

## Clinicians in Government

March 2023, Volume 25, Number 3: E167-237

### From the Editor

Health Professionals in Government 169  
Sofia Ahsanuddin

### Case and Commentary

How Should Clinicians and Researchers in Government Respond to Threats to Their  
Offices? 172  
Daphne Mlachila, MD, MPH

What Should Be Roles of Federal Clinician Governors in Motivating Equity in Locally  
Coordinated Triage Protocols? 179  
Isabelle M. Mikell, Courtney L. Savage Hoggard, MBE, and Harald Schmidt, PhD, MA

How Should the US Federal Government Oversee Clinicians' Relationships With  
Industry? 186  
Sunita Sah, MD, PhD, MBA

### Health Law

Holding Clinicians in Public Office Accountable to Professional Standards 194  
Wendy E. Parmet, JD and Claudia E. Haupt, PhD, JSD

### AMA Code Says

AMA *Code of Medical Ethics'* Opinions Related to Clinicians in Government 200  
Scott J. Schweikart, JD, MBE

### Policy Forum

What Should Be Clinicians' Roles in Regulatory Assessment of Prospective  
Interventions' Risks of Exacerbating Inequity? 204  
Anushka Bhaskar and Daniel Carpenter, PhD

### Medicine and Society

How Should State Licensing and Credentialing Boards Respond When Government Clinicians Spread False or Misleading Health Information? 210

Allison M. Whelan, JD, MA

### History of Medicine

Which Skills Are Key to Public Health Leaders' Success in Crisis Management? 219

Evan Anderson, JD, PhD and Scott Burris, JD

### Art of Medicine

On Stage, But Not on Cue 226

Julia O'Brien

### Viewpoint

Science and Ethics of "Curing" Misinformation 228

Isabelle Freiling, PhD, Nicole M. Krause, MA, and Dietram A. Scheufele, PhD

### Podcast

How Medicalization Limits Public Health Effectiveness: An Interview With Dr Paula Lantz



## AMA Journal of Ethics®

March 2023, Volume 25, Number 3: E169-171

### FROM THE EDITOR

#### Health Professionals in Government

Sofia Ahsanuddin

*Policy lies downstream of society. Mandates are not self-executing; to work, policies need to be followed, guidance needs to be believed. Public health is rooted in the soil of trust. That soil has thinned in America.*  
**Ezra Klein<sup>1</sup>**

In 2020, the United States faced a public health threat unparalleled in recent memory. With the rapid spread of the novel coronavirus (SARS-CoV-2), the United States grappled with unprecedented strains on its public health infrastructure, accompanied by a death toll that has not been seen since the 1918 influenza pandemic.<sup>2</sup> Responsible for informing public health policy in the midst of an election cycle, medical professionals vested with government authority—hitherto referred to as clinician governors—were thrust into the limelight. As they worked to translate emerging scientific evidence into policy, they navigated innumerable ethical challenges, mounting public scrutiny, and public distrust.

In such emergency scenarios, the role of clinician governors in preparing, building, and maintaining health sector capacity becomes increasingly salient. However, even during periods of relative stability and prosperity, US clinicians serving in the federal government or in state governments have myriad responsibilities as regulators, science communicators, providers of health care services, and sponsors of applied research. By means of an implicit social contract, they are accountable to patients, the public, and their professions in ways that transcend clinicians' typical fiduciary duties to individual patients, colleagues, and institutions.<sup>3</sup> One reason for this **extra layer of accountability** is that when clinicians draw upon their professional skill sets to help administer agencies, formulate law, or enforce regulations, they are vested with legal authority beyond the scope of normal practice, such as the issuance of public health mandates.

The complex nature of clinician governors' roles and responsibilities in the best of times and during crises is the topic of discussion in this month's issue of the *AMA Journal of Ethics*. The issue is a meditation on various ethical considerations that health professionals in government face and how they must utilize their position of authority to address gaps in health care delivery, **triage protocols**, preserve scientific objectivity when communicating with the public, and minimize conflicts of interest due to their involvement with the private sector. Importantly, the issue addresses questions of public speech guidelines in the context of an "infodemic," which illustrate rather concretely the

degree of interpenetration of government and medical authority that renders void traditional norms of noninterference in authorities' respective spheres of influence.

In particular, this issue focuses on one of the most glaring aspects of the pandemic response: public distrust of government authority. Two years into the COVID-19 pandemic, a *NewsNation/Decision Desk HQ* survey found that 31% of Americans approved of Dr Anthony Fauci's COVID-19 advice and 45% approved of President Biden's pandemic response.<sup>4</sup> The Johns Hopkins Center for Health Security and the Nuclear Threat Initiative's 2019 Global Health Security Index demonstrates that, despite ranking first on metrics of pandemic preparedness, the United States was at the bottom of the ladder in terms of public trust in government.<sup>1</sup> A 2021 Pew Research Center poll found that a major consequence of public distrust in government authority is increasing sociopolitical division, illustrated by the fact that 88% of Americans believe that Americans are more divided than before the pandemic.<sup>5</sup> Social trust in medical care is a theme explored at length, with several contributors suggesting that it is dependent on factors such as the extent of federal authority over locally coordinated triage protocols, clinician advocacy for and regulation of novel interventions, professional obligations to **impart legitimate information** to the public, and federal regulation of clinician policy makers' ties to industry.

Topics in this theme issue have come to the fore relatively recently, but they have lasting importance for the future of public health in the United States. The contributors and I hope that this theme issue will shed light on the gravity of the issues raised, as well as on the importance of clinician governors conducting their affairs in light of rigorous scientific standards and a commitment to objectivity.

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**CASE AND COMMENTARY: PEER-REVIEWED ARTICLE**

**How Should Clinicians and Researchers in Government Respond to Threats to Their Offices?**

Daphne Mlachila, MD, MPH

**Abstract**

During the COVID-19 pandemic, clinician policy makers have faced unprecedented challenges. This commentary responds to a fictional case of a clinician policy maker who heads the Office of the Surgeon General and must ponder the answers to these questions: (1) What does it mean for a clinician or researcher to responsibly hold government office? (2) When good governance is thwarted by apathy about facts and cultural sympathy with false information, how much personal peril should government clinicians and researchers be expected to endure to maintain and model allegiance to evidence as a basis of public policy? (3) How should government clinicians navigate legislative, regulatory, or jurisprudential curtailment of their authority or roles in promoting public health and safety?

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**Case**

As the US Surgeon General, Dr SG is also vice admiral of the US Public Health Service (USPHS) Commissioned Corps, overseeing thousands of uniformed public health professionals in federal health service clinical and governance roles, each of whom are widely regarded as top clinicians and researchers in their fields. Dr SG recently testified before a congressional committee looking to restrict USPHS personnel members' discussion, in the course of their duties, of politically contentious topics (eg, gun violence, needle-exchange programs, contraception), regardless of these topics' evidence base or relevance to public health and safety.

Legislators cite a recent poll revealing that 56% of Americans disapprove of the US Department of Health and Human Services Office of the Surgeon General (OSG) and another poll indicating that 43% of Americans distrust science and health information released by the OSG. OSG press agents have also been struggling to manage confusion about science and health recommendations published by the Centers for Disease Control and Prevention that don't fully accord information on the OSG website. Atop those frustrations, OSG press agents have also tried to manage some media channels'

portrayal of Dr SG as “part of a science elite on a mission to instill enough fear to justify curtailing Americans’ civil liberties.” Since becoming the US Surgeon General, Dr SG and family members have frequently received threatening correspondence and now retain security personnel for public and even some personal events.

Dr SG’s testimony to the congressional committee reiterates that the OSG’s accountability is to best available science, not to public opinion, and not to extremist distortions of facts. Nominated by the US President and confirmed by the US Senate, Dr SG underscores that the OSG has always been an important expression of government balance of powers. Dr SG also emphasizes that OSG independence and credibility are compromised by politically motivated congressional restrictions of OSG staff members’ speech, actions, and other standard means of engaging stakeholders—including the public—on critical health and safety matters.

After a grueling day of testimony, Dr SG confesses to a colleague, “I’m nearing the end of my 4-year term, but the stress gets to me. I wonder whether I should resign.” This colleague urges Dr SG to remain in office and fulfill the term, emphasizing that resignation could mean that the OSG would be at risk of crumbling under less skilled leadership. Dr SG continues, “I expected to confront doubters and skeptics in my many roles as a public servant, but good health and science communication in this age of apathy about facts makes this impossible. My skills might be put to better use if I start a media company.”

Dr SG considers what to do.

### Commentary

The clinician policy maker is a health professional who helps formulate government policies. Examples of clinician policy makers include clinicians who hold political office, such as congresspeople, or those who **lead governmental agencies**, such as Dr SG. In this article, the clinician policy maker will broadly refer to a medical doctor in charge of leading a governmental agency.

Due to the COVID-19 pandemic and a growing distrust of government exacerbated by the rapid spread of misinformation through social media, the clinician policy maker is frequently asked to make choices based on not only the evidence but also ethical considerations. Making decisions about the rights and duties of individuals, communities, and government and accepting responsibility for protecting and maintaining health is a deeply complicated task. Dr SG is at a professional crossroads in terms of whether to continue holding office and, if so, how to lead. Traditionally, clinical policy makers have used public health or medical ethics frameworks to guide decision making on how to best improve the health of populations. However, a public more prone to apathy towards facts and to cultural sympathy with false information has altered the feasibility of relying on these traditional moral and ethical frameworks. New guidelines for clinician policy makers who serve in government need to be debated and developed that are practical, prudent, and persuasive—a more population-based approach to medical ethics.

### Public Health Ethics vs Medical Ethics

Public health, broadly speaking, is the art and science of protecting and improving the health and well-being of populations and encompasses multiple disciplines, including epidemiology, disaster prevention, and pandemic preparedness.<sup>1,2</sup> Public health ethics,

as defined by the Centers for Disease Control and Prevention, is a “systematic process to clarify, prioritize and justify possible courses of public health action based on ethical principles, values and beliefs of stakeholders, and scientific and other information.”<sup>3</sup> Public health ethics employs a utilitarian moralist framework by aiming to do the most good for the greatest number of people, even if this goal at times is furthered at the expense of individual liberties.<sup>4,5,6</sup> The American Public Health Association has defined 6 core principles of public health: professionalism and trust, health and safety, health justice and equity, interdependence and solidarity, human rights and **civil liberties**, and inclusivity and engagement.<sup>7</sup>

In contrast, medical ethics refers to the values, principles, and code of conduct that health care professionals should uphold to protect the health of individuals. Medical ethicists generally employ a deontological framework, whereby clinicians have certain moral obligations and patients have certain immutable rights or privileges that clinicians should not infringe upon, even if the consequences of doing so might benefit the public good.<sup>4,5,6,8</sup> Beauchamp and Childress have defined 4 key principles of medical ethics: (1) autonomy (patients’ right to self-determination and consent to medical procedures), (2) beneficence (clinicians’ obligation to do good), (3) nonmaleficence (clinicians’ obligation to do no harm), and (4) justice (the obligation to distribute limited health resources in a way that is fair).<sup>9</sup> The American Medical Association (AMA) *Code of Medical Ethics* provides guidance to clinicians on their specific duties and responsibilities.<sup>10</sup>

In order to responsibly hold office, clinicians in government, such as Dr SG, need to extend the goals of individual patient care to the broader community. While the AMA *Code* does not explicitly discuss the ethical duties of clinician policy makers, it does contain sections on physicians and the health of the communities they serve.<sup>11</sup> These sections discuss the ethical use of quarantine and isolation,<sup>12</sup> health promotion and preventive care,<sup>13</sup> and ethical physician conduct in the media.<sup>14</sup> To fulfill their ethical duties, clinicians are advised to use a patient-centered approach,<sup>15</sup> promote appropriate vaccinations and screenings,<sup>13</sup> and advocate for “their patients’ welfare,”<sup>16</sup> which includes advocating for healthier school, work, and community environments for their patients and for community resources to better promote patient health and well-being.<sup>13</sup> Dr SG has a moral imperative to promote the health of communities even if the object of that health promotion is contentious, such as contraceptive use or means to end gun violence. If that activist role involves participating in the media, clinicians must remember to first and foremost uphold the values, norms, and integrity of the medical profession,<sup>14</sup> which requires that any medical information clinicians provide is “accurate ... inclusive of known risks and benefits ... commensurate with their medical expertise ... [and] based on valid scientific evidence and insight gained from professional experience.”<sup>14</sup> In order to gain public trust, especially in rapidly evolving crises such as the COVID-19 pandemic, Dr SG must be forthcoming about the limitations of current knowledge and impress upon the public that information on the new disease is iterative and rapidly evolving. Dr SG is also bound to confine the medical advice he gives to his areas of expertise and maintain the highest levels of patient confidentiality when discussing patient care.

### **A Population-Based Approach to Ethics**

Although the goals and intentions of both public health and medical ethics frameworks continue to be important and relevant for clinician policy makers, modifications are needed. A framework based on principles of total population health that bridges public health and medicine and incorporates social, political, and economic factors may be the



most appropriate place to start. Such an approach was taken in 1999 by Dunn and Hayes, who defined population health as “the health of a population as measured by health status indicators and as influenced by social, economic and physical environments, personal health practices, individual capacity and coping skills, human biology, early childhood development, and health services.”<sup>17</sup> Five years later, however, Kindig and Stoddart redefined public health in purely population terms as the “health outcomes of a group of individuals, including the distribution of such outcomes within the group.”<sup>18</sup> There is growing consensus that to deal with ethical challenges of being a clinician policy maker, elements of the utilitarian moralist framework of public health must be combined with elements of the deontological framework of medicine.<sup>5,6</sup> This more practical approach will allow public health practitioners to stay true to the evidence (by avoiding the utilitarian framework’s risk of overgeneralization) while also espousing the utilitarian framework’s outcomes orientation with the understanding that all governmental health activity is based on authority and funding provided through a political—whether executive, legislative, or judicial—decision-making process. This approach will also enable clinician policy makers to understand that the process of health outcome improvement involves multiple determinants at multiple levels—from the individual, to the community, to the state or nation as a whole. The idea of embracing total population health, which encompasses geopolitical rather than geographic areas,<sup>19</sup> is critical to clinician policy makers performing their job ethically, morally, and successfully.

