

HIGHLIGHTS

The Centers for Disease Control and Prevention (CDC) plays a pivotal role in protecting the public from serious health threats and the agency must strengthen scientific integrity to continue its mission. The Union of Concerned Scientists (UCS) has compiled actions the CDC should take to take in order to make improvements to the scientific integrity of the agency, including:

- *Ensuring that robust scientific research, communication, and science-based decisionmaking occurs during the COVID-19 pandemic.*
- *Addressing racism and discrimination within the agency.*
- *Improving the timeliness and content of communications of scientific information to the public and the media.*
- *Ensuring that science-based decisions are informed by independent science.*
- *Ensuring that scientists know their rights under the scientific integrity policies.*

Strengthening Scientific Integrity at the Centers for Disease Control and Prevention

Recommendations for 2021 and Beyond

The Centers for Disease Control and Prevention (CDC) constitutes our nation’s top defense against public health threats (Parikh 2020). Its research and other science-based activities yield enormous benefits in reducing the burdens of disease not only throughout the United States but also across the world (Sencer 2016). Its model is so widely respected that African, European, and Asian nations proudly call their own public health agencies CDCs, even when those initials make little sense in the local language.

As the CDC responds to the COVID-19 pandemic, the worst public health crisis in a century, it is more important than ever that it freely and fully engages in the scientific process and acts on that approach to protect people’s health and safety (CDC n.d.). During the pandemic, the CDC’s importance—indeed, its pivotal role in saving lives—has become more apparent than ever.

Science-based decisionmaking is crucial to the CDC’s ability to carry out its mission: protecting public health and safety by producing and communicating scientific information and tools. However, when science has been politically contentious, the CDC has faced pressure to violate basic principles of scientific integrity (SI) and to manipulate information for political purposes. The results have included buried scientific reports, censored scientists, and restrictions on the media’s access to experts (UCS 2020a; UCS 2017; UCS 2020b).

The CDC must strengthen scientific integrity to ensure that the agency can continue conducting groundbreaking research and using the best available science. Given its fundamental national and global roles, the CDC should consider these recommendations for promoting scientific integrity.



James Gathany/CDC

The CDC exists to protect our nation’s people from public health and safety threats, a role that has grown increasingly crucial as our country navigates the COVID-19 pandemic. It is imperative that the agency take steps to improve scientific integrity in order to serve the public during this tumultuous time.

Promoting Science-Based Decisionmaking

Integrity must be central to the CDC’s science-based decision-making processes, such that the agency’s research and the information it conveys adheres to the strongest principles outlined in its SI policy. However, in a 2018 survey of federal scientists conducted by the Union of Concerned Scientists (UCS) and Iowa State University, CDC scientists reported that political considerations, coming in particular from the White House, hindered the agency’s ability to make science-based decisions (Goldman et al. 2020).

Political interference also makes it difficult for the best available science to fully inform agency scientists and their work (for example, due to restrictions on attending scientific conferences) or to communicate the most accurate science-based information to the scientific community as well as the media and the general public. For example, shortly after President Trump’s inauguration, the CDC canceled a planned “Climate and Health Summit” conference without explanation (Dennis 2017). In 2017, CDC officials instructed staff to never use seven words in documents prepared for the following year’s budget—including the words “science-based” and “evidence-based” (Cohen 2017). In 2018, political officials suppressed publication of a study on the health effects of per- and polyfluoroalkyl substances (a group of chemicals collectively known as PFAS) by the Agency for Toxic Substances and Disease Registry (Snider 2018). During the COVID-19 pandemic, concerns have arisen about the decisionmaking processes that resulted in the CDC’s testing-kit failures, restrictions on the ability of its scientists to speak to the media, and the suppression of a report on how to reopen communities safely (Boburg et al. 2020; Lemon 2020; Dearen and Mike Stobbe 2020).

The CDC should consider the following actions to promote science-based decisionmaking in several key areas.

During the COVID-19 pandemic, a report on how to reopen communities safely was suppressed.

Ensure that robust scientific research, communication, and science-based decisionmaking occurs during the COVID-19 pandemic:

- Continue to develop and promote transparent, accurate, and standardized methodologies for collecting and analyzing case, death, hospitalization, and testing data.

