

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

Charles M. Lepkowsky

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

clepkowsky@gmail.com

Published: June 30, 2023

Citation: Lepkowsky C M, 2023. U.S. COVID-19 Policy in 2023 and its Consequences. Medical Research Archives, [online] 11(6).
<https://doi.org/10.18103/mra.v11i6.4022>

Copyright: © 2023 European Society of Medicine. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

DOI:
<https://doi.org/10.18103/mra.v11i6.4022>

ISSN: 2375-1924

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.

Keywords: COVID-19, policy, politics, WHO, CDC

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During the COVID-19 pandemic, US public health interventions have been inconsistent and prematurely withdrawn, with consequent successive waves of disease outbreak, increased fatality rates and damage to the economy.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.^{1,2} At risk populations were identified,³⁻⁶ 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.⁷⁻¹¹

During the ensuing three years, COVID-19 containment policies and protocols varied widely from nation to nation.¹² 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.¹³ 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.¹⁴ However, COVID-19 policy in the US reflected a slow response to the initial pandemic, and inconsistent policies over the ensuing three years.¹⁵⁻¹⁷

In January 2020, as most of the industrialized nations responded quickly to the identification of COVID-19 as a global pandemic,¹³ US President Trump dismissed COVID-19 as a threat to public safety.¹⁸ 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.¹⁹ In 2019, the Trump administration eliminated of PREDICT, a global early warning program specifically intended to identify viruses with pandemic potential.²⁰ Critical

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 (NCRID), 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."^{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.^{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.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.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%.³⁵ However, vaccinations lose potency over time, so the relevant number has become the current booster vaccination rate.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%.³⁹

In response to heightened tensions over COVID-19 safety protocol enforcement,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."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.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 2022.⁴³ Since 2020, the average annual US COVID-19 death toll has been 376,135.⁴³ For perspective, the highest annual number of gun-related deaths in the US (including accidental shootings and suicides) was 20,200 in 2022.⁴⁴

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.⁴⁵ 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.⁴⁶ Researchers have found for the first time that COVID infection has crossed the placenta and caused brain damage in two newborns.⁴⁷ 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.⁴⁸

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.⁴⁹ New research is shedding light on how an infection with COVID-19 may reactivate, or even cause, psoriasis.⁵⁰ COVID can more than triple the chance of being diagnosed with type 2 diabetes within a year of being infected.⁵¹

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.⁵² 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).⁵³ Black communities in general have been disproportionately affected by the COVID-19 pandemic.⁵⁴

Long COVID

The term "long COVID" emerged in May 2020, but many doctors remain uncertain about how to screen or treat it.⁵⁵ 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.⁵⁶ The Long COVID Handbook describes the clinical burden of long COVID as on par with heart disease or oncology.⁵⁷

Chest pain is a common lingering symptom of COVID.⁵⁸ 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.⁵⁹ 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.⁶⁰

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.⁶¹ 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.⁶² The severity of

neurologic and non-neurologic symptoms associated with long COVID appear to be linked to the severity of the initial infection.⁶³ 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.⁶⁴

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.⁶⁵

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.⁶⁶⁻⁶⁹

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.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.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.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.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.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.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 2022.⁸⁵⁻⁸⁶ 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.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, 2023.⁸⁸

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, 2023.⁸⁸

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.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 2023.⁸⁹⁻⁹¹

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.⁹² Effective May 12, 2023, COVID-19 OTC tests (HCPCS K1034) were no longer a covered benefit for Medicare.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.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.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.⁹⁶ 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.⁹⁷ 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.⁹⁸⁻¹⁰¹

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.¹⁰²

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.¹⁰³ 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.¹⁰⁴⁻¹²¹

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 70.¹¹⁵ 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.¹²² 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.¹²³

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).^{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.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.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*.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.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 12.¹³⁵ "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."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.^{135,136}

Similarly, since the beginning of 2023, over 450 legislative bills have been introduced in the US restricting LGBTQ rights.^{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.¹³⁹

The political tensions surrounding COVID-19 policy are recognized as potent stressors, which have long been known to induce lasting brain changes.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.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.^{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

Declarations

Funding:

This research received no specific grant from any funding agency in the public, commercial or not-for-profit sectors.