### **A Clinician Policy Maker’s Perils**

With growing political polarization in the United States, there are many threats to the physical and emotional safety and well-being of the clinician policy maker. The vignette describes threats to the life of Dr SG and his family members, including a need for increased security personnel, which raises the question: When is personal strife too much for the clinician policy maker? This question is particularly concerning, given the growing **mental health crisis** among health professionals. In a meta-analysis that collated data on over 17 000 resident physicians from 18 countries, Mata and colleagues found high rates of depression and depressive symptoms (29%) among residents.<sup>20</sup> Other studies have corroborated that physicians experience higher rates of poor mental health compared to age-matched members of the general population.<sup>20,21</sup> Poor clinician mental health is strongly associated with poor health outcomes for both patients and clinicians. For example, it has been found that physicians who are depressed are 6 times more likely to make medication errors than healthy staff.<sup>22</sup> Clinicians who experience burnout—a clinical syndrome characterized by high levels of emotional exhaustion, cynicism, and feelings of being ineffective due to “workplace stress that has not been successfully managed”<sup>23</sup>—have been shown to have higher risk of absence for mental or cardiovascular disorder, higher rates of traffic accidents and all-cause mortality, and reduced productivity and early retirement than healthy clinicians.<sup>21</sup>

Given these adverse outcomes, effective measures to assess physician mental health are imperative at the individual, organizational, and systemic levels. As in the case of Dr SG, a thorough assessment of clinician policy makers’ mental health—including screening for anxiety, depression, posttraumatic stress disorder, or other mental health disorders—is essential. If Dr SG’s continuance in office poses an elevated risk of burnout, suicide, or other mental trauma, then it would be acceptable for Dr SG to resign, knowing that severe mental stress and burnout are detrimental to his personal

health and safety and to the broader US population affected by policies developed and communicated by Dr SG.

### **Taking Action as a Clinician Governor**

Applying the following guidelines, adapted from Edward Hunter,<sup>24</sup> would help clinician policy makers promote public health and safety, as well as deal with conflicts between various governmental agencies:

- *Recognize the factors affecting policy decisions.* Clinician policy makers need to be sensitive to other factors beyond health and science that influence policy decisions.<sup>24</sup> Incorporating other perspectives, such as those of diverse population groups or other governmental agencies, and acknowledging the consequences of public action would help clinician policy makers craft recommendations with more achievable outcomes. This approach includes focusing on common goals between and within government agencies.
- *Educate the public on the scientific process.* The scientific process is supported by guardrails, such as peer review and expert committees, to ensure accuracy and proper interpretation of information. However, science changes and adapts as new information and more robust evidence accumulate. Clinician policy makers must educate the public that knowledge is ever-changing and that new questions and conclusions can emerge.
- *Communicate evidence objectively.* Clinician policy makers need to present unbiased and impartial data, research, and evidence and to be truthful about what they do not know. Efforts need to be taken to “avoid the reality or perception of selectively highlighting evidence that supports a predetermined political position.”<sup>24</sup>
- *Avoid partisanship.* Clinician policy makers need to not only be aware of past bipartisan successes<sup>24</sup> but also uphold views that follow the aforementioned preexisting ethical guidelines, irrespective of the political views of their superiors. This nonpartisan approach should be communicated to political leaders before clinician policy makers accept public positions.

### **Conclusion**

This framework will not make the job of clinician policy makers easy. The challenges of political polarization and disinformation and misinformation, as well as anti-science sensibilities, will create complexities that clinician policy makers will have to navigate. However, their goal and responsibility must remain improving the health of populations. The population-based framework proposed here would enable clinician policy makers to do their best to achieve this aim while upholding the ethical responsibilities of their profession.

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The author(s) had no conflicts of interest to disclose.

*The people and events in this case are fictional. Resemblance to real events or to names of people, living or dead, is entirely coincidental. The viewpoints expressed in this article are those of the author(s) and do not necessarily reflect the views and policies of the AMA.*



## AMA Journal of Ethics®

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### CASE AND COMMENTARY: PEER-REVIEWED ARTICLE

#### What Should Be Roles of Federal Clinician Governors in Motivating Equity in Locally Coordinated Triage Protocols?

Isabelle M. Mikell, Courtney L. Savage Hoggard, MBE, and Harald Schmidt, PhD, MA

##### Abstract

This commentary on a case examines racially inequitable outcomes, especially for Black patients, resulting from use of Sequential Organ Failure Assessment (SOFA) scores to triage patients during the COVID-19 pandemic and how inequitable outcomes in triage protocols could be reduced. It also considers the nature and scope of clinician governor responses to members of federally protected classes who are disadvantaged by use of the SOFA score and argues that clinician leaders of the Centers for Disease Control and Prevention, specifically, should provide federal guidance that motivates clear legal accountability.

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##### Case

Dr D is an infectious disease specialist, an epidemiologist, and the medical director of a state department of health. Following a flu season that was socially and fiscally devastating, Dr D administers budget for essential personnel, surge planning, tertiary triage strategy, and critical care inventory (eg, ventilators, dialysis machines, medications, personal protective equipment). Dr D assembles a central committee of regional triage officers from around the state, which forges consensus about communication plans that activate the triage strategy across the state in response to an emergency (ie, epidemic, multi-locale mass casualty events, natural disaster) and how to train teams to implement protocols efficiently and equitably.

State epidemiological data reveal that low-income communities and communities of color were inequitably burdened (in terms of higher morbidity, more complications, higher mortality) by the most recent flu outbreak. Age-adjusted flu hospitalizations were highest among Black persons, second highest among American Indian and Alaska Native persons, and third highest among Latinx persons.

Dr D is contacted by Centers for Disease Control and Prevention (CDC) officials, who offer specific clinical recommendations to amend the state's triage protocol to avoid replicating inequity demonstrated during the past flu season. The CDC officials specifically expressed concern that inequity stems prominently from states' triage protocols' reliance on Sequential Organ Failure Assessment (SOFA) scores, which are routinely used to prioritize critical care resource allocation to patients with the lowest SOFA scores, often by one of 2 approaches. One triage strategy Dr D and committee members created uses just patients' SOFA scores to inform critical care resource allocation to patients. A second strategy sorts patients more granularly (ie, by preexisting comorbidities, age, and other factors, including equity, which inform prognosis and survivability), with "ties" among scores being broken by clinicians' on-site assessments about how to best identify, interpret, and apply these and possibly other factors.

Dr D is unsure about the legal nature and scope of any federal authority in defining, developing, implementing, and overseeing equitable on-site triage practices in organizations and locales across the state. Triage plans normally vary by state, so Dr D wonders how best to separate the state department of health's ethical from its legal obligations in overseeing local implementation of triage protocols and responding to persistent inequity. Dr D considers how to respond to the CDC's inquiry.

### Commentary

In order for Dr D to respond to the concerns of the CDC officials, she must first gain a better understanding of the national [crisis standards of care \(CSC\)](#) landscape, of which the SOFA score typically is a part. The SOFA is a clinical decision-making tool created in 1994 by the European Society of Intensive Care Medicine and used to assess the degree of an individual's organ dysfunction.<sup>1</sup> In the context of triage under CSC, the SOFA score is used to estimate how likely it is that a patient will survive intensive care.<sup>2</sup> The SOFA score produces a numeric value (based on the summation of 6 scores, each ranging from 0 to 4), with a higher number expressing a lower likelihood of survival. During the COVID-19 pandemic, some states used the SOFA score alone to group patients into priority groups for receiving scarce treatments (eg, ventilators), and other states added additional metrics, such as prioritization based on the group to which a patient belongs (eg, essential workers, children, pregnant people).<sup>3</sup> Despite SOFA's widespread use during the COVID-19 pandemic when CSC guidelines were reviewed, limitations of using the SOFA score were noted as early as 2020.<sup>4</sup>

Here, we summarize key evidence demonstrating that use of SOFA scores in CSC risks exacerbating inequities, as SOFA scores overestimate the mortality of Black patients, resulting in these patients being placed in lower priority groups and hence having a lower survival rate than White patients, whose care is overprioritized. We then highlight ways of attenuating inequities that have been proposed in the literature and argue for the development of federal guidance as a means of promoting equitable resource allocation. Our own guidance stems from the lessons that ought to have been learned from the nation's most recent reckoning with the inequitable effects of CSC during the pandemic. Dr D requires knowledge of both inequity resulting from use of SOFA scores in CSC and how inequities in CSC can be reduced in order to effectively change existing protocols. We conclude with a discussion of how Dr D should respond to the CDC's concerns.

### **Harms of Using SOFA**

*Studies examining SOFA alone.* Roy et al found that Black patients had higher mean peak and mean 24-hour SOFA scores than patients of other races despite not having significantly greater ICU admission and in-hospital mortality rates.<sup>5</sup> Although Gershengorn and colleagues found SOFA accuracy to be consistent among racial and ethnic groups,<sup>6</sup> accuracy does not guarantee equitable treatment. In a large multisite cohort study, Miller et al found that Black patients' odds of dying were 2% lower than those of White patients with equivalent SOFA scores.<sup>7</sup> Studying differences within triaged groups, Ashana et al demonstrated that within highest-priority groups (SOFA score < 6), Black patients had a lower in-hospital mortality rate than White patients and that when Black patients were reclassified from intermediate (SOFA score 6-8) to higher priority levels, their in-hospital mortality rates were similar to those of White patients.<sup>8</sup> The authors concluded that "the SOFA score underestimated in-hospital mortality risk for White patients and overestimated it for Black patients."<sup>8</sup> Likewise, Keller et al cautioned against using SOFA scores to triage COVID-19 patients, citing its inaccuracies in predicting inpatient hospital mortality.<sup>9</sup>

In a study of 4 allocation approaches for critically ill COVID-19 patients, including SOFA only and a lottery, Bhavani et al found that, in the SOFA-only protocol, Black and Hispanic patients were assigned higher SOFA scores than White patients and that Black patients had a significantly lower survival rate than the average survival rate of all patients included in the study.<sup>10</sup> When the ventilators were randomly assigned, there were no significant differences in survival between groups.<sup>10</sup> Rubin et al raised similar concerns in a retrospective cohort study of patients who required ventilation, finding that SOFA scores were not able to reliably predict short-term survival.<sup>11</sup>

*Studies examining multi-criteria algorithms, including SOFA scores.* State guidelines that use SOFA scores as part of multi-criteria frameworks also disadvantage people of color. In a multisite retrospective cohort study, Wunsch et al found that a slightly higher percentage of patients of color were categorized in the lowest-priority groups using the New York State guidelines.<sup>12</sup> Moreover, Jezmir et al found in a multicenter cohort study of patients intubated on admission to the intensive care unit that the use of the Colorado guidelines prioritized the patient most likely to survive 71% of the time in the White subcohort but only 63% of the time in the Black subcohort.<sup>13</sup> The hypothetical raw SOFA algorithm followed this same trend, selecting patients most likely to survive more often in the White than in the Black subcohort.<sup>13</sup> Despite the Colorado guideline's slightly better prediction of 28-day survival than the New York State guideline,<sup>3</sup> Colorado's inclusion of comorbidities was flagged as a concern by Bharadwaj et al due to the risk of exacerbating racial and socioeconomic disparities, as "those who are most disadvantaged are most likely to have multiple comorbidities," thereby decreasing their estimated likelihood of short-term survival.<sup>3</sup>

*Historical context of SOFA harms.* Sederstrom and Wiggleton-Little<sup>14</sup> and Cleveland Manchanda et al<sup>4</sup> emphasize that typical uses of the SOFA score in CSC for patients with COVID-19 ignore historical inequities by assuming equivalent baseline health among all patients. CSC thus deprioritize patients of color with comorbidities, such as hypertension and chronic obstructive pulmonary disease, which are more common in racial and ethnic minorities due to adverse social and political determinants of health. Schmidt et al 2022 echo these points, noting that the SOFA score's creatinine measure simultaneously measures kidney function and social disadvantage and that, when this measure is included, the SOFA score generally advantages White patients while

disadvantaging Black patients.<sup>15</sup> It should be clear to Dr D that creating a more equitable triage protocol is an urgent task required to reduce health care and health disparities among Black and other historically marginalized groups.

### SOFA Alternatives

There are many leads on equitable triage protocols in the literature for Dr D to work with. One way in which inequities can be mitigated is by alternatives to the SOFA score. In a reserve system, such as proposed by Miller et al,<sup>7</sup> units of the scarce resource are reserved for a particular subset of the population (eg, zip code, age, chronic condition), and allocation decisions for those reserved resources will be made without members of the given subset of the population competing with patients outside of that subset. While Miller et al did not specifically mention race as a potential category of a reserve system, prioritizing groups with higher chronic disease burdens and lower socioeconomic status zip codes would prioritize Black and other historically marginalized and minoritized patients, thereby helping to balance different stakeholders' interests. Another way of mitigating inequities is demonstrated by the National Academies of Sciences, Engineering, and Medicine's incorporating the Social Vulnerability Index (SVI) into coronavirus vaccine allocation guidelines in spring 2020.<sup>16</sup> SVI ranks census tracts on 15 social factors, such as population of historically marginalized racial groups or disability rate. An individual's SVI score is used in the guideline as a tiebreaker between otherwise equally prioritized individuals. Finally, Bhavani et al explored age-related and random lottery systems. They highlighted that a youngest-first allocation system had a higher survival rate than all other protocols and a higher survival rate for Black patients than the lottery, likely reflecting the younger age of severe COVID patients who are Black.<sup>10</sup> Random ventilator allocation via a lottery saved the least lives, but survival to hospital discharge did not differ among racial and ethnic groups.<sup>10</sup>

Another way inequities can be mitigated is by making modifications to the SOFA score. This could be done, for example, by removing the creatinine component from the SOFA score, as the Black population has elevated creatinine levels.<sup>4,7,8,15</sup> Sederstrom and Wiggleton-Little propose that SOFA scores be amended to allocate points back to Black Americans to alleviate some of the burden of blackness for patients in triage.<sup>14</sup> Moreover, the approach assigns additional points to patients who currently reside in areas of resource deprivation. The authors state that this deliberate and antiracist "give-back" approach "does not result in an environment where the intentional favoring of Black patients nets a positive over other patients."<sup>14</sup>

Sarkar et al suggest that incorporating socioeconomic and geographical markers, alongside biomarkers related to the present disease, will make future prediction models more accurate.<sup>17</sup> Schmidt et al suggest improving diversity on decision-making teams, as well as more downstream approaches, such as adjusting SOFA creatinine penalties by average race or ethnicity levels and replacing creatinine with alternative measures, such as cystatin C, to curb inequitable outcomes.<sup>18</sup>

In sum, the literature demonstrates that the SOFA score overestimates the mortality of Black patients and simultaneously prioritizes White patients, in part due to flawed study design. In response, a wide range of proposals have been made to attenuate this harm—not adopting any of these recommendations risks becoming complicit in structures that sustain, if not exacerbate, existing inequities. It is the responsibility of Dr D and her team to act quickly in putting one of these plans or a better, novel alternative into action expediently.



