course of remdesivir, respectively (Table 2). Of three WRSU deaths among patients with laboratory-confirmed COVID-19, none met Emergency Use Authorization criteria for outpatient treatment because of oxygen requirements or hospitalization at time of diagnosis. Among patients who received any outpatient treatment, no deaths occurred.

In a review of patient encounters to assess opportunities to deliver COVID-19 vaccine, it was found that 75% of patients seen in the ED in January 2022 were not up to date. ED-based vaccinations were initiated by pharmacists to avoid relying on ED staff to administer vaccines.

## SUSTAINABILITY

The WRSU's DPM, which coordinated and conducted the WRSU community COVID-19 response, has full-time staff and will continue to use the same

## TABLE 1— COVID-19 Cases and Outcomes: Whiteriver Service Unit (WRSU) and Arizona, December 25, 2021–January 31, 2022

| | No. (Rate per 100 000) | | |
|---|---|---|---|
| **Characteristic** | **WRSU**[a] | **State of Arizona**[b] | **IRR (95% CI)** |
| Cases of confirmed COVID-19 | 2 168 (12 044) | 519 431 (7 139) | 1.69 (1.62, 1.76) |
| COVID-19–related hospitalizations | 41 (228) | 16 245 (223) | 1.02 (0.73, 1.39) |
| COVID-19–related deaths | 3 (17) | 2 294 (32) | 0.53 (0.11, 1.55) |
| Case fatality rate, % (95% CI)[c] | 0.14 (−0.02, 0.30) | 0.44 (0.42, 0.46) | . . . |

*Note.* CI = confidence interval; IRR = incidence rate ratio.

[a] Rates per 100 000 were calculated for cases, hospitalizations, and deaths using the electronic health record (EHR) for WRSU population-level data. The Indian Health Service EHR, in conjunction with iCare, a population management software tool, and Resource and Patient Management System, were used for WRSU data collection for health care delivery and public health analyses and decision-making.

[b] Trends in number of COVID-19 cases and deaths in the United States by state/territory, as reported to the Centers for Disease Control and Prevention (CDC), were accessed by data download from https://covid.cdc.gov/covid-data-tracker/#trends_dailycases, https://covid.cdc.gov/covid-data-tracker/#cases_totaldeaths, and https://covid.cdc.gov/covid-data-tracker/#new-hospital-admissions (accessed October 11, 2022). The CDC calculates the number of new cases or deaths each day either by using the information provided by states and territorial jurisdictions or by calculating the difference in cumulative counts reported by the state from the day before. Rates per 100 000 are calculated as total cases or deaths per 100 000 people using the US Census Bureau Population Estimates Program.

[c] Case fatality rate difference between WRSU and Arizona was −0.30 percentage points (95% CI = −0.46, −0.14; *P* = .04).

strategy to respond to other diseases. The WRSU coordinates with tribal government agencies (e.g., the Emergency Operations Committee, the Public Health Department, community health representatives, and the WMAT Emergency Medical Services) to enhance sustainability.

## TABLE 2— COVID-19 Treatment Outcomes Among Persons Aged ≥ 18 Years With a Positive SARS-CoV-2 Test Result: Whiteriver Service Unit, Arizona, December 25, 2021–January 31, 2022

| **Treatment Outcome** | **No. (%)** |
|---|---|
| Total with positive SARS-CoV-2 test result | 1616 (100) |
| Received outpatient treatment[a] | 528 (33) |
| Sotrovimab | 319 (20) |
| Casirivimab/imdevimab | 186 (12) |
| Remdesivir | 23 (1) |
| Death | 0 |
| Did not receive outpatient treatment | 1088 (67) |
| Met EUA criteria for outpatient treatment[b] | 1032 (64) |
| Did not meet EUA criteria[c] | 56 (3) |
| Death | 3 (0.2) |

*Note.* EUA = Food and Drug Administration's Emergency Use Authorization.

[a] Treatment included sotrovimab, casirivimab/imdevimab, or remdesivir.

[b] Patients categorized as high risk and who met EUA criteria for outpatient treatment.

[c] Patients who required oxygen therapy because of COVID-19, were hospitalized because of COVID-19, or otherwise did not meet EUA criteria for outpatient treatment.

## PUBLIC HEALTH SIGNIFICANCE

The WRSU's COVID-19 response demonstrates how an integrated, proactive approach using data to drive dynamic, real-time decision-making among a dedicated workforce that understands the local community context, can contribute to a decreased CFR.[10] Clear and real-time communication was essential to the response, particularly in meeting time-frame goals for treatments.

Home outreach can require substantial investments of time and human resources; however, in this remote population with limited resources, including transportation, as well as limited or unavailable Internet and video capabilities, there were few other alternatives to reaching persons at highest risk for severe disease. In addition, seeing patients in their own environment and performing a physical examination provide more information than can be obtained through a telephone call, inform clinical decision-making, and enhance patient care. Early identification of patients at high risk, streamlining expedient treatment, and linking to ongoing care through home visits all contributed to improvements in outcomes. Preemptive planning of vaccination efforts while still in surge mitigation phase has the potential to reduce future morbidity and mortality.

A proactive risk management and health strategy, preventive measures, collaborative and integrative interventions involving health care and public health institutions from the community to hospital level, and an integrated data-driven response led to a COVID-19 CFR that was significantly lower than that of the rest of Arizona. Among communities disproportionally affected by COVID-19, an integrated approach using data to drive dynamic, real-time decision-making among a culturally competent workforce can contribute to decreased COVID-19 case fatality. AJPH

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## CONTRIBUTORS

E. A. Van Dyne and R. M. Close performed conceptualization, data analysis, and interpretation of data, and drafted and edited the article. C. Jentoft performed conceptualization and interpretation of data, and drafted and edited the article. T. Boone performed data analysis, and drafted and edited the article.

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# On Building Common Ground: An *AJPH* Special Section

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**See also Building Common Ground, pp. 1093–1115.**

Protecting the health and safety of all Americans depends on at least three capacities: the ability to determine how health and safety is best protected scientifically; the ability to communicate the logic, risks, and benefits of proposed interventions so the population trusts the interventions suggested; and the ability to convene communities so that they see the need for these interventions as part of the common good. Building common ground has become more challenging as the nation struggles to see itself as one people. The roles of public health and of public health leadership in building that common ground have always been implicit, but the increasing polarization of the nation requires a more conscious effort from public health and public health leadership if we are to be effective in protecting the health and safety of all Americans.