Competing Interests:

The author has no conflicts of interest to declare. There are no competing interests

involved in the research reported or the writing of this paper.

Consents, Contributorship, and Acknowledgements:

This paper was written according to the Ethical Principles of the American Psychological Association. The author is the sole author of this work, including its conception and design; the acquisition, analysis, and interpretation of data; drafting, writing, and editing; final approval of the version published; and accepts accountability for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

References:

1. Kannan S, Shaik Syed Ali P, Sheeza A, Hemalatha K. COVID-19 (Novel Coronavirus 2019) - recent trends. *Eur Rev Med Pharmacol Sci.* 2020 Feb;24(4):2006-2011. doi: 10.26355/eurrev_202002_20378. PMID: 32141569.
2. Guo YR, Cao QD, Hong ZS, Tan YY, Chen SD, Jin HJ, Tan KS, Wang DY, Yan Y. The origin, transmission and clinical therapies on coronavirus disease 2019 (COVID-19) outbreak - an update on the status. *Mil Med Res.* 2020 Mar 13;7(1):11. doi: 10.1186/s40779-020-00240-0. PMID: 32169119; PMCID: PMC7068984. <https://pubmed.ncbi.nlm.nih.gov/32169119/>
3. Shahid Z, Kalayanamitra R, McClafferty B, Kepko D, Ramgobin D, Patel R, Aggarwal CS, Vunnam R, Sahu N, Bhatt D, Jones K, Golamari R, Jain R. COVID-19 and older adults: What we know. *J Am Geriatr Soc.* 2020 May;68(5):926-929. doi: 10.1111/jgs.16472. Epub 2020 Apr 20. PMID: 32255507; PMCID: PMC7262251. <https://pubmed.ncbi.nlm.nih.gov/32255507/>
4. Fried LP, Tangen CM, Walston J, Newman AB, Hirsch C, Gottdiener J, Seeman T, Tracy R, Kop WJ, Burke G, McBurnie MA, Cardiovascular Health Study Collaborative Research Group. Frailty in older adults: evidence for a phenotype. *J Gerontol A Biol Sci Med Sci.* 2001;56:M146-156. doi: 10.1093/gerona/56.3.m146.
5. Nickel CH, Rueegg M, Pargger H, Bingisser R. Age, comorbidity, frailty status: effects on disposition and resource allocation during the COVID-19 pandemic. *Swiss Med Wkly* 2020; 150:w20269. doi: <https://doi.org/10.4414/smw.2020.20269>
6. Vellas C, Delobel P, de Souto Barreto P, Izopet J. COVID-19, Virology and geroscience: A perspective. *J Nutr Health Aging.* 2020;24(7):685-691. doi: 10.1007/s12603-020-1416-2. PMID: 32744561; PMCID: PMC7301052
7. Heinrich MA, Martina B, Prakash.2020. Nanomedicine strategies to target coronavirus. *J.Nano Today.* 2020 Dec;35:100961. doi: 10.1016/j.nantod.2020.100961.
8. Ahn DG, Shin HJ, Kim MH, Lee S, Kim HS, Myoung J, Kim BT, Kim SJ. Current status of epidemiology, diagnosis, therapeutics, and vaccines for novel Coronavirus disease 2019 (COVID-19). *J Microbiol Biotechnol.* 2020 Mar 28;30(3):313-324. doi: 10.4014/jmb.2003.03011. PMID: 32238757.
9. Harapan H, Itoh N, Yufika A, Winardi W, Keam S, Te H, Megawati D, Hayati Z, Wagner AL, Mudatsir M. Coronavirus disease 2019 (COVID-19): A literature review. *J Infect Public Health.* 2020 May;13(5):667-673. doi: 10.1016/j.jiph.2020.03.019. Epub 2020 Apr 8. PMID: 32340833; PMCID: PMC7142680.
10. Li H, Liu SM, Yu XH, Tang SL, Tang CK. Coronavirus disease 2019 (COVID-19): current status and future perspectives. *Int J Antimicrob Agents.* 2020 May;55(5):105951. doi: 10.1016/j.ijantimicag.2020.105951. Epub 2020 Mar 29. PMID: 32234466; PMCID: PMC7139247.
11. Pascarella G, Strumia A, Piliengo C, Bruno F, Del Buono R, Costa F, Scarlata S, Agrò FE. COVID-19 diagnosis and management: a comprehensive review. *J Intern Med.* 2020 Aug;288(2):192-206. doi: 10.1111/joim.13091. Epub 2020 May 13. PMID: 32348588; PMCID: PMC7267177.

