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On COVID, We Fought the Last War. And Lost.

Jay Bhattacharya and Martin Kulldorff

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On COVID, We Fought the Last War. And Lost.

Jay Bhattacharya, MD, PhD, and Martin Kulldorff, PhD

Executive Summary

When scientists encounter a novel situation, they nearly always shape their thinking by analogy. The analogy that the scientist-bureaucrats who designed the COVID pandemic policy (many of whom came to prominence during the HIV pandemic) immediately latched onto in the early days of COVID was HIV, the virus that causes AIDS. Nearly every element of COVID policy was derived from a misapplication of lessons learned from HIV policy. Among these include a number of false presumptions:

- that recovery after COVID disease would not produce immunity;
- that herd immunity was impossible with COVID;
- that the primary deleterious clinical impacts of COVID disease would occur after recovery from acute infection;
- that everyone is at equal risk of a severe outcome—hospitalization or death—from COVID disease;
- that a physical barrier to a basic human bodily function (breathing) would prevent infected people from spreading COVID disease;
- that tracing the contacts of infected individuals would be an effective means of limiting the spread of COVID disease; and
- that closures of locations like schools where the disease was thought to spread and the limitation of travel would effectively limit COVID disease spread.

"Nearly every element of COVID policy was derived from a misapplication of lessons learned from HIV policy."

The faulty application of lessons from the HIV pandemic explains why many aspects of COVID policy were adopted. And the differences in the biology of HIV and SARS-CoV-2 (the virus that causes COVID) in each case explain the failure of these policies in the latter case. The sole exception—a

policy with no direct or obvious analog to a policy adopted during the HIV pandemic—was the society-wide lockdowns implemented in most developed countries worldwide in March 2020. Those were a radical departure from both HIV-era policies and standard pre-existing pandemic plans for managing airborne respiratory virus pandemics.

Introduction

The virus that causes COVID was unknown to humans before 2019. Before it was dubbed SARS-CoV-2, many scientists called it the novel coronavirus. The phrase has implicit within it a contradiction that is easy to miss—while the SARS-CoV-2 virus was new, coronaviruses are not. To understand the response by public health authorities to the COVID pandemic, one must realize that public health bureaucrats placed enormous weight on "novel" and not so much importance on "coronavirus" in their thinking.

When scientists encounter a novel situation, they nearly always shape their thinking by analogy. Reasoning in a vacuum is rarely fruitful, and hypotheses must come from somewhere. The analogy that scientist-bureaucrats immediately latched onto in the early days of COVID-19 was HIV, the virus that causes AIDS.

"They (the COVID response team) studiously ignored a century of epidemiological knowledge about coronaviruses and other similar pathogens."

This fact may surprise some readers, but it shouldn't because personnel is policy. In the infectious disease community over the last 40 years, many of the best-known and most influential science bureaucrats and public health officials came to prominence in combatting the HIV crisis. This cadre includes the four key scientists responsible for our COVID response: Dr. Anthony Fauci, an HIV/AIDS immunologist who led the National Institute of Allergy and Infectious Diseases during both the HIV/AIDS and COVID pandemics; Trump's Coronavirus Response Coordinator Deborah Birx, an HIV/AIDS immunologist who previously served as the Global AIDS Coordinator beginning under President Barack Obama; former CDC director Dr. Robert Redfield, an HIV virologist who previously served on the President's Advisory Council on HIV/AIDS; and the then CDC director Dr. Rochelle Walensky, a clinical HIV/AIDS researcher who previously chaired NIH's AIDS Advisory Research Council.

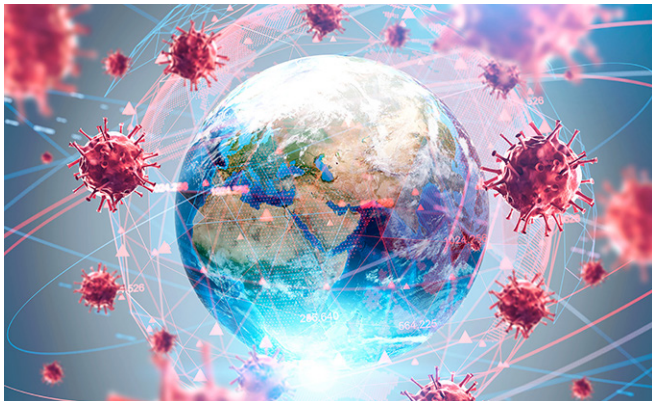
With instincts honed over decades, they studiously ignored a century of epidemiological knowledge about coronaviruses and other similar pathogens. As HIV/AIDS laboratory scientists and clinicians without a formal background in epidemiology and public health, they were obliged to and did, at some point, learn about the epidemiology of HIV/AIDS. For COVID, they then adopted a public

health policy derived from a faulty analogy to the epidemiology of HIV rather than the epidemiology of coronaviruses, with which they were unfamiliar.