In public health, “finding common ground” is commonly applied to subject matter related to racial/ethnic diversity, equity, and inclusion. The world and the United States are diverse places whether we acknowledge and embrace diversity, equity, and inclusion or not. Too often in the United States, we are sorted or sort ourselves by income, education, race, faith, gender preference, and geography, and too many of us exist in bubbles: a social environment where we know and interact only with people with whom we share some common identifier. Consequently, we often exist without encountering ideas and beliefs different from our own, and too often we have no context in which to learn about or appreciate the ideas of others.[1]

In the special section “Building Common Ground,” *AJPH* offers a new paradigm—suggestions for expanding the notion of diversity to include diversity of thought and perspectives built from lived experiences, frames of references, and differing worldviews—with the goal of forming public health strategies for public good in a landscape of varied political, cultural, and ideological perspectives. We hope to open dialogues on these challenging issues, identify points of articulation among persons with differing worldviews, and locate best practices that help us come to agreement on how to best promote population health.

Honest and transparent communication is critical in this endeavor, as are mutual respect, understanding and fairness, and tolerance of differing ideas. We acknowledge the specific challenges of cultivating common ground in the United States, with our tiered governmental structures (i.e., the local, state, and federal levels), which sometimes serve as barriers to accomplishments, as well as our well-documented difficulty in transcending the usual variety of competing interest groups and seeing ourselves as Americans, unified for the common good. We conceptualize this special section as an open door to continuing conversations in incremental steps to identify methodologies, strategies, and practices that will facilitate building common ground, brick by brick, and learning along the journey.

When a group of our colleagues who are Association of State and Territorial Health Officials alumni, former state health officers who served in both Republican and Democratic administrations, proposed a special section on building common ground, we were uncertain what building common ground would entail. But the process of putting out a call for articles, reading the submissions, and determining which submissions best fit our developing criteria helped us understand both the need for common ground and the skills, knowledge, and wisdom required in creating that common ground.

Our call for proposals asked for articles on building an understanding among groups with differing viewpoints, values, ideologies, or perspectives to better address programs, policies, and interventions in public health and population health. We determined that building common ground occurs when different people or groups find areas of policy or programmatic agreement, even when they do not agree about ideology, policy, or politics. We understood that, although building common ground has always been challenging in public health policy, the current political and ideological division in the United States (and indeed the world) has reached levels that threaten progress in many domains. But we also understood that public health and population health improvement presents many opportunities to build common ground to produce better population health outcomes.

The Comments, Notes From the Field, and Editorials in this special section represent a first-pass attempt to address the opportunities presented to public health as a convener and facilitator of the process to find common ground in this one aspect of US policy, culture, and society, as we focus on the consensus necessary to protect the health and safety of all Americans.

Telfair LeBlanc (p. 1096) reflects on contemporary trends in the quantity and quality of available information and on the distortion of public confidence in information created by spin and social media. She recommends that schools of public health design specific courses to create awareness of the information conundrum to help future public health professionals discern fact from fiction and clearly differentiate between conclusions based on opinions and those based on empirical evidence.

Kassler and Bowman (p. 1102) question the now sometimes fraught language of public health surveillance and expose how our legitimate desire for privacy makes that language a wedge that threatens our common ground. They propose ways to change the programs and systems we develop to emphasize the same high priority for privacy and civil liberties that our policymakers and their constituents demand so that our language will resonate among all.

Bernier (p. 1099) reports on the Crosscurrents Dialogue Model, which has been used to explore how Americans with different political perspectives can have productive conversations about controversial value-laden topics. He suggests that the divide among Americans can be narrowed by the Crosscurrents Dialogue Model enough to reach agreement on public health interventions.

Similarly, Blacksher et al. (p. 1110) describe public deliberation, a process that convenes people of varied backgrounds to learn and talk together about a social problem in search of solutions. They describe the core principles and practices of deliberation, provide examples of its use in the health sector, discuss deliberation design adaptations attuned to a divided and diverse United States, and describe where and how it could be used to address decision making in US population health.

Magnan and Kindig (p. 1106) share 12 principles that may be helpful in fostering agreements about public health issues and ideas among people who may not agree about other things.

Finally, Alberti et al. (p. 1114), writing from the Association of American Medical Colleges Center for Health Justice, report on a nationally representative poll of 1510 members of Generation Z: those aged 18 to 24 years. The poll identified unexpected areas of agreement among these younger self-identified Democrats, Independents, and Republicans, and the results give us hope for a future focused on health equity that builds those areas of agreement.

We hope that this special section will further the development of this public health skill set and that we see many other articles, reports, and editorials as we develop science based on the approach to building common ground but also knowledge and wisdom based on the science. We hope future articles (and, perhaps, future special sections) will tell the stories of successful and unsuccessful attempts to build common ground, highlighting best practices and using rigorous evaluation methodology. Such articles will name the convener, the major parties to the process, and their positions and differences; the processes used to reach common ground; the processes used to maintain negotiating equipoise; the intervention chosen; the methodology by which that intervention was successful; and the results achieved. The articles will also discuss lessons learned and thoughts about scalability.