## Conclusion

Dr D is in a difficult position. At a minimum, she should act in a manner that does not exacerbate existing inequities, as recommended by Hick et al.<sup>16</sup> She has a responsibility as a physician to act in accordance with both justice and nonmaleficence. Since the literature is clear on the limitations of the SOFA score, ignoring the need for adjusting CSC triage protocols risks violating both these ethical principles. Dr D should hence respond to the CDC's concerns in 2 main ways. First, she should urge CDC officials to press for binding federal guidance through an internal mechanism. Second, in the interim, she should take immediate action to reduce the risk of inequitable outcomes from SOFA at the hospital where she practices.

We suggest that Dr D appeal to clinical administrators at her hospital to create CSC guidelines that recognize the most recent **evidence of racial inequity** in allocation approaches during the COVID-19 pandemic—for example, by incorporating a reserve system or an SVI. She should also prompt an investigation of her hospital's demographics to address specific areas of potential harm. Importantly, a mild improvement should not be delayed in hopes of a perfect solution. Dr D should act quickly to implement a more equitable plan to minimize the accumulated harm of SOFA based on existing research while working to create a more ideal CSC. Most importantly, however, Dr D and CDC officials should advocate for revision of CSC guidelines at a national level. The lack of federal guidelines allows states to choose whether they will make the effort to mitigate the harms of a racially inequitable triage protocol. However, since racial and ethnic minority groups constitute a federally protected class, they should be protected under a federal CSC. A federal guideline that takes structural inequities into account is imperative to mitigate the exacerbation of health inequities faced by Black and other historically marginalized and minoritized patients. Additionally, it would likely reduce the burden of moral decision making among physicians concerned about social justice.<sup>20</sup>

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*The people and events in this case are fictional. Resemblance to real events or to names of people, living or dead, is entirely coincidental. The viewpoints expressed in this article are those of the author(s) and do not necessarily reflect the views and policies of the AMA.*



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### CASE AND COMMENTARY: PEER-REVIEWED ARTICLE

#### How Should the US Federal Government Oversee Clinicians' Relationships With Industry?

Sunita Sah, MD, PhD, MBA

##### Abstract

Many clinicians, including those who work in government, experience potential clashes between their professional responsibilities and personal interests that can create conflicts of interest (COIs). Some clinicians might assert that their personal stakes do not influence their professional actions, but data suggest otherwise. This commentary on a case suggests that COIs must be acknowledged with sincerity and managed such that they are eliminated or, at least, credibly mitigated. Moreover, policies and procedures that guide responses to clinicians' COIs must be in place before clinicians assume roles in government. Without external accountability and respect for the limits of self-regulation, clinicians' capacity to reliably promote the public interest without bias could be compromised.

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##### Case

Suppose Dr M is a renowned endocrinologist with a long, distinguished record of national clinical and research service and the chair of the National Clinical Care Commission (NCCC), a committee charged with helping review improvements to US Department of Health and Human Services (HHS) diabetes-related care programs. Dr M also consults and serves on speaker panels for companies developing diabetes interventions. Frequently for international conference presentations, Dr M receives honoraria and travel expenses (ie, transportation, meals, accommodations, document-processing fees) from diabetes therapeutics industry sponsors. Most recently, for example, Dr M spoke about the efficacy and safety profile of a drug that only recently received approval from the US Food and Drug Administration. Company A researched and developed this drug using federal funds. Medicare and Medicaid also cover several million US patients' prescriptions for this drug, so conferences like this one are also often attended by clinician members of watchdog organizations and advocacy groups, such as Public Citizen.

Public Citizen recently issued a press release describing Dr M's blatant conflicts of interest (COIs) and misappropriation of federal funds for personal gain due to Dr M's acceptance of honoraria and travel expense reimbursement from Company A. Public Citizen urged HHS to take action.

Dr M subsequently receives a letter from HHS outlining its concern with Dr M's acceptance of payment from Company A. HHS stated its intent to investigate and take action.

Dr M offers to return all monies received from Company A and issues a rebuttal to the complaint and a press release, saying: "First, I spoke only as a physician and scientist; I did not speak as a representative of the US NCCC. Second, my remarks did not constitute an endorsement of Company A's drug. Third, I disclosed my relationship with Company A at the conference. Finally, the remuneration I received from Company A is insufficient to constitute a conflict of interest so substantial as to warrant such a complaint."

HHS considers how these explanations should inform a decision on whether to take action against Dr M.

### Commentary

Many clinicians, including those who work in government, face COIs—potential sources of bias arising from the conflict between their professional responsibilities and personal self-interest.<sup>1,2</sup> In this fictional case, the doctor has a clear COI: Dr M received (and frequently receives) honoraria from companies whose products Dr M opines on. Dr M also serves as the chair of the NCCC, a committee that advises the government on patient care. It would be almost impossible for the audience to view Dr M's public remarks as purely Dr M's opinion as a physician separately from their role as chair of the NCCC.

Those who accept COIs often believe, and sometimes explicitly assert, that their personal stakes do not influence their professional actions.<sup>3</sup> Although the presence of a COI does not necessarily imply that advice is biased,<sup>4</sup> research has repeatedly demonstrated that COIs often operate without our awareness and against our best intentions, compromising our judgment. The presence of such conflicts in medicine, regardless of whether judgments are influenced or not, also jeopardizes public trust.<sup>5</sup> In this case, the reputation of the NCCC is at stake. What can the US government do to regulate **clinician-industry relationships** for clinicians who advise the government on health care programs? Before answering this question, I will first discuss the influence of COIs on physician decision making and the limits of COI disclosure policies.

### Insufficiency of Disclosure

Clinicians who think they are not biased by their COIs have an inaccurate mental model of how such conflicts work. Although some clinicians who have COIs might make a deliberate choice to act unethically and place their financial interests over their professional responsibilities, most clinicians with COIs do not behave in such an explicitly corrupt way.<sup>2</sup> Rather, they assume they can self-regulate and ward off any unwanted influence.<sup>2</sup> Consequently, they believe they can speak about, recommend, or advocate for particular treatments without bias.

In reality, COIs exert influence unintentionally, as evidenced by social science research. Clinicians, like all decision makers, are influenced by COIs even when they try to be objective and impartial.<sup>6,7,8</sup> For example, physicians typically report that their patients' health and well-being come first and that they can remain independent, despite receiving incentives from industry.<sup>2,9</sup> However, studies have shown that physicians who receive payments from industry prescribe their sponsors' drugs and request that specific drugs be added to a hospital formulary more often than physicians who are not paid by industry.<sup>10,11</sup>

Dr M's public appeal included the fact that Dr M disclosed a financial interest in Company A at the conference. While such transparency is important from an ethical viewpoint, the clinician-industry relationship is problematic regardless of whether Dr M disclosed it or not. Simply put, disclosure does not solve the concern of the biasing influence of COIs, and, as mentioned, it can compromise public trust in medicine.<sup>2,12</sup> To be clear, disclosure is not intended to "manage" COIs but to identify such conflicts so that institutions can determine what steps—such as the elimination of the COI—are needed to reduce the risk of compromised judgments or a loss in public trust.<sup>5</sup> The Physician Payments Sunshine Act<sup>13</sup> requires any transfers of values of \$11.64 or more made to physicians, teaching hospitals, and advanced practice clinicians—with the total not exceeding \$116.35—to be disclosed on a public website.<sup>14</sup> A serious limitation of the act, however, is that the obligation to disclose only falls on the donor and not on the recipient (although the affected clinicians and teaching hospitals now have the opportunity to review reported disclosures and correct any errors).

As will be discussed in what follows, disclosing COIs can in itself lead to unintended consequences for both the recipients of disclosure and the professionals, including clinicians, who are disclosing the conflict.<sup>15,16,17</sup> Thus, governmental medical institutions and commissions, such as the NCCC, need to carefully determine how to eliminate the presence of such conflicts among their members.

### **Consequences of COI Disclosure**

*Recipients' reaction.* Disclosure of COIs often poses difficulties for recipients. Unsure of how to react to disclosure, they frequently ignore it,<sup>18,19,20</sup> or they either trust the physician more (associating such relationships with expertise)<sup>21,22,23</sup> or trust the physician less (becoming skeptical of the physician's integrity or benevolence), even when the physician's advice is of demonstrably high quality.<sup>24</sup> Despite sometimes trusting the physician's advice less, recipients may also feel increased pressure to comply with it to avoid signaling distrust and insinuating that the physician could be biased by their conflict.<sup>25</sup> This psychological process—known as insinuation anxiety—can lead to greater compliance with advice *with* disclosure than *without* disclosure.<sup>25</sup>

*Clinician bias.* COI disclosure can also affect the behavior of clinicians themselves. Disclosing the conflict can increase or decrease the extent to which advice is biased, depending on the context,<sup>26</sup> experience of the advisor,<sup>27</sup> and whether sanctions are available for penalizing biased advice.<sup>28</sup> In previous research, I found that salient COI disclosures can decrease bias in advice of professionals, such as physicians, by reminding them to place their patients first.<sup>26</sup> However, as I noted, "eliminating or reducing COIs ... [is] likely to have a much larger effect on improving advice quality than policies such as disclosure.... Policy makers must be cautious to avoid any indirect harm that disclosure could cause if it displaces more effective measures against conflicts of interest."<sup>26</sup>

### The Professionalism Paradox

Many professionals, including physicians, take offense at the notion that they might be influenced by financial incentives.<sup>3</sup> Their reaction reveals, yet again, the robust belief that bias resulting from COIs is within our conscious control. For example, when testifying before the US Securities and Exchange Commission in 2000, high-ranking executives of top accounting firms, including Arthur Andersen, cited “professionalism” as a reason they and their employees could remain unbiased and objective in the presence of COIs.<sup>29</sup> Just a year later, Andersen was implicated in the Enron scandal and subsequently surrendered its accounting licenses.

Although a strong sense of professionalism and integrity can help protect against intentional corruption, it does not mitigate unintentional and implicit bias arising from COIs. In fact, belief in one’s ability to remain impartial and professional could even make matters worse.<sup>3</sup> Similarly, assertions of one’s unbiased reasoning can increase bias, as “saying is believing.”<sup>30</sup> Moreover, studies have shown that advocating for a past decision can strengthen one’s belief that it was the right decision, even if it was not.<sup>30,31</sup>

High confidence in one’s ability to consciously control any biasing influence represents a shallow understanding of the concept of professionalism.<sup>3</sup> Those with such a strong but shallow sense of professionalism may more readily accept COIs and believe they need to work less hard than others to correct for the potential influence of a COI, ironically leading to greater acceptance of COIs and more bias.<sup>3</sup> Instead, physicians need to cultivate a deep understanding of the concept of professionalism. More than simply confidence in one’s ability to self-regulate unwanted influence and complying with the letter of law and hospital policies, deep professionalism entails the understanding that because we all have limits to our self-regulatory capacities, it is best to avoid COIs altogether.<sup>3</sup> Physicians with deep professionalism will also embrace continued ethical training to embed this understanding. As I have written elsewhere:

[I]f a hospital policy bans pharmaceutical representatives from interacting with physicians in their hospitals and curtails their free lunches, physicians who understand the deeper concept of professionalism will also reject walking across the street from the hospital to indulge in the free lunches the pharmaceutical company now sets up in hotel conference rooms. Even if a policy does not regulate physicians’ behavior outside of the hospital, those with deep professionalism will understand and internalize the principles and values of self-regulation as well as nurture the values repeatedly with an active practice.<sup>3</sup>

### Gifts

Clinicians, such as Dr M, often make the mistake of focusing on the size of the COI, assuming that small gifts are insufficient to affect their decisions. This notion is reinforced by policies that set arbitrary amounts under which gifts or honoraria are acceptable. For example, the American Medical Association (AMA) and at least 5 states and the District of Columbia have set guidelines for what they deem acceptable payment amounts for physicians.<sup>32</sup> A 2013 revision to the *AMA Code of Medical Ethics* stated that gifts “in the general range of \$100 are permissible,” but the empirical basis for this guideline is lacking.<sup>33</sup> By comparison, the Kaiser Permanente defines “significant financial interest” for clinical researchers as remuneration exceeding \$5000 in 12 months.<sup>34</sup>

Accepting a gift incurs a debt and evokes the norm of *reciprocity*—the obligation to help those who have helped you. In many cultures, accepting a gift without reciprocation is socially unacceptable.<sup>9</sup> Anthropologist Marcel Mauss has documented formalized gift-giving rituals of leaders negotiating conflict settlements.<sup>35</sup> Michael Oldani, an

anthropologist and former pharmaceutical representative, noted that “the importance of developing loyalty through gifting cannot be overstated”<sup>36</sup> and that “the essence of pharmaceutical gifting” is “bribes that aren’t considered bribes.”<sup>37</sup>

While the magnitude of a COI may affect how people view the conflict (for example, people may view a clinician’s acceptance of a personal gift of large value as less acceptable than smaller gifts), even very small gifts (eg, lunch, stationary) are known to affect physician decision making.<sup>38</sup> In fact, small gifts may be even more pernicious than large ones, as they may go almost unnoticed by recipients.<sup>3</sup> As I have previously noted: “Large gifts are likely to create a conscious sense of indebtedness to the gift-giver and may activate attempts to avoid them or to reflect on their possible influence and correct for it. In the case of small gifts, however, people often hold the belief that they are too small to matter, allowing them to bypass scrutiny.”<sup>3</sup>

### **Public Accountability**

Many policies and regulations that have been proposed to mitigate the negative effects of COIs have had limited success.<sup>16</sup> Attempts to reduce bias through education can increase people’s understanding of COIs. Such training, however, might only convince people that others are susceptible to self-serving biases but that they themselves are immune.<sup>39</sup> This belief again highlights our resistance to accepting that biases can operate subconsciously.