- Emphasize the importance of, and implement actions to promote, the consistent and comprehensive collection of case data, broken down by race, ethnicity, and other demographics (e.g., socioeconomic factors, disability status). This could help the agency, states, and communities better understand and work to address disparities in health outcomes across the population.
- Revise policies and practices to encourage scientists to provide the public with lifesaving science-based information. Agency leadership should actively remind agency experts of their rights to speak to the media and public. Further, leadership should encourage experts to do so—for example, through announcements in an all-hands meeting or an email communication sent broadly to agency staff.
- Ensure that whistleblower protections are firmly in place and communicated to the scientific staff, and investigate all reports of retaliatory actions against whistleblowers.

The CDC must reaffirm its commitment to scientific integrity by ensuring that its SI policy is clear and strong, and by fostering an agency culture that reinforces the policy and encourages staff to uphold scientific integrity in their work. Such steps can help limit political interference in decisionmaking processes:

- When protecting public health requires the immediate release of scientific research, all CDC employees, including managers and high-level officials, should strive to prioritize and fast-track the release and communication of this information, as the agency’s internal guidance on crisis communications articulates (CDC 2018).
- While the CDC has a process for investigating research misconduct, as outlined in the policy for “Responding to Allegations of Research Misconduct,” the procedures for reporting and investigating other types of SI violations are vaguely defined (CDC 2002). The agency should develop and implement specific procedures to investigate any and all potential violations of scientific integrity. The procedures should include investigating senior officials, a provision that likely requires coordination between the CDC’s SI official and its inspector general.
- While the CDC SI policy explicitly states that staff can communicate their work without interference from the Policy Office, the policy’s clearance sections contain no equivalent language. As evidenced by open-ended responses from CDC scientists on the 2018 UCS survey and other assessments, undue interference from the Policy Office can lead to the suppression of scientifically robust documents and a culture of self-censorship on politically sensitive topics (Goldman et al. 2020). The Office

of the Director for each CDC center should develop specific procedures for resolving issues of potential political interference during the clearance process. Each office should specify reasonable time limits for clearance of official scientific products and other scientific documents involving CDC experts.

- To address the shifting of resources away from politically contentious topics, which CDC scientists reported in the 2018 survey, the political leadership should publicly reaffirm, with concrete internal steps, the agency’s commitment to strengthening data collection, grant funding, and research on public health topics of great social importance that may be politically sensitive in nature (Goldman et al. 2020). Such topics could include, for example, gun violence, vaccinations, reproductive health, the use of lethal force by police, the health impacts of climate change, and health disparities in underserved communities (e.g., Indigenous groups, people of color, LGBTQ+ populations, immigrants).
- The CDC should evaluate the hiring criteria regarding qualifications for scientific positions. The agency should provide a certificate of qualification for HR staff who demonstrate they understand the qualifications required for candidates for scientific positions.
- Managers who oversee scientists should receive science-literacy training to ensure they understand the role and methods of CDC scientists and the importance of scientific integrity.

Fostering an Antiracist Work Culture

In July 2020, more than 1,200 CDC employees (more than 10 percent of the agency workforce) signed a letter stating that they “can no longer stay silent to the widespread acts of racism and discrimination within CDC that are, in fact, undermining the agency’s core mission” (Anonymous 2020). Scientific integrity cannot be achieved in an environment of “pervasive and toxic culture of racial aggressions” that systematically harms members of the CDC workforce. Nor can the CDC effectively carry out its mission of saving lives and protecting the nation’s most vulnerable and marginalized communities while perpetuating inequities within its ranks. The CDC should take effective, swift action to meet the following recommendations put forth by its own staff.

It is imperative that the CDC work to address its racism and discrimination through the following actions:

- The CDC director should issue an official, public memo declaring that systemic racism is a public health crisis.

The CDC cannot effectively protect the nation’s most vulnerable and marginalized communities while perpetuating inequities within its ranks.

To show that systemic racism warrants major public health intervention, the director should outline specific actions the agency can take, such as:

- Explore creating a CDC center or working group devoted to tackling systemic racism.
- Establish an Office of Minority Health in every CDC center and work with Congress to increase the funding, scope, and size of existing offices.
- Mandate that all CDC scientific and programmatic activities consider systemic racism in their designs, conceptualizations, and implementations.
- Take actions to dismantle the processes and conditions that make systemic racism a “crushing reality for people of color in their daily lived experiences here at CDC” (Anonymous 2020).
- The CDC director should work with the agency’s senior leadership to implement tracking, auditing, and oversight processes:
 - Increase Black representation in agency senior and leadership positions.
 - Establish a CDC working group empowered to implement diversity and inclusion initiatives throughout the agency.
- The CDC’s Human Resources Department should issue an internal memo listing long- and short-term goals and actions it plans on taking to dismantle the racially hostile work environment:
 - Include diversity and inclusion goals as part of HR hiring and promoting processes and establish procedures to track the agency’s level of engagement in fair and equitable selection processes.
 - Establish mandatory, staff-wide annual training sessions on implicit biases.
 - Improve the processes that govern Equal Employment Opportunity complaints to guard against inaction

or workplace retaliation and enforce zero-tolerance policies for managers that have multiple racial discriminatory grievances filed against them.