The common ground we find and build in public health is necessary for public health to succeed in protecting the health and safety of all Americans. That common ground is part of a bigger picture—a perception of our membership in one nation, indivisible after all, which is likely a necessary condition for democracy and for a better, safer, and stronger future. AJPH

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## CONTRIBUTORS

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## CONFLICTS OF INTEREST

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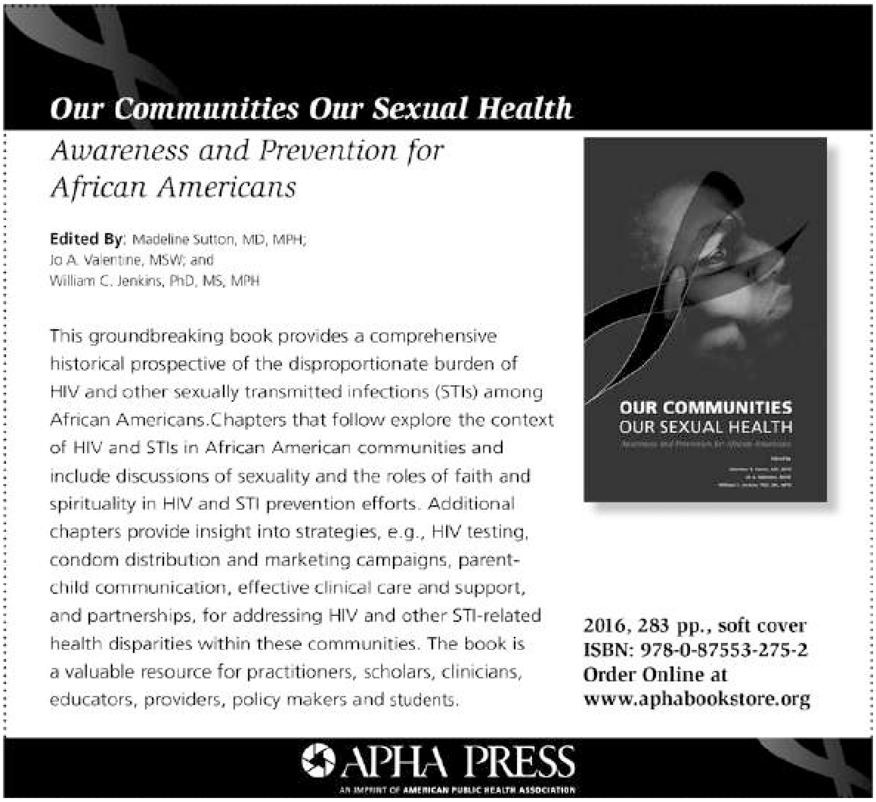

# The Crosscurrents Dialogue Model: 2019–2023

*Roger H. Bernier, PhD, MPH*

**See also Building Common Ground, pp. 1093–1115.**

The failure to consult with the public in policymaking can result in less sound and supportable policies. The Crosscurrents Dialogue Model (CDM) was developed to explore if Americans with different political perspectives could have useful policy conversations. To date, the CDM participants have addressed 10 separate topics such as health care and immigration and reached agreements each time. CDM provides evidence that the divide between politically diverse Americans can be bridged adequately to agree on specific recommendations for action. (*Am J Public Health*. 2023;113(10):1099–1101. https://doi.org/10.2105/AJPH.2023.307359)

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The politicization of public health interventions in the United States during the COVID-19 pandemic helped make clear what has always been true but not often acknowledged publicly. Namely, public health is politics.[1] The frequently heard advice for policymakers to just "follow the science" has never been an adequate guide for action because the facts do not just speak for themselves. Behind most public health and other public policy choices are competing social values,[2] and decision-makers in public health have often relied largely on their own values or those of expert committees in making public policy decisions. Since our core values as Americans reside in the body politic, the failure to meaningfully consult with the public on values tradeoffs in arriving at evidence-informed decisions can result in less sound, less values-aligned, and less supportable public policies.

Critiques of the US pandemic response are now calling for more community engagement in developing public health policies.[3,4] However, the deep political polarization that now characterizes American society raises questions about how to effectively engage with populations that harbor diverse and strongly held views, not just on vaccines, masks, and lockdowns but on myriad other topics as well.

## INTERVENTION AND IMPLEMENTATION

The Crosscurrents Dialogue Model (CDM) is a small-group problem-solving methodology used to explore whether everyday Americans with different political values could have frank conversations about timely, controversial topics and reach agreement on recommendations for addressing the problems. Both health and nonhealth topics were selected for discussion. CDM overlaps with the use of a charette method, which also involves problem-solving, but most often the charette topics center on planning and design choices rather than public policy options.

## PLACE, TIME, AND PERSONS

The CDM was implemented in Beaufort and Aiken counties in South Carolina beginning in 2019. Meetings were carried out in person or via videoconferencing for approximately two hours every two weeks and have continued uninterrupted for three years, including during the pandemic. The group started with two liberal and two conservative persons at a breakfast meeting and has grown to attract an estimated 50 different individuals of different ages, races, and genders with an average of between 10 and 15 members at any given point in time. The membership has consistently included people representing diverse political views. Prerequisites for joining the group are curiosity, the capacity to be open-minded, and an interest in learning from others. During the meetings, the ground rules agreed upon are to avoid dominating the discussion, to be respectful, and, when disagreeing, to do so inoffensively. A member of the group serves as moderator and organizer.

To date, members have met on separate topics of gun control, impeachment, health care reform, election reform, police reform, the existence of shared public values, immigration, threats to democracy, civil discourse, and teaching American history. For each topic, members gathered relevant facts from reliable sources, discussed competing values and different points of view, found shared interests or common ground, identified practical solutions, and agreed on recommendations.

## PURPOSE

The motivation for the intervention is to provide "proof of concept" that individuals with very diverse political views can have productive dialogues. The goal is achieved by publishing the agreements in local newspapers so that the conversations can serve as an example to other citizens and public officials of what can be accomplished through dialogue.

## EVALUATION AND ADVERSE EFFECTS

To date, the CDM has made it possible for diverse Americans to reach 12 separate agreements on 10 different topics. Each agreement has been on a limited set of actions that could be taken to better address the public problem. Each of these agreements has been submitted and published by local newspapers covering four towns in two counties of South Carolina. The publication of the group's agreements has led to the recruitment of new members who have helped to sustain the desired average number of participants. Also, the publicity about the CDM has led to other groups organizing to use the model in new areas. For example, the CDM has been piloted by the Osher Lifelong Learning Institute at the University of South Carolina Beaufort,[5] and a modified version has been carried out by interested dialogue practitioners in Northeastern Ohio.[6] There have been no adverse or unintended consequences associated with CDM.

## SUSTAINABILITY

The CDM has been in continuous use for three years and has tackled numerous different topics with a continuous turnover of regular members leaving and new members joining. The new members have been attracted after reading one or more of the published statements and learning about the group. The project demonstrates that there is a public appetite for safe spaces and proven effective methods for exchanging views and learning from other citizens who think differently.