12. Lepkowsky CM. U.S. COVID-19 Policy: Politics Trump Science. *Medical Research Archives*. 2022;10(7). <https://doi.org/10.18103/mra.v10i7.2962>
13. Wu S, Neill R, De Foo C, Chua A Q, Jung A, Haldane V et al. Aggressive containment, suppression, and mitigation of covid-19: lessons learnt from eight countries *BMJ*. 2021; 375 :e067508 doi:10.1136/bmj-2021-067508
14. Han E, Tan MMJ, Turk E, Sridhar D, Leung GM, Shibuya K, Asgari N, Oh J, García-Basteiro AL, Hanefeld J, Cook AR, Hsu LY, Teo YY, Heymann D, Clark H, McKee M, Legido-Quigley H. Lessons learnt from easing COVID-19 restrictions: an analysis of countries and regions in Asia Pacific and Europe. *Lancet*. 2020 Nov 7;396(10261):1525-1534. doi: 10.1016/S0140-6736(20)32007-9. Epub 2020 Sep 24. PMID: 32979936; PMCID: PMC7515628.
15. Althouse BM, Wallace B, Case B, et al. The unintended consequences of inconsistent pandemic control policies. Preprint. *medRxiv*. 2020;2020.08.21.20179473. Published 2020 Oct 28. doi:10.1101/2020.08.21.20179473
16. Cowen T. America's Vaccine Policies Are a Contradictory Mess. *Bloomberg Report, US Edition*. 2021. <https://www.bloomberg.com/opinion/articles/2021-07-27/america-s-covid-policies-are-a-contradictory-mess#xj4y7vzkg>
17. Gupta S, Nguyen TD, Rojas FL, Raman S, Lee B, Bento A, Simon KI, Wing C. Tracking public and private response to the covid-19 epidemic: Evidence from state and local government actions. *Am J Health Econ*. 2021;7(4). doi: <https://doi.org/10.1086/716197>
18. Ball S. From "hoax" to pandemic: Trump's shifting rhetoric on coronavirus. *France 24*. 2020 Mar 20. <https://www.france24.com/en/20200320-from-hoax-to-pandemic-trump-s-shifting-rhetoric-on-coronavirus>
19. Williams S. Head of global health security ousted from White House. *Scientist*. 2018 May 10. <https://www.the-scientist.com/the-nutshell/head-of-global-health-security-ousted-from-white-house-36618>.
20. Baumgaertner E, Rainey J. Trump administration ended pandemic early-warning program to detect coronaviruses. *Los Angeles Times*. 2020 Apr 2. <https://www.latimes.com/science/story/2020-04-02/coronavirus-trump-pandemic-program-viruses-detection>
21. Yamey G, Gonsalves G. Donald Trump: a political determinant of covid-19. *BMJ*. 2020; 369 :m1643 doi:10.1136/bmj.m1643
22. U.S. Department of Health and Human Services. Renewal of determination that a public health emergency exists. 2020 Jun 23. <https://www.phe.gov/emergency/news/healthactions/phe/Pages/covid19-23June2020.aspx>
23. World Health Organization. Managing the COVID-19 infodemic: Promoting healthy behaviours and mitigating the harm from misinformation and disinformation. <https://www.who