Demanding a Seat vs. Rejecting the Table: AIDS Activism, Covid-era Medical Freedom, and Communication Policy for an Era of Distrust

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Executive Summary

Public health communication faces an unprecedented authority collapse. Trust in doctors and hospitals has fallen from 70% to 40% since 2020. Patients refuse evidence-based treatments in favor of social media influencers and alternative healers. In November 2025, political appointees republished the CDC's autism-vaccines webpage to contradict decades of research. This crisis extends beyond vaccination to every domain of public health.

In the 1980s, AIDS activists mastered epidemiology and clinical trial design to challenge FDA bureaucracy, learning institutional science's language to earn legitimacy. As marginalized, dying members of stigmatized communities, they needed institutional credibility to access treatments. Covid-era medical freedom activists rejected scientific processes entirely, turning to podcasts and TikTok while dismissing legitimate research. One group demanded a seat at the table; the other rejected the table altogether, representing a structural and societal shift. Where AIDS activists sought institutional approval, medical freedom activists reject the premise that institutions deserve deference. Traditional public health communication—credentialed experts at podiums, peer-reviewed studies behind paywalls—now triggers suspicion rather than trust.

Decades of manufactured doubt, media fragmentation, algorithmic amplification of misinformation, and institutional failures during Covid created conditions where populations with cultural and political power concluded that institutional expertise signals corruption. Medical freedom activists weaponized these failures – along with legitimate historical grievances like the opioid crisis and medical racism – into wholesale rejection of expertise.

This capstone makes recommendations grouped in three categories:

Reconstructing the Messenger: Fund independent health content creators without controlling their messaging. Redirect communications budgets from billboards and PSAs to grants for platform-native creators with established audience trust. Accept that editorial independence means funded voices will sometimes acknowledge institutional failures.

Transforming the Medium: Create content optimized for where information actually spreads—TikTok, Instagram, memes—rather than press releases and PDFs. Use pre-bunking strategies that build cognitive immunity before misinformation spreads. Enter existing conversations on social media rather than creating institutional echo chambers.

Democratizing Access: Remove journal paywalls for publicly-funded research. Require plain-language summaries of all public health studies. Establish quality control for methodologically unsound research before it enters policy conversations. Create verification infrastructure that makes institutional trust optional.

These strategies work because they bypass the need for institutional credibility entirely. They create infrastructure for independent verification, trusted community messengers, and accessible research. This should be permanent infrastructure for an era where power, expertise, and trust no longer converge.

Introduction

On November 19, 2025, political appointees republished the Center for Disease Control's (CDC) webpage on autism and vaccines, including the statement, "'vaccines do not cause autism' is not an evidence-based claim," bypassing the agency's own scientists and contradicting decades of research. Within weeks, the federal Advisory Committee on Immunization Practices (ACIP) began exploring policy changes that would fundamentally alter America's childhood vaccination schedule, despite warnings from public health experts that such changes would leave children vulnerable to preventable diseases.

These events and others have placed public health policy in the United States at an unprecedented crisis point, one where institutional authority has largely collapsed as a basis for health communication and where institutions themselves often promote misinformation. The consequences extend far beyond vaccination rates. Patients refuse hospitalization while critically ill, seeking unlicensed treatments. Trust in doctors and hospitals has collapsed from 70 percent to 40 percent since 2020. Cancer screening rates decline as patients question medical recommendations. Chronic disease management falters when diabetic and hypertensive patients reject evidence-based treatment protocols in favor of "doing their own research." Communities resist water fluoridation and milk pasteurization as government overreach. Every domain of public health – from disease surveillance to antibiotic stewardship, from environmental health to pandemic preparedness – depends on a foundation of scientific authority that is rapidly eroding.

Understanding how we reached this crisis point requires examining the distance between two transformative health movements. In the 1980s, AIDS activists demanded inclusion in the scientific process, arming themselves with epidemiological and biomedical literacy to challenge FDA bureaucracy. They put their faith in scientists, biostatisticians, researchers, and the federal institutions that could get "drugs into bodies." The AIDS movement became the first social movement in the U.S. to accomplish the mass conversion of disease victims into activist experts. Thirty years later, Covid-era medical freedom activists used similar methods of activism, but rejected the scientific process entirely, turning to social media influencers and alternative healers. Rather than trusting and learning the language of science, they accepted information from podcast hosts and TikTok videos as valid with the call to "do your own research" – research that consisted not of mastering viral replication cycles or immunopathogenesis, but of watching conspiracy content and dismissing legitimate scientific inquiry. One group demanded a seat at the table; the other rejected the table altogether.

This is a structural shift, not just ideological. AIDS activists were marginalized, stigmatized, and fighting for survival a social position without power. They were forced to earn institutional legitimacy because they had no other path to treatment. Modern medical freedom activists, however, often occupy positions of cultural dominance as straight, white, conservative Americans who enter debates with entitlement, not supplication. This power reversal explains why public health communication strategies, designed for audiences seeking institutional validation, fail with populations that reject the premise that institutions deserve deference.

These two movements represent fundamentally different relationships to authority – a term this capstone uses to describe three distinct phenomena. *Epistemic authority* refers to who is

recognized as knowing what is true. *Institutional authority* refers to who has the power to make binding decisions. *Cultural legitimacy* refers to who people feel comfortable trusting. In functional systems, these three align: credentialed experts hold institutional positions and command public trust. AIDS activists contested who held these forms of authority – demanding patient representation, community expertise, faster trials – but operated within a framework where credentials, institutions, and trust could and should converge. The medical freedom movement represents a complete separation: public health institutions retain decision-making power but have lost both epistemic credibility and cultural legitimacy among significant populations. The capstone does not argue that institutions should simply be trusted again, or that recreating past authority structures is possible or desirable. Instead, it examines how evidence-based public health can function when expertise, power, and trust no longer align.

Both movements changed the culture and practice of public health and medicine, but the Covid-era transformation – combined with dramatic shifts in the media, information, and communication landscape – necessitates a fundamental reevaluation of public health messaging strategies. The balance of power between modern patient activists and public health institutions has shifted, giving factions that were once considered fringe organizational, bureaucratic, and even executive-level power. This capstone traces the transformation of medical activists from the AIDS era through Covid, examines the communication policy failures and media landscape changes that enabled this crisis, and proposes several strategies for public health communication for a populace that may be resistant to public health guidance.

AIDS Activism and Scientific Authority

The Drug Lag

In the early years of the AIDS crisis, activists largely fought a social and information battle, working to provide reliable information to patients and those at risk. Groups like the Gay Men's Health Crisis, the first community-based AIDS service provider in the U.S., established an information and counseling hotline on the founder's home phone. After sexual transmission of AIDs was confirmed, gay activist groups began distributing pamphlets on safe sex. Activist Larry Kramer published the now historic essay, "1,112 and Counting" in the *New York Native*[1] urging the community to anger at the government for lack of support for sick and dying gay men and the slow pace of scientific progress in finding a cause for AIDS. In 1987, Kramer founded the group that *TIME* magazine called "the most effective health activist group in history," the AIDS Coalition to Unleash Power, ACT UP. The group staged its first protest in March of that year on Wall Street, demanding immediate action on a variety of issues, including the FDA's release of potentially lifesaving investigative drugs to everyone with AIDS.[2]

Disproportionately prevalent in the gay community, associated with the taboos of gay sex and subcultures of drug users, the AIDS epidemic sparked such fear and prejudice that activists spent these early years of the crisis defending their humanity and demanding that AIDS be seen as more than a "gay disease," or a punishment for "immoral lifestyles." But with acknowledgement from the U.S. government of the crisis and the commitment of resources in the mid 1980s, the movement pivoted from defense to offense. This shift enabled activists "to come up with a vision for the way healthcare should be done in this country, the way that drugs should be researched

and sold, and made available. Most importantly was the idea that people with AIDS should be at the center of the public discussion on AIDS," noted activist Gregg Bordowitz.[3] As the number of AIDS cases increased, Persons with AIDS (PWAs) organized to first appeal for federal funding for AIDS research and education and to fight discrimination against them based on their disease. That agenda then broadened as they began to examine the regulations governing drug research and approval.[4]

By the 1980s, the FDA's rigorous multi-phase approval process meant new drugs took over 10 years to reach market – a timeline that proved deadly for AIDS patients.[5] While azidothymidine – more commonly known as AZT and the first medication approved by the FDA to treat HIV/AIDS – had first been developed in the 1960s to treat cancer, it had been proved ineffective. In 1985, however, Burroughs Wellcome, its maker, discovered that AZT halted the replication of the disease that came to be known as HIV. Phase I trials began in 1985, showing that AZT kept the virus from replicating in 15 of 19 research subjects. Effective therapies needed to cross the blood-brain barrier, which AZT did, but some patients experienced headaches or developed low white cell counts. Phase II trials concluded with the question of whether AZT could be tolerated over long periods of time, whether viral drug resistance would develop, or whether AZT could affect disease progress or survival.[6] In other words, the drug showed promise, but was by no means a cure. Other drugs would need to be investigated and tested. In the meantime, PWAs would continue dying.

"A New Species of Expert"

In May 1986, community publication *AIDS Treatment News* reported that large scale studies of AZT were still months away – patients wouldn't be able to get AZT for another two years. Yet 10,000 people were expected to die of AIDS within the next year. "And with deaths doubling every year, a little math shows that a two-year delay between when a treatment is known to work and when it becomes available means that three quarters of the deaths which will ever occur from the epidemic will be preventable."[7] *ATN* editor John James continued by noting that AIDS activists had thus far been uninvolved in treatment issues, and that they could bring pressure to the process of experimental treatments.

The idea of applying pressure to the waypoints of the new drug pipeline became central to the movement's strategy for engagement with clinical research. Activists believed that researchers conducting AIDS clinical trials were too close to their own specialties and overly dependent on the continued good graces of funding sources to be capable of generating or publicly communicating research issues. In James's view, "Non-scientists can fairly easily grasp treatment-research issues; these don't require an extensive background in biology of medicine."[8] If researchers weren't willing to engage with the public, activists would insinuate themselves into the world of research.

At the time, randomized clinical trials had recently been established as the "gold standard" in biomedicine. The use of these trials had accelerated, growing by 30% in the first half of the 1980s, from 3,414 in 1980 to 4,732 in 1985.[9] This shifted the social meaning of these trials – for investigators, trials were simply scientific experiments. But for those suffering from serious

illnesses, controlled clinical trials were a means of access to otherwise unavailable drugs – drugs with scientific promise by virtue of their novelty and the fact that they were being studied.[10]

While physicians and patients engaged in "community-based research" circa 1985-1987, it was federal agencies that coordinated the bulk of research in the field. By 1988, organization like ACT UP trained their attention on the FDA, perceived as the roadblock to access to AIDS drugs. While compassionate use exemptions existed via a special category of unapproved drugs called Treatment Investigational New Drugs (Treatment INDs), AIDs patients found that they could rarely obtain these experimental therapies through existing use programs, and only two unapproved AIDS-related drugs were permitted between 1983 and 1987.[11] The Phase II trial of AZT was suspended in September 1986 when researchers found it so effective that it would be unethical to keep the control group on placebos, despite the severe adverse reactions in some trial participants. Nevertheless, the FDA approved AZT for use in 1987, alongside a controversy about its price: $8,010 per patient, per year. (Or roughly $23,000 in 2026 dollars.)

By this point, ACT UP had adopted the slogan "drugs into bodies,"[12] which appeared frequently on placards and T-shirts at protests. "Drugs into bodies" became the main goal of activists, and so they set their sights beyond the FDA and on researchers, health professionals, pharmaceutical companies, insurance companies, the National Institute of Allergy and Infectious Disease, and the Department of Health and Human Services.[13] Yet activists couldn't simply walk into government agencies and make demands – to engage with science they needed to be let past its gates and gatekeepers.

Activist movements, through amassing various forms of credibility, can become genuine participants in the construction of scientific knowledge. But the question of who possess competence in science is one of the most common means by which "science" is differentiated from the "public."[14] AIDS activists learned the languages and cultures of medicine by attending scientific conferences, scrutinizing and learning from professionals inside and outside of the movement, and gained a working knowledge of medical vocabulary. They taught themselves the inner workings of drug testing and regulation, including the roles of pharmaceutical companies and government advisory committees.[15]

To engage fully with biomedical research in a way no other patient advocates to date had, treatment activists needed to become a new species of expert that could speak credibly in the language of research. But the leaders of the movement were autodidacts who began as science novices. Mark Harrington, for example, was writing scripts for a film company when he discovered ACT UP. Taking stock of how much he didn't know about science and federal bureaucracy, Harrington made a list of the words he needed to understand, which evolved into a 50-page glossary distributed to ACT UP members. Jim Eigo, with a background in the arts, authored critiques of scientific practices peppered with references to Shakespeare.[16]

The activist-driven organization *Project Inform* worked to educate activists about how to weigh scientific claims, read between the lines of journal articles and news reports – fundamentally, how to assess credibility in science.[17] In a process likely to be familiar to any graduate student, *Project Inform* instructed its readers to assess the reputation of researchers and the institutions they worked for, the prestige of the journal in which research is published, and to assess the

validity of study design, warning activists to look for inconsistencies specific to the field, like viral culture methods, controversial at the time. Conspiracy rarely entered the conversation – *Project Inform* offered conventional advice about "good science" and did not suggest that forces conspired to keep articles out of prominent journals or that new ideas could spring from unlikely sources.

Once activists could converse comfortably about viral assays, reverse transcription, or cytokine regulation, activists increasingly found that researchers felt compelled to consider their arguments on the merits. In the process, they won influential converts to their cause, including Anthony Fauci, head of NIAID at the time and the government's AIDS research program. "There are some activists that are brilliant," Fauci said in 1994. "And even more so than some of the scientists."[18]

Armed with knowledge of drug trial protocols and well aware of their own looming mortality, PWAs worried that without some change in approach, the treatments they needed wouldn't reach market until after their deaths. AZT wasn't a cure, wasn't tolerated by many, and activists increasingly questioned whether it was the answer to the epidemic. As debates raged about the usage of AZT within both the activist and global scientific community, activists began turning their attention to new drugs. Throughout 1989 and 1990, activists became even more involved in the minutiae of clinical trial design – a topic they increasingly debated face to face with researchers and officials from the NIH and FDA.

This direct engagement with the terms of clinical research would both further establish the scientific credibility of activists and ultimately alter the pathways by which treatments came to seem credible by both researchers and regulatory bodies.[19] At the time, study protocols prioritized "clean" data – results uncontaminated by variables like concurrent medications or participants with multiple health conditions. In the name of such clean data, study participants with lab test values or demographic characteristics outside of a specified range, or those currently taking other medications or had taken them in the past, were excluded from study protocols. In practice, these restrictions made it so that some trials were unable to recruit participants because treatment options were too unattractive, people lied in order to get into trials of helpful therapies, or cheated protocols while trials were underway. In the context of a life-threatening illness among a savvy group of patients, activists pointed out that the emphasis on clean data was itself producing some decidedly messy clinical trials.[20]

Further, activists recognized that clinical trial populations should more fully represent the different social groups affected by the epidemic. A conclusion that in the modern era seems so elementary as to be obvious, treatment activists needed to point out to researchers of the era that AIDS trials tended to consist largely of middle-class white men. But AIDS affected injection drug users, people with hemophilia, women and men, whites and minorities. Activists argued that these populations must also be given access to trials. Enlisting the support of biostatisticians, who agreed that subject populations must be broadly representative of those receiving drugs, activists pushed for the scientifically credible policy of acquiring generalizable data, but also a morally credible policy. Excluding populations from effective treatments in the name of clean data was unconscionable, they argued, and activists took a pragmatic view of drug trials that took into account the heterogeneity, occasional or infrequent ambiguity, and other "messy" aspects of

ordinary clinical practice.[21] Community physicians shared this view – that trials with the most elegant designs may not be the ones that provide the most useful information if they fail to reflect the actual treatment regimens prescribed by doctors and consumed by patients.[22]

Affecting the Balance

AIDS activists didn't just accelerate access to HIV drugs – they fundamentally reshaped how modern clinical research operates, prompting institutional changes, normative shifts in clinical research, and transformed the social contract between science and society. The arguments of AIDS activists have been published in scientific journals and presented at formal scientific conferences. Activist publications created new pathways for the dissemination of medical information. Prestigious journals now release findings faster to the press, and advocates' voices and votes on review committees helped determine which studies received funding. The very definition of AIDS now incorporates HIV-related conditions that affect women, where it previously did not.

Activist interventions have led to the establishment of new mechanisms for regulated drugs, including expanded access and accelerated approval. The FDA's Parallel Track Policy (1989),[23] Expanded Access/Compassionate Use Programs (1990s),[24] the Patient Representative Program (1991),[25] and the Accelerated Approval Regulations (1992)[26] can all be credited to the work of AIDS activists. Scholars debate whether these changes stemmed from direct activist pressure or from FDA officials anticipating political consequences, [27] but the resulting transformation of clinical research practices is clear.

These activists shifted the balance of power between competing visions of how clinical trials should be conducted. Scientists now move compounds more rapidly into clinical trials, and their networking has brought different communities of scientist into cooperative relationships with one another, changing the patterns of information communication within science.[28] Activists broadened the demographic characteristics of clinical trial participants, broadening access to experimental therapies. In 1988, 82% of subjects recruited into ACTG trials were white. By 1994, 56% were white (26% were African-American, 16% Hispanic/Latino, 2% other). The ratio of men to women was reduced from 13:1 to 5:1. Activists cannot take credit for all of the demographic diversification in the years since the movement, but the politicization of the issue brought about a climate in which change became perceived as necessary.[29]

Through a 2025 lens, however, the work of AIDS treatment activists seems like it belongs to an almost different species of patient advocate functioning in an alien scientific climate. During the Covid pandemic and political shifts that followed, those that challenge scientific norms or consider themselves "patient advocates" do so by *mimicking* scientific authority without evidence to support claims. They rely on non-institutional sources and alternative networks for information, unconcerned with the validity of sources, or use selective citations to support their view while dismissing those that don't conform to the alternate narrative they've built. Official sources are distrusted; conspiracies are embraced. In short – they are the polar opposite of the AIDS treatment activist that collaborated within the established though imperfect system.

Demanding a Seat vs. Rejecting the Table

While AIDS activists were learning to speak the language of science, a different kind of campaign was underway to undermine scientific authority itself. With the release of the 1986 Surgeon General's report, which reinforced the danger of smoking and concluded that secondhand smoke could cause cancer even in otherwise healthy nonsmokers, the tobacco industry fell into a panic. Following the release of the report, the Environmental Protection Agency (EPA) took steps to limit indoor smoking. But unlike AIDS activists working to be taken seriously by the federal biomedical establishment, the tobacco industry set out to discredit the EPA in general and label any scientific results that any industry didn't like as junk.[30]

Any investigation of the relationship of medicine and science to industry must consider the case of the tobacco industry, as the tobacco industry, in effect, invented the modern problem of conflicts of interest.[31] It is a problem and playbook that has now been employed in virtually every scientific "controversy," no matter how settled the science. A new type of science, in fact, was created by tobacco interests: the production of scientific knowledge not for purposes of research and development, but rather to undo facts considered to be known. If science had historically been dedicated to the making of new facts, the tobacco industry campaign now sought to develop specific strategies to "unmake" a scientific fact.[32]

The tobacco industry had long understood the value of doubt – a 1969 R.J. Reynolds memo called doubt their "product since it is the best means of competing with the 'body of fact' that exists in the mind of the general public." By keeping controversy alive around scientific findings that connected smoking, and later, secondhand smoke to cancer, they could continue to spread doubt and confusion long after scientific consensus had been reached. By 1990, the industry had professionalized this method and distributed a handbook titled *Bad Science*, containing over 200 pages of quotes, articles, and op-ed pieces that challenged the epistemic authority and integrity of science, along with a list of credentialed experts available to provide negative soundbites on any issue a think tank or corporation needed.[33]

From Cigarettes to Vaccines

Weaponizing doubt wasn't a new idea. American physicists Frederick Seitz and Fred Singer, both credentialed scientists who pivoted from legitimate research to ideology-driven denialism, worked to discredit science as a practice, disseminating false information and promoting doubt for over 40 years.[34] Seitz, a founding member of the George C. Marshall Institute, a think tank known in the 1980s for its promotion of climate change denialism, did for climate change denialism what the industry-funded Council for Tobacco Research did for cigarettes: attack studies that cast the industry in a bad light.

While Seitz and Singer worked for industries whose profits were threatened by scientific evidence, similar tactics began to appear in medical freedom movements. Vaccine critics, for example, have claimed that scientists haven't seriously researched whether vaccines cause autism, despite 70 studies on the question. Of those 70 studies, 26 have linked vaccines to autism, but the majority were authored by suspended physician Mark Geier and his son, David, who does not have a medical or advanced degree. The Geirs are known within the scientific

community for manipulating data, not accounting for confounders in their studies, and citing their own flawed work. Riding the wave created by Andrew Wakefield's MMR-autism claims in the mid-2000s, the Geiers began promoting a theory that interactions between mercury and testosterone explained many symptoms of autism.[35] The Geiers' work has been heavily criticized for using deceptive research techniques and flawed data,[36] yet these are the researchers that current Health and Human Services (HHS), Secretary, Robert F. Kennedy, Jr., has hired to serve as a senior data analysts at HHS to examine these debunked links between autism and vaccines.[37] By 2020, anti-vaccine activists were using these same doubt-manufacturing tactics – now amplified by social media – to sow distrust about Covid vaccines.

The Splintering of Truth: A 30-year Media Evolution

The anti-vaccine playbook in the modern era may look similar to Big Tobacco's efforts beginning in the 1960s, but society changed dramatically in the years between, often in ways that purposely or inadvertently court controversy that doesn't exist. The Fairness Doctrine, a Federal Communications Commission policy that required U.S. broadcasters to cover controversial public issues with balanced viewpoints, might have been repealed in 1987, but the notion of "equal time" in media remains enshrined in Americans' sense of justice and fair play, [38] with audiences expecting "both sides" treatments of many issues. Yet some sides now represent deliberate disinformation spread by organized and well-funded interests. Repeating false claims also tends to reinforce them as "fact"[39] and the press's adherence to balance can contribute to bias, and can mislead the public into perceiving scientific controversy where none exists.[40]

But false balance isn't just an editorial choice – it's driven by structural economic forces. In 1969, when the R.J. Reynolds "doubt" memo was circulated, three television networks (ABC, CBS, and NBC) were the only major sources of television news for most Americans.[41] Roughly 1,700-1,800 daily newspapers in the U.S. existed during this period along with a handful of national news magazines (*Time, Newsweek, Life*, etc.) No national newspapers existed with wide distribution.[42] Contrast that to today, where news and information arrives in virtually unlimited quantities at the tap of an internet user's finger. Over these roughly 30 years from the AIDS crisis to Covid, Americans went from 5-10 primary news sources to effectively unlimited sources with varying levels of quality, fact-checking, and emphasis on "balanced" points of view.

As news sources proliferated, competition for readers and subscribers increased. While "if it bleeds, it leads" has been credited to William Randolph Hearst in the late 1890s, the philosophy remains in effect today. Studies show that adding negative words to headlines increases click-through rates.[43] Research comparing online-native outlets (e.g., Buzzfeed, Huffington Post) to legacy outlets (*USA Today, LA Times*) found that online-native outlets utilized more than twice as much sensationalism in their social media posts – 52% of tweets from digital-native outlets contained at least one clickbait feature.[44] Emotionally-charged content on social media achieves between 17-24% more engagement per "moral-emotional word" than content without it,[45] and to attract viewers and generate advertising revenue, both television and online platforms often focus on emotionally charged or dramatic stories, even when they lack context or accuracy. The need to dominate ratings, receive clicks, and ultimately increase the bottom line sometimes takes precedence over the obligation to deliver factual information.[46]

This already fractured information landscape transformed from what scholars called the "misinformation age"[47] into a "post-truth" era by 2016.[48] Between August and November 2016, the top 20 fake news stories on Facebook generated more engagement than the 20 top election stories from 19 major news outlets combined, resulting in 9 million instances of engagement (likes, comments, shares).[49] False information is 70% more likely to be retweeted on Twitter (now X) than the truth, and reaches its first 1,500 readers 6 times faster. This effect is more pronounced with political news than other categories, [50] and fake news can spread up to 10 times faster than true reporting on social media.[51] Thirty-three percent of U.S. news consumers surveyed in 2020 reported having unknowingly shared fake news or misinformation on social media.[52] Meanwhile, cable news networks like FOX, CNN, MSNBC (now MSNOW), NewsMax, and OAN openly align themselves with either conservative or liberal viewpoints and provide a platform for commentators and pundits who often blur the lines between news reporting and opinion. A pundit expressing an opinion on a news program leads to increasingly hazy lines between journalism and non-journalism, and opinion versus fact.

The Perfect Storm: Doubt, Post-Truth, and Covid

When Covid struck in 2020, it arrived into an information ecosystem already primed for misinformation, one shaped by decades of manufactured doubt, fragmented media, algorithmic amplification, and eroded institutional trust.

Government and public health officials admittedly made missteps in early days of the pandemic. In February 2020, Surgeon General Jerome Adams stated masks were "not effective in preventing COVID-19 infection among the general public," and in early March, Dr. Anthony Fauci echoed this, saying masks were not necessary for the general public." In April 2020, the CDC reversed course on this messaging completely, promoting masking as essential, with the flip-flop revealed as a strategy to prevent a rush on medical-grade masks to ensure supply for frontline workers, damaging agency credibility in the process.[53] Evidence of airborne spread had been established by March 2020, but the CDC didn't officially acknowledge airborne particles until May 2021, well past the point of agreement within the scientific community. The delay meant inadequate ventilation guidance, an over emphasis on surface cleaning, and under emphasis on indoor air quality.[54] Isolation guidance was reduced from 10 days to 5 in December 2021 with no test requirement, with CDC director Rochelle Walensky acknowledging the goal was to "allow people to continue their daily lives" and prevent economic strain. Many experts noted that this wasn't sufficient to minimize risk.[55] And in a rapidly evolving infectious disease situation, the CDC did not seem prepared to issue real-time communication as the science evolved. Unable to follow the traditional process of writing guidance documents for every scenario over months and years, with the Trump administration abruptly ending CDC-controlled media briefings and the incoming Biden administration then leading most briefings, a messaging void developed.

Other sources quickly filled that void, and filled it with either confusion or misinformation while fear and anxiety were high – environments in which misinformation thrives. Some framed preventative behaviors as politically motivated attempts to limit individual freedoms, with conservative media a common source of this alternative framing.[56] Other media relied on conflict framing, emphasizing the controversy over masking – an average of 15% of stories mentioning

masks during winter 2020 to spring 2021 framed them around controversies, and 1 in 7 stories contained the word "controversy." By 2021, "controversy" spiked to roughly 23% of mask stories, spiking directly in response to CDC guidance changes and political events with a partisan slant – conservative-leaning Sinclair stations aired more controversial mask content.[57]

Social isolation increased the reliance on online information and on social media, and misinformation circulated at an unrivaled speed and scale. In the first quarter of 2020, English-language fact-checks surged 900%, with 82% of Covid misinformation flagged proved false;[58] and 85% of fact-check tweets contained outright false claims.[59] By mid-2020, 78% of Americans believed or were unsure about at least one false Covid statement,[60] with social media users showing vulnerability rates of 23-31% – more than double the 11% among traditional news consumers.[61] These falsehoods exploited the credibility gaps created by public health missteps: 60% heard claims the government was exaggerating deaths, with 37% believing it true.[62] Neither the CDC nor state and county health departments were prepared for this onslaught of messaging that reframed the public health response to Covid as a political attempt to control the population rather than apolitical measures to safeguard citizens.[63] With shrinking traditional newsrooms and citizens suffering from "informational impoverishment,"[64] information had become increasingly fragmented with previously unquestioned facts and priorities now very much questioned.

From Fringe to Power: The Medical Freedom Movement

These series of events – years of doubt manufacturing, media splintering, the growth of mechanisms to efficiently disseminate misinformation, and public health missteps – created a very different kind of patient activist, one that did not seek the approval or collaboration of researchers as AIDS activists did. An inverted analogue can be found here: both AIDS activists and Covid activists were "medical freedom" groups that argued the government and scientific establishments were withholding treatments, albeit in very different ways. AIDS activists demanded access to treatments with promise, while medical freedom activists often demanding those already proven ineffective, such as ivermectin. Both movements echoed ideas of bodily autonomy, as well as the "right to try." Both used the language of patient empowerment. But Covid era activists directed it against mainstream science rather than in partnership. And while AIDS activists worked toward a technical mastery of the science, Covid activists frequently spread misinformation and faulty arguments against evidence-based treatments.

The medical freedom movement, however, did not emerge from pure delusion or propaganda. Covid-era activists were responding to real institutional failures that provided evidence for their distrust, taking kernels of truth and expanding them into a blanket rejection of expertise. The CDC's guidance on masks contradicted itself within months, while the lab leak hypothesis, dismissed as conspiracy theory and censored on social media in 2020, became plausible enough for the FBI and Department of Energy to investigate by 2023. Natural immunity from prior infection, dismissed in vaccine mandates, was later acknowledged as providing robust protection against severe disease and hospitalization (though protection against reinfection waned more rapidly). Vaccine side effects initially downplayed as extremely rare were eventually confirmed and added to warning labels. Each of these represented a real failure, but medical freedom activists weaponized institutional mistakes about specific claims into wholesale rejection of institutional authority itself.

Beyond Covid-specific reversals, medical freedom activists also tapped into legitimate, long-standing grievances about medical systems: women's pain systematically undertreated or dismissed as anxiety, Black patients' concerns ignored leading to worse health outcomes along with historical abuse (e.g., Tuskegee, forced sterilization, more recent "race corrections" in medicine), chronic illness sufferers told their debilitating conditions are psychosomatic, and pharmaceutical industry capture of regulatory agencies as demonstrated during the opioid crisis. The movement's persuasive power came from weaving together real institutional failures – some Covid-specific, some decades old – into a narrative of corruption. They were correct that patients are often dismissed, that regulatory capture exists, and that medical systems fail marginalized populations. But they rendered these real problems into blanket dismissal: do not trust doctors, reject all vaccines, abandon institutional expertise entirely.

Medical freedom activists view their work with the same urgency AIDS activists felt in the 1980s-90s. They believe ivermectin and hydroxychloroquine are suppressed miracle cures, just as AIDS activists believed AZT or better drugs were being withheld by bureaucratic red tape. They see themselves as protecting children from vaccine injury, just as AIDS activists saw themselves protecting their community from death by FDA delay. Both groups created alternative information networks when mainstream sources failed them, both framed their activism as life-or-death necessity. But where AIDS activists developed genuine expertise through literacy projects that taught immunology and clinical trial design, medical freedom activists developed what they believed was expertise, learning to identify conflicts of interest and reading study abstracts, but frequently misinterpreting methodology and overstating limitations. AIDS activists learned to read clinical trials to hold institutions accountable to scientific standards they claimed to uphold; medical freedom activists learned to read clinical trials to find reasons to dismiss them. These groups operate from different epistemological realities.

But the most consequential difference is not epistemological – it's power. AIDS activists were dying members of a stigmatized minority begging institutions for help. Medical freedom activists are often members of culturally dominant groups telling institutions to get out of the way. AIDS activists needed institutional legitimacy to access treatments; medical freedom activists don't need institutional validation to validate their concerns.

While the "medical freedom" movement did not originate during Covid (its origins can be traced to libertarian frameworks around "health freedom" going back to the Colonial era), the emergence of Covid served as an accelerant, helping turn a niche movement into a more powerful force. While anti-vaccine activists' pre-pandemic messaging revolved around concerns about health impacts and safety, new messaging shifted to a philosophical focus on liberty, medical freedom, and parental rights. Scientific consensus around the safety, efficacy, and benefit of Covid vaccination was less salient than concerns about liberty and perceptions of unwelcome government interference. [65] Since the pandemic affected the entire population, it expanded not only anti-vaccine activism, but more broadly, anti-public health activism as people faced the inconveniences of mask-wearing, social distancing, closed restaurants and bars, and cancellations of social events.[66]

This transformation created a demographic revolution. Since Covid, there have been two shifts in vaccine hesitancy: a change in scale and demography. Before the pandemic, no single negative vaccine attitudes group in the U.S. constituted a clear demographic majority, and many groups aligned demographically with liberals. After Covid, vaccine hesitancy became predominantly conservative/Republican, a complete reversal from the pre-pandemic "crunchy liberal" stereotype.[67] Much of the work in the vaccine hesitancy space emphasizes personal characteristics, including varying levels of trust in institutions. But by February 2021, differences in demographics, concern about the pandemic, and institutional trust no longer explained the partisan gap.[68]

Resistance to evidence-based treatments extended beyond vaccines. Mainstream news sources reported on Covid patients finding advice online and following advice that promoted alternatives to proven treatments, with patients becoming deeply distrustful of the medical system, turning instead to fringe medical doctors, natural healers, and internet personalities ready to push unproven cures.[69] Studies showed patients diagnosed with Covid refused to take prescribed medication, citing a "distrust in benefits," a reliance on supplements, nutrition, and alternative treatments, and noting that they received information from their "personal network" and "media" rather than doctors.[70] Trust in Western medicine and medical establishments has also waned since 2020, with a marked decrease noted in the first two years of the pandemic. Seventy percent of patients had a "great deal of trust" in doctors and hospitals in April 2020, but by January 2022, that number was 57%. By April 2025, it shrunk to 40%. In April 2020, 58% of people had a "great deal of trust" in scientists; by April 2025, it decreased to 36%.[71]

The transformation from AIDS activism to Covid-era medical freedom represents more than a shift in tactics and trust – it also came with a shift in political power. With the inauguration of the second Trump administration and Kennedy's ascension to HHS Secretary, the strategies of Covid activists have become the playbook of the federal government, and officials have frequently used these tactics to advance agendas against vaccines, peer-reviewed science, and scientific norms in general. Namely:

- In September 2025, FDA commissioner Marty Makary asserted a causal relationship between acetaminophen and autism in an interview with CNN. [72] Quoting a study that showed correlation, not causation, Makary took advantage of a common scientific practice to note that evidence of association can support a possibility of causation in the sense that anything is possible. Makary blatantly took the quote out of context as an official looking to support the administration's unscientific and unsound position in a scientific sounding way.

- In October 2025, Secretary Kennedy announced that studies will be performed to "make the proof" during a Cabinet meeting about the Tylenol-autism issue, implying that the administration seeks to generate evidence to fit a predetermined conclusion, while still using the language and norms of science.[73]

- In December 2025, the new political appointees of ACIP overturned a decades-long policy on hepatitis B vaccines for infants – a standard practice in the U.S. for more than 30 years that has been credited with dramatically lowering liver diseases caused by the

virus.[74] The committee claimed questions about the harms of the vaccine could not be resolved due to a lack of data, but a number of medical groups have disputed this characterization and pointed to the over 400 studies conducted over 40 years that find no evidence that birth dose vaccination causes any short or long-term serious adverse events or deaths.[75]

- More troubling than ACIP disregarding these 400 studies is the CDC's award of $1.6 million to Danish researchers to perform a new randomized control trial of the hep B vaccine in 14,000 newborns in Guinea-Bissau,[76] withholding the vaccine from one group until six weeks in an impoverished nation with high maternal/infant mortality and one of the world's highest hep B prevalence rates. The study has been compared to the Tuskegee experiment, and has bypassed all normal scientific and ethical review processes.

This list is not exhaustive, and these examples signal a pattern of the current administration's behavior more than a settled path for vaccines or the study of autism. (E.g., the Guinea-Bissau study has been halted as of early 2026 due to ethical concerns raised by critics worldwide.) Yet news headlines and a pattern continues to date where the language of science has become a tool for undermining science itself. According to Dr. Daniel Jernigan, a top CDC official that resigned in August, Secretary Kennedy "seems to be going from evidence-based decision making to decision-based evidence making."[77]

A Different Kind of Authority

Better communication cannot solve this crisis of confidence, nor can it change the balance of cultural and political power. When populations holding that cultural and political power conclude that institutional expertise signals corruption rather than competence, no amount of credentials, peer review, or official guidance will restore trust. Public health must build infrastructure that bypasses the need for institutional credibility entirely. We can't force people to sit at a table they've rejected.

The following recommendations prepare public health for the current reality and next crisis by creating infrastructure that works regardless of institutional credibility. These three categories of strategies can work within a fragmented information landscape and **are intended to supplement, rather than replace, traditional public health communication.** Press releases, guidance documents, and expert testimony remain effective for populations that trust institutional authority. But for audiences that have rejected these sources, public health needs parallel approaches that accept this fragmentation as, if not permanent, something with us for the foreseeable future, and these interventions can operate in a landscape where no single institution commands universal credibility. They break with traditional public health praxis, prioritizing reaching people over controlling messaging and effectiveness over institutional prestige.

I. RECONSTRUCTING THE MESSENGER

Public health communicators can take lessons from researchers working elsewhere in the misinformation field. In the wake of the August 2023 Maui fires, information scientists at the University of Washington reviewed the top search terms and discourse on X and YouTube and the information environments created. On YouTube, the top X-discovered video was titled "The Maui Fires – REAL Reason They Happened," by a creator named Two Bit da Vinci. Despite the clickbait title, this wasn't a conspiracy theory video, but rather an informed, deep dive into all aspects of the Maui fires. Running 26 minutes, the video discussed everything from climate change to invasive grass, and ends with a debunking of common wildfire conspiracy theories, while validating concerns about predatory behavior by investors and acknowledging a history that has led to distrust.

Note the style and aesthetic of the video's thumbnail and its provocative framing. The creator associates the video with the style and norms of conspiracism to gain views from people who may typically be attracted to conspiracy-driven videos, but provides a thorough and truthful accounting of events, reaching an audience that it might not have otherwise. A YouTuber named "Two Bit da Vinci," may not be the first messenger that comes to mind as "trusted," but the space in which messengers function must be considered. Many debunking efforts use dry headlines, concise treatment of issues, and expertise over amateur investigation. A long-form video is not the answer for every piece of misinformation or an ideal format for every audience, but some viewers would be better served by videos that lean into conspiracism-adjacent norms.[78] Public health can take a lesson from this, rethinking not just the identity of messengers but the visual and stylistic language of credibility itself. The aesthetic form and format of messaging should be explored and tested, but ideas of who can be a credible, trusted messenger in this era also requires rethinking.

Entering Unwelcoming Spaces

The implication of this may be uncomfortable, as it suggests public health will need to learn to work through messengers it doesn't control, in formats it didn't design, reaching audiences in spaces it doesn't dominate. If target populations do not trust scientists and physicians, or state or federal authorities, if they do not trust mainstream news sources or immediately judge them as biased, then entering any space with that coding – professional, institutional, authoritative – will not be effective. "Meet them where they are" has become a popular refrain in public health, but for messaging, the messenger can be as important, if not more so, than the words used.

Historically, public health has delivered information from behind podiums, while wearing suits or white lab coats, and sent press releases picked up by legacy media. But for some populations, these are all signals to *distrust* to these populations. "Professionalism" itself is likely a red flag.

True trusted experts in this space are likely to be members of the local community, and someone with influence *within* that community, e.g., homeschooling parent influencers, "tradwife" content creators who also believe evidence-based public health guidance (at least in part or by topic), and traditionally "masculine" figures who share critical values with an audience but also believe in vaccination, for example. An ideal messenger in this space may be someone who has a YouTube channel with 30,000 subscribers, makes videos about firearms, the 2nd Amendment, and prepping for his conservative audience that is distrustful of government. This hypothetical creator is also vaccinated but has never mentioned it. The public health approach would have historically been to pay him to make a PSA about vaccines, but audiences in this space are savvy enough to recognize the sponsorship. A better approach would be to provide him with accessible, non-jargon-y information sources, and let him mention it organically.

This approach is at odds with public health norms that typically require partnership agreements, talking points, and measurable deliverables. But control isn't compatible with these spaces. The uncomfortable truth is that the most effective messenger for a conservative gun owner in a rural state is probably another gun owner who was vaccinated because he looked at the data himself, and talks about it in the same no-nonsense way he'd talk about ammunition. Rather than just designing campaigns, public health agencies should also become resource providers.

Silver Bullets vs. Scatter Shot

There are no guarantees that this hypothetical content creator – or any real one – will address the issues public health wants them to address. The foundation of planning, measurement, and accountability on which public health rests unfortunately does not apply here. This is seed bombing, not industrial farming. Traditional public health communication plants messages in neat rows – press releases watered with media coverage, harvesting predictable behavior change. But that model only works when you control the land and public health no longer controls the information landscape. What remains is a technique of scattering seeds broadly and hoping some take root in unexpected places. It's frustrating. It doesn't scale. But the alternative – continuing to plant in neat rows on land you no longer own – has demonstrably failed.

This comes with an obvious question: how do you evaluate an approach that rejects traditional metrics of success? Traditional metrics – behavior change rates, knowledge scores, clinical outcomes – assume controlled dissemination and measurable endpoints. Seed bombing approaches require different evaluation frameworks. Network analysis can track message diffusion: how far did content spread, through how many degrees of separation, and did it cross community boundaries or remain siloed? Metrics like cascade depth, bridge nodes, and amplification rates reveal whether trusted messengers successfully carried evidence-based information into skeptical spaces. Qualitative discourse analysis can document shifts in community conversations over time, and whether conspiratorial framing has shifted to nuanced questioning or even cautious engagement. Community-led or ethnographic methods can capture changes in trust, relationship formation between communities and health systems, and the emergence of local validation networks. These approaches prioritize process indicators – is the message spreading? Are conversations shifting? – over traditional outcome measures.

These evaluation methods can capture whether seeds are taking root, but they cannot predict where. Across society, there has been a shift in trust and the idea of expertise that credentials confer. Gen Z trusts family members and friends over politicians and religious leaders.[79] They have low trust in institutions generally – 50% have "very little" trust in Congress, and 36% have "very little" trust in the presidency. Only "science" has majority trust – 36% trust it a "great deal" and 35% "quite a lot.[80] Yet young respondents are also twice as likely as older ones to say that the average person who has done their research can know as much as a doctor. Young people are twice as likely to heed uncredentialled advice, with people without medical degrees having a large influence on health decisions.[81]

At the same time, there has been a broad decline in formality and what constitutes "professionalism" across society. Managers and employees both dress less formally, with work-from-home during Covid accelerating a casual workspace. Top-down directives no longer work as managerial or instruction styles – at least not for those hoping for loyalty or compliance. Young people expect autonomy and respect. For public health, this creates a fundamental messenger problem: the traditional visuals of institutional authority code as out of touch or dated to audiences that have rejected hierarchical authority structures. The doctor in a suit speaking from a government building is exactly the messenger that younger, evidence-skeptical populations will dismiss as inauthentic, corporate, or "part of the system." Older generations used to rail against The Man and "selling out" to corporate interests. But rebellion implies the institution still has power worth resisting. Younger generations haven't rebelled against public health or institutional authority – they've decided it irrelevant altogether.

Research shows people can change their minds. Work in the anti-vaccine space has been particularly robust, with studies revealing that vaccine hesitancy is not a stable trait precluding vaccination, but is changeable.[82] Often, this change comes as the result of hearing stories about those with vaccine-preventable disease, growing fears of infection or hospitals filled, or personal experience with disease consequences – ultimately, when disease consequences feel real rather than abstract. The mechanisms that work to change minds – personal conversations, witnessing consequences – are precisely what the seed-bombing approach enables and industrial farming prevents.

While these approaches may seem unconventional, they require no federal mandate. Table 1 maps implementation feasibility across potential actors. This and the following tables are not meant to be read as blueprints but as suggestions for potential partnership pathways, funding mechanisms, and the division of roles across public health, nonprofits, and academia.

Table 1: Implementation Pathways for Messenger-Based Strategies

Recommendation	State/Local Health Depts	Nonprofits & CBOs	Academic Institutions	Professional Orgs	Private Funders	Federal
Seed-bombing approach	●	●	◐	○	●	○
Platform-native content creation	●	●	●	◐	●	○
Support for trusted validators in right-wing spaces	◐	●	○	○	●	○

Legend: ● High feasibility | ◐ Moderate feasibility | ○ Low feasibility

State health departments and community-based organizations are best positioned for messenger-based strategies, as they have existing relationships with local validators and understand regional communication dynamics. Private foundations can provide funding and convening power to scale successful local models.

II. TRANSFORMING THE MEDIUM

Identifying trusted messengers is only half the challenge. Even credible voices fail when delivering information in formats that signal institutional authority. Misinformation primarily spreads through platform-native content – memes, TikToks, viral graphics – while public health clings to methods that seem increasingly dated. Reaching skeptical audiences requires not just different messengers, but different forms of media.

Embracing Platform-Native Content

Public health does not have a content problem – it has a format problem. Historically, public health has communicated via press releases distributed to mainstream media outlets, paid media campaigns, and public service announcements. At times, public health issues become salient enough that they receive earned media or news coverage. At the national level, the CDC writes and issues comprehensive guidance documents – often lengthy, technical PDFs – and creates mass communication campaigns to target broad populations. These methods emphasize credentials and institutions, delivering expertise-driven and top-down communication from experts telling the public what to do and revolve around a philosophy of centralized, coordinated efforts.

The effectiveness of these methods has had mixed results. Changing human behavior is difficult, but even under optimal conditions, public health campaigns showed short-term gains that disappeared when funding ended, or they failed entirely. In worst-case scenarios – like campaigns against illegal drugs such as the D.A.R.E program – campaigns and messaging backfired entirely. Even successful campaigns often widened health disparities, struggled to reach underserved populations, and required conditions that were already eroding before Covid accelerated their collapse.

These ideal conditions are long gone. Accurate and thorough information loses because it's optimized for a media landscape that no longer exists, and public health strategies need to change in response. Instead of press releases and PDFs, content needs to be created and designed for platforms where information actually spreads. This can include short-form video (TikTok, Instagram reels, YouTube shorts), shareable infographics and memes, and content in algorithm-friendly formats.

Some social media creators have already embraced this ethos, making humorous or entertaining but accurate health videos. Gastrointestinal specialist Dr. Mike (30 million followers across Instagram, TikTok, and YouTube) promotes evidence-based medicine and trust in physicians. TikTok creator Nurse Tara, a school nurse with 5 million followers, makes skit-style videos and uses music to educate about menstruation and period positivity. Registered dietician Dr. Jessica Knurick, with almost 2 million followers across TikTok and Instagram, debunks MAHA health and nutrition misinformation in a no-nonsense way, and shares information in quick, digestible videos and shareable posts. Tymay Lay (over 4 million followers across TikTok and Instagram) makes comedic videos about issues like breast cancer screening and high blood pressure using pop culture references and music that appeals to the age groups that should be aware of these issues. Pharmaceutical companies have also moved into this space. AstraZeneca partnered with

Dawson's Creek star Joshua Jackson for a campaign urging cancer screenings, released shortly after the death of Jackson's *Dawson's* co-star, James Van Der Beek, from colorectal cancer. When industry controls platform-native health messaging, public health loses the ability to communicate without commercial bias.

This makes independent creators even more essential, and emotionally resonant content spreads 70% faster than neutral information, with TikTok doctors during Covid reached younger audiences that traditional PSAs never touched. Not every public health communicator or physician needs to or should be trained in short-form video or meme creation, and not every physician or scientist is a natural comedian or performer and suited for the medium. But talented and entertaining communicators already exist in this space, and their content – and content like it – should be encouraged and offered institutional support.

But institutional support cannot mean institutional control. When public health agencies partner with influencers by providing scripted talking points and requiring content approval – as many did during Covid – they destroy the authenticity that made these creators trusted in the first place. The challenge is building infrastructure that funds independent voices without controlling their messaging.

Existing communications budgets for state and local health departments can be repurposed to contract with creators and allow for no-strings funding, without requiring talking points, logo placement, or content approval. Instead of $500,000 spent on a PSA run on billboards, Instagram, or TV/radio, 10 grants of $50,000 each can be offered to independent health content creators – or 100 micro-grants of $5,000 for hyper-local reach. State/local health departments can also create grant programs modeled after private foundations (such as the Rita Allen, Alfred P. Sloan, or Kavli Foundations) where selection criteria revolves around platform reach, audience trust, and content quality rather than a predetermined messaging strategy and format.

Contractual protections must also prevent institutional micromanagement: agencies cannot review content before publication, cannot withdraw funding based on messaging decisions, and cannot require creators to remove or edit posts, as it will signal the creator has been co-opted by the institutions their audience distrusts. This means accepting that funded voices will sometimes emphasize risks agencies would rather downplay, acknowledge institutional failures, or frame issues in ways that don't align with official guidance. We know that agency-controlled content doesn't perform well in the modern social media ecosystem, and algorithms punish content that "feels like an ad." Supported independent creators can create and maintain audience relationships built on trust, especially when given editorial independence that audience recognize as the absence of an agenda.

Pre-bunking over debunking

Traditional fact checks often arrive too late. By the time public health debunks misinformation, it has already spread and solidified. Debunking can also backfire by reinforcing the original false claim through repetition. But strategies exist to counter the effects of misinformation *before* people encounter it. Not a new tactic, pre-bunking originated in the 1960s as "inoculation theory" proposed by psychologist William McGuire, who suggested that exposing people to

watered-down propaganda helps them builds resistance in the same way a vaccine builds immunity. Pre-bunking exposes people to weakened forms of misinformation *before* they encounter it and builds "cognitive immunity" or "mental antibodies." It has been shown in various studies to be slightly more[83] to significantly more effective[84] than debunking after the fact. Pre-bunking teaches the recognition of manipulation techniques and creates transferable skills, while debunking requires addressing each individual false claim.

For example, create media that warns people about myths like "the flu vaccines cause flu" before flu season rather than countering that argument after it's been spread to millions. Both pre-bunking and debunking reduce misinformation susceptibility, though the evidence is admittedly mixed on which is more effective. Pre-bunking can also be resource intensive, requiring anticipation and planning. But adding pre-bunking techniques to existing debunking strategies can potentially prevent misinformation spread and potentially end the current game of Whack-a-Mole public health plays with false content.

Flood the Zone

Because information no longer flows in directions that public health can control, public health must flow with information. During Covid, the World Health Organization (WHO) attempted to direct conversation with the #WearAMask hashtag. WHO posted under #WearAMask with scientifically accurate information, while at the same time, a separate, organically created #WearAMask hashtag flourished on social media, featuring humor, music, and dance. Contrasted with the formal and sterile WHO content, the popular but unconventional approach to messaging drew more attention, views, and engagement than official health agencies and managed to spread the same message. Other institutional hashtags like #VaccinesWork created an echo chamber as WHO, UNICEF, global vaccine alliance Gavi, and the CDC became a closed loop of organizations talking to each other, rather than a grassroots conversation.

Instead of creating these echo chambers filled with posts that read like policy documents, public health should go to where the conversation already is. This may mean entering the conversation under an anti-vaccine hashtag to respond and flood it with accurate information. It will require participating in the conversation like a human being, and to dig a little and understand where a user's hesitation comes from – a bad experience with a physician? Exposure to something like the highly popular Dr. Bob alternative vaccine schedule? Response to misinformation should be made in context, not with edicts delivered from on high. Make responses something worth sharing and spreading.

Table 2 shows implementation pathways for these medium-based strategies, demonstrating they can be adopted immediately across all sectors.

Table 2: Implementation Pathways for Medium-Based Strategies

Recommendation	State/Local	Academic	Professional Orgs	Content Creators	Private Funders	Federal
Pre-bunking campaigns	●	●	●	●	●	○
Flooding hashtags/entering conversations	●	●	◐	●	●	○
Support for health content creators	●	◐	○	N/A	●	○
Platform-native formats (TikTok, memes, etc.)	●	●	●	●	●	○

Legend: ● High feasibility | ◐ Moderate feasibility | ○ Low feasibility

These strategies require no centralized coordination and can be implemented immediately across all sectors. Individual health practitioners, academic institutions, and state health departments already have the tools and platforms necessary to create engaging, platform-native content.

III. DEMOCRATIZING ACCESS

Cries to "do your own research" abound – on social media, in one-on-one conversations, and on podcasts like Joe Rogan's, which commands an audience in the tens of millions and has platformed vaccine skeptics and conspiracy theorists. Yet for populations skeptical of science and the institutions that produce it, as well as those that still broadly trust public health and evidence-based research, "do your own research" is reasonable advice. Verifying information independently rather than accepting claims on institutional authority alone can bypass real or imagined conflicts of interest and distrusted messengers and institutions. We should support people in doing such research productively. This means providing accessible paths to credible sources, making those sources more accessible for non-research audiences, and ensuring that when bad science is published, bad study design or flaws in analysis are flagged.

Tear Down the Paywalls

Paywalls are the first roadblock any lay researcher encounters, as the majority of academic research requires a subscription or university log-in to access. This varies by field and has been improving, but as of 2020, only 28% of scholarly publications were open access, though in biomedical/health research, close to 50% was open access. That still leaves 50% of research inaccessible, and if we want patients, advocacy groups, and community members to educate themselves using solid, evidence-based science, it must be accessible to them. Removing journal paywalls provides an obvious solution.

Given that research in the United States is publicly funded, money that flows to top academic publishers like Elsevier, Springer Nature, Wiley, Taylor & Francis, and SAGE via paywalls should not be generating private profits for these corporations. Elsevier, for example, reports profit margins exceeding Google's on content it did not create. When taxpayers pay for research, taxpayers should be able to read it. Removing paywalls isn't a new idea, but it does face structural barriers, including the prestige tied to paywalled journals, and academic career advancement that requires publishing in them. No single institution can opt out without disadvantaging its researchers. Work should continue to democratize this access, however.

Readable Research

Until then, accessible articles should be accessible to read. Scientific papers often read as if written in a foreign language and in a way, they are. Methodology sections can be incomprehensible to those without a research background, and the vast majority of the public has no idea what these words mean, let alone the broader language around health and science. Fifty-four percent of American adults read at level 2 on the PIAAC literacy scale (meaning they have difficulty comparing and contrasting information, paraphrasing, and making low-level inferences).[85] Eighty-eight percent lack proficient health literacy, meaning 9 out of 10 adults struggle to understand prescription labels, insurance forms, or health information.[86] A recent survey by snack food brand Lay's showed that 42% of people did not know that Lay's potato chips were made of potatoes.[87] The language of statistics and research is far beyond the average American.

If removing journal paywalls can be considered the low-hanging fruit of accessibility, plain-language summaries (PLS) of research perhaps hang on a slightly higher branch. Short (120-300-word), jargon-free summaries of research articles, PLS are written in language accessible to non-specialists and published alongside the research article after the abstract, or as standalone publications. Peer reviewed like the original article, PLS are almost always open access, even if the main article is paywalled. This has become mandatory at some journals, and metrics show that articles with PLS are accessed 62% more often than those without. The paper's original authors usually write them, though some journals use professional science writers or work with vendors. Work has also advanced towards developing large language models that can rewrite scholarly abstracts into more comprehensible versions.[88]

Consistent use of PLS could also serve as infrastructure for accurate science journalism. Journalists consistently report paywalls as major barriers to verifying claims and accessing methodology details[89], forcing them to rely on potentially exaggerated press releases, scientist quotes, or their own mistaken interpretation of a paper. Peer-reviewed PLS, published alongside paywalled articles, would give journalists immediate access to study design limitations and accurate findings.

But PLS has not become universal yet. It remains optional at many journals, and pharmaceutical researchers specifically have expressed worry about being perceived as "promoting" their products versus informing patients. Scholars have been resistant as it requires extra work, and currently, there are no standardized guidelines for PLS across journals. Adding PLS to the volumes of historical papers that may be accessed, especially as certain topics become timely or relevant again, also will require a great deal of time and labor. While some patient advocacy groups have been producing patient summaries for selected research articles, and graduate students in some fields continue to write summaries, we have yet to see a systematic effort. PLS should be encouraged, incentivized, and prioritized. Public health institutions especially should treat plain language summary creation as infrastructure worth of encouragement and investment.

Addressing Uncertainty and Systems Problems

Uncertainty is inherent to science and science communication. Limited research in the area around communicating uncertainty to the public suggests that people may actually respond positively to uncertainty in research – admitting uncertainty communicates trustworthiness for both scientists and journalists writing about it.[90] But the type of uncertainty matters – framing uncertainty as a normal part of the scientific process has different effects than "we don't know." A certain amount of hedging is also built into the scientific publishing process – studies that do not establish causal relationships often still include language indicating that an association does or might exist.

In our current climate, bad actors have weaponized this hedging. As mentioned, FDA Commissioner Marty Makary took advantage of language suggesting "evidence of an association between acetaminophen use and autism," despite the lack of an established causal relationship. This language existed in the paper he cited, albeit out of context, and Makary negelcted to mention that the largest, most robust study on the subject involving 2.4 million children found no

association. Yet his quote spread, and the vast majority of the public had no reason to or knowledge to understand that the language of uncertainty had been weaponized.

Public health institutions cannot change academic writing or journal standards, but we must understand how to communicate uncertainty and how to work in an environment where that uncertainty may become a tool for bad actors. Federal standards can be established for how public health agencies translate research findings into public guidance, particularly when evidence conflicts or is uncertain. Explicitly stating the strength of the evidence, synthesizing all relevant evidence (not just the newest study), separating what the science shows from what you should do, and providing decision-making frameworks when evidence is uncertain can help mitigate the issues that come with communicating scientific uncertainty.

Garbage In, Garbage Out

Managing scientific uncertainty in public communications is one challenge. Preventing methodologically unsound research from entering the policy conversation is another. A different problem arises when published research is flawed, using underpowered studies, inappropriate statistical methods, or reaches conclusions unsupported by data. These aren't cases of honest uncertainty but failures of quality control. For example, a four-patient study in published in April 2020 *Annals of Internal Medicine* concluding that masks were ineffective was cited thousands of times before retraction two months later. The Cochrane Review on masks was methodologically flawed – it used an RCT-only framework for a question RCTs can't answer well, its lead author misrepresented its findings, and it created exploitable misinformation. Peer review is designed to catch fraud and major errors, but it doesn't always prevent the publication of bad studies with overreaching conclusions. During emergencies, journals fast-track review, making quality control even worse. And once published in a prestigious journal, flawed research becomes "credible" in a way that persists even after retraction.

PLS or careful uncertainty language can't fix this – if the underlying study is junk, PLS simply translates junk into accessible language. The solution requires upstream quality control.

- Require pre-registration of all federally or state-funded public health intervention studies that specifies the power analysis needed to detect meaningful effect, primary outcomes to prevent fishing for significance later, an analysis plan, and ensure that the study meets minimum quality thresholds.

- Establish an NIH Rapid Assessment Team that monitors high-impact journals for public health studies likely to affect policy, issues study quality assessments quickly, posts those assessments publicly and notifies journal editors, and flags study design issues. This could be considered peer review before policy impact.

- Require that agencies making public health recommendation adhere to minimum evidentiary standards. Agencies should not be able to cite a single study without systematic review context, they must assess study quality, and if citing a study with known limitations, they must note them.

- When federally-funded research is retracted, the funding agency must issue a public correction, any policy documents must be updated, and if research was cited in media, the agency must proactively contact the original outlets. Researchers with patterns of retracted work should become ineligible for federal funding.

"Do your own research" became a vector for misinformation not only because good information was inaccessible, but because bad information was amplified through prestigious publication venues. Public health communication failed during Covid when the systems meant to validate scientific claims – peer review, journal prestige, academic gatekeeping – instead gave credibility to flawed studies that spread faster than retractions could contain them.

Table 3 shows implementation pathways for these access and quality control strategies.

Table 3: Implementation Pathways for Access and Quality Control Strategies

Recommendation	State/Local	Academic	Professional Orgs	Journals/Publishers	Private Funders	Federal
Increasing Access						
Open access mandates	◐	◐	○	◐	●	●
Plain language summaries	●	●	●	●	●	○
Managing Uncertainty						
Evidence synthesis standards	●	◐	●	○	○	◐
Uncertainty communication frameworks	●	●	●	○	○	◐
Quality Control						
Pre-registration requirements	◐	●	○	●	●	◐
Rapid quality assessment	◐	●	◐	○	●	◐
Journal accountability standards	◐	●	●	●	○	○
Policy evidentiary standards	●	N/A	●	N/A	N/A	◐
Retraction tracking protocols	●	◐	○	○	●	◐

Legend: ● High feasibility | ◐ Moderate feasibility | ○ Low feasibility | N/A Not applicable

Academic institutions and professional organizations are central to access and quality strategies. Universities can require Plain Language Summaries and pre-registration immediately. Foundations can mandate open access for funded research. While federal open access mandates would have maximum impact, state requirements for state-funded research and foundation mandates can substantially increase availability of publicly-funded research. For quality control, an independent academic consortium or nonprofit watchdog (modeled on Stanford's Meta-Research Innovation Center or the UK's NIHR Evidence Synthesis Programme) could provide rapid assessment without federal involvement.

Why Not Systemic Reform?

The simplest, most comprehensive solutions to trust and misinformation problems unfortunately are the least politically feasible in the current climate. Removing or deemphasizing profit motives in media would likely curb click-bait headlines and articles and incentives for conflict framing but removing profit motive means reconstructing the entire business of media. Robust content moderation, with social media platforms actively removing mis- and disinformation, would require tech company cooperation, but as of January 2025, Meta (formerly Facebook) has removed fact checkers and replaced them with user-generated "community notes," modeled after the system Elon Musk implemented on X.[91] Executive orders issued by President Trump have also targeted "censorship," arguing that content moderation interferes with free speech. In February 2026, the State Department announced that it would develop a portal to bypass content bans in Europe and elsewhere, allowing individuals to see banned material, including hate speech and terrorist propaganda, signaling the administration's prioritization of unrestricted information over accuracy or public safety. And while increasing digital, scientific, and overall literacy would allow individuals to evaluate online claims more critically, improving literacy is a generational project, not something that can be accomplished in the near term.

The recommendations in this capstone address structural problems, not temporary political crises. While the current administration has accelerated credibility and distrust issues, the underlying conditions developed over decades and will persist regardless of political leadership. Secretary Kennedy could be removed from his position tomorrow, or a more public-health friendly administration could take office in 2028. But even under optimal federal leadership, the populations that have rejected institutional authority, the information ecosystems that amplify misinformation, and a media landscape that prioritizes emotional content over accuracy will remain. These recommendations create communication infrastructure that remain effective across political transitions and through future crises.

Conclusion

AIDS activists learned to speak the language of institutional science because they had to. Through hundreds of hours of self-education, they mastered epidemiology, immunology, and clinical trial design – not because they trusted institutions, but because institutional credibility was the only currency accepted in spaces where their survival was decided. They demanded a seat at the table by learning the language spoken there, because marginalized populations without social power must earn the right to be heard.

Today's medical freedom activists occupy a fundamentally different social position. They enter spaces with entitlement and without asking for permission. They don't feel compelled to learn the language of science to be taken seriously because they already occupy positions of social and political power. Where AIDS activists sought approval from institutions, today's activists reject the very premise that institutional approval matters.

This shift in power dynamics explains why traditional public health communication fails with these populations. The doctor in the white coat, the CDC director at the podium, the peer-reviewed study behind a paywall – these signals of epistemic authority that once commanded deference now trigger suspicion. For populations that have never needed institutional validation to feel legitimate, institutional messaging reads as condescension at best and conspiracy at worst. Public health cannot restore trust by producing more credentials, more studies, or more official guidance. The populations that have rejected institutional authority did not do so because they lacked information; they did so because they rejected the premise that these institutions deserve deference.

The recommendations in this capstone can work because they do not require institutional trust. They create infrastructure for verifying information independently, for hearing from trusted community members rather than distant experts, for accessing research without gatekeepers. They make trust optional by making verification possible. This is not a temporary workaround while waiting for trust to return. The core problem is structural: epistemic authority, institutional authority, and cultural legitimacy have separated, likely for the foreseeable future, and public health must stop designing communication strategies that assume they will realign. The approaches discussed here – reconstructing the messenger, transforming the medium, and democratizing access – work whether or not populations regain trust in institutions. They work because they bypass the need for institutional credibility entirely. Public health communication must be rebuilt on this foundation not as a crisis response, but as permanent infrastructure for an era where power, expertise, and trust no longer converge.

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