## PUBLIC HEALTH SIGNIFICANCE

Many reports describing lessons learned from the recent pandemic call for greater community engagement to develop more effective and supportable public health interventions.[3,4] Most calls are for the involvement of like-minded stakeholders who already support the public health mission. Few calls for community engagement highlight the need for involvement of citizens with diverse political persuasions. We found no reports that provide convincing evidence that it will be possible for public health officials to bridge the chasm that now separates Americans. Admittedly, the CDM has not produced any major changes in the fundamental political perspectives of participants. However, those unchanged worldviews have not been an obstacle to reaching agreement on specific recommendations to help solve the problem discussed. Thus, the CDM provides compelling evidence that the divide among Americans can be bridged enough to reach agreement on some desirable actions.

The CDM is fundamentally a problem-solving, trust-building methodology with easily recognizable and achievable steps that could be replicated in other geographic areas served by public health. Thus, for any organizations such as state and local health departments or community-based organizations that have authority and responsibility for making public health–related policy decisions, and in the multiple topic areas where competing values are at stake in making those decisions, CDM could be employed. Such topic areas include decisions about the use of nonpharmaceutical interventions during outbreaks or in a pandemic, policy choices aiming at violence prevention and gun control, vaccination policy issues, choices about access to abortion and other medical services, options for improved control of obesity, harm-reduction strategies related to drug addiction and recovery, and many others. Use of CDM in these types of situations could serve to trigger greater use of public participation in public health policymaking overall.

With additional recruiting and design modifications, the model could be scaled up to help bring a larger, unified voice of the public in any given area to the public health policymaking table.[7] Such inclusion of the public has the potential to be a trust-building and transformative strategy for public health. Greater public participation promotes some of the same concepts and principles underlying shared decision-making in clinical practice.[8] In that setting, the provider and patient collaborate to make the best-informed decisions aligned with the patient's values. Just as in clinical settings where the goal is a more patient-centered care, the goal for public participation in community settings would be a more population-centered public health where sound decisions are well-aligned with public values. AJPH

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## HUMAN PARTICIPANT PROTECTION

Human participant protection is not applicable. This practice activity is a case example of dialogue methods and conversations used voluntarily by individuals to reach agreements among themselves on public issues.

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# Communities at Risk for Mpox and Stigmatizing Policies: A Randomized Survey, Republic of Korea, 2022

*Yongjin Choi, PhD, MPP, and Ashley M. Fox, PhD, MA*

**Objectives.** To estimate the impact of communicating to the public that men who have sex with men (MSM) are most at risk for mpox on potential stigmatization and risk perception.

**Methods.** We conducted a survey experiment randomizing exposure to messages about mpox among a sample of the South Korean public (n = 1500) in July 2022. We randomized respondents to receive an informational message about mpox that was (1) a neutral informational message about mpox that did not highlight its origins or risk groups (control group), (2) a message explaining that the virus originated in Africa, or (3) a message emphasizing that MSM are most at risk.

**Results.** We found that emphasizing that MSM are most at risk increases support for policies that would restrict lesbian, gay, bisexual, transgender/-sexual, queer or questioning–related events by about 7 percentage points compared with the control condition. However, the message describing African origins did not affect support for restricting travel from Africa. Neither changed risk perceptions or willingness to be vaccinated against mpox.

**Conclusions.** Messages aimed at educating the public about most at-risk groups may trigger increased stigmatization of those groups in ways that could contribute to unnecessary persecution. (*Am J Public Health*. 2023;113(10):1120–1127. https://doi.org/10.2105/AJPH.2023.307347)

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The World Health Organization declared mpox, previously known as monkeypox, a public health emergency of international concern on July 23, 2022, after it spread to multiple nonendemic countries.[1,2] Presently, in the parts of the world where mpox is newly spreading, those most at risk for acquiring the disease are gay and bisexual men who have sex with men (MSM).[2] To avoid stigmatization, public health messaging initially took a neutral tone that conveyed that mpox is not a sexually transmitted infection and did not emphasize the specific risk groups.[3] However, this messaging has raised complex questions about communicating risk to the public. Public health officials may wish to emphasize who are the most at-risk groups to avoid unnecessary panic by accurately reporting that the risk to the public is not generalized. Additionally, more targeted messaging that specifies those who are most at risk can ensure that they are getting the prevention messages and services they need.[4] On the other hand, messages that convey groups who are the most at risk can potentially contribute to the stigmatization of affected groups, especially when they are already marginalized populations.

As mpox continues to spread and appears to remain clustered in high-risk groups, how to convey risk to the public and target resources while avoiding stigma continues to be a pressing question for public health actors. Moreover, as novel infectious diseases emerge, naming conventions and risk group reporting continue to be vexing issues for public health actors.

Stigma has been defined as an "attribute that is deeply discrediting."[5(p3)] Stigma is exercised through the cooccurrence of labeling and stereotyping in the context of unequal power relations and can result in separation from society, status loss, and discrimination.[6] Although often treated as an individual attribute, disease stigma stems from the social construction of illness in a given society and how this understanding is linked to stereotyped beliefs about categories of the individuals most affected.[7,8] In its most extreme form, "structural stigma"[6] can move from individual and societal attitudes to being codified into law, including the imposition of punitive policies or sanctions on stigmatized groups.[9]

Stigma has often accompanied infectious diseases. Precisely because they are communicable, infectious diseases can lead to the social scapegoating of groups perceived to be the primary source of illness.[10] Disease names, such as the "Spanish flu" and "gay-related immune deficiency," may reinforce the scapegoating and stigmatization of certain groups by conveying connotations of accusation or xenophobia.[7,11] Scapegoating can contribute to acts of violent aggression against persecuted groups.[12] Stigmatized social difference may be used to legitimize the status of dominant social groups at the top of the social hierarchy.[13] Commentators have attributed the increase in anti-Asian hate crimes in the United States during the COVID-19 pandemic to the hateful populist rhetoric reinforcing its East Asian origins (e.g., calling COVID-19 the "China virus" or "Kung Flu").[14]

Once a particular group is associated with a disease, it can lead to overestimating disease prevalence among those who are at heightened risk and underestimating the prevalence among others. For instance, even in countries where MSM are not the primary risk group for HIV, HIV and AIDS are still largely mistakenly associated with this risk group.[15] Furthermore, stigma can contribute to support for policies that violate the civil liberties of affected groups and can lead to further societal ostracization and persecution. Historically, disease epidemics, such as the 1892 typhus and cholera outbreaks in New York City, provoked nativist sentiments culminating in quarantine measures targeting specific ethnic and religious groups and prompting calls to suspend immigration.[10] Public health has long grappled with how to balance the civil rights of individuals and vulnerable groups with the need for restrictive measures to prevent forward transmission of disease.[16] Thus, associating mpox with the sexual behaviors of marginalized risk groups has the potential to downplay the risk of generalized transmission while also increasing support for restrictive measures that might unnecessarily violate civil liberties.