This flawed analogy with HIV in the minds of top public health leaders partly explains why America adopted many counterproductive and ultimately useless policies to counteract COVID.

COVID, HIV, and immunity

Consider the immunological fact that recovery after infection trains immune systems to deal better with the pathogen that caused the original disease in cases of future exposure or infection. Of course, HIV infection is an exception to this rule. There is no effective immunity; untreated, the virus destroys the immune systems of infected individuals over several years.



But SARS-CoV-2 is not HIV. It is a coronavirus. All the coronaviruses that infect humans induce some immune protection against future reinfection and against severe disease on reinfection (Sariol and Perlman, 2020). Research on immunity after a SARS-CoV-1 infection found "reactive T-cells 17 years after infection" (Doshi, 2020). This is why the other coronaviruses that infect humans nearly always cause mild cold-like symptoms—most people are first exposed to them when young, and our bodies remember how to handle them.

Given this basic science background, it would make sense to start with the presumption until proven otherwise that SARS-CoV-2—a coronavirus—would also induce immunity after recovery. This is indeed what the scientific evidence shows. The fact that COVID recovery provides immunity is incontrovertible and has been since the summer of 2020 when it was clear that reinfections after COVID recovery were rare (Yeager, 2020). Though reinfection can subsequently happen as immunity gradually wanes—as for other coronaviruses—people who have recovered from a previous COVID infection are unlikely to become severely ill or die from a new infection (Abu-Raddad, Hiam, and Bertollini, 2021).

Despite this, our COVID-19 response leaders—with instincts honed by decades of HIV work—questioned immunity after COVID recovery. They maintained that stance long after scientific work definitively proved its existence for COVID. For example, in October 2020, Dr. Walensky co-authored a "Memorandum" in *The Lancet*, claiming that "any pandemic management strategy relying upon immunity from natural infections for COVID-19 is flawed" and is "a dangerous fallacy unsupported

by scientific evidence" (Alwan et al., 2020). Based on this premise—and falsely claiming an "evidence-based consensus"—the memorandum authors praised lockdowns and urged governments to implement severe population-wide disease control measures such as isolation, social distancing, face covering, rapid testing, and contact tracing to suppress COVID spread.

More sensible immunologists writing in 2020 urged the scientific community to expect immunity following a SARS-CoV-2 infection to follow the pattern of immunity after infection with other coronaviruses:

> We argue that the normal cadence by which we discuss science with our colleagues failed to properly convey likelihoods of the immune response to SARS-CoV-2 to the public and the media. As a result, biologically implausible outcomes were given equal weight as the principles set by decades of viral immunology… [We] posit that, with few exceptions, the development of protective humoral immunity of more than a year is the norm. Immunity to SARS-CoV-2 is likely to follow the same pattern. (Baumgarth, Nikolich-Žugich, Lee, and Bhattacharya, 2020)

"The questioning of COVID-19 immunity led to lockdowns with disastrous collateral public health damage"

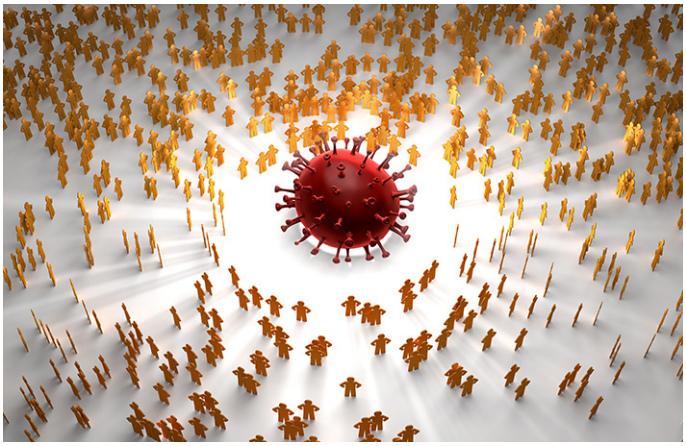
The questioning of COVID-19 immunity led to lockdowns with disastrous collateral public health damage that we must now live with. Later, these and other public health bureaucrats pointedly ignored immunity from COVID recovery when mandating vaccines. The decision thereby prioritized vaccination for people who did not need it over older Americans who had not yet had the disease and who were still at high risk of dying from it. It also led many COVID-recovered people to lose their jobs when they refused to abide by the vaccine mandates for no public health purpose (Makary, 2021).