Ensuring the Unimpeded Communication of Science

CDC scientific communications form the basis of personal and societal decisions designed to keep our nation's people safe. However, multiple setbacks are restricting the ability of CDC scientists to communicate their work to the public. In responding to the 2018 UCS survey, 40 percent of CDC scientists reported they did not believe they were allowed to speak to the public or the news media about the findings of their scientific research (Goldman et al. 2020). This situation has been exacerbated during the COVID-19 pandemic, with heightened restrictions on the ability of CDC scientists to speak with the media. For example, the CDC failed to hold a press briefing on the novel coronavirus during a crucial three months, from March 9 to June 12, 2020 (Crump 2020). And the agency has barred its experts from appearing on CBS interviews throughout the duration of the pandemic (Crump 2020).

The CDC should take the following actions to protect the ability of scientists to communicate effectively about their work and to ensure accurate and timely communications from experts to the public.

To improve the timeliness and content of communications of scientific information to the public and the media, CDC officials should take the following steps:

- Increase training and guidance opportunities on scientific integrity and crisis communication beyond those offered one or more times annually to all scientific/technology professionals. For example, establish opportunities for staff to directly engage with SI officials and expand who would benefit from attending SI trainings to include managers, directors, public relations officers, and political appointees.
- Discourage self-censorship by making explicit, in the form of a memo and other public communication from agency leadership, that CDC scientists are free to pursue and communicate openly about their scientific work. Agency leadership should affirm the stipulation in the CDC's "Release of Information to News Media" policy that scientists are responsible for notifying their supervisors and media relations personnel regarding significant actions having the potential to generate public interest or media attention, and that they are encouraged but not required to do so.

- Modify the CDC "Guidance on Scientific Integrity Policy" to indicate that it is not just CDC media employees who cannot interfere in the ability of scientists to communicate their work to the public but also interagency officials, political appointees, and managers. The policy should state that such interference can constitute a violation of scientific integrity.
- Political officials should reaffirm, in their public communications with department scientists (e.g., written memos and talks), the importance of the CDC's SI and communications policies and explicitly reinforce that public affairs employees will:
 - Not alter the substance of scientific, scholarly, or technical information.
 - Provide news releases for review by subject-matter experts before issuing them.
 - Never ask or direct federal scientists to alter their scientific findings.

Addressing Conflicts of Interest

The use of science to inform decisions affecting the public should be as unbiased as possible—the science should be independent (i.e., free of political, ideological, or financial influence) and speak for itself. When decisionmakers are swayed by their own bias or their decisions align with policy choices unsupported by science, it puts the safety and health of people at risk. The resignation of CDC Director Brenda Fitzgerald in early 2018, when her investments in tobacco stocks and other questionable financial conflicts became public, indicates the importance of strengthening the CDC's handling of conflicts of interest (Kaplan 2018).

The use of science to inform decisions affecting the public should be as unbiased as possible—it should be independent.

To ensure that science-based decisions rely on independent science, the CDC should consider the following recommendations:

- The administrator should issue a directive requiring that scientific leadership positions are filled by individuals

with specialized training or significant experience relevant to the positions for which they are nominated, such as the requirements specified in US Code Title 7 for confirming the Department of Agriculture’s chief scientist.¹ The agency should seek to codify the directive to ensure that qualified experts fill scientific leadership positions.

- While the “Confidentiality Financial Disclosure System Policy for CDC/ATSDR” outlines requirements for political officials and high-level employees to disclose potential conflicts of interests, the policy lacks a specific process for publicly disclosing conflicts in a timely manner. The administrator should issue a directive to this effect, consistent with the guidance and mandates of the Office of Government Ethics.
- The inspector general of the Department of Health and Human Services (HHS), the CDC’s parent agency, should enforce ethics agreements better by requiring the presence of ethics officials in meetings of senior political officials to ensure that they recuse themselves from scientific discussions for which they have a direct conflict of interest. The HHS inspector general should ensure a safe mechanism by which CDC employees can report breaches of ethics agreements.