Likewise, because mpox originated in Africa, news stories of the outbreak featuring stock photos of severe cases in African children have raised concerns about the exoticization of the disease in ways that may contribute to "othering" and may excessively heighten fear.[17] During the 2014 Ebola outbreak in West Africa, national media outlets in the United States conceptualized Ebola as a scary and exotic virus by pairing terms that fostered fear of the virus with words that evoked Africa and using alarming images and fear-inducing headlines.[17] This othering process steered the public discourse of the outbreak in a direction that stigmatized Africans living in the United States and people who travel to African countries.[17]

The discourse also contributed to some states adopting non–evidence-based quarantine measures for returning health workers that hampered the Ebola response.[18] Previous research has found that infectious disease outbreaks tend to raise public anxieties in ways that support more restrictive measures than would ordinarily be tolerated because of heightened fear.[19] Thus, media portrayals of mpox as a "foreign" and "African" disease may produce heightened risk perception in ways that may contribute to discriminatory or overly draconian policies.[20]

As in much of the world, in the Republic of Korea (ROK), potentially stigmatizing media coverage of the mpox outbreak preceded the identification of the first case. The coverage consisted of noting the rise of mpox cases in nonendemic countries, the fact that the disease is endemic to Africa, and the unexplained clustering of cases in gay men. The first case of mpox in ROK was confirmed on June 22, 2022, in a Korean citizen returning from Germany. In response, the Korean government raised its alert level to "caution" and pledged to strengthen monitoring and response systems for the disease.[21]

The identification of the first case also coincided with Gay Pride month and preceded the Seoul Queer Culture Festival, which was scheduled for July 16, 2022.[22] Although official reporting stressed that the disease was not sexually transmitted and could only spread through close skin-to-skin contact,[23] some social media discussions called for the cancellation of the queer festival.[22] Homosexuality remains a contentious issue in Korea. According to a 2020 Pew Center Poll, only 44% of Koreans say that homosexuality should be accepted by society compared with 72% in the United States.[24] Thus, we anticipated that the Korean public might be susceptible to messages that identify marginalized risk groups in their support for restrictive policies, particularly those burdening risk groups.

We sought to estimate the impact of communicating to the public the heightened risk among MSM and the disease's African origins on risk perceptions, vaccine acceptance, and support for potentially stigmatizing policies through a survey experiment randomizing exposure to messages about mpox in ROK. Through a survey experiment with a factorial design, we randomly assigned respondents to 5 total treatment groups: 2 message arms (i.e., MSM and African origins) with and without an image that presents the severity of skin lesions as a symptom of mpox.

## METHODS

We ran the experiment on a random sample of ROK adults (n = 1500) between July 4 and July 8, 2022, shortly before the public health emergency of international concern was declared and shortly after the first case of mpox received wide media and public attention in the country. Although there were only a few confirmed cases of mpox, ROK is one of the least ethnically diverse countries[25] and has a culture that is relatively less supportive of same-sex marriages.[26] Therefore, the stigmatizing effect of messaging highlighting the African roots and the relevance of sexual minorities to mpox may be more salient in Korean society.

We randomized respondents to receive information about mpox that was (1) a neutral message providing basic information about mpox (control group), (2) a message indicating that the virus originated in Africa, or (3) a message emphasizing that gay and bisexual men are most at risk for contracting mpox. We provided the control group with a neutral, nonstigmatizing message that described the mpox outbreak and was accompanied by an infographic in Korean. The message and infographic explained mpox transition mechanisms, symptoms, and relevant health recommendations and did not refer to risk groups or disease origins.

Additionally, we exposed half of the respondents to an image demonstrating the severity of lesions caused by mpox. The purpose of showing the image was to assess whether demonstrating mpox's severity heightened risk perception and thereby increased support for excessively restrictive and discriminatory policy options. This created 5 treatment conditions and the control group (Table 1). Appendix A (available as a supplement to the online version of this article at http://www.ajph.org) contains the full conditions.

### Data

Trend Research, a Korean survey company, collected the data for this study. Trend Research's online panel includes 650 000 members who have opted to receive e-mail invitations to the online survey. The panel is updated twice a year by inviting about 5000 new members. Respondents were selected randomly and stratified by age, gender, and province (including metropolitan city). There were no missing values in the variables used.

### Variables

We examined 8 binary outcomes. First, we used 6 binary policy support variables: screening all passengers for symptoms of mpox, requiring all passengers to wear masks on public transportation, beginning mass vaccine production, encouraging people to avoid close contact and stay 6 feet apart in public spaces, banning flights from African countries, and restricting lesbian, gay, bisexual, transgender/-sexual, queer or questioning (LGBTQ) events, such as queer festivals. We measured these variables by using a select all that apply question with 7 choices, including "nothing at this time." These were investigator-created mitigation strategies and did not necessarily represent any government recommendations at the time. Second, we examined a binary measure of respondents' willingness to be vaccinated against mpox. The last outcome variable was risk perception of mpox. We measured this binary variable with a question asking how concerned respondents were about contracting mpox. Appendix B (available as a supplement to the online version of this article at http://www.ajph.org) contains detailed descriptions of the full question wordings and how we coded these variables.

