RESEARCH ARTICLE

U.S. COVID-19 Policy in 2023 and its Consequences

Charles M. Lepkowsky

Independent Practice
1143 Deer Trail Lane, Solvang, CA 93463-9519, USA

clepowsky@gmail.com

Abstract

Economic pressures combined with anti-science politics have led to the termination of COVID-19 safety protocols in the United States (US). Although the epidemiology and virology of COVID-19 have not changed since its emergence in late 2019, intentional, consistent strategies with demonstrated efficacy for containment of the pandemic have been abandoned. Diminished media coverage of COVID-19 contributes to the popular notion that the pandemic is “over.” COVID-19 thus remains uncontained in the US. The number of US COVID-19 fatalities remains the highest in the world, and continues to grow. Beyond the negative consequences for public health and pandemic management, the confabulation of politics and science has also produced growing political tensions, with the emergence of socially regressive legislation in states historically invested in the anti-science agenda as applied to COVID-19. Recommendations are made for consistent messaging and policy from government agencies to improve management of the COVID-19 pandemic, and unify the public in acceptance of science-based interventions and attitudes.

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Introduction

During the COVID-19 pandemic, US public health interventions have been inconsistent and prematurely withdrawn, with consequent successive waves of disease outbreak, increased fatality rates and damage to the economy. The impact of inconsistent COVID-19 policy and lax enforcement extends far beyond the management of COVID-19, including regressive laws limiting women’s reproductive rights and the rights of the LGBTQ population. In this paper, recommendations will be made for more consistent messaging and policy from government agencies to improve management of the COVID-19 pandemic, and unify the public in acceptance of science-based interventions and attitudes.

Historically Inconsistent and Prematurely Withdrawn US COVID-19 Public Health Policies

COVID-19 was initially identified in Wuhan, China in December of 2019 as SARS-CoV-2. COVID-19’s virulence and lethal potential were so great that by the end of January 2020, the World Health Organization (WHO) had declared an international public health emergency (PHE) and assigned COVID-19 pandemic status. At risk populations were identified, and most industrialized nations hurried to establish policies intended to contain the spread of COVID-19. These included masking mandates and shelter in place policies that led to the closure of private and public businesses, schools and outpatient healthcare facilities. During the ensuing three years, COVID-19 containment policies and protocols varied widely from nation to nation. A 2021 research study characterized COVID-19 containment strategies as falling into one of three categories: aggressive containment, suppression, and mitigation. The study concluded that containing community transmission is the optimal strategy for sparing both lives and the economy. In response to the outbreak of a disease, immediate action was recommended. Patience was also recommended before easing public health interventions. Prematurely easing public health interventions demonstrably leads to successive waves of disease outbreak, increased fatality rates and greater damage to the economy. However, COVID-19 policy in the US reflected a slow response to the initial pandemic, and inconsistent policies over the ensuing three years.

In January 2020, as most of the industrialized nations responded quickly to the identification of COVID-19 as a global pandemic, US President Trump dismissed COVID-19 as a threat to public safety. America’s slow response to COVID-19 reflects politically-based healthcare policy decisions that predate the COVID-19 pandemic. Early in 2018, the Trump administration had closed the White House global health security office, an inter-agency pandemic preparedness program established by the Obama administration following the 2014-2016 Ebola epidemic. In 2019, the Trump administration eliminated of PREDICT, a global early warning program specifically intended to identify viruses with pandemic potential.
programs within the CDC also experienced significant reductions.¹³

During the several weeks between the initial identification of COVID-19 in Wuhan, China and the first identified case of COVID-19 in the US, the Trump administration failed to undertake actions that might have contained community transmission of COVID-19. These actions might have included nationwide COVID-19 testing and contact tracing, an immediate increase in the production of personal protective equipment (PPE) for health workers, promotion of funding for expanding hospital capacity, and the establishment of clear chains of communication between state governors and the federal government. However, the Trump administration failed to undertake any of these actions.²¹

By the end of January 2020, the US Department of Health and Human Services (HHS) formally recognized COVID-19 as a serious threat to national public health and safety, declaring a Public Health Emergency (PHE).²² In subsequent months, tensions grew between the Trump administration and HHS, the Centers for Disease Control and Prevention (CDC), the National Center for Immunization and Respiratory Diseases (NCIRD), other health and public safety offices, state governors promoting safety protocols for COVID-19, and a variety of virologists, epidemiologists and other scientific experts.¹³