Herd immunity

Through the COVID era, the term "herd immunity" took on a negative undertone in public discussions. Politicians and public health officials used the term to signify a laissez-faire attitude toward COVID spread. However, such a negative connotation is unwarranted because any conceivable pandemic management strategy leads to herd immunity.[1] While it does not exist for HIV/AIDS, herd immunity is a proven scientific phenomenon that protects human populations from many infectious diseases once a sufficient number of people have been infected and have recovered or been vaccinated

1 Some public health authors have mistaken herd immunity as a *de facto synonym for disease eradication, which it is not (Sridhar and Gurdasani, 2021).*

(Ashby and Best, 2021; Anderson and May, 1979). It is also not hard to explain, especially in a simple case.



Consider a population of people living in a society and regularly interacting with one another. Suppose a new disease like COVID enters the population when no one has immunity; it spreads easily. The disease spreads when people come in contact with each other's breath, so the first person with the disease will spread it to a few other people in the ordinary course of life. As more and more people recover from the infection and gain protection against reinfection as a result, those same interactions do not result in infection transmission. Disease spread slows. This phenomenon—a biological fact common to all readily transmissible pathogens that induce immunity—is herd immunity.

The herd immunity threshold is closely related to how easily the disease is spread (it is often summarized by a single number, R_0, or the number of people to whom an infected individual in the usual course of life will spread the disease if the population is entirely immune naïve). The threshold equals the fraction of the population that must be immune such that a single new infection will result in exactly one additional person infected. If the fraction immune in a population is above this threshold, the number of new cases will tend to decrease over time, while if the fraction immune is below it, the number of new cases will tend to increase.

The situation is a bit more complicated in the case of coronaviruses because the protection against future infection wanes over time, while the protection against severe disease requiring hospitalization is more persistent (Goldberg et al., 2022). Waning immunity pushes the fraction immune below the herd immunity threshold, putting us into an endemic state where waning immunity and new cases arising form an equilibrium in which the lethality of the disease is much lower as a larger fraction of the population is immune (Haider et al., 2023).

Herd immunity is also more complex with COVID because it is a seasonal disease (Byun et al., 2021) and has different herd immunity thresholds in summer and winter. This is also true for other human coronaviruses, which also display a seasonal pattern.

The contrast with HIV disease, where herd immunity is impossible, could not be sharper. Because HIV infection does not induce immunity in infected individuals, it necessarily implies that herd immunity is impossible. In 2020, public health leaders such as Rochelle Walensky assumed that SARS-CoV-2 was likely to behave more like HIV than the other human coronaviruses regarding herd immunity. The WHO even changed the definition of herd immunity in October 2020 to exclude immunity provided by COVID recovery (Hoffman, 2020). In October 2020, the prominent scientific journal *Nature* published an article entitled "The False Promise of Herd Immunity for COVID-19" (Aschwanden, 2020). Because America's COVID leaders were laboratory scientists and clinicians first, their epidemiological knowledge derived primarily from their fight against HIV where herd immunity is impossible. They did not understand the herd immunity concept, critical for understanding the spread of other infectious diseases such as COVID.

Long HIV, long COVID

For most common respiratory viruses, including SARS-CoV-2 and other coronaviruses, our bodies clear the virus after fighting off infection. Despite this, respiratory viruses can sometimes cause post-viral syndromes outside the respiratory tract after the infection is resolved (Hayase and Tobita, 1997). For example, in some rare cases, influenza infection can cause the deadly neurological disorder Guillan-Barre syndrome (Vellozzi, Iqbal, and Broder, 2014), while Epstein-Barr virus infection can lead to months of fatigue (Ebell, 2004).

Our bodies do not clear all viruses after infection. For instance, the varicella virus that causes chickenpox lies dormant in a patient's dorsal nerve roots for decades after a patient has cleared the chickenpox infection. Zoster, a reactivation of the latent virus decades later, is a form of "long" chickenpox (Gershon et al., 2015) more commonly known as shingles.

Of course, HIV is another prominent example of a virus that the body never clears after infection. The initial infection causes a fever, fatigue, and maybe a rash that resolves spontaneously. The virus replicates in the body with a particular predilection for CD4+T cells. Over time, if the virus is untreated, it destroys a person's capacity to fight other infections and causes cancers like Kaposi's sarcoma. AIDS is a constellation of deadly syndromes that can happen years after the initial infection by HIV. AIDS is a form of "long" HIV (Moir, Chun, and Fauci, 2011).