The key independent variable was a categorical factor representing the treatment conditions. Control variables included ideology (liberal, conservative, or independent), age, gender, educational attainment, marital status, job status, having a religion, and monthly household income. We did not report the parameter estimates for these variables in the main results but added them to Appendix D (available as a supplement to the online version of this article at http://www.ajph.org). We did not ask about mpox knowledge because all participants received a standard set of knowledge.

### Statistical Analysis

We used ordinary least square regressions with a 95% confidence interval, including the interaction terms between the 2 types of message arms and the image arm, to identify the average treatment effects of each treatment arm in a factorial design. We used 2-tailed statistical tests and completed analyses using Stata version 17 (StataCorp LP, College Station, TX). We used robust SEs for all

## TABLE 1— Willingness to Vaccinate Against Mpox, Anxiety About Mpox, Support for Mpox-Related Policies, and Sociodemographics of Survey Respondents, by Treatment Group: Republic of Korea, July 2022

| | | Treatment 1, % | | Treatment 2, % | | |
|---|---|---|---|---|---|---|
| **Variable** | **All (n = 1500), %** | **Without Image[a] (n = 750)** | **With Image[b] (n = 750)** | **Plain Description[c] (n = 500)** | **African Arm[d] (n = 500)** | **MSM Arm[e] (n = 500)** |
| Willing to vaccinate | 45.07 | 43.73 | 46.40 | 44.20 | 47.20 | 43.80 |
| Worry about the mpox infection | 9.13 | 9.20 | 9.07 | 10.00 | 9.40 | 8.00 |
| Support for | | | | | | |
| Korea entry inspection | 59.13 | 57.60 | 60.67 | 57.40 | 61.20 | 58.80 |
| Masks in public transportation | 38.47 | 36.67 | 40.27 | 40.60 | 37.00 | 37.80 |
| Social distancing | 34.73 | 33.73 | 35.73 | 34.40 | 31.20 | 38.60 |
| Vaccine production | 24.13 | 23.60 | 24.67 | 24.20 | 24.40 | 23.80 |
| Travel ban from Africa | 33.20 | 33.60 | 32.80 | 33.20 | 31.40 | 35.00 |
| Restrictions on LGBTQ events | 38.40 | 37.33 | 39.47 | 34.80 | 38.20 | 42.20 |
| Political propensity | | | | | | |
| Liberal | 24.87 | 23.07 | 26.67 | 23.20 | 26.00 | 25.40 |
| Independent | 22.13 | 24.00 | 20.27 | 23.40 | 19.80 | 23.20 |
| Conservative | 53.00 | 52.93 | 53.07 | 53.40 | 54.20 | 51.40 |
| Woman | 49.00 | 48.40 | 49.60 | 45.60 | 51.80 | 49.60 |
| Age, y | | | | | | |
| 18–29 | 19.53 | 20.27 | 18.80 | 19.20 | 20.00 | 19.40 |
| 30–39 | 17.53 | 17.20 | 17.87 | 18.40 | 17.60 | 16.60 |
| 40–49 | 21.27 | 21.87 | 20.67 | 20.00 | 21.00 | 22.80 |
| 50–59 | 22.60 | 22.27 | 22.93 | 22.60 | 23.00 | 22.20 |
| 60–69 | 19.07 | 18.40 | 19.73 | 19.80 | 18.40 | 19.00 |
| Education | | | | | | |
| High school or less | 20.80 | 18.67 | 22.93 | 18.40 | 19.80 | 24.20 |
| Bachelor's degree | 65.33 | 68.53 | 62.13 | 68.20 | 66.00 | 61.80 |
| Master's degree or more | 13.87 | 12.80 | 14.93 | 13.40 | 14.20 | 14.00 |
| Religiosity | 46.00 | 46.27 | 45.73 | 46.40 | 44.80 | 46.80 |
| Married | 54.60 | 54.27 | 54.93 | 56.40 | 53.40 | 54.00 |
| Job status | | | | | | |
| Health care workers | 6.87 | 7.33 | 6.40 | 7.00 | 7.20 | 6.40 |
| Employees | 53.40 | 54.67 | 52.13 | 51.40 | 55.00 | 53.80 |
| Unemployed/other | 39.73 | 38.00 | 41.47 | 41.60 | 37.80 | 39.80 |
| Monthly income, ₩, millions | | | | | | |
| < 2 | 11.80 | 9.60 | 14.00 | 12.20 | 11.40 | 11.80 |
| 2–3.99 | 31.93 | 32.13 | 31.73 | 29.00 | 35.40 | 31.40 |
| 4–5.99 | 27.80 | 27.33 | 28.27 | 30.00 | 24.60 | 28.80 |
| 6–7.99 | 14.67 | 16.53 | 12.80 | 14.60 | 14.80 | 14.60 |
| > 7.99 | 13.80 | 14.40 | 13.20 | 14.20 | 13.80 | 13.40 |
| No. of responses | 1500 | 750 | 750 | 500 | 500 | 500 |

*Note*. LGBTQ = lesbian, gay, bisexual, transgender/-sexual, queer or questioning; MSM = men who have sex with men.

[a] Participants who were not exposed to an image demonstrating the severity of lesions caused by mpox.
[b] Participants who were exposed to an image demonstrating the severity of lesions caused by mpox.
[c] Participants who received a neutral message providing basic information about mpox.
[d] Participants who received a message including a prompt that mpox originated in Africa.
[e] Participants who received a message including a prompt that gay and bisexual men are most at risk for mpox.