Exacerbating tensions, President Trump made extensive use of social media, often to promulgate anti-scientific rhetoric. Part of a phenomenon that came to be called the “infodemic,” news media and social media have participated in massive and unprecedented around-the-clock distribution of news and commentary about COVID-19. The infodemic is defined as “an overabundance of information, both online and offline. It includes deliberate attempts to disseminate wrong information to undermine the public health response and advance alternative agendas of groups or individuals. Mis- and disinformation can be harmful to people’s physical and mental health; increase stigmatization; threaten precious health gains; and lead to poor observance of public health measures, thus reducing their effectiveness and endangering countries’ ability to stop the pandemic.”²³-²⁷

President Trump’s inconsistent management of the COVID-19 pandemic allowed COVID-19 case rates to spiral upward, peaking at the time of the November 2020 Presidential election.²⁸

Incoming President Biden sought to improve COVID-19 management, introducing various programs including “a decisive public health response that ensures the wide availability of free testing; the elimination of all cost barriers to preventive care and treatment for COVID-19; the development of a vaccine; and the full deployment and operation of necessary supplies, personnel, and facilities” and “A decisive economic response that starts with emergency paid leave for all those affected by the outbreak and gives all necessary help to workers, families, and small businesses that are hit hard by this crisis. Make no mistake: this will require an immediate set of ambitious and progressive economic measures, and
further decisive action to address the larger macro-economic shock from this outbreak.\textsuperscript{29,30} The biggest breakthrough in the management of the COVID-19 pandemic was the development of effective COVID-19 vaccines. As the FDA granted emergency use approval for COVID-19 vaccines, a growing number of Americans received vaccination.\textsuperscript{31,32} However, perhaps as a legacy to former President Trump’s anti-science rhetoric, a large percentage of the American population declined vaccination, apparently influenced more by partisan politics and/or regional attitudes than by scientific evidence. Vaccination avoidance correlates with lower educational attainment, rurality, and regions characterized by a relatively high Trump vote share.\textsuperscript{33} Anti-vaccination populations (more than pro-vaccination populations) share conspiracy theories, engage more in discussions on Twitter, use emotional language, and largely followed the anti-vaccination Tweets of Donald Trump, highlighting the impact of the infodemic as employed by the former president.\textsuperscript{34} 

COVID-19 vaccination rates increased quickly during early 2021, but due in large part to the headwind of anti-vaccination misinformation, stalled in the middle of 2021. At the beginning of 2022, the US COVID-19 “fully vaccinated” rate (having received the initial two doses) was at 63.6%. By June 21, 2022, that number had increased to 66.9%.\textsuperscript{35} However, vaccinations lose potency over time, so the relevant number has become the current booster vaccination rate.\textsuperscript{36-38} Almost a year later, the current US COVID-19 vaccination rates are as follows: full vaccination (two initial doses) 69.3%; at least one updated booster dose: 17%.\textsuperscript{39} In response to heightened tensions over COVID-19 safety protocol enforcement,\textsuperscript{40} beginning in June of 2021 the US government dropped non-pharmaceutical interventions including population- and case-based interventions. The Centers for Disease Control and Prevention (CDC) found itself without authority to enforce COVID-19 safety protocols. The CDC changed its use of language from “protocols” or “policies” to “recommendations” or “suggestions,” citing the absence of authority to enforce a “policy.”\textsuperscript{41} Despite more than three years of scientific evidence demonstrating the efficacy of face masks for containing the spread of COVID-19, policies regarding masking and social distancing have disappeared. Even states with historical roles as leaders in the adoption of safety protocols for COVID-19 now offer meek “guidelines” for masking.\textsuperscript{42} The politically-driven COVID-19 policy-making process has achieved an endpoint. Largely in response to pressures from conservative legislators and economic pressures to “re-open” business including tourism, the Biden administration announced its decision to end the COVID-19 public health emergency (PHE) in May 2023. The PHE termination will lead to sweeping changes across the health care system. Currently, there are no federal or state mandates for COVID-19 safety protocols. Politically-driven decisions regarding healthcare and public safety impact public health as well as public health policy. In
addition, they have long-lasting social and political consequences whose extent has yet to be fully realized.