Strengthening the CDC’s Scientific Integrity Policy

The CDC has a strong SI policy, but there is room for improving its content, accessibility, and implementation. For instance, parts of the policy entitled “Release of Information to News Media” and “Clearance of Information Products Disseminated Outside CDC for Public Use” previously appeared on the CDC website but have been offline during the COVID-19 pandemic. Additionally, the CDC’s primary document on scientific integrity, “CDC Guidance on Scientific Integrity,” has not appeared on the main website since late June 2020; it is only available via CDC Stacks, the agency’s publications library. Unclear or inaccessible policies impede CDC scientists from knowing their rights and the public from understanding the agency’s commitment to upholding scientific integrity. Such conditions may lead to censorship or self-censorship.

To ensure that CDC scientists know their rights under the SI policies and that the agency reinforces a culture of scientific integrity, the agency should reinforce SI policies and procedures:

- Three policy documents, “Release of Information to News Media,” “Clearance of Information Products Disseminated Outside CDC for Public Use,” and “CDC Guidance on

Scientific Integrity,” must be available online and CDC staff informed of their contents.

- The CDC should build out its SI infrastructure to ensure all its staff have access to and open channels of communication with SI officials and their representatives. Such infrastructure could include regularly scheduled trainings, ongoing communication between SI officials and staff, SI committees of representatives across agency offices, and an annual report on the status of scientific integrity at the agency, including a high-level summary of all investigations into SI violations.

Unclear or inaccessible policies impede CDC scientists from knowing and communicating about their rights.

- SI officials should consistently check in with scientific staff to ensure they understand their rights. This check-in could take place through establishing regular office hours for SI officials and periodic internal SI surveys.
- Political officials should regularly reaffirm, in their public communications with department scientists (e.g., in memos and staff meetings), the importance of the SI and communications policies.

To ensure that policy guidance is as clear and protective as possible, the CDC should update its SI policy to include the following provisions:

- Political appointees, directors, and supervisors must not inappropriately influence scientific research. Instances of intimidation, suppression, or other interference may constitute SI violations.
- CDC scientists have the right to review, approve, and comment publicly on the final version of official agency documents that significantly rely on their work. The current policy does not guarantee this right of last review when a scientist is not an author but the document relies on the scientist’s research or the scientist is identified as a contributor.
- For public-facing materials, the procedure for reporting and resolving differing scientific opinions outside of or before the clearance process is explicit and public.

- The procedures for investigating SI allegations that fall outside of research misconduct are specified in greater detail.² While the SI policy acknowledges that “fact-finders should be undertaken and preemptive measures instituted,” it does not specify whether the other SI violations should be investigated in the same manner as research misconduct or when another investigative procedure would be more appropriate.
- Track and publicly report SI violations, as do the Environmental Protection Agency, the Department of the Interior, and other agencies (MacKinney et al. 2020).
- Ensure that nonscientific considerations or other bureaucratic hurdles do not impede the clearance process for unofficial scientific publications (e.g., peer-reviewed publications that do not rely on non-public agency data) by addressing concerns about the agency’s slow, sometimes impassable clearance processes. The CDC should implement a policy similar to that of the Food and Drug Administration, which allows its scientists to proceed with publication if the supervisor or other official fails to review the manuscript within 30 days, provided the publication includes an appropriate disclaimer appropriate (FDA 2012).

Conclusion

The Centers for Disease Control and Prevention has become a world leader in public health, well beyond its 1946 founding (or primary) mission to halt the spread of malaria in the United States. Today, the CDC tackles some of the biggest public health problems facing our nation, and the world, by conducting critical scientific research, disseminating health information, and responding to health threats. From its smallpox eradication program and tobacco cessation campaigns, to its efforts to slow the spread of COVID-19, the CDC saves the lives and improves the health of millions of people in this nation and abroad, and it fulfills this mission through the use of science-based decisionmaking. It is critical that the agency maintains integrity in its science-based decisionmaking processes, ensuring that its scientists, and the work they produce, continue to effectively protect the public’s safety and health.

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ENDNOTES

- 1 7 U.S. Code Title 7— AGRICULTURE. <https://www.law.cornell.edu/uscode/text/7>
- 2 The procedures at the Environmental Protection Agency could be a model.

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