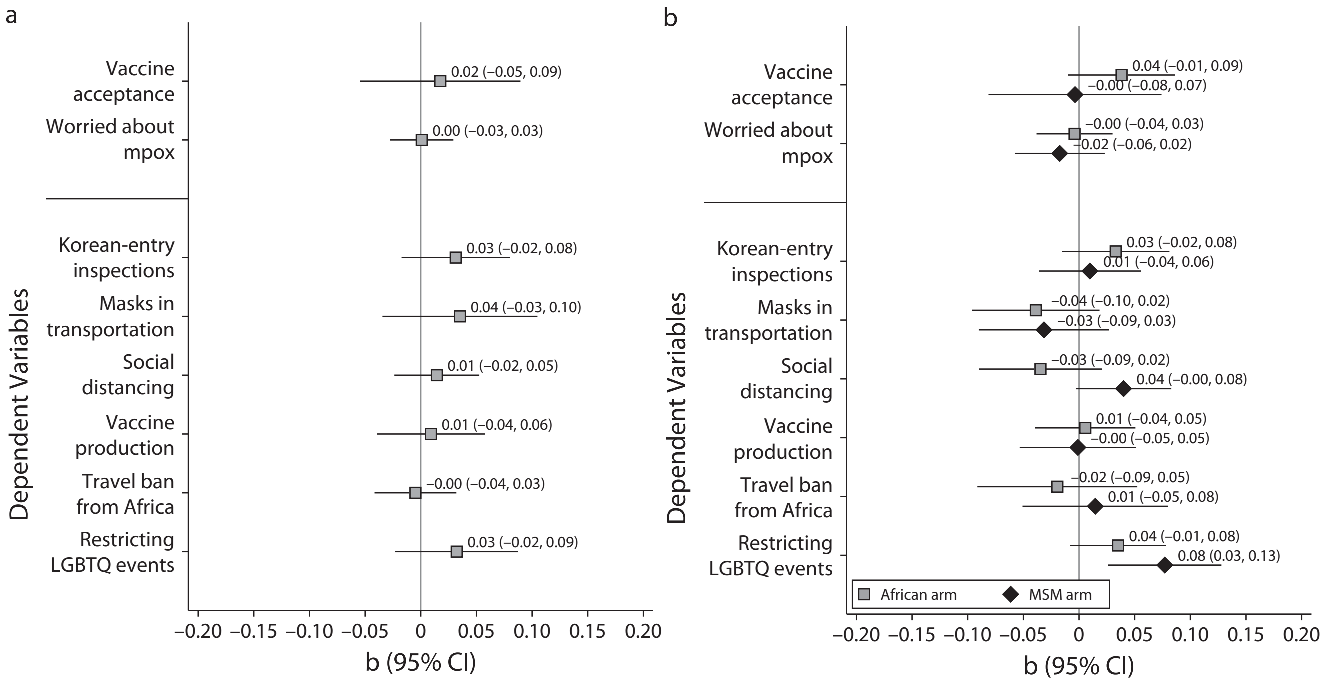

**FIGURE 1—** **Marginal Effects on Stigmatization and Risk Perception of (a) Lesions Image, and (b) Stigmatizing Descriptions: Republic of Korea, July 2022**

*Note.* CI = confidence interval; LGBTQ = lesbian, gay, bisexual, transgender/-sexual, queer or questioning; MSM = men who have sex with men. Results are from an ordinary least squares model. Markers indicate the marginal effect of the experimental arms on the answer. Whiskers and numbers in parentheses indicate 95% CIs. The controls included but not shown are age, gender, educational attainment, marital status, job status, religiosity, and household income.

estimations. Appendix C (available as a supplement to the online version of this article at http://www.ajph.org) provides the full equation with detailed explanations of how we calculated the marginal effects.

## RESULTS

Table 1 summarizes the data. Overall, 45% of the sample was willing to be vaccinated against mpox if recommended, and only 9% were worried about getting mpox. Although the majority of the respondents did not support restrictive or stigmatizing policies against mpox, a large portion of respondents did support these policies: 38% supported restricting LGBTQ events and 33% supported banning travel from Africa; 59% also supported entry inspection, 38% masks in public transit, 35% social distancing, and 24% mass mpox vaccine production.

When compared with the 2020 benchmark data from Statistics Korea, our sample showed great consistency with population estimates in terms of gender and age, as we stratified the data collection (Appendix E, available as a supplement to the online version of this article at http://www.ajph.org). The percentage married was slightly lower than the benchmark data but still comparable. However, the study sample tended to oversample more highly educated individuals compared with the benchmark.

Figure 1 presents the average treatment effects of the treatment arms (Appendix D provides the full regression table). We found that exposure to the message emphasizing MSM's risk increased support for restricting LGBTQ-related events by nearly 7 percentage points (35% vs 42%) compared with the control condition. In adjusted ordinary least squares models, this was the only significant result across the study arms and outcomes (8 percentage points; 95% confidence interval [CI] = 0.03, 0.13; *P* = .003; Figure 1b). However, neither the African origin arm nor the MSM arm made a difference in support for banning flights from African countries, willingness to be vaccinated against mpox, anxiety about the mpox infection, or support for other types of policy measures. Exposure to the skin lesions image did not produce any significant differences across the study arms (Figure 1a).

The interaction between the message arms and the image arm was also statistically insignificant (Appendix D). The effect of the MSM arm on the likelihood of support for policies restricting LGBTQ events was stronger when it was presented without the lesions image than with the image (Appendix F, available as a supplement to the online version of this article at http://www.ajph.org). These findings remained the same when estimating based on logistic regression (Appendix G, available as a supplement to the online version of this article at http://www.ajph.org).

The likelihood of endorsing stigmatizing policies was associated with respondents' gender and age (Appendix D). Female respondents were more likely to support banning flights from African countries by 7 percentage points (95% CI = 0.02, 0.11; *P* = .006) than were male respondents.

Compared with politically liberal respondents, politically conservative respondents were more likely to support banning travel from Africa by 7 percentage points (95% CI = 0.01, 0.12; *P* = .018) and restricting LGBTQ events by 12 percentage points (95% CI = 0.02, 0.21; *P* = .015). Politically independent respondents were 8 percentage points more likely to support banning travel from Africa (95% CI = 0.02, 0.13; *P* = .007) and restricting LGBTQ events (95% CI = 0.01, 0.15; *P* = .032) than were liberal respondents. Respondents who are religious were more likely to support banning travel from Africa by 7 percentage points (95% CI = 0.03, 0.11; *P* = .001) and restricting LGBTQ events by 7 percentage points (95% CI = 0.02, 0.11; *P* = .010).

The likelihood of support for banning travel from Africa decreased with respondents' age. Respondents in their 40s (−10 percentage points; 95% CI = −0.17, −0.04; *P* = .004), 50s (–16 percentage points; 95% CI = −0.24, −0.09; *P* < .001), and 60s (–18 percentage points; 95% CI = −0.26, −0.10; *P* < .001) were less supportive of banning travel from Africa than the reference group aged 18 to 29 years. The likelihood of support for restricting LGBTQ events was not significantly associated with age, however.