Public Health Consequences of Politically-Driven US COVID-19 Policy

In the absence of safety protocols, US COVID-19 case rates fluctuate, but on average have remained at about 30,000 a day. US COVID fatalities average about 200 per day, with over 1.1 million US deaths attributed to COVID-19 to date. US new COVID-19 case and fatality rates peaked in January 2021, were mitigated with the introduction of vaccinations, but due to reductions in safety protocols, peaked again in September 2021, and achieved their highest point to date in January 2022. Since 2020, the average annual US COVID-19 death toll has been 376,135. For perspective, the highest annual number of gun-related deaths in the US (including accidental shootings and suicides) was 20,200 in 2022.

COVID-19 health complications

The number of COVID-19 health complications continues to grow. For example, researchers in Germany have found that part of the Corona virus, the spike protein, remains in the brain long after the virus clears out. Boys born to mothers infected with SARS-CoV-2 during pregnancy may be more likely to receive a diagnosis of a neurodevelopmental disorder by age 12 months. Researchers have found for the first time that COVID infection has crossed the placenta and caused brain damage in two newborns. Research has also found a genetic link between the risk for COVID-19 infection and the leading cause of vision loss among people aged 50 and older, called age-related macular degeneration.

Poor-quality sleep and irregular sleep could be important drivers of breathlessness in patients who were previously hospitalized for COVID-19, according to data from the UK’s CircCOVID study. New research is shedding light on how an infection with COVID-19 may reactivate, or even cause, psoriasis. COVID can more than triple the chance of being diagnosed with type 2 diabetes within a year of being infected.

It is commonly accepted in American society when someone makes choices to help avoid a deadly heart attack or lower the risk of cancer. That is because heart disease and cancer are the leading causes of death in the United States. But just one line down on the list of top killers, in third place, is COVID-19. The risks of COVID-19 have faded so much from everyday American life that some experts are concerned people that do not fully realize it remains one of the leading causes of death in the U.S. Relatedly, life expectancy in New York City fell to 78 years from 2019 to 2020, a 4.6-year drop mostly caused by the COVID-19 pandemic. Non-white demographic groups had the highest drops. Life expectancy fell to 73 years for Black New Yorkers (a 5.5-year drop from 2019) and 77.3 years for Hispanic/Latino New Yorkers (a 6-year drop.) For white New Yorkers life expectancy only fell to 80.1 years (about a 3-year drop). Black communities in general have been disproportionately affected by the COVID-19 pandemic.
**Long COVID**

The term "long COVID" emerged in May 2020, but many doctors remain uncertain about how to screen or treat it. More than 3 years into the COVID-19 pandemic, lasting symptoms have become quite common and are now recognized as predictable sequelae to COVID-19. Residents of certain states, women, Hispanic people, and transgender people are more at risk. The Long COVID Handbook describes the clinical burden of long COVID as on par with heart disease or oncology.

Chest pain is a common lingering symptom of COVID. Cognitive symptoms, commonly referred to as brain fog, are among the most common persistent or new symptoms after COVID-19. Cognitive symptoms are also often reported by patients with myalgic encephalomyelitis or chronic fatigue syndrome (ME/CFS). Successful management tools used to treat ME/CFS can also be effective in treating long COVID. The chances of having long COVID appear to decrease sharply between a person’s first and second infections, a recent study from the United Kingdom shows.

Four in 10 people with long COVID had moderate to severe sleep problems, and black people with the condition were much more likely to have serious sleep issues. A review of more than 800,000 patients has found that women, smokers, and those who had severe COVID-19 infections are at a higher risk of long COVID, whereas two vaccination doses significantly reduces the likelihood of long COVID. The severity of neurologic and non-neurologic symptoms associated with long COVID appear to be linked to the severity of the initial infection. The neurologic symptoms of long COVID appear to be explained by a phenomenon known as antigenic imprinting, which involves a misdirected immune response to the SARS-CoV2 virus.