Returning to the case, should Dr M be “punished” for the COIs with a fine or penalty or even banned from speaking? Sanctions or penalties for bias are problematic, as they can encourage people to view decisions in terms of a cost-benefit analysis rather than as an ethical issue.<sup>40</sup> Also, it is often impossible to determine which advice is best and least biased, given the presence of multiple treatment options<sup>41</sup>; thus, accusations of bias and influence will be hard to prove and the resulting sanctions or fines difficult to implement.

The major issue, in this case, is Dr M’s financial relationships with industry and their influence on Dr M’s role in the NCCC. Such relationships undermine both Dr M’s professional reputation and that of the NCCC, just as they would undermine the reputation of any professional organization accepting a corporate donation.<sup>42</sup> They also compromise Dr M’s capacity to independently and objectively issue recommendations to the government on patient care. As such, Dr M should step down from serving on the commission.

As mentioned, simply disclosing these relationships is insufficient. The only effective way to manage COIs is through sincere attempts to eliminate them. What’s promising is that the disclosure of the *absence* of COIs could justifiably increase public trust.<sup>43</sup> The US government needs to put in place clear procedures and policies regarding the elimination or mitigation of any COIs before physicians assume public roles, such as serving on or advising government or patient advocacy groups. For example, if the NCCC had a clear policy of “no financial relationships with industry” available from the start, there would have been no confusion for either party regarding whether Dr M could serve on the commission. Clinicians with public roles must be held to higher standards than other physicians and receive continuing education on the concept of deep professionalism.<sup>3</sup> It is commendable that Dr M returned all monies received from Company A, but such conflicts also need to be avoided in the first place. Even if



physicians believe they will not succumb to any biasing influence from COIs (at least, not intentionally), they nevertheless need to be held accountable for them.

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*The people and events in this case are fictional. Resemblance to real events or to names of people, living or dead, is entirely coincidental. The viewpoints expressed in this article are those of the author(s) and do not necessarily reflect the views and policies of the AMA.*



## AMA Journal of Ethics®

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### HEALTH LAW: PEER-REVIEWED ARTICLE

#### Holding Clinicians in Public Office Accountable to Professional Standards

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##### Abstract

Clinicians using governing authority to make public health policy are ethically obliged to draw upon scientific and clinical information that accords with professional standards. Just as the First Amendment does not protect clinicians who provide advice that fails to express standard care, so it does not protect clinician-officials who offer information to the public that a reasonable official would not provide.

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##### Clinician-Governor Leadership

Ever since Benjamin Rush signed the Declaration of Independence, physicians have played an important role in American public life. Many have held elected or appointed positions at the federal, state, or local level. The leadership and expertise of such physicians who guide health agencies, such as the Centers for Disease Control and Prevention (CDC) and local boards of health, can be very valuable, especially during a pandemic.

Unfortunately, not all physician-officials provide the public with medically sound information and guidance. Since the start of the COVID-19 pandemic, several physicians in public office have made false or misleading statements or have given potentially harmful advice about masking, vaccines, and COVID-related treatments. For example, in 2020, Scott Atlas, a neuroradiologist who served as an advisor to then-President Trump, claimed that children cannot transmit SARS-CoV-2.<sup>1</sup> Senator Rand Paul, one of 4 physicians in the Senate in 2021, said that most masks available for purchase over the counter “don’t prevent infection.”<sup>2</sup> And former Louisiana Congressman Ralph Abraham tweeted in 2020: “Abortions nearly always have a fatal outcome for the baby, and many times it’s the same for the mother.”<sup>3</sup>

We suggest that, with respect to the provision of health-related information and advice, the relationship between physician-officials and the public resembles that between physicians and patients. Building on that analogy, we argue that physician-officials have an ethical duty to offer medically sound information and advice to the public. We also

examine some limitations to that duty and explain why protection of free speech does not preclude professional regulation of the duty to provide accurate public information. We conclude by suggesting that the profession is best suited to police that duty.

### Professionalism and Information

Physicians have both ethical and legal obligations to provide patients with information and advice that aligns with professional knowledge.<sup>4</sup> This duty, which arises from the asymmetrical nature of the physician-patient relationship—as physicians have expertise that patients lack—is foundational to the concept of **informed consent**. As the US Court of Appeals for the District of Columbia stated in *Canterbury v Spence*: “it is normally impossible to obtain a consent worthy of the name unless the physician first elucidates the options and the perils for the patient’s edification.”<sup>5</sup> When a physician gives a patient advice that contradicts professional knowledge, the patient’s consent is not truly informed. Hence the patient may act upon the advice in ways that are detrimental to their health. For example, if a physician tells a patient that the influenza vaccine is dangerous, the patient may avoid vaccination.

Although the duty to provide medically sound advice generally arises within the context of a physician-patient relationship, both courts and the profession recognize limited circumstances in which physicians have duties to others.<sup>6</sup> For example, in *Tarasoff v Regents of the University of California*, the California Supreme Court held that a psychologist had a duty to **provide reasonable warnings** to individuals whom the patient could foreseeably harm.<sup>7</sup> Courts have likewise found that physicians have a duty under some circumstances to warn third parties about a patient’s communicable disease.<sup>6</sup> Many states also require physicians to report cases of certain infectious diseases or suspected cases of child or elder abuse.<sup>8</sup>

The American Medical Association (AMA) *Code of Medical Ethics* recognizes that physicians have some ethical duties to the public. These include the duty “to participate in activities contributing to the improvement of the community and the betterment of public health.”<sup>9</sup> AMA *Code of Medical Ethics* Opinion 8.12 states that when physicians “engage with the media,” they should “ensure that the medical information they provide is: (i) accurate; (ii) inclusive of known risks and benefits; (iii) commensurate with their medical expertise; [and] (iv) based on valid scientific evidence and insight gained from professional experience.”<sup>10</sup> In a similar vein, the Board of Directors of the Federation of State Medical Boards issued a statement in July 2021 explaining that physicians “have an ethical and professional responsibility to practice medicine in the best interests of their patients and must share information that is factual, scientifically grounded and consensus-driven for the betterment of public health. Spreading inaccurate COVID-19 vaccine information contradicts that responsibility, threatens to further erode public trust in the medical profession and puts all patients at risk.”<sup>11</sup> Scholars have urged **licensing boards to discipline physicians** who provide false and dangerous information (eg, regarding the safety of vaccines) to the public writ large.<sup>12,13</sup>

The case for physician-officials having an ethical obligation to refrain from spreading misinformation to the public is even more compelling. First, at least some public officials, especially those with authority over public health, have a type of fiduciary obligation to the public they serve.<sup>14</sup> By the very nature of their office, they are entrusted to protect the public’s health. Second, because of physician-officials’ superior knowledge about health, the public is likely to rely upon their statements to make personal health decisions. Indeed, because members of the public may reasonably

believe that physician-officials have both expertise and access to information that is not publicly available, they may give special credence to a physician-official's advice, especially during public health emergencies when they are often forced to rely on the advice of government officials rather than their own physician. When that advice is not medically sound, members of the public may make dangerous decisions to the detriment of their health. In that sense, the misinformation or bad advice given by physician-officials is comparable to, but perhaps more dangerous than, the malpractice that occurs when physicians provide their patients with inaccurate information, state an incorrect diagnosis, or provide erroneous advice as to treatments. It is also potentially more dangerous than the bad advice given by licensed physicians with a public profile who are not officeholders—for example, “celebrity physicians” who have a large social media following.<sup>15</sup>

### **Caveats**

The analogy between medical malpractice and the provision of misinformation or medically unsound advice to the public by physician-officials helps clarify the scope of the latter's duties to the public. Just as physicians' advice to patients is judged against professional standards, so the information and advice offered by physician-officials should be judged against what a reasonable physician would say under the circumstances. Hence, physician-officials do not violate their duty simply by giving advice that proves to be inaccurate as more is learned about a public health issue. The duty is to act with reasonable care, consistent with professional ethics and as measured against professional standards.

Executing this duty is complicated by the fact that physician-officials, especially those who hold elected office, are expected to have and assert ideological and policy positions. Although the public may give extra weight to ideological statements—such as “vaccine mandates violate liberty”—when uttered by physician-officials, such statements are not based on medical expertise and should not be treated as medical information or advice. Nor are there professional standards regarding such statements (although professional organizations often take positions about political issues). Hence, political statements are outside the scope of physician-officials' duties to the public. Nevertheless, the line between political statements and factual ones can be blurry, and the public may read ideologically informed statements (vaccines violate freedom) as implying factual misstatements (vaccines are dangerous).

### **Remedies**

Although the First Amendment's Free Speech Clause protects private speakers from governmental limits on their freedom of expression, the government can restrict clinicians' false speech to some extent.<sup>16</sup> Importantly, the First Amendment does not apply to government speech, and when physicians holding government office speak in their official capacity, they should be considered government speakers rather than private speakers.<sup>17</sup> The government can choose its own message, and it can do so to the exclusion of other messages.<sup>18,19</sup> It can regulate the speech of government officials who do not have First Amendment rights when speaking in their official capacity. Thus, even though physician-officials have free speech rights when they speak in their personal capacity, the First Amendment does not prohibit the government from policing its official statements to ensure that they align with professional expertise. However, the government's compelling physicians to express its viewpoint does not guarantee truthful statements.<sup>16</sup> Hence, the government should not be relied upon to regulate physician-officials' public health-related communications. We consider 2 alternatives below.

*Tort law.* As the second author (C.E.H.) has written elsewhere, “Professionals who give bad advice are subject to malpractice liability, and the First Amendment provides no defense” against it.<sup>20</sup> Although possible, subjecting physician-officials’ bad professional advice to tort liability would be difficult. First, courts would need to accept that claims for official health-related misinformation constitute a form of malpractice that is actionable in court. Second, many plaintiffs would have to overcome governmental immunities and may have difficulty establishing that the office holders’ statements caused their injury.

*Professional regulation.* In contrast, there are strong reasons to rely primarily on tightening of professional ethical rules and discipline to police ethical breaches rather than malpractice law. Relevant professional bodies should have greater latitude in addressing the dissemination of misinformation and bad advice by physician-officials. Most immediately, professional bodies, such as the AMA, could revisit their ethical codes to more explicitly require physician-officials to comply with professional standards when providing the public with factual information or health advice. Professional bodies could also police physician-office holders’ failure to do so. To be sure, professional bodies are not beyond criticism. In the past, they have at times taken positions that are now considered outdated or problematic with respect to the interests of patients.<sup>4</sup> Furthermore, disciplinary enforcement actions by professional bodies are often insufficiently focused on ensuring that members provide information and advice that conforms with expertise.<sup>21</sup> Nonetheless, professional disciplinary bodies have proven capable of updating their views using their own professional standards.<sup>4</sup> And they are institutionally best situated to police the advice given by members of the profession. In the dynamic development of knowledge, professional regulatory bodies can be more responsive than courts in professional liability cases and thus can better ensure that clinicians holding public office speak to the public in a way that corresponds to professional insights.

## Conclusion

Many of the reasons why physicians have an ethical obligation to provide patients with advice that aligns with professional standards also apply when physicians who hold public office— especially those who have responsibility for the public’s health—give health-related information and advice to the public writ large. Although malpractice law may be available in some instances to redress violations of this duty, professional regulation, including censure and delicensing, offers the most effective remedy.

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## AMA Journal of Ethics®

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### AMA CODE SAYS

#### AMA Code of Medical Ethics' Opinions Related to Clinicians in Government

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##### Abstract

The AMA Code of Medical Ethics does not specifically refer to physicians' governmental roles. This article, however, summarizes AMA Code guidance on physicians' interactions with governments, as well as their nonclinical roles, political actions, and communications.

##### Introduction

Physicians serving in governmental roles are not uncommon in today's professional world. For example, many physicians serve as federal or local officials who make law, craft policy, or serve in regulatory agencies, like the US Food and Drug Administration or the Centers for Disease Control and Prevention, where they interpret, implement, and enforce executive actions. When physicians work in government, ethical issues unique to their dual role as physician and government official can arise. The American Medical Association (AMA) Code of Medical Ethics does not speak directly to physicians working in governmental roles, but several opinions offer guidance to physicians who function as government officials or as political actors or communicators.

##### AMA Code Opinions

*Interactions with government.* One set of opinions in the AMA Code offers guidance on professional self-regulation, which includes a section titled "Physician Interactions With Government Agencies."<sup>1</sup> These opinions include Opinion 9.7.1, "Medical Testimony"<sup>2</sup>; Opinion 9.7.2, "Court-Initiated Medical Treatment in Criminal Cases"<sup>3</sup>; Opinion 9.7.3, "Capital Punishment"<sup>4</sup>; Opinion 9.7.4, "Physician Participation in Interrogation"<sup>5</sup>; and Opinion 9.7.5, "Torture."<sup>6</sup> While these opinions are not directly on point for a physician who also **works as a governmental official**, they are tangentially related and provide some insight into matters of public health policy. For example, Opinion 9.7.4 states: "Physicians who engage in any activity that relies on their medical knowledge and skills must continue to uphold principles of medical ethics."<sup>5</sup> Thus, overarching ethical principles should guide the actions of physicians that do not constitute the practice of medicine per se but that do rely on medical expertise.

*Ethics guidance for physicians in nonclinical roles.* Opinion 10.1, "Ethics Guidance for Physicians in Nonclinical Roles,"<sup>7</sup> also speaks to physicians who serve in nonclinical government or civic roles. Opinion 10.1 states: "Even when they fulfill roles that do not

involve directly providing care for patients in clinical settings, physicians are seen by patients and the public, as well as their colleagues and coworkers, as professionals who have committed themselves to the values and norms of medicine.”<sup>7</sup> Opinion 10.1 notes that when physicians “use the knowledge and values they gained through medical training and practice” in their other nonclinical roles, they are still “functioning within the sphere of their profession” and hence are still obligated to uphold key ethical and fiduciary duties.<sup>7</sup> When physicians serve in nonclinical roles, possible conflicts of duty—say, between their public and private roles—can arise and “may ethically be tempered,” according to Opinion 10.1, by the following considerations:

- (a) The impact of the nonclinical role on the health of individuals and communities.
- (b) The degree to which they [physicians] are perceived to be acting as representatives of the medical profession.
- (c) The extent to which they [physicians] rely on their medical training or expertise to fulfill the nonclinical role.<sup>7</sup>

Hence, conflicts may be mitigated when physicians in nonclinical roles maintain their professional norms and values but deemphasize their medical expertise and authority while performing such roles.