The SARS-CoV-2 virus is a coronavirus. Given this fact, it would have made sense—when the virus was new—to assume that the pattern of post-infection responses would most closely resemble those seen after coronavirus infection rather than HIV (Baumgarth et al., 2020). Instead, health officials such as Anthony Fauci emphasized the possibility of long-term sequela (i.e., after-effects) from COVID infection in terms that resembled the rhetoric about the long-term consequences of HIV

infection. For instance, in 2020, to justify his advice to close schools, Fauci used emerging evidence that COVID infection in children—in very rare cases—produces an immunological condition known now as MIS-C (Kail, 2020). Fauci emphasized this rare side effect rather than the known fact that school closures are harmful to the health of a vast number of children (Christakis, Van Cleve, and Zimmerman, 2020). And he did this without any evidence that closing schools would protect children from contracting COVID. In 2021, Dr. Francis Collins, then head of the National Institute on Health, began a $1.15 billion research program to study "long" COVID (Subbaraman, 2021).

The scientific evidence shows that the long-term sequelae from COVID infection are more akin to those produced by other respiratory viruses than by HIV. These sequelae fall into three distinct categories: (1) slow recovery by COVID patients whose acute illness was so severe that it required hospitalization (see, e.g., Parker et al., 2021, Medrinal et al., 2021); (2) people who suffer non-specific symptoms such as fatigue that may or may not be caused by prior COVID infection (see, e.g., Matta et al., 2022); (3) long-term symptoms after COVID infection, such as anosmia (loss of smell), which scientists have demonstrated to be caused by SARS-Cov-2 (see, e.g., Wang et al., 2022).

"The scientific evidence shows that the long-term sequelae from COVID infection are more akin to those produced by other respiratory viruses than by HIV."

Regarding group (1), it should come as no surprise that a stint in the hospital for a severe bout of COVID requires some time afterward for a patient to fully recuperate (PHOSP-COVID Collaborative Group, 2022). Regarding group (2), extensive epidemiological studies comparing COVID-recovered patients and matched control patients who had never had COVID oftenoften find that those who've had COVID and those who haven't have more or less the same general symptoms associated with long- (Matta et al., 2022; Hirt et al., 2022; Selvakumar et al., 2023). Regarding group (3), the vast majority of COVID patients who suffer anosmia and other long COVID symptoms recover within a few months after infection. Children especially recover rapidly, though symptoms do persist for a small subset of people for much longer (Molteni et al., 2021).

Risk stratification and the noble lie

HIV/AIDS is a serious disease at any age. That is not true for COVID. By early 2020, we already knew from Wuhan data that older people infected with COVID are over a thousand-fold more likely to die from the infection than an infected child (Kulldorff, 2020).

The messaging by COVID officials regarding who is at risk from COVID echoed the hyperbolic public messaging regarding the risk stratification of HIV during the early days of that pandemic.

Though it was clear then that gay men with multiple partners were the highest risk group, public health officials were slow to focus their prevention efforts on helping them, with deadly consequences (Shilts, 1987). Health officials, including Anthony Fauci, amplified equivocal evidence of HIV spread by casual contact, including among children, rather than emphasizing the particular risk faced by gay men, IV drug users, and hemophiliacs (Magness, 2021).

The motivation for this messaging was perhaps to spare high-risk groups from the social stigma associated with HIV infection, just as some argued that it was unethical to single out older Americans for specific COVID focused prevention measures. But it is better to be stigmatized than dead, and there are other effective ways to combat the ugly tendency to stigmatize those with a disease (De Ciaccio et al., 2021).

"While obesity and certain other chronic conditions increase the risk of mortality from COVID infection, the single most important risk factor is age."

While obesity and certain other chronic conditions increase the risk of mortality from COVID infection, the single most important risk factor is age. These facts were clear from the earliest days of the pandemic, especially as data arrived from China, Italy, and the ill-fated Diamond Princess cruise ship, which all showed that most deaths occurred among the older population (Bendavid and Bhattacharya, 2020; Ioannidis, 2020). Seroprevalence studies conducted months after the start of the pandemic confirmed a mortality risk of 0.05 percent from COVID infection for people under 70 and a mortality risk of 5.4 percent for people over 70 (Ioannidis, 2021; Axfors and Ioannidis, 2022).

Public health bureaucrats studiously ignored that predictable risk factors render COVID infection relatively harmless for most people while deadly for others. Public health messaging throughout the pandemic exaggerated the risk young people faced. In February 2020, the WHO announced that the case fatality risk from COVID was 3.4 percent—an order of magnitude higher than the infection fatality risk—without emphasizing the low fatality risk for children and young adults (Lovelace and Higgins-Dunn, 2020). The case fatality rate represents the proportion of people who are identified by doctors and public health officials as sick who die from the infection, while the infection fatality rate represents the propotion of people infected who die from infection. The two quantities differed, especially early in the pandemic, because only a small fraction of infected people were identified by officials as such due to incomplete testing and surveillance (Sood et al., 2020; Bendavid et al., 2021).

Public health advertising in Australia featured a young person with laboured breathing on a ventilator dying from COVID (BBC News, 2021). When Rudy Gobert, a young fit professional basketball player, contracted COVID, he was chastised by many in the public health professions for not taking

the virus seriously enough (ESPN, 2020). And this messaging was effective. A rolling survey conducted on June 30, 2021, by researchers at the University of Southern California found that people under 40 estimated their chance of dying if infected at 6.4 percent, while people above 65 estimated 18.7 percent (USC, 2021). Everyone greatly overestimated their risk of dying relative to the truth, especially young people (Leonhardt, 2021).

What was the putative motivation for this hyperbolic messaging? One possible reason is that people who perceive COVID as a lethal risk are more likely to comply with public health measures such as lockdowns (Beca-Martínez et al., 2022; Cipolletta et al., 2022). By exaggerating the risk of mortality from COVID infection, many young people abstained from their normal interactions, which are necessary for good mental and physical health. One consequence was a sharp rise in depression and suicidality—a nationwide CDC survey in June 2020 found that one in four young adults had seriously considered suicide (Czeisler, Lane, and Petrosky, 2020).

Condoms and masks

In the context of HIV, which spreads via sexually intimate contact, public health recommends using condoms during sex as a physical barrier to the spread of the virus (CDC, 2021). That was wise advice as there is good evidence that condoms are effective in reducing the spread of HIV. Until the relatively recent development of pre-exposure prophylaxis medications that prevent HIV (CDC, 2022), condoms were the primary tool for limiting the spread of the disease in a sexually active population with multiple partners. Public health officials' success at promoting the use of condoms to control the spread of HIV—including substantial if not universal public compliance with the recommendations—conditioned many to think of physical barriers regulating intimate relations as acceptable and effective interventions (Onwujekwe et al., 2013).

In the context of COVID, public health officials applied the idea of physical barriers to prevent disease to mass face masking to control the spread of COVID in the population. While masking has an intuitive appeal for reducing the risk of infection spread by respiratory droplets, the logic of blocking large droplets does not necessarily extend to blocking microscopic aerosol particles in which the SARS-CoV-2 virus travels (Nazaroff, 2022; Ueki et al., 2020). Furthermore, though there were many randomized trials in many settings, no randomized evidence before the pandemic showed that

masking would work at a population level to contain the circulation of other respiratory viruses, such as influenza (Jefferson et al., 2020).

"While people were encouraged to wear any kind of mask, the effectiveness of masks—if they are effective at all—certainly depends on the type of mask worn."

While people were encouraged to wear any kind of mask, the effectiveness of masks—if they are effective at all—certainly depends on the type of mask worn (cloth vs. surgical vs. N95), on the protocols for replacing contaminated masks, on how well-trained the mask-wearer is in maintaining a good fit, and on a large number of other factors. The effectiveness of masks in protecting the wearer against infection (self-protection) may also differ from the effectiveness of masks in protecting people near the wearer from becoming infected (source control) (Moschovis et al., 2021).

Mask studies conducted in laboratories on mannequins, for instance, are unlikely to translate well into real-world settings. Correlation studies between the imposition of mask mandates and the subsequent spread of COVID disease are also of limited value since there is natural variation in disease incidence.

The best guide to the effectiveness of face masks—the highest quality evidence—are randomized controlled trials. There were many randomized evaluations of masking in the context of the flu published before the pandemic. At least three more have been conducted on COVID spread since the pandemic began, finding that face masks provide zero or minimal protection against COVID.

With a vast literature on the efficacy of masks to control respiratory viruses, comprehensive literature reviews and meta-analyses have summarized the evidence with roughly the same conclusions (Liu et al., 2021; Jefferson et al., 2023). The Cochrane review of the mask literature separately evaluates the effectiveness of medical/surgical masks and N95 respirator masks. The authors conclude:

Medical or surgical masks

Ten studies took place in the community, and two studies in healthcare workers. Compared with wearing no mask in the community studies only, wearing a mask may make little to no difference in how many people caught a flu-like illness/COVID-like illness (9 studies; 276,917 people); and probably makes little or no difference in how many people have flu/COVID confirmed by a laboratory test (6 studies; 13,919 people). Unwanted effects were rarely reported; discomfort was mentioned.

N95/P2 respirators

Four studies were in healthcare workers, and one small study was in the community. Compared with wearing medical or surgical masks, wearing N95/P2 respirators probably makes little to no

difference in how many people have confirmed flu (5 studies; 8407 people); and may make little to no difference in how many people catch a flu-like illness (5 studies; 8407 people), or respiratory illness (3 studies; 7799 people). Unwanted effects were not well-reported; discomfort was mentioned. (Jefferson et al., 2023)

It is perhaps natural that public health officials, steeped in their successful experience instructing the population to use condoms during sex to reduce the spread of HIV, would turn to a physical barrier like masking to reduce the spread of SARS-CoV-2. But public health advice ran far ahead of the equivocal scientific evidence. The advice to mask backfired, instead inducing a culture war in the US, with fearful people adopting the mask as a part of their identity to show that they cared about others, and with more science-conscious people similarly embracing free faces to show that they were not prone to mass hysteria (Ball, 2020). Similar battles happened during the 1918 pandemic in the US when public health officials in many places mandated mass masking, most conspicuously in San Francisco, where an Anti-Masking League formed (Navarro, 2020). Both the inefficacy of and backlash to the intervention should have been predictable.

Contact tracing

From the early days of the HIV epidemic, as soon as it became clear that the disease spreads via sexual contact (particularly among gay men), public health authorities deployed contact tracing techniques to limit the spread of the virus (Ramstedt, 1991; Kassler and Cates, 1992; Cowan, French, and Johnson, 1996). The idea of contact tracing is intuitive and effective for sexually transmitted diseases (Young et al., 2018). When an infected person is found, close contacts are tested, and further cases can then be treated and isolated from the rest of the population so that they do not spread the disease. If people know they have an HIV infection—something contact tracing enables—then they can take appropriate precautions to protect their partners. Epidemiologists who study HIV consider contact tracing among the most important tools public health has to combat that disease.

The situation with COVID is entirely different because the disease spreads very easily to hundreds of potential contacts (Bhattacharya and Packalen, 2020). While contact tracing can be useful for other infectious diseases, such as Ebola, it is useless and wasteful for widely circulating respiratory viruses, such as Influenza or SARS-CoV-2. The premise of contact tracing—that recently infected individuals can quickly identify most of their contacts in locations where they might have become

sick—is not met. This fact should have signaled to public health officials that contact tracing would fail to mitigate the spread of COVID.

Furthermore, the scale of infections to trace is orders of magnitude greater than for HIV. Contact tracers were predictably overwhelmed, especially during the massive waves of COVID disease that occurred despite costly mitigation efforts. In 2021, for instance, in Los Angeles, it would take contact tracers weeks to interview infected patients, many of whom had already recovered from COVID, if they could reach them at all (Reyes, 2021). Even if a previously infected person could remember where he may have been exposed to the virus and who was exposed to his breath, it was too late. Most of those people had already got the infection and started to spread it to others. Because of dynamics like this, the massive contact tracing programs in both the UK (Young, 2021) and Australia (BBC, 2022) have been deemed expensive failures.

School closures, travel restrictions, and other lockdown measures

At first glance, travel restrictions, school closures, and lockdowns—mainstays of the American COVID policy—do not have any direct parallel to policies undertaken to combat HIV. That first glance is misleading, at least in the case of travel restrictions and school closures. Though public health officials never deployed society-wide lockdowns to address the HIV pandemic, they did use focused closures of key locations, like bathhouses, which were thought to be focal locations of disease spread (Shilts, 1987). Society-wide lockdowns, on the other hand, are a genuine departure from HIV policy, and indeed from standard respiratory virus pandemic management plans.

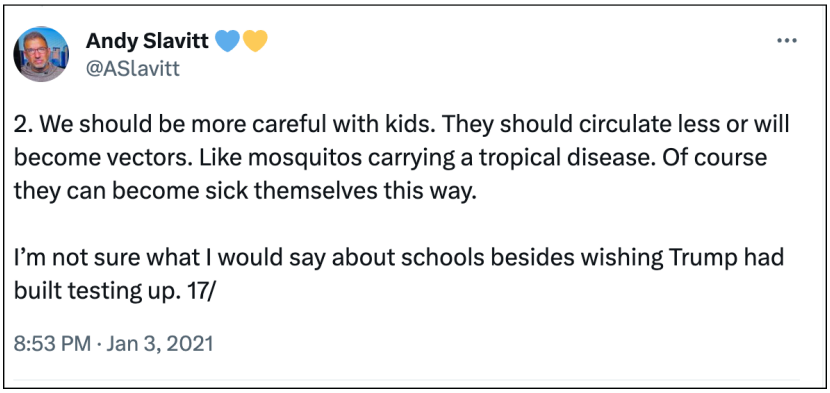
Without much public health benefit, the United States and other countries deployed travel restrictions as a strategy to contain HIV spread. For decades, countries banned HIV-positive individuals from entering or immigrating, and the US required HIV testing for green card applicants. Some countries included HIV-positive status as a cause for deportation. It was only in 2016 that the United Nations issued its "Political Declaration on Ending AIDS," which called for all countries to remove HIV-related travel restrictions, though there are still countries with such entry restrictions (UNAIDS, 2019).

In January 2020, as much of the world first became aware of COVID in China's Hubei province, other countries started to close their borders even though it was already too late, except for island

countries in the southern hemisphere. There was some early pushback echoing lessons learned from HIV/AIDS, arguing that travel restrictions would unduly burden and stigmatize Asian populations, but that was soon forgotten.[2] With COVID, the health bureaucrats took movement restrictions to a higher level. In the US, there were travel bans between states (Harrington and Byrnes, 2020).

School closures to control the spread of COVID mimic the closure of bathhouses to control the spread of HIV in the early days of that pandemic. The underlying idea was the same—to shut down activities thought to drive disease spread. Through much of the first two years of the pandemic, health bureaucrats shut down "inessential" activities like in-person schools (Budryk, 2020), small businesses, and religious worship (Hayden and Sestito, 2020) while leaving open "essential" activities including big-box retail stores (Fleming, 2021), strip clubs (Giri, 2020), and marijuana dispensaries (Browning, 2020). Public health, in effect, declared the former unclean and the latter clean. Many prominent people in public health were explicit in their rhetoric. In January 2021, Andy Slavitt, a Biden administration COVID advisor, compared children to "mosquitoes," calling them a major "vector" of transmission. Figure 1 reproduces Slavitt's tweet.

Figure 1: January 2021 Tweet from White House Advisor Andy Slavitt



Society-wide lockdowns and shelter-in-place orders are a genuine exception to our thesis that COVID policy has its roots in HIV policy. They represent a departure from pandemic management in the HIV-era and, indeed, in a century of respiratory virus pandemics dating back to at least 1918, which never considered lockdown as a strategy (Blanco-Jiminez, 2021; Inglesby et al., 2006). The underlying explanation for this departure from previous practice is that panicked governments worldwide copied China's authoritarian response at the recommendation of the World Health Organization (WHO).

In late February 2020, the WHO sent a delegation to China to investigate its draconian lockdown of Hubei province, including the city of Wuhan—home to 12 million souls. Though the delegation never set foot in Wuhan or Hubei province, the *Report of the WHO-China Joint Mission on Coronavirus Disease 2019 (COVID-19)* concluded that "China's uncompromising and rigorous use

2 Trump's Chinese travel ban, imposed ultimately in late February 2020, was epidemiologically useless, as COVID had already been seeded throughout the world by travel in and out of China in the months that preceded it.

of non-pharmaceutical measures to contain transmission of the COVID-19 virus in multiple settings provides vital lessons for the global response. This rather unique and unprecedented public health response in China reversed the escalating cases in both Hubei, where there has been widespread community transmission, and in the importation provinces, where family clusters appear to have driven the outbreak" (WHO, 2020).

For countries like Italy, Iran, and the US, which had already identified COVID cases in-country, the WHO report recommended "multi-sector scenario planning… for the deployment of even more stringent measures to interrupt transmission chains as needed (e.g. the suspension of large-scale gatherings and the closure of schools and workplaces)." The recommendations included halting international travel, echoing the early travel restrictions imposed on HIV-positive individuals from the early days of that crisis.

Cliff Lane, a deputy to Anthony Fauci at the US National Institute of Allergy and Infectious Disease and an HIV researcher in his own right, was the only American official included in the WHO delegation to China. In a February 22, 2020 email he wrote to Maria van Kerkhove (an epidemiologist also on the UN delegation), he wrote: "China has demonstrated the infection can be controlled, albeit at great cost. That is the bottom line of the report from my perspective. The global community needs to decide the way forward. That room needs more than this group." This email is reproduced as Figure 2. Italy had already imposed a lockdown by then, with the US following suit in mid-March. Nearly the whole world (with the notable exception of Sweden and a few other outliers) copied the Chinese lockdowns (Sebhatu et al., 2020)—a public health policy with no precedent in the history of pandemic management, at least with respect to the scope and duration of its implementation in 2020 and beyond.

Figure 2: February 2020 Email from Cliff Lane to Maria Van Kerkove

From: Lane, Cliff (NIH/NIAID) [E]
Sent: Sat, 22 Feb 2020 10:01:23 +0800
To: Dr VAN KERKHOVE, Maria
Subject: Re: Inputs needed

China has demonstrated this infection can be controlled, albeit at great cost. That is the bottom line of the report from my perspective.

The global community needs to decide the way forward. That room needs more than this group.

Conclusion

It is hard to find anyone who calls American public health's recommended COVID mitigation policies successful. The official count identifies about 1.2 million deaths with COVID identified as a cause since January 2020. And the mitigation approaches like lockdowns, school closures, contact tracing, quarantining, masking, etc., have had their own costs, which include massive learning loss

by children, shuttered small businesses, skipped cancer screening exams and medical treatments, and loss of trust in public health authorities who embraced the "noble" lie (Bardosh, 2023).

While the causes of these failures are undeniably multifactorial, in this paper we have made the case for an underappreciated reason: the top American public health officials adopted policies that worked reasonably well in the context of HIV, but which were entirely unsuited to manage the COVID pandemic.

We conclude with one last piece of evidence for our assertion that prominent public health officials confused COVID with HIV. In October 2020, along with Prof. Sunetra Gupta of Oxford University, we wrote the Great Barrington Declaration (GBD), a call for focused protection of vulnerable older adults from COVID exposure and the lifting of lockdowns to mitigate their harm to children and young people. Prof. Gupta is a professor of Theoretical Epidemiology, Prof. Kulldorff is a professor of Medicine with a long track record of work in infectious disease epidemiology, and Prof. Bhattacharya was a professor of Medicine (now Health Policy) with a long track record of peer-reviewed publications, teaching, and training of students in epidemiology. Tens of thousands of prominent epidemologists, scientists, and medical doctors signed the declaration shortly after we released it, with research publication histories at least as distinguished as the signatories of a pro-lockdown memorandum released shortly after we released the Great Barrington Declaration (Ioannidis, 2022).

Four days after we wrote the Declaration, Dr. Fauci—head of the National Institute of Allergy and Infectious Disease and a key architect of the American strategy to manage the pandemic—wrote an email to Francis Collins, his boss and head of the National Institutes of Health. In this email (reproduced as Figure 3), Fauci analogized our call for a nuanced, risk-stratified approach to managing the pandemic to the "AIDS denialist days of Peter Duesberg, Harry Rubin and Kary Mullis." The background for this slur was a hypothesis put forward by Duesberg in 1992 that HIV was not the cause of AIDS (Duesberg, 1992). Of course, the GBD did not deny SARS-CoV-2 was the cause of COVID. It simply called for a more appropriate strategy to deal with the pandemic than the lockdown-focused one that Fauci espoused. Why would Dr. Fauci's mind leap to such an inappropriate analogy? It should be clear that the architects of our COVID policies learned all the wrong lessons from the last war and, as a result, ensured we all lost this one.

Finally, the HIV/AIDS analogy, while providing a reason for the failure of the COVID response as designed by the scientific bureaucrats, leaves open another question beyond the scope of this paper: Why didn't epidemiologists speak up against the measures implemented based on this flawed analogy?

Open scientific discourse is important on any scientific topic but is especially critical during a national emergency such as a pandemic. But pandemic leaders often avoided discussions with public health

Figure 3: October 2020 Email From Anthony Fauci to Francis Collins

From: Fauci, Anthony (NIH.NIAID) [E]
To: Collins, Francis (NIH/OD) [E]
Cc: Tabak, Lawrence (NIH/OD) [E]; Burklow, John (NOIH/OD) [E]; Myles, Renate (NIH/OD) [E]; Wolinetz, Carrie (NIH/OD) [E]; Lane, Cliff (NIH/NIAD) [E]
Subject: RE: Quote re Barrington Declaration
Date: Wednesday, October 14, 2020 8:13:27 AM

This is very reminiscent of the AIDS denialist days of Peter Duesberg, Harry Rubin and Kary Mullis (all of Berkley)

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scientists critical of their preferred approach.[3] When Collins and Fauci publicly smeared scientists critical of lockdowns, many knowledgeable epidemiologists and public health scientists censored themselves despite their reservations about the policy. As leaders of the NIH and NIAID, Collins and Fauci disburse tens of billions of dollars—and confer high status within the scientific community—to biomedical scientists in the US and abroad. They abused their position and power to smear dissident scientists who pointed out the error of deploying strategies better suited to control the spread of HIV than of COVID.

3 For example, when the two of us where invited to the White House in August 2020, we met with both the president and vice president, but Dr. Birx refused to meet with us, finding a deliberate excuse to be out of town. Dr Fauci was also uninterested in meeting with us (Atlas, 2021).

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