A new federal research project aims to answer lingering questions about long COVID using mobile monitoring devices to help track the condition. The RECOVER Initiative expects to give out 10,000 sensors to people who are eligible based on race/ethnicity, income, and other demographic factors (rural residents for example). After two months, all people in the RECOVER study over the age of 13 will be eligible for the sensors.

**New COVID-19 variants continue to emerge**

The new COVID-19 subvariant XBB.1.16 is spreading so rapidly around the globe that the World Health Organization has officially added the strain to its “variants of interest” list. While not officially named, the XBB.1.16 is being referred to as “Arcturus.” It has grown exponentially since appearing in India in January, and now accounts for 4.2% of global cases and 9.6% of cases in the U.S, landing it in second place behind its long-predominant Omicron cousin XBB.1.5, which causes 78% of cases. Arcturus may cause previously unseen symptoms in children, including itchy eyes. The CDC has Arcturus on its watchlist. The latest WHO summary highlighted XBB.1.16’s “immune escape characteristics,” predicting it will continue to account for more and more cases.
At the time of this writing, the CDC Nowcast projections estimate the proportion of these lineages designated as Omicron with estimates above 1%: XBB.1.5, XBB.1.16, XBB.1.9.1, XBB.1.9.2, XBB.1.5.1, FD.2, and BQ.1.1. XBB.1.5 is projected to be at approximately 78.0% (95% PI 73.6-81.8%). XBB.1.16, XBB.1.9.1, XBB.1.9.2, XBB.1.5.1, FD.2, and BQ.1.1 are projected to be between 1.0% and 7.2% of circulating lineages. XBB.1.16, XBB.1.9.1, XBB.1.9.2, and XBB.1.5.1 all have positive growth. XBB.1.5, FD.2, and BQ.1.1 are all decreasing in proportion. All other virus lineages are predicted to have very slow or no change in proportion.70

Vaccines, treatment and testing

Although the PHE is ending and policies no longer support public safety protocols, research on vaccines and treatment for COVID-19 continues, with benefits that extend to the treatment of other diseases. A review of research findings reveals the large scope of the work.

In the realm of immunology, it has been found that the body's ability to attack COVID-19 is weakened among unvaccinated people, or people who were infected before getting their first two shots of mRNA vaccine.71 An antiviral therapy in early development shows potential for preventing COVID-19 infections when given as a nasal spray as little as 4 hours before exposure. It also appears to work as a treatment if used within 4 hours after infection inside the nose.72 Regarding vaccination and vaccination hesitancy, data show that people who had low hopes from a COVID-19 vaccine reported more negative side effects from COVID-19 vaccination.73

High-dose prophylactic anticoagulation or therapeutic anticoagulation reduced de novo thrombosis in patients with hypoxemic COVID-19 pneumonia.74 Gilead Sciences Inc. has unveiled data from the first human study of its experimental oral COVID-19 antiviral, saying the results in healthy volunteers cleared the way for two large Phase III trials of the drug that have begun enrolling patients.75 People living with long COVID in the trial who received AXA1125 had a significant improvement in fatigue compared to those who received a placebo.76

COVID-19 vaccine development has led to application of novel vaccines for a variety of other diseases. Vaccines for the world's most deadly diseases, like cancer and heart disease, will likely be ready by 2030 and could save millions of lives. Many are calling this era "the golden age" of vaccine development, largely credited to the pandemic's use of mRNA technology to create COVID-19 vaccines.77

AstraZeneca is confident that its new version of COVID-19 antibody treatment could protect immunocompromised patients against all known virus variants.78 The Pfizer-BioNTech vaccine (BNT162b2) is safe and highly effective against COVID-19 in children as young as 6 months old. Emerging evidence suggests that 3 mRNA vaccine doses are needed to enhance immune responses against Omicron. A 2-dose series of the Moderna vaccine (mRNA-1273) for children aged 6 months to 5 years has an acceptable
safety profile and elicits immune responses consistent with higher doses given to older children, adolescents, and adults.\textsuperscript{79} Accordingly, the US Food and Drug Administration had expanded the emergency use authorization (EUA) of Pfizer and its partner BioNTech SE’s bivalent COVID-19 vaccine as a single booster dose for children six months through four years of age who have completed their initial three-dose vaccination with Pfizer’s original shot.\textsuperscript{80} Advisers to the U.S. Food and Drug Administration endorse full approval of Pfizer’s oral antiviral COVID-19 treatment Paxlovid for adults at high risk of progression to severe disease.\textsuperscript{81} A plan by the Biden administration to spend some $5 billion to jump-start efforts to develop new coronavirus vaccines and treatments is drawing kudos from scientists and pandemic experts.\textsuperscript{82}

As of April 12, 2023, 674.7 million vaccine doses had been administered in the United States. Overall, about 230.5 million people, or 69.4\% of the total U.S. population, had completed a primary series. About 55.6 million people, or 16.7\% of the U.S. population, had received an updated booster dose.\textsuperscript{83}

Changes in Public Health Policy as a Consequence of Politically-Driven US COVID-19 Policy

Impact on public health & environmental regulations.

During the PHE, the Centers for Medicare and Medicaid Services (CMS) allowed hospitals treating Medicare patients to make wider use of nurse practitioners and physician assistants. Newly-minted physicians not yet credentialed to work at a particular hospital were also reimbursed for treating Medicare patients, an acknowledgement of the backlog in credentialing processes during the pandemic. Similarly, training requirements for nursing home staff were relaxed. With the termination of the PHE, nursing homes will have to meet higher standards for training workers. To increase hospital capacity during the PHE, Medicare waived requirements limiting critical access hospitals and small hospitals located in rural areas to 25 inpatient beds, and limiting patient stays to 96 hours. On May 11, 2023, these limitations resumed.\textsuperscript{84}

During the PHE, the Drug Enforcement Administration (DEA) allowed health care providers to prescribe some controlled substances virtually, or over the phone, without first conducting an in-person medical evaluation. One of those medications is buprenorphine, an opioid used to prevent debilitating symptoms during withdrawal from other opioids. Research demonstrates that buprenorphine reduces the risk of overdose by more than 50\%. Experts have expressed concern that reducing access to buprenorphine might double the number of fatal opioid overdoses. Recent data indicate that initiation of buprenorphine in US hospitals has plateaued since 2018, with low retention rates of less than 25\%, based on data from more than 3 million individuals who began buprenorphine between January 2016 and October 2022.\textsuperscript{85-86} Similarly, the DEA intends to reduce telehealth access to initial 30-day supplies of other medications.
including Ambien, Valium, and Xanax. Even stricter policies will apply to prescriptive medications including Adderall, Ritalin, and oxycodone.\textsuperscript{87}

Additional changes are underway as a consequence of the termination of the PHE. Enhanced federal funding to states for COVID-related services and products will be phased down through Dec. 31, 2023, extending the time states can receive federally matched funds through the Consolidated Appropriations Act of 2023. People with private health insurance are likely to experience higher costs for COVID-19 tests. Coverage of COVID-19 vaccinations and boosters will continue until the federal government’s vaccination supply is depleted. The same is true for COVID-19 treatments. Medicare telehealth flexibilities will be extended through Dec. 31, 2024. Medicare cost-sharing for testing and treatments (except for oral antivirals) expired May 11, 2023. Medicaid and Children’s Health Insurance Program (CHIP) recipients will continue to receive approved vaccinations without charge, but testing and treatment without cost-sharing will expire during the third quarter of 2024. The Medicaid continuous enrollment provision ended March 31, 2023.\textsuperscript{88}

Since the PHE ended, the uninsured no longer have access to 100% coverage for free COVID-19 treatments, vaccines, and testing. The end of the enhanced Inpatient Prospective Payment System reimbursement rate on May 11, 2023 reduced the amount providers are paid for diagnosing people with COVID-19. Health Insurance Portability and Accountability Act (HIPAA) potential penalty waivers which had allowed providers to communicate with patients through telehealth (e.g., on a smartphone) without violating privacy laws and incurring penalties were also terminated on May 11, 2023.\textsuperscript{88}

The termination of the PHE will significantly change the way in which state and local public health departments monitor the spread of disease. The Department of Health and Human Services (HHS) no longer have the authority to require labs to report COVID testing data, increasing inconsistencies in COVID-19 tracking between states and even counties. Hospitals are not required to report COVID data to HHS on as frequent a basis.\textsuperscript{46} These changes will make it much more difficult to track COVID-19, which will impair response capability in the event of an outbreak. Although there has been no change in the virology of COVID-19, the CDC and other government agencies terminated COVID-19 safety protocols in April 2023.\textsuperscript{89-91}

The Biden administration’s decision to end the COVID-19 public health emergency in May 2023 brought sweeping changes across the health care system that go far beyond many people having to pay more for COVID tests.\textsuperscript{92} Effective May 12, 2023, COVID-19 OTC tests (HCPCS K1034) were no longer a covered benefit for Medicare.\textsuperscript{93} A Republican proposal to cancel unspent COVID-19 relief money could undercut healthcare for military veterans and pensions for blue-collar workers while doing little to improve the U.S. fiscal picture.\textsuperscript{94} Moderna Inc expects to price its COVID-19 vaccine at around $130 per dose in the U.S. going forward as purchases move to the private sector from the government.\textsuperscript{95}
Mixed messaging from government agencies continues regarding pandemic management. Part of the government’s We Can Do This campaign is a commercial that shows everyday people going about their lives, then reminds them that, “Because COVID is still out there and so are you,” it might be time to update your vaccine. But for many people, the message that COVID-19 is still a major concern is muffled if not absent. Many data tracking sources, both federal and others, are no longer routinely reporting the number of COVID-19 new cases, hospitalizations, and deaths. In general, US governmental guidance about additional booster vaccinations has been inconsistent. Over the past month, the CDC updated its COVID-19 booster shot guidelines to clarify that only a single dose of the latest bivalent booster is recommended at this time. Within a week, the FDA then announced that people ages 65 and older and those with a weak immune system may choose to get a second COVID-19 booster shot starting later this spring.

Telehealth

Early in 2020, consumer advocacy groups, the American Medical Association (AMA) and the American Psychological Association (APA) made repeated written appeals to CMS and the US Congress in an advocacy effort to make reimbursement available for telephonic (audio-only) telehealth care. On April 30, 2020, CMS responded, allowing reimbursement during the PHE for telephonic (audio-only) telehealth care for patients using Current Procedural Terminology (CPT) codes including those for routine psychotherapy. This important change in Medicare policy was a significant acknowledgement of the barriers to healthcare posed by the use of the internet and related IT for communication between patients and healthcare providers. The CMS policy change also induced private insurers to allow reimbursement for telephonic (audio-only) telehealth during the PHE, making healthcare more accessible to other populations with limited access to or fluency with IT.

The expansion of access to care made possible by reimbursement for telephonic (audio-only) telehealth extends far beyond the situational convenience it presented during the PHE. Telephonic telehealth makes healthcare accessible to an average of 95.5% of Medicare subscribers over the age of 70. Data from the RAND Corporation demonstrate that telephonic (audio-only) telehealth plays a unique role in bridging the digital gap for populations for whom videoconferencing web-based platforms are inaccessible or too difficult. Telephonic telehealth is recognized as a treatment modality with potential for addressing long-standing health inequities among historically marginalized and minoritized communities impacted disproportionately by the COVID-19 pandemic.

Based on the demonstrated effectiveness of telephonic telehealth during the COVID-19 pandemic, CMS has proposed the expansion of Medicare coverage to audio-only communication technology for telehealth services to diagnose, evaluate, or treat established patients with mental health and substance abuse disorders. The CMS proposal includes Medicare coverage for
telephonic mental health services to beneficiaries who are unable to leave their homes for appointments. The CMS proposal has support in the US Congress from US senators who describe telephonic telehealth as a “lifeline” for nurses. Protecting the availability of audio-only telehealth is a priority for the following reasons:

1) While a high-speed internet connection and broadband services are necessary for videoconferencing telehealth, about a third of Native Americans in the United States live on tribal lands with poor internet access, where suicide and incest are more common, and treatment for substance abuse disorders is difficult to find.

2) Telephonic telehealth is cost-effective and ensures the availability of healthcare even without high-speed connectivity.

3) Videoconferencing telehealth services require digital literacy. Similar to research data reported above, the Bipartisan Policy Center in collaboration with Social Sciences Research Solutions found that older Americans use telephonic (audio-only) telehealth significantly more than videoconferencing telehealth visits. Their research indicates that 42% of older adults report some kind of technology or access barrier when participating in telehealth videoconferencing, with higher frequency of difficulties with advanced aged and for people in rural areas. They also note that videoconferencing is significantly more difficult to coordinate for caregivers of family members.¹²⁴

Research by the AMA is consistent with the RAND Corporation’s findings. The AMA investigated the relative utility, accessibility and quality of various telehealth modalities. The AMA found that telehealth reimbursement and services currently encompass all primary forms of healthcare, with high satisfaction ratings from both patients and healthcare providers. The AMA states that telephonic (audio-only) telehealth will remain an essential component of access to care, especially for patients with limited IT fluency. The AMA report suggests that policymakers support audio-only telehealth policies to reduce digital inequities as efforts are made to reduce the digital divide.¹²⁵

Despite all of the data reported above, Medicare and private insurers indicate that termination of the PHE will be coupled with termination of more liberal telehealth policies.¹²⁶ Medicare and private insurers continue to seek loopholes allowing exclusion of various types of telehealth, including a requirement for at least one in-person visit within each 12-month period, making telehealth (and healthcare) inaccessible to the most vulnerable populations, including older adults.¹²⁷,¹²⁸ However, the potential costs associated with telehealth (fewer in-person interactions) appear to be outweighed by the dollar savings and expansions in access to healthcare.¹²⁹

Social and Political Consequences of the Infodemic and the Anti-Science Agenda

An unforeseen consequence of the infodemic has been the use of social media as a platform for unprecedented expressions of stigmatization, xenophobia, racism, and political divisiveness that extend far beyond COVID-19. These behaviors have significantly impacted the mental health of the American.
public, with dramatic increases in anxiety, panic, paranoia, depression, obsessive behaviors, hoarding, and post-traumatic stress disorder (PTSD).\textsuperscript{130,131}

The anti-scientific rhetoric President Trump generated in 2020 has had a lasting impact, extending far beyond COVID-19 safety protocols. Encouraged by the president, a large number of Americans openly opposed COVID-19 safety protocols, characterizing them as violations of their personal rights.\textsuperscript{132} Governors of the most conservative Republican states supported the Trump anti-science agenda, refusing to impose stay-at-home orders, and experiencing widespread COVID-19 outbreaks.\textsuperscript{12}

Emboldened by the absence of consequences for their dismissal of federal COVID-19 safety standards, conservative states including Texas, Florida and Idaho have made increasingly aggressive moves to limit women’s reproductive rights, leading to a controversial decision by the US Supreme Court to reverse Roe v. Wade.\textsuperscript{133} Thirteen politically conservative states have passed additional legislation criminalizing women who seek abortions, and anyone who aids them in doing so. In April 2023, Idaho passed a new “abortion trafficking” law, the first of its kind in the U.S. The law makes it illegal to either obtain abortion pills for a minor or to help them leave the state for an abortion without their parents’ knowledge and consent.\textsuperscript{134}

In April 2023, Florida Rep. Stan McClain proposed House Bill 1069, which requires that sexual health instruction, including health education, sexually transmitted diseases and human sexuality, be restricted to students in grades six through 12.\textsuperscript{135} “Menarche is defined as the first menstrual period in a female adolescent. Menarche typically occurs between the ages of 10 and 16, with the average age of onset being 12.4 years.”\textsuperscript{51} The bill has generated a negative national reaction from groups concerned that it would provide no information to young women about menstruation prior to their first period.\textsuperscript{135,136}

Similarly, since the beginning of 2023, over 450 legislative bills have been introduced in the US restricting LGBTQ rights.\textsuperscript{137,138} These include Republican calls to ban gay marriage through legislation in Iowa and Tennessee, and proposed legislation in Florida that would limit protections for same-sex couples, including a bill that would give the state the right to separate transgender children from their parents. In Florida, in a single day over 20 bills were introduced by Republican state legislators limiting the rights of LGBTQ community. In February 2023, Tennessee’s legislature passed a law restricting drag performances in public and/or in front of children. In March 2023, West Virginia’s attorney general announced that the state will ask the US Supreme Court to allow enforcement of a law banning transgender athletes from female sports teams. The American Civil Liberties Union (ACLU) is currently tracking 469 bills intended to limit or remove the rights of the LGBTQ population.\textsuperscript{139} The political tensions surrounding COVID-19 policy are recognized as potent stressors, which have long been known to induce lasting brain changes.\textsuperscript{130} An observable manifestation of growing domestic tension is the
unprecedented increase in US gun violence in 2023. 2022 achieved a record high total of 20,200 gun deaths of all kinds, including mass shootings, murders, defensive use, accidental shootings and suicides. To date, in 2023 there have already been a total of 13,602 US gun deaths.140

Conclusion

US access to healthcare has been a largely unnoticed victim of the COVID-19 pandemic. Described as “The double whammy of pandemic burnout and the aging of baby boomer physicians,” a recent survey by Elsevier Health predicts that up to 75% of healthcare workers will leave the profession by 2025, supporting a 2020 study conducted by the Association of American Medical Colleges (AAMC) that projected a shortfall of up to 139,000 physicians by 2033.141 In 2021, the Association of American Medical Colleges projected that the U.S. will face a shortage of between 17,800 and 48,000 primary care doctors (in that one specialty alone) by 2034. By that time, the population of Americans 65 and older—a demographic that will rely the most on these providers—will grow by 42.4%. Meanwhile, the existing supply of doctors is itself going gray. A third of Massachusetts primary care doctors are 60 or older. The Association of American Medical Colleges predicts that in the next decade, 40% of active doctors nationwide will be at least 65 years old and moving into retirement.142,143

COVID-19 itself remains a life-changing illness for many Americans. Overlooked by mainstream media, long COVID affects about 20% of people diagnosed with COVID-19.144

Although brain fog and other neurological symptoms are considered hallmark features of long COVID, specific neurological symptoms and their pertinent treatments vary from person to person, complicating treatment approaches on the community level.145 The majority of the population that completed a primary COVID-19 vaccination series has not received the bivalent booster. Ongoing monitoring of intention to receive a booster vaccination (or to have one’s child vaccinated with the booster vaccine), barriers to vaccination, and differences in bivalent booster vaccination coverage by demographic factors are considered key factors for improving and expanding tailored strategies to improve vaccination coverage. Communities might partner with medical providers, schools, and community organizations to make bivalent booster vaccination available onsite. Additional recommendations for encouraging current COVID-10 vaccinations and boosters include referrals for vaccination, reducing barriers to receipt of vaccination, employing trusted messengers to discuss vaccine safety and effectiveness with adults or parents and guardians of adolescents, and emphasizing the importance of staying up to date with COVID-19 vaccinations.146

Beyond inconsistent management of the COVID-19 pandemic, hard pushback from state governors and legislators opposed to COVID-19 safety protocols has led to a growing rift in American society. The rift is evidenced by the sheer volume of bills in play that represent retractions in social progress, with specific focus on restricting the rights of
women, the LGBTQ population and other minoritized or marginalized groups.\textsuperscript{133-139}

Pretending that the COVID-19 pandemic has been resolved in service of the economy has been a disastrous course of action. Premature easing of safety protocols has led to repeated surges of COVID-19. New COVID-19 variants continue to emerge, increasing the likelihood of another widespread outbreak. It is recommended that federal agencies including HHS and the CDC continue to share practical guidelines with the public, including masking in crowded public venues and staying current with COVID-19 vaccinations and boosters. It is also recommended that the administration provides more consistent support to these agencies for communicating consistent messages to the community, and generating enforcement policies that are practicable. Based on data demonstrating the significant increase in access to care provided by telephonic (audio-only) telehealth, especially among populations with limited access to or fluency with IT, it is recommended that the liberalization of telehealth policies during the PHE is made permanent without qualification or restriction. Specific liberalized policies include patient access to telehealth from home, parity of reimbursement for telehealth with equivalent in-person healthcare services, and reimbursement for telephonic (audio-only) healthcare visits. Making these policy changes permanent will make healthcare accessible to the populations most at risk, with consequent improvements in healthcare outcomes and cost savings for healthcare systems.\textsuperscript{12, 103, 131}
Corresponding Author:
Charles M. Lepkowsky, Ph.D.
Independent Practice
1143 Deer Trail Lane,
Solvang, CA 93463-9519, USA
Telephone: (805) 688-1229
Facsimile: (805) 686-9382
Email: clepkowsky@gmail.com

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