## DISCUSSION

Despite low personal risk perception of mpox in ROK, we found that exposure to a simple prompt emphasizing MSM's risk for mpox increased support for restrictive measures for LGBTQ populations. We found that although only 9% of the sample reported being worried about mpox, individuals who were exposed to a message mentioning MSM's risk for mpox were 8 percentage points more likely to support restricting LGBTQ events when controlling for other covariates. The message did not affect being worried about mpox, vaccine acceptance, or support for other, more generalized mitigation measures, suggesting that adding this information primarily serves to channel stigma rather than to affect risk perception.

Exposure to images showing the severity of lesions did not affect outcomes. The findings are more meaningful because we conducted our study at a time when mpox was not objectively a broad threat to the public, with only 1 identified case in the country at the time of the survey, although the issue was salient in the media. Considering that stigmatizing attitudes can be triggered by a simple vignette in a context in which the public's fear of mpox is moderate, the stigmatizing effects of media messaging might be much greater when the public's risk perception of an infectious disease is more elevated.

We did not find support for the notion that the disease's African origins increased support for policy restrictions that may be associated with xenophobia. Neither the study arm that mentioned the disease's origins in Africa nor the image depicting the severity of lesions increased support for restricting travel from Africa, risk perception, or willingness to be vaccinated, contrary to our hypothesis that images or messages that "exoticized" the illness might unduly affect attitudes. Nevertheless, one third of respondents did support policies to restrict travel from Africa even though travel restrictions contravened the government's messages.[23] These findings are aligned with findings from a study in the United States fielded during the Ebola crisis, which indicated that a simple mention identifying African travelers as the disease carrier in the United States did not make a significant difference in policy preferences.[27]

We did find support for the idea that a simple prompt merely identifying MSM as those most at risk increased support for restricting LGBTQ festivals (an 8 percentage point increase in the likelihood). Although the majority of the public did not endorse these restrictions (62% in the sample), the finding suggests that caution in messaging is needed to carefully take the social ramifications of highlighting risk groups into account in public vaccine communication. Given that the MSM community perceived media reports on mpox to be stigmatizing,[28] crafting more sensitive messages can also help reduce self-stigma in the community.

Those most supportive of restricting LGBTQ events and limiting travel from Africa included older respondents, especially those aged 50 years or older, and women. The higher support among the older generation presumably reflects their lower overall acceptance of homosexuality.[29] However, it is less clear why female respondents in this study were more inclined to favor regulating LGBTQ-related events. Women were also more likely to support more draconian measures, including social distancing and banning flights from Africa, but less likely to support more routine surveillance measures, such as airport screening (Appendix D). This suggests that women in the Korean context may have a greater tendency to place public safety above individual rights. Consistent with this finding, previous studies have found heightened vaccine hesitancy among women in Korea[30] but a greater likelihood of engaging in other preventive behaviors.[31]

Overall, respondents were quite supportive of a variety of mitigation measures despite their low risk perception, with 45% reporting they would be willing to be vaccinated against the disease. Presently, generalized vaccination is not recommended, and vaccination efforts in the United States are limited to the populations most at risk.[32] Large portions of the public also supported entry inspection (nearly 60%), masks in public transit (nearly 40%), social distancing (nearly 35%), and increased vaccine production to prevent the spread of mpox should it become necessary (nearly 25%), although these measures are not currently and never were broadly recommended.

Although we found that emphasizing certain risk groups increased support for potentially discriminatory policies, this does not necessarily suggest that emphasizing generalized risk is a good alternative. Emphasizing generalized risk can cause unnecessary fear and panic that could contribute to further stigmatization of "index" groups—those perceived as having initially introduced a disease—or those who may serve as "bridge" populations to the general public.[33] Current research suggests that the epidemiology of mpox has changed, so that the generalized risk is reduced, and that focusing on the most at-risk groups may be warranted.[34] Thinking beyond mpox, public health practitioners should continue to think carefully about how to present disease origins, disease naming conventions, and whether and when to publicly identify particular risk groups. The extent of marginalization of the primary risk group should be an active consideration. The renaming of monkeypox as mpox is an example of a deliberate strategy to reduce undue fear and anticipate public anxiety.[35] However, decisions need to be proactive rather than reactive.

## Limitations

Our study had certain limitations that must be acknowledged. Results in the Korean context might not be broadly generalizable to other contexts. The images used in the image arms were selected to represent what mpox might look like on Asian skin tones and represented relatively mild lesions. The use of more "shocking" stock photos depicting a severe case on African skin tones might have produced a more substantial reaction from the public than what we detected. That 38% of the sample reported supporting restrictions on LGBTQ events suggests there may be high existing stigma toward MSM in ROK, potentially affecting the magnitude of the study results. When the survey was administered, ROK had experienced only 1 domestic case of mpox.

Furthermore, we used only 1 item to assess measures related to treatment of the MSM community. However, the results also speak more broadly to public tolerance of restrictive measures and risk perceptions as they pertain to mpox. Lastly, even though we stratified the sampling, the survey undersampled less educated people and the data might not be free from selection bias because the online panel was more accessible to people with Internet access.

## Conclusions

We found that concerns that highlighting MSM's risk might increase stigma are not unfounded. The need to alert the most at-risk groups should be balanced with the possibility of heightened stigma. How to most accurately and appropriately present health threats to the public to raise appropriate risk perceptions and compliance remains an ongoing global challenge for public health. AJPH

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### CONTRIBUTORS

Y. Choi conducted the data analysis. Both authors conceptualized the study, designed the data collection, secured funding, accessed the data, contributed to writing the article, and interpreted the results.

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## CONFLICTS OF INTEREST

The authors have no conflicts of interest to declare.

## HUMAN PARTICIPANT PROTECTION

The data collection of this study was reviewed and approved by the institutional review board of the University at Albany, State University of New York (protocol number 22X058).

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# Erratum In: “Erratum In: ‘Living Alone and Suicide Risk in the United States, 2008–2019’”

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