*Political actions by physicians.* Opinion 1.2.10, “Political Action by Physicians,”<sup>8</sup> describes ethical obligations of physicians involved in **political advocacy**. While not all physicians with governmental roles are involved in advocacy, some, like legislators, definitely are. Opinion 1.2.10 states:

Like all Americans, physicians enjoy the right to advocate for change in law and policy, in the public arena, and within their institutions. Indeed, physicians have an ethical responsibility to seek change when they believe the requirements of law or policy are contrary to the best interests of patients. However, they have a responsibility to do so in ways that are not disruptive to patient care.<sup>8</sup>

Hence, physician legislators must seek changes to law that they believe will benefit patients and, furthermore—while engaging in any type of policy change or advocacy—must “ensure that the health of patients is not jeopardized and that patient care is not compromised.”<sup>8</sup>

*Political communications.* Relevant to physicians in government, especially those holding office, Opinion 2.3.4, “Political Communications,” states:

Physicians enjoy the rights and privileges of free speech shared by all Americans. It is laudable for physicians to run for political office; to lobby for political positions, parties, or candidates; and in every other way to exercise the full scope of their political rights as citizens. Physicians may exercise these rights individually or through involvement with professional societies and political action committees or other organizations.<sup>9</sup>

Additionally, Opinion 2.3.4 offers guidance on how physicians can **ethically express political views**. Specifically, Opinion 2.3.4 mandates that physicians should not allow “political matters to interfere with the delivery of professional care” and that physicians should be sensitive to the “imbalance of power in the patient-physician relationship” any time they “express their personal political views,” especially in the course of clinical care of patients.<sup>9</sup>

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**POLICY FORUM: PEER-REVIEWED ARTICLE**

**What Should Be Clinicians' Roles in Regulatory Assessment of Prospective Interventions' Risks of Exacerbating Inequity?**

Anushka Bhaskar and Daniel Carpenter, PhD

**Abstract**

When there is an evidence base that could be used credibly to justify expedited US Food and Drug Administration review, emergency use authorization, or approval, interventions-in-development must be evaluated in terms of their possible downstream influence on public trust and confidence in regulatory processes during a national public health crisis. When regulatory decisions express overconfidence about a prospective intervention's success, there is risk that the costliness of or misinformation about the intervention will exacerbate health inequity. A converse risk is regulators' underestimation of an intervention's value in treating populations at risk for inequitable care. This article considers the nature and scope of clinicians' roles in regulatory processes in which such risks must be considered and balanced to promote public safety and public health.

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**Responsible Clinician Advocacy**

Public trust in medical treatments is an essential consideration in ethical deliberations on regulatory review, emergency use authorization, or approval of interventions-in-development. Because knowledge of the efficacy of medical treatments depends greatly on the degree to which health professionals prescribe or recommend them, as well as on whether citizens adhere to these recommendations, clinician advocacy during the regulatory process has manifold implications for health outcomes. Clinician advocacy for or against potential treatments, given a plausible evidence base that favors approval, must be considered in light of (1) a treatment's potential implications for public confidence in regulatory processes and (2) clinicians' judgments about whether the regulator is fairly evaluating the new product. This article examines the ethical dimensions of physician voice in the public sphere when new agents are being evaluated, authorized, or approved in a context of high uncertainty. If the decisions made during the regulatory process exhibit regulators' overconfidence in a prospective intervention under consideration—risking inequity exacerbation due to the cost of or spread of misinformation about that prospective intervention—then physicians might

weigh in against authorization or approval. Conversely, if regulators underestimate the prospective treatment value of a new product for some subpopulations, then physicians might speak publicly to draw attention to the treatment's potential value.

### Trust During the Pandemic?

The US Food and Drug Administration (FDA) has long held a high public reputation among citizens, scientists, and clinicians,<sup>1</sup> although public trust in the FDA has recently declined.<sup>2</sup> Previous literature has consistently shown that patient trust in clinicians remains high, in part because of the trust that many individuals have in their own doctor and the professional status of a physician,<sup>3</sup> although **trust in doctors** has also declined during the pandemic.<sup>4</sup> Clinician involvement in regulatory procedure is imperative at a time when medical regulators like the FDA are seeking to improve transparency and gain public trust, even going so far as to involve patients in the regulatory process.<sup>5</sup>

Clinicians' engagement in the regulatory process can take multiple forms, such as their involvement in advisory or decision-making groups or in writing editorials, evidence reviews, or other forms of public commentary on the drugs or devices in question.<sup>6</sup> The role of physicians in reporting instances of adverse outcomes or observations of negative health effects in patients they treated with interventions that have received FDA approval cannot be overstated. In this manner, physicians can provide important information for the evidence base of a particular drug or medical device through broad observation of their patient population. Ultimately, clinicians must be involved in the ethical and medical considerations pertinent to the **regulation of medical products** that require governmental oversight and approval, and any potential reservations they have in relation to these products should be taken very seriously.

The COVID-19 pandemic presented a significant challenge for clinical advocates pushing for vaccination uptake to mitigate the spread of the virus. Vaccine hesitancy was particularly high during the first months of the pandemic, with a large spike in hesitancy during the sixth and seventh months of the pandemic (September and October 2020), especially among Black Americans, Asian-Americans, and Native Americans,<sup>7</sup> following significant instances of the Trump administration's political interference in the FDA,<sup>8</sup> which presumably contributed to public fears that authorization of the vaccine would be politically motivated. (Vaccine hesitancy did decline among people of color following the vaccine rollout, however.<sup>9,10</sup>) Figures like Anthony Fauci, then director of the National Institute of Allergy and Infectious Diseases and a member of the Trump Administration's Coronavirus Task Force, provided significant reassurance to the public with regular national addresses regarding the safety and efficacy of the vaccine, despite the accelerated timeline for its emergency use authorization and later approval by the FDA.

Clinician advocacy can have downstream effects on public confidence in the product.<sup>11</sup> The COVID-19 pandemic presented a crucial opportunity for clinicians to speak up against the emergency use authorization of drugs without substantial evidence in support of their therapeutic value. In cases of overconfidence in drugs, such as hydroxychloroquine, some physicians' advocacy against medication unproven to treat coronavirus contrasted with other physicians' promotion of these pharmaceuticals as a substitute for vaccination.<sup>12</sup> In one such case, immense pressure by the Trump Administration on the FDA in the early stages of the pandemic led to emergency use authorization for hydroxychloroquine to treat coronavirus.<sup>13</sup> Clinician governors, such as Fauci and other former public health officials, spoke up against the FDA decision.<sup>13,14</sup> The FDA later reversed its emergency use authorization for hydroxychloroquine,

especially in light of the severe cardiac events associated with the drug.<sup>15</sup> While cause-and-effect is impossible to establish, it is quite possible that clinician advocacy in the case of hydroxychloroquine reduced its use and contributed to the eventual reconsideration and reversal of its authorization.<sup>16</sup>

### **Countering Therapeutic Overconfidence**

Clinician criticism of particular therapeutic agents is important to prevent these agents' use exacerbating inequalities. When agents are authorized for emergency use based on thin evidence or when procedural irregularities have affected a decision, disadvantaged populations might be differentially affected for several reasons. First, low-quality products are often more heavily advertised,<sup>17</sup> and the effect of this publicity is likely to be higher for those who are less educated or who have access to lower-quality medical services. It is for this reason that independent physician advice—when coordinated with established, sound guidelines—may help protect marginalized populations from suboptimal prescription and usage patterns. Second, members of marginalized populations might be more distrustful of government and scientific institutions,<sup>18</sup> and this distrust can spill over to contemporary care settings. In these cases, physician independence (especially as perceived by marginalized populations) could help increase badly needed trust in therapeutics.<sup>19</sup>

It is furthermore important to consider the basis of clinician-advocates' judgments regarding whether the regulator is properly evaluating the new product or not. An example of physicians providing a vital counterweight to regulatory overconfidence is FDA approval of aducanumab. After regulatory approval of this drug in spite of an expert panel voting against approval—with 10 members voting against and 1 voting “uncertain”—the public voice of clinicians who disagreed with the decision of regulators was significant in bringing attention to the decision.<sup>20</sup> Following the FDA approval of the drug over the clear and unanimous advice of the relevant scientific advisory committee, clinicians spoke up in 2 ways. First, individuals such as Aaron Kesselheim of Harvard Medical School, Mayo Clinic neurologist David Knopman, and Washington University neurologist Joel Perlmutter, publicly resigned from their positions as members of a primary advisory committee to the FDA.<sup>21</sup> Second, leading hospitals, such as Cleveland Clinic and Mount Sinai, made public announcements that their physicians would not be prescribing aducanumab.<sup>22</sup> The decision of these clinician experts to speak up against the agency was particularly significant, as it called into question the FDA's trustworthiness in the [process of drug approvals](#). Although physician protest may further erode trust in regulatory agencies in the short run, physician advocacy in favor of scientific rigor presents an important opportunity to engage the public in understanding the validity of the drug approval process and the importance of rigorous scientific evaluation of new agents.

### **Circumspect Courage**

The advocacy work of clinicians in contexts such as these must be considered carefully. Idiosyncratic reliance upon personal opinions is never a sound basis for clinical advice, prescribing patterns, or medical treatment. Assuming a plausible evidence base that justifies authorization or approval, clinical criticism or suspicion must be considered in light of 2 variables. The first is the potential implications of clinical statements or advocacy for downstream public confidence in therapeutics. The key here is public confidence not in *any* therapeutics but in the *right* therapeutics—namely, those whose use is proven to improve health outcomes and that will, in addition, potentially reduce health inequities. The second variable concerns judgments about whether the regulator



is properly evaluating a new product. If regulatory decisions express overconfidence in a prospective intervention—as might have occurred during review of aducanumab or for emergency use authorization of hydroxychloroquine or convalescent plasma—then expected usage patterns might worsen health inequity without raising population health due to the high cost of the drug (aducanumab) or to misinformation about the drug (hydroxychloroquine) affecting certain groups more than others. In such cases, independent physician criticism of the evidence base for prospective interventions might be appropriate for countering regulatory overconfidence. If regulators underestimate a prospective intervention’s value for subpopulations, on the other hand, then physicians might call attention to that intervention’s possible value to some underserved populations.

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## MEDICINE AND SOCIETY: PEER-REVIEWED ARTICLE

### How Should State Licensing and Credentialing Boards Respond When Government Clinicians Spread False or Misleading Health Information?

Allison M. Whelan, JD, MA

#### Abstract

The spread of health misinformation by health care professionals who also hold government positions represents a long-standing problem that intensified during the COVID-19 pandemic. This article describes this problem and considers legal and other response strategies. State licensing and credentialing boards must use their authorities to discipline clinicians who spread misinformation and to reinforce the nature and scope of professional and ethical obligations of government and nongovernment clinicians. Individual clinicians must also play an important role by actively and vigorously correcting misinformation disseminated by other clinicians.

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#### Introduction

The American public expresses a relatively high degree of trust in health care professionals (HCPs), although the degree of that trust varies among different demographics.<sup>1,2,3,4,5</sup> With such trust comes a responsibility to not misuse or abuse that trust in ways that harm individual and public health. Among other things, this responsibility requires that HCPs ensure the accuracy of the health information they disseminate to patients and the public at large.

Health misinformation is not a new phenomenon, but it spread “at unprecedented speed and scale” during the COVID-19 pandemic, facilitated in part by social media and the 24/7 news cycle.<sup>6</sup> The term *misinformation* proves difficult to define with precision, and what constitutes misinformation can change over time as new evidence becomes available. For purposes of this article, misinformation includes information that is demonstrably false, inaccurate, based on insufficient or poor-quality data, or misleading according to the best available evidence.<sup>6,7</sup> It can also include deliberately overstating the certainty of the evidence about a particular issue.

Misinformation has many sources—including members of the lay public as well as the medical profession. This article focuses on government clinicians, defined as individuals

with health care-related degrees or training who are also vested with government authority. Government clinicians need not hold an active license to practice medicine and their medical training may or may not be relevant to their government positions. Their medical backgrounds, however, are known to the public and may be leveraged or even weaponized to inflate the credibility of their statements about science, medicine, and health.

Health misinformation spread by government clinicians raises important questions about whether and how to regulate such misinformation. This article explores this issue and concludes that state licensing boards and professional societies must take more robust and affirmative actions against government clinicians who spread health misinformation. Additionally, they should develop explicit professional obligations to discourage and counteract misinformation. To have the greatest impact, these obligations must also extend to nongovernment clinicians, and individual clinicians must play an active role in **countering misinformation** spread by fellow clinicians.

### **Misinformation Spread by Government Clinicians**

During the COVID-19 pandemic, government clinicians made statements that were misinformed at best and false or even dangerous at worst. For example, as the United States experienced a spike in COVID-19 cases in October 2020, Scott Atlas—a radiologist by training, adviser to President Trump, and member of the White House Coronavirus Task Force—tweeted, “Masks Work? NO,” along with misrepresentations about the science behind the effectiveness of masking.<sup>8</sup> This tweet contradicted guidance from the Centers for Disease Control and Prevention (CDC) and was removed by Twitter for violating its policy against sharing false or misleading COVID-19 information that could lead to harm.<sup>8</sup> Atlas espoused many controversial and questionable positions about COVID-19, clashing frequently with public health officials. Among other things, he promoted a disputed and potentially dangerous approach to herd immunity, suggesting it could be achieved by allowing the virus to spread among healthy Americans.<sup>9,10</sup> Many public health experts believed such an approach could result in the deaths of hundreds of thousands, if not millions, of Americans.<sup>10</sup> Officials from the World Health Organization (WHO) called such a strategy “very dangerous.”<sup>11</sup>

Throughout the pandemic, US Senator Roger Marshall, an obstetrician-gynecologist by training, regularly went unmasked at campaign events, said he used hydroxychloroquine to prevent COVID-19 despite warnings from the US Food and Drug Administration (FDA) against using the drug as a preventative, proposed legislation to ban vaccine mandates, and disputed guidance that people who have had COVID-19 should get vaccinated.<sup>12</sup> Senator Marshall ensures that the public knows he is a physician by, for example, putting “Doc” in the letterhead of his US Senate office’s news releases and using “MD” in his Twitter handle.<sup>12,13,14</sup>

Mark McDonald is a California psychiatrist who, although not a government official, advised Florida Governor Ron DeSantis on the state’s pandemic response.<sup>15</sup> McDonald espoused many controversial positions throughout the pandemic, including that ivermectin was an “effective, safe, inexpensive treatment” for COVID-19, despite many public health agencies and medical professionals warning against the use of ivermectin as a COVID-19 treatment.<sup>15</sup> Misinformation about ivermectin resulted in increased demand for the drug and caused a spike in calls to poison centers throughout the country due to its improper use.<sup>15</sup>

These are just a few examples of government clinicians spreading what arguably qualifies as **health misinformation about COVID-19**. More egregious examples of misinformation can be found in statements by nongovernment clinicians, such as a San Francisco physician who stated that 5G networks cause COVID-19.<sup>16,17</sup>

Misinformation from government clinicians also extends beyond COVID-19. In 2015, for example, Senator Rand Paul, an ophthalmologist by training, misleadingly stated that “many” children have developed “profound mental disorders” due to vaccines, a claim refuted by the weight of scientific evidence.<sup>18</sup>

Health misinformation risks serious consequences for individual and public health.<sup>19</sup> During the COVID-19 pandemic, misinformation “caused confusion and led people to decline COVID-19 vaccines, reject public health measures such as masking and physical distancing, and use unproven treatments.”<sup>6</sup> When misinformation comes from authority figures, the consequences are potentially more profound.<sup>20,21</sup> Authority bias, for example, can cause individuals to “attribute more significance to statements from authority figures even in regard to areas beyond the scope of their authority.”<sup>22</sup> Government clinicians hold positions of authority, and their medical credentials bolster their perceived authority and expertise on matters of health. The significant harms of misinformation make it a pressing issue that demands attention and action.

### **Government Regulation of Misinformation**

Freedom of speech is not absolute, but regulating speech is fraught with legal challenges and controversies. Regulating misinformation proves particularly challenging during rapidly evolving situations, such as the COVID-19 pandemic, when it is difficult to determine what constitutes misinformation vs legitimate uncertainty. Indeed, new information requires government health officials to revise guidance, and the revised guidance may at times contradict prior recommendations, as illustrated by the US government’s initial advice that masks were not necessary to protect the general public from COVID-19.<sup>23</sup> After discouraging healthy Americans from wearing masks during the initial weeks of the pandemic, the CDC reversed course and recommended that all people wear face coverings while in public.<sup>23</sup>

This article does not endeavor to comprehensively analyze the First Amendment rights of clinicians, a nuanced and complicated issue. In short, there are many potential constraints on regulating government clinicians’ speech through state and federal laws. The extent to which their speech can be regulated depends, in part, on how the speech is categorized.<sup>19,24,25</sup> Is the government clinician speaking as a medical professional, a government official or employee, or a private citizen? Is the speech commercial speech, political or ideological speech, professional or occupational speech, or government speech? Is the government clinician speaking about a matter of public concern?<sup>19,24,25,26</sup> In certain contexts, even knowingly false speech may be protected.<sup>27,28</sup> Importantly, there are constitutional limits on the government’s authority to police a government clinician’s speech in the public sphere—such as on social media—if the clinician is speaking in their capacity as a private citizen rather than a government clinician.<sup>19,25</sup>

Regulating and restricting the speech of government clinicians would undoubtedly be subject to challenge, particularly if there is debate about whether the clinician is speaking in a public or private capacity, a line that can be especially blurry for speech on social media. The lawfulness of a restriction is highly context specific, creating uncertainty about whether a restriction would withstand judicial scrutiny in any given

case. Furthermore, some believe the American judiciary, particularly the US Supreme Court, has become increasingly protective of free speech, although the strength of that protection depends, in part, on the topic of the speech being restricted.<sup>29,30,31,32,33</sup> This uncertainty renders government enforcers and the judiciary unreliable and inconsistent mechanisms for combatting misinformation. Furthermore, there are significant questions about whether they are appropriate arbiters of what constitutes health misinformation. And importantly, in the wrong hands, restrictions can be taken to the extreme and cause more harm than good.<sup>34,35</sup> Indeed, the instinct to exert control over information, particularly in times of crisis, may be counterproductive because “[r]umor and misinformation thrive in an environment of secrecy,” whereas “an open and expressive environment fosters public trust in institutions.”<sup>34</sup>

### **State Medical Boards and Professional Self-Regulation**

Given the uncertainties of government regulation, other methods to combat misinformation spread by government clinicians must be considered. Many clinicians have done their part throughout the COVID-19 pandemic to counter misinformation.<sup>36</sup> That said, a clearer and more formal obligation remains necessary. There is no single solution to solving the problem. State medical boards, through their **licensing powers**,<sup>37</sup> and HCPs, through professional self-regulation,<sup>37,38,39</sup> both have an important role to play in the enforcement of existing standards and obligations.

State medical boards determine whether HCPs meet recognized standards of professional conduct. While state laws vary, unprofessional conduct often includes “dishonesty.”<sup>37</sup> Thus, in appropriate circumstances, a state medical board may discipline a licensed HCP who spreads misinformation when the board determines that the misinformation meets its state’s definition or interpretation of dishonesty. Such discipline may include suspending or revoking the HCP’s license.<sup>40</sup> There are, however, a number of limitations to relying solely on state medical boards to combat misinformation spread by HCPs. First, while discipline may be possible in some states, disciplinary actions against physicians—for any reason—are rare.<sup>41</sup> Second, medical boards—as entities of the state—may also run into the First Amendment challenges mentioned above. And third, the threat of discipline will be an inadequate deterrent for government clinicians who do not practice or have an active license to practice.

Nevertheless, for clinicians who are licensed, state licensing and credentialing boards should provide further clarity about what constitutes dishonesty and explicitly state that spreading health misinformation to individual patients or the public may provide grounds for discipline. Importantly, state medical boards should commit to more robust enforcement of state licensing standards by taking disciplinary actions against HCPs who fall short of these standards by spreading health misinformation. State medical boards should also consider publishing fact-checks of statements made by government clinicians who are or have been licensed.

Professional self-regulation, which does not require that those disciplined have an active license, can also help combat misinformation spread by government clinicians. Professional self-regulation can occur in many ways, such as through counteracting public statements or reprimands issued by professional organizations like the American Medical Association (AMA), various board certification organizations like the American Academy of Pediatrics, and individual clinicians. Individual clinicians have an important, yet often overlooked, role to play in combatting misinformation. This article asserts that government and nongovernment clinicians have professional and ethical obligations not

only to avoid spreading misinformation but also to actively and vigorously correct misinformation spread by other government and nongovernment clinicians, as well as other sources. While the second obligation need not require clinicians to actively seek out misinformation to correct, it would obligate them to correct or report any misinformation of which they become aware.

Highest priority should be given to correcting misinformation that is demonstrably false or that presents a significant threat or potential threat to public health and safety. In high-priority cases, state medical boards should be involved to determine an appropriate disciplinary response if the clinician spreading misinformation holds an active license. In cases that are less clear—of which there will be many, given the inherent difficulty in defining misinformation—instead of formal discipline, such as license suspension or revocation, greater reliance should be placed on public reprimand and on state medical boards, professional organizations, and individual clinicians counteracting such statements. These counteracting statements should refute the misinformation and provide the public with the best available evidence on the particular issue.

Existing ethical principles support these obligations. The AMA's Principles of Medical Ethics, for example, state:

1. "A physician shall uphold the standards of professionalism, be honest in all professional interactions, and strive to report physicians deficient in character or competence, or engaging in fraud or deception, to appropriate entities."<sup>42</sup> This principle supports clinicians' obligations to not spread misinformation and to "report" clinicians who do spread misinformation. Broadly interpreted, "reporting" a clinician could include issuing public statements and leveraging the media to counteract the misinformation with accurate information based on the best available evidence.
2. "A physician shall continue to study, apply, and advance scientific knowledge, maintain a commitment to medical education, [and] make relevant information available to patients, colleagues, and the public."<sup>42</sup> In line with this principle, clinicians should correct misinformation and provide accurate information to "advance scientific knowledge."<sup>42</sup>
3. "A physician shall recognize a responsibility to participate in activities contributing to the improvement of the community and the betterment of public health."<sup>42</sup> To abide by this principle, clinicians should avoid making statements that are not supported by the best available evidence and should play an active role in countering misinformation from other clinicians in order to contribute to "the improvement of the community" and for the "betterment of public health."<sup>42</sup>

Government clinicians are also subject to ethical standards applicable to government employees set forth in various laws, regulations, and policies. These include "ensur[ing] that every citizen can have complete confidence in the integrity of the Federal government"<sup>43</sup> and "disclos[ing] waste, fraud, abuse, and corruption to appropriate authorities."<sup>44</sup> Read broadly, these principles provide additional support for the position that government clinicians, even if they do not hold an active medical license, have an obligation to not spread misinformation and to disclose or report misinformation spread by other government clinicians.



As shown, these and other principles can be interpreted so as to support the obligations to avoid spreading misinformation and to correct misinformation. That said, this approach requires broad interpretations of existing obligations and thus remains less than ideal. Existing principles of ethics should therefore be updated to address misinformation and include these obligations explicitly. For government clinicians specifically, a separate set of ethical obligations should be developed to make clear that their positions of medical and governmental authority impose heightened responsibilities, regardless of whether they practice or hold an active license to practice.

### Conclusion

The rapid spread of health misinformation by government and nongovernment clinicians requires that government clinicians recognize their professional and ethical responsibilities to make truthful statements and to counteract misinformation spread by other clinicians. These obligations, however, do not fall solely on government clinicians. More than ever, society needs all clinicians to step up and speak up. Furthermore, professional organizations and state medical boards must make more robust use of their powers to take appropriate disciplinary action against clinicians who violate professional standards by spreading health misinformation.

Misinformation is a widespread societal problem without one clear and concise solution. Combatting misinformation requires the government, the medical profession, and the public to join forces to protect the public's health from dangerous health misinformation. Indeed, addressing health misinformation "will take more than individual efforts.... [It] will require a whole-of-society effort."<sup>6</sup> The medical profession must take a leading role in this fight.

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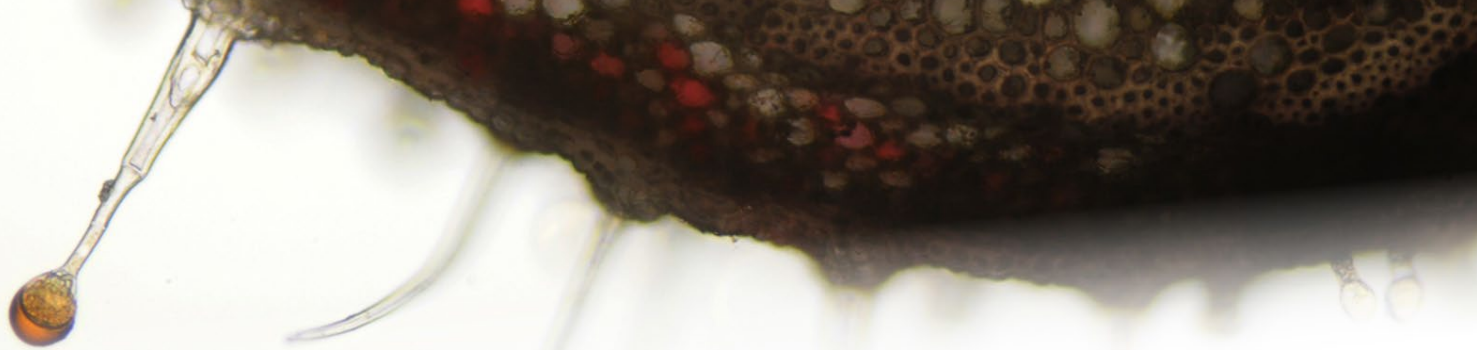
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### HISTORY OF MEDICINE: PEER-REVIEWED ARTICLE

#### Which Skills Are Key to Public Health Leaders' Success in Crisis Management?

Evan Anderson, JD, PhD and Scott Burris, JD

##### Abstract

Under-resourced and fragmented public health infrastructure has contributed to a poor pandemic response in the United States. There have been calls to redesign the Centers for Disease Control and Prevention and to increase its budget. Lawmakers also have introduced bills aiming to change public health emergency powers at the local, state, and federal levels. Public health is ripe for reform, but reorganization and enhanced funding will not address an equally pressing problem: chronic failures of judgment in the definition and implementation of legal interventions. Without a more informed and nuanced appreciation for the value and limits of law as an instrument of health promotion, the public will remain at unnecessary risk.

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##### Pandemic Failures

The US response to the COVID-19 pandemic has been poor by most measures. Despite many advantages, the United States has a higher COVID-19 death rate than any other wealthy country.<sup>1</sup> This is dismaying but should not be surprising. Efforts to reverse—even just halt—obesity<sup>2</sup> and fatal overdose<sup>3</sup> in the United States remain similarly humbling failures; meanwhile, the prospects of an effective response to climate change are far from auspicious.

It is easy to blame lack of progress on political partisanship or characteristics of American culture and social media. But these are not readily modifiable factors and therefore remain, practically speaking, the conditions of public health work.<sup>4</sup> Our Byzantine and impoverished public health infrastructure surely plays a role in public health failures. Since January 2020, state legislators have introduced more than 1500 more or less thoughtful bills to change the allocation and extent of public health authority,<sup>5</sup> and many commentators continue to call for drastic reform in how the Centers for Disease Control and Prevention (CDC) is structured and operates.<sup>6,7,8</sup> However, better funding and organization, while necessary, are far from sufficient for achieving greater and more equitable levels of health.

The key challenge in pandemic response and in public health generally is behavior change. Health agencies and their leaders are adept at identifying the etiology of harms and using epidemiology to estimate how resulting interventions *could* improve population-level outcomes. But when public health leaders “prescribe” those science-based interventions to the public in the form of rules, regulations, and guidance, they are surprised to encounter widespread noncompliance and even resistance. This should be frustratingly familiar to physicians, whose patients’ medication adherence hovers between 30% and 50%.<sup>9</sup>

To be sure, bad politicians and fake news influence compliance with public health rules and guidelines in ways one doesn’t see in medicine. But the fundamental threats to effective legal intervention are analogous in population terms to some of the challenges to medication adherence identified by the American Medical Association: fear, cost, misunderstanding, too many medications (and instructions), lack of symptoms, mistrust, worry, and depression.<sup>10</sup>

Overcoming the public health version of these challenges requires leaders to recognize that mass behavior change is itself a huge job that is illuminated by work in many scientific disciplines. Success is not merely or even mostly a function of better communication.<sup>11</sup> Equally or more important is accounting for available knowledge about social context and social psychology in the design and implementation of legal rules.

### **Making Better Use of Law**

Law has long been one of public health’s best tools.<sup>12</sup> Deployed effectively, **laws can make environments healthier** and instigate healthier behavior. Along with the “hard” power of formal rules, legal authority can also be wielded “softly” through mechanisms that structure choices (eg, make organ donation opt-out), provide incentives (eg, tax unhealthy products), and act to educate targets about healthy behavior and conditions (eg, require nutritional labeling on menus and packaging).<sup>13</sup>

Getting laws—all of which should be considered in terms of their health effects—right requires collaboration between 3 groups.

*Biomedical researchers.* Bench scientists and applied epidemiologists are needed to identify ways to disrupt mechanisms that cause harm. In the pandemic, for example, they identified the value of limiting indoor activity in densely congested areas.

*Social scientists.* Social scientists are needed to determine, through socio-ecological analysis, how rules can facilitate behavior change. For indoor density restrictions, that would mean first understanding the social, economic, and cultural value of different indoor activities. Social scientists would assess norms and logistical constraints likely to frustrate compliance, such as the predictable difficulties relating to church and school attendance, and offer practical advice about implementation considerations. The social scientist group would also include historians who could describe noncompliance observed in analogous events like the Great Influenza of 1918 to 1920,<sup>14</sup> as well as sociological researchers who would appreciate, at the outset, that issuing an order of any type does not ipso facto produce the desired behavior and who would bring useful evidence and theory to bear on the problem of compliance.<sup>15</sup> Compliance with law, the serious scientific study of which goes back at least as far as sociologists Max Weber and Émile Durkheim, is known to depend on factors like legitimacy of the law giver,

perceptions of the law's fairness, peer beliefs and behaviors, conformity with existing norms and habits, and the likelihood of disobedience being detected.<sup>16</sup> And, of course, people actually have to know what the law is and have the resources necessary for compliance, conditions that are often not met and are often tied to inequities. *Resources* here doesn't just include the masks people need to follow a masking rule but cognitive resources as well: people can only follow so many rules at any one time.<sup>17</sup> Perceptions of risk are also important, pointing to the necessity of not just designing but implementing rules with an understanding of how cognitive bias and social conditions influence compliance.

The sociological researchers would know that context also matters in other ways. Even when law "works," (ie, changes behavior) it doesn't do so completely or permanently. Laws, like antibiotics, may lose efficacy with over- and misuse, suggesting a need to steward legal authority. Like pills, laws also often have side effects, the costs of which must be carefully weighed against therapeutic benefit. For example, laws can increase bike helmet use but also expose Black people to racialized overpolicing.<sup>18</sup>

*Lawyers.* The third essential group would be experts on the legal authority of government. This group knows how to write clear rules and would be able to advise on whether and how long courts would uphold restrictions. This group would know that the protection of speech—and especially religion—has been elevated in recent decades and that epidemiologists would need to have specific evidence in hand establishing the indispensability of any differential treatment of religious and secular entities.

All 3 groups—biomedical researchers, social scientists, and lawyers—would need to work together to address trade-offs that are narrow—such as whether closing malls forces people into other less spacious settings—and broad—such as whether restrictions on churches would create spillover antagonism for vaccination recommendations. In a crisis like the COVID-19 pandemic, for which it was predictable from the start that vaccine hesitancy would be a major challenge, discussions would be situated in an ongoing planning process focused on immediate and longer-term needs.

### **Shortcomings of US Pandemic Responses**

Unfortunately, use of both hard and soft legal authority during the pandemic was poor. This resulted not from a lack of available knowledge and evidence about behavior change through law but from a lack of serious attention to the problem by public health policy makers. Some mistakes were understandable, given the scale and uncertainty of the crisis. But many didn't emerge from the difficult features of the pandemic and in fact exhibited the same deficiencies that have plagued the response to other public health threats. For example, restrictions on travel over state lines exhibited many of the flawed assumptions about enforcement capacity and the harmful theatricality we observe in the War on Drugs. In their treatment of religious activity, state health leaders created rules likely to activate cultural suspicions about government overreach while providing nearly ideal opportunities for First Amendment challenges, which largely succeeded.

Instead of stewarding the credibility needed for compliance with legal rules and recommendations, federal, state, and local governments were caught up in an understandable—but ultimately avoidable—game of whack-a-mole, issuing over 1000 emergency laws in just the first 6 months of the pandemic.<sup>19</sup> Many of these pandemic laws, such as the CDC's 2021 mask guidance, were overly complex.<sup>20</sup> Failing to appreciate the harmful externalities of arbitrary rules, public health leaders created

restrictions with strange inconsistencies, such as prohibiting outdoor gatherings while allowing restaurants to operate.<sup>21</sup> Extensive study of prior epidemics had established that the best overall strategy was targeted layered containment (ie, application of multiple partially effective measures), but in the constant and enduring rush to act quickly, specific tactics (like mask mandates and density restrictions) were not carefully targeted and therefore could not be sustainably layered.<sup>4, 22</sup>

### **Better Leadership and Inclusion**

Public health in the United States will not improve if its deficiencies are attributed wholly to resources and legal infrastructure—let alone if those in the field blame politicians, people mistrustful of vaccines, social media, and news media. We have used the example of law, one of public health's most important tools, to highlight the need to change the culture and leadership of public health. Here, we offer a few recommendations and observations to facilitate this change.

The first recommendation is to adopt a transdisciplinary model of public health from the first day of professional training for all public health workers. This model entails embracing a much wider array of disciplines in decision making about behavior change and policy.<sup>23</sup> Physicians have essential roles to play in public health but are perhaps overrepresented in leadership, as medical training is legally required to head many federal, state, and local health agencies or has been the assumed or customary qualification.<sup>24</sup> Every director of the CDC since 1953 has been a physician,<sup>25</sup> as have all but one US Food and Drug Administration commissioner since 1980.<sup>26</sup> Over two-thirds of state health officers have medical training<sup>27</sup>; the last 32 commissioners of health in New York City have been physicians.<sup>28</sup> But jobs in public health leadership come with formal legal responsibilities and powers, and physicians in official and unofficial capacities also implement and explain legal responses issued by legislatures and executive branches. Without change in their understanding of and capacity to wield law, there is as little hope of addressing overdose and obesity as there was in preventing widespread transmission of and harm from COVID-19. It is past time to bring anthropologists, economists, political scientists, and others more fully into decision making about how to use law and other mechanisms of behavior change.

It is also important that knowledge and power be shared not only among a wider array of professionals but also with the people. Sharing knowledge and power is not easy, nor is it a panacea. Sometimes people will latch onto a problematic idea (eg, “masks don't work”) that is difficult to change. Sometimes people don't trust health authorities or have different priorities or more pressing concerns. Awareness of these views and the motivations and assumptions underlying them, however, can inform whether and how a law would actually have its desired effect and what side effects need to be considered. More transparent policy making can promote public trust. As in medicine, there is still much to learn about how to do this widely and well.<sup>29</sup>

Culture might be a good place to end. It has been hard to miss an immodesty in public health leaders who are clinicians, which tracks with long-standing concerns that physicians have “some blind spots and unhealthy norms,” including “assum[ing] the role of a hero” and implying that “to err is human, but ... [they] are superhuman.”<sup>30</sup> People speak grandly of “following the science” when what they actually follow is a narrow epidemiological slice of available knowledge about human health behavior. Growing recognition of the essential value of humility in patient care<sup>31</sup> should extend to those working in public health leadership as well. Diversity of thought, humility, transparency,



and sharing of power are all elements of more effective practice of public health leadership.

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# AMA Journal of Ethics®

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## ART OF MEDICINE

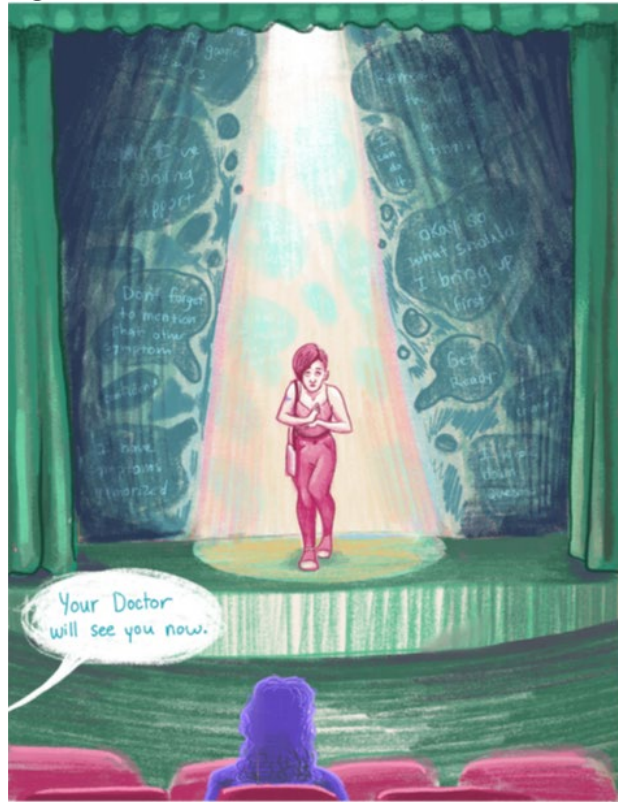
### On Stage, But Not on Cue

Julia O'Brien

#### Abstract

This comic considers how patients can work to use the right vocabulary to help their physicians help them, since patients suffer when physicians fail to properly diagnose and intervene on their ailments. This comic also considers how patients can experience performance anxiety after what might be months of preparation for a key clinic visit in hopes of getting help.

Figure. Detail from *Is There a Script for How to Help a Physician Help Me?*



(Click [here](#) to view the entire graphic narrative.)

**Media**  
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Being a patient **in search of a diagnosis**—or a physician who can make one—is often riddled with frustration, anger, self-doubt, and performance anxiety. Patients can spend a lot of time preparing for a clinic visit, which can generate as much pressure on a patient as a performance does for an actor. When patients feel they have to help their physicians help them, clinical encounters can be poignant, unrewarding sources of exacerbated suffering of an illness.

This comic captures a patient’s frustration when an ongoing health issue seemingly does not get resolved after the patient sees the physician. Instead of a happy ending, patients can experience cliffhanger after cliffhanger, as physicians struggle to diagnose or treat them. This process lengthens patients’ path to healing and can become another source of stress.

Physicians struggle in this situation, too. There are only so many clinicians, and many patients compete for their time. The current system doesn’t allow physicians to **dedicate enough time** and energy to properly question patients, perform examinations, and earn their trust. Which resources might enable physicians to meet a patient’s needs in the first, rather than the tenth, appointment?

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## AMA Journal of Ethics®

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### VIEWPOINT: PEER-REVIEWED ARTICLE

#### Science and Ethics of “Curing” Misinformation

Isabelle Freiling, PhD, Nicole M. Krause, MA, and Dietram A. Scheufele, PhD

##### Abstract

A growing chorus of academicians, public health officials, and other science communicators have warned of what they see as an ill-informed public making poor personal or electoral decisions. Misinformation is often seen as an urgent new problem, so some members of these communities have pushed for quick but untested solutions without carefully diagnosing ethical pitfalls of rushed interventions. This article argues that attempts to “cure” public opinion that are inconsistent with best available social science evidence not only leave the scientific community vulnerable to long-term reputational damage but also raise significant ethical questions. It also suggests strategies for communicating science and health information equitably, effectively, and ethically to audiences affected by it without undermining affected audiences’ agency over what to do with it.

##### Current Myopia About Misinformation

“I believe that misinformation is now our leading cause of death,” US Food and Drug Administration Commissioner Robert Califf tweeted in April 2022, “and we must do something about it.”<sup>1</sup> Diagnoses like this one are understandable. Normative democratic ideals assume that the best available scientific evidence informs both societal and individual decisions and crowds out misperceptions, disinformation, or conspiratorial thinking. Because of what it sees as a recent deviation from these norms in our current information environment, the World Health Organization has warned about an “infodemic,”<sup>2</sup> or a deluge of information—some of it inaccurate—that makes it difficult for citizens to separate signal from noise.

The assumption that misinformation is a new problem and Califf’s diagnosis of it raise several questions. Are there, in fact, reliable bodies of evidence that demonstrate that misinformation among public audiences is (a) more widespread now than it has been in the past and (b) causally rather than correlationally linked to behavioral choices or attitudes that might be harmful to societal or individual well-being? As we have showed elsewhere, the answer to both questions, at the moment, is “no.”<sup>3</sup> Given the problem’s uncertain diagnosis and prognosis, the answers to various questions regarding solutions quickly become complicated. What, if anything, constitutes an appropriate way to

intervene on misinformation and its behavioral correlates, such as vaccine hesitancy? Does this answer change for different audiences (eg, medical professionals vs nonexperts)? When, if at all, should informational correctives or interventions targeting behavioral correlates of misinformation occur? To whom should they be delivered, in what form, and with what degree of certainty? And who should deliver them—scientists, the government, or other actors?

The complexity of the problem of misinformation and the weak evidence base for both its diagnosis and prognosis have not stopped many in the academic community from urging large-scale interventions to stop the spread and uptake of misinformation about science and health.<sup>4,5</sup> These interventions raise a number of ethical concerns, all of which we explain in more detail below. First, some of these interventions are driven by a (sub)conscious desire among scientists to shape rather than inform public policy and to change how the **public consumes public health information**. This is not to say that scientists should not engage in continuous dialogue with policy makers<sup>6</sup> about how science can inform policy options or with other “publics”<sup>7</sup> about individual citizen choices. Some scientists’ strategy of urging policy makers or citizens to “just follow the science,” however, is not only naïve with respect to its likely success but also normatively at odds with how democratic societies make policy choices. As Stevens succinctly put it: “[T]he process of organising knowledge for policy through advisory committee is political, as well as scientific.... So when a government claims to be ‘following the science’ in response to a global pandemic, we need to treat this claim with caution.”<sup>8</sup> We will return to this concern below.

The intention to influence policy choices or change citizens’ behavior by solely following the science, unmediated by politics—concerning in itself—is even more troubling in light of the second ethical issue: corrective interventions for misinformation can have unintended effects that undermine scientists’ credibility, raise ethical dilemmas, or create additional vulnerabilities for some populations. Finally, many of these interventions—ironically—are at odds with the best available scientific evidence about how to effectively achieve different science communication goals across diverse populations and in new media environments driven by algorithms.

### **Informing Policy vs Social Engineering**

Scientists’ instinctual desire to intervene in what they see as a worsening misinformation problem comes with a temptation to claim authority over policy questions that do not solely have scientific answers. For example, should we mandate COVID-19 vaccines in elementary schools if those vaccines have been proven to be safe for children between 5 and 12 years of age? The second part of this question—ie, whether vaccines are “safe” according to a given technical standard—is one that science has the competence and authority to answer. However, the first part of this question—the **vaccine mandate**—is a question of public policy that should be determined by democratic processes involving diverse groups of stakeholders. Although science can function in policy-related deliberations as a factual evidentiary authority—for example, by providing insights as to the comparative health risks and benefits of vaccines—the weight of scientists’ authority relative to that of others in policy making processes is determined by democratic institutions.

This distinction between empirical and policy questions is captured in the term *policy* itself. In the *polis*, or the Greek ideal city-state, communities are run by citizens. Scientists and scientific institutions, as one component of our larger polis, are uniquely

positioned to inform policy decisions with reliable evidence, but scientific evidence is just one of many input streams to policy choices. As such, scientific evidence competes in democratic decision-making processes with other kinds of considerations, including societal values, strategic goals, and social norms.

As we argued early in the pandemic,<sup>9</sup> science will risk losing public support—especially among some partisan groups—if it blurs the boundaries between empirical questions that it is qualified to answer and policy questions that can only be addressed as part of broader public deliberations about facts, values, and societal priorities. Anthony Fauci, director of the National Institute of Allergy and Infectious Diseases and chief medical advisor to the US president, demonstrates how to successfully walk this very fine line. When asked whether he would recommend a vaccination requirement for domestic travel in December of 2021, for example, he responded: “The President takes all recommendations, all discussions, and, as a group, we make a decision about what’s best to do.”<sup>10</sup>

Recognizing the need for science to be seen as a good-faith arbiter of reliable evidence to inform policy, some in the academic community have shifted their attention to maximizing public uptake of reliable information and **preventing the spread** of misleading claims. The COVID-19 pandemic, not surprisingly, put significant strain on this approach, given that scientists were faced with the temptation to counter misinformation that they knew to be wrong with rapidly changing scientific evidence, which often turned out to be wrong or incomplete. For example, former President Trump’s misleading claims about the benefits of hydroxychloroquine were quickly debunked by fact checkers based on an article that had been published in the *Lancet*, which was later retracted.<sup>3,11</sup> The retraction led some of Trump’s defenders to label fact-checks and articles published in medical journals contradicting Trump’s claims as essentially biased political attacks on Trump.<sup>12</sup> The damage was done, even though a recent study published in the *Lancet Regional Health Americas* found that hydroxychloroquine has no benefit in reducing risk of hospitalization for COVID-19.<sup>13</sup> As this example shows, the possible benefits we reap from fact-checking scientific claims in contexts of high scientific uncertainty may simply fail to outweigh the risks and unintended consequences of undermining scientific authority.

Attempts to manage public opinion by socially engineering the ways that citizens use and interpret information are riddled with ethical pitfalls. It might be tempting to believe that, by “sticking to the facts,” scientific communicators remain neutral brokers of information whose purview encompasses interventions to combat misinformation. However, it is possible for scientific actors to use the “facts” to communicate in ethically questionable ways.<sup>14</sup> For example, there has been increasing attention to communication approaches designed to “inoculate” members of the public against developing misperceptions about science as a sort of preventive intervention strategy.<sup>15</sup> *Psychological inoculation* involves warning audiences about the existence of certain misinformation claims before they are exposed to them (eg, “over 31,000 scientists have signed a petition that there is no scientific evidence for human-caused global warming”), and then following that warning with a factual refutation (eg, “97% of climate scientists have concluded that human-caused global warming is happening”).<sup>16</sup> Rooted in propaganda research conducted during World War II,<sup>17</sup> inoculation research is designed to influence a priori how people will process false claims when they encounter them in order to prevent the uptake of certain beliefs (typically beliefs that are considered by scientists to be false or misleading).<sup>16</sup> Yet attempts to limit public



discourse, no matter how misguided that discourse may seem, are antithetical to the very idea of science, which, over time, builds an increasingly sound epistemological account of the world through the open contestation of competing truth claims. Attempts by scientific institutions to steer or moderate public debate through inoculation therefore risk doing irreparable reputational damage to science's claim to be a neutral arbiter of truth.

Some might argue that scientists are uniquely positioned to steer public debate, given their reputation as neutral observers whose conclusions—in an ideal world—are only bound by facts. This reputation does not always align with scientific data, however, as scientists exhibit motivated reasoning and identity-driven conclusions similar to that of non-expert citizens. For instance, male scientists rate research as lower in quality if it challenges gender bias within the academy.<sup>18</sup> Similarly, research conducted by the third author (D.A.S.) and colleagues shows that scientists' policy judgments about regulation of new technologies are shaped by their personal ideology and other belief systems, even after controlling for their scientific judgments about potential risks and benefits.<sup>19</sup>

Perhaps more importantly, however, inoculation and related interventions are techniques that by design rely on audiences not consenting to the “treatment.” If scientists told audiences that they selectively exposed them to small dosages of counter-messages in news or social media in order to change the way they interpret information down the road, the corrective effects might evaporate. More perniciously, scientists would rightfully come under immediate attack from political actors for not staying in their “lane.” The undermining of scientific authority would be exacerbated by a constantly changing knowledge base that might create ethical dilemmas for scientists if—in rare cases—they were aware they might inoculate against messages that turned out not to be completely false as more science emerged, as occurred early in the COVID-19 pandemic.<sup>13</sup> In other words, informational inoculation without consent—which would be unthinkable for vaccines or other medical treatments—is both normatively troubling and potentially disastrous as a public relations problem for science.

Our concern about social engineering approaches, such as inoculation, however, should not be interpreted as advocacy for a naïve understanding of a marketplace of ideas in which “false” claims will eventually give way to “true” claims in public discourse. They will not. Even if true claims were easily identifiable (which they often are not),<sup>3</sup> evidence-backed claims that fail to meaningfully connect to societal values and preferences are unlikely to win hearts and minds when they compete in modern media ecosystems against well-packaged falsehoods.<sup>14,20</sup> It therefore makes sense to use research insights from the behavioral and social sciences, for example, to frame science-related messaging in ways that will resonate with specific audiences who might otherwise be unmotivated to recognize certain issues as relevant, important, or valuable to them.<sup>21</sup> However, rather than packaging information in ways that increase target audiences' likelihood of considering a given argument or of seeing certain facts in new ways, inoculation essentially enables the institutions who use it to paternalistically decide that certain claims are blights on public discourse and then to stealthily diminish the power of those claims by encouraging people to discount them and thereby dramatically reduce their spread.

Similar charges of paternalism can be leveled against “nudging” initiatives. Nudging, which is sometimes euphemistically described as “enhanced active choice,”<sup>22</sup> is a social engineering strategy that shapes information delivery and decision-making processes in

ways that push people's behavior in a desired direction. To be clear, nudging is not designed to educate, as inoculation sometimes is. Instead, nudging is intended primarily to orchestrate outcomes of interest, typically outside conscious awareness.<sup>23</sup> An example of nudging is when transportation authorities set organ donation as the default when people obtain their driver's license—ie, rather than asking people to opt-in to organ donation, people must instead opt out. When former President Barack Obama's Social and Behavioral Sciences Team implemented nudging strategies—eg, by redesigning communications to encourage military service members to contribute to their retirement plans<sup>24</sup>—the policies were, unsurprisingly, criticized as affronts to individual liberty on the part of condescending government institutions. “To be clear,” noted Richard Williams in *Politico*, “Congress did not pass legislation authorizing such activity; this is something dreamt up by bureaucracies to force their own preferences on citizens.”<sup>25</sup>

The concerns we have expressed about nudging are not meant to detract from the importance and power of social science research. Nudges can **serve as valuable tools** to achieve certain goals, such as mask-wearing during a public health crisis like the COVID-19 pandemic, but the question as to whether orchestrating any given outcome qualifies as using “nudging for good” is often difficult to answer and will be dependent on cost-benefit analyses that incorporate competing value systems and priorities. Is nudging people to wear masks for the sake of public health a justifiable use of nudging, if evidence about possible detrimental effects of mask-wearing on the psychological development of young children<sup>26</sup>—or on racial profiling of Black people—remains unclear, or at least difficult to quantify?<sup>27</sup> The answer is likely still “yes, nudging to encourage mask-wearing is important,” but, as this example suggests, we need to consider the perspectives of diverse stakeholders (including scientists in specialties other than public health) in our decision-making process, as well as in the careful design and dissemination of nudging communications.

While reasonable arguments can be made both in favor of and against policy makers or government institutions using nudging strategies, the idea of scientists themselves trying to nudge publics either in their information processing or behaviors is riddled with ethical landmines. As we discussed earlier, the reputational risks that scientists and scientific institutions face when they engage in such social engineering are serious, and they will only intensify in contexts in which the science at hand is controversial or the scientific evidence underlying the social engineering strategy is rapidly shifting. Indeed, scientists who engage in inoculation or nudging will likely be perceived by some as condescending or paternalistic, as participating in an unethical overreach of their institutional authority, or even as hypocritically undermining the open contestation of knowledge that is core to scientific philosophy and epistemology.<sup>9</sup>

### **Communicating Science**

When Congress established the US land grant system with the passage of the Morrill Act over 160 years ago, it did so with the intent to support not only the growth of scientific knowledge but also the communication of scientific information.<sup>28</sup> As Congressman Morrill put it: to “give intelligence to those who will esteem it.... Let us have such colleges ... to announce facts and fixed laws ... and broadcast that knowledge.”<sup>29</sup> As we have argued in this essay, the communication of reliable scientific information in our current highly politicized and competitive information ecologies has many ethical pitfalls. Relying on the best available social science evidence to help guide these efforts is therefore foundational to science's ability to fulfill what some have called its “social

contract.”<sup>30</sup> It follows that it would be unethical for scientists not to do everything they can in order to ensure that the benefits of their work reach all cross-sections of society.

This ethical mandate—and the utility of social science research in fulfilling it—is illustrated powerfully by concerns within the scientific community about a lack of trust among African American communities and other populations that historically have been at the receiving end of unethical treatment (or the lack of treatment) by parts of the medical community. Calls to rebuild trust are often well-intentioned but focus on symptoms rather than the underlying causes. For example, expectant African American mothers continue to face up to 3 times higher mortality rates than White mothers.<sup>31</sup> A lack of trust in the medical community, in other words, might be much less a function of historical mistreatment than of current inequities in health outcomes. Any attempt to rebuild trust through outreach and communication without first addressing these kinds of inequities is disingenuous at best and unethical at worst. But we know from decades of social science research that citizens with higher income and education levels will benefit much more from health information campaigns than people with lower levels of income or education.<sup>32</sup> These “knowledge gaps,” as sociologist Phil Tichenor and colleagues called them in the 1970s,<sup>33</sup> will widen as more information becomes available, favoring the already information rich and leaving already vulnerable populations less (accurately) informed.

Given some communities’ lack of trust in science and the existence of knowledge gaps, new information needs to be framed in ways that align with how different publics make sense of information. Decades of research in communication science, sociology, political science, and psychology have shown that the same information is interpreted very differently by audiences when presented in ways that either resonate or do not resonate with their respective interpretive schemas and worldviews.<sup>21</sup> When scientists communicate without providing audience-relevant context and framing that resonate with citizens’ (rather than their own) value and belief systems, their messaging is likely to favor groups who are already most interested in science and aligned with the scientific community, leaving behind groups that are often most vulnerable and underserved by paywalled science journalism in elite media outlets. Data collected during the pandemic about a lack of public buy-in for “vaccine passports” provide powerful proof of how effective alternative framings can be. While conservative audiences were concerned about the term *passport*, which resonated with their concerns about government overreach and federal oversight, they were much more likely to support vaccine “verification,” which frames the issue of showing vaccination cards as one of individual choice and responsibility.<sup>34</sup>

Of course, not every frame is meaningful to all publics, especially in an era when hyperpartisanship is the new normal. We all engage in motivated reasoning, especially when processing information that contradicts our values.<sup>35</sup> Similarly, many of us navigate online environments at least partly defined by filter bubbles that echo voices and sources consistent with our prior views and preferences.<sup>36,37</sup> We need to start taking these realities into account rather than seeing those whom we are trying to persuade as the only ones using motivated reasoning and blaming them and the filter bubbles they are in for adverse outcomes or even for exacerbating the problem. For instance, the scientific community has a poor track record of meaningfully communicating the value of science to some sectors of society, such as religious people or conservative audiences.<sup>38</sup> And some of these wounds might be self-inflicted: we should not be surprised when science is perceived as partisan when prominent scientist

communicators regularly mock Republicans and communities of faith on social media.<sup>38,39</sup>

COVID-19 has demonstrated powerfully how unprepared science was to give answers to rapidly emerging and urgent policy problems. Not only were there high-profile retractions of published research<sup>11</sup> and preprint-based overclaims in popular media, but science during the pandemic was also conducted much faster than normal and under immense public scrutiny.<sup>9</sup> Even with these challenges, however, science continues to be the best way that societies have for producing and curating reliable information. Scientists seeing members of the public as partners in solving large societal challenges, such as COVID-19, rather than as patients with attitudinal or behavioral pathologies that need to be fixed will be a prerequisite for scientists' continued ability to inform the urgent policy choices that are coming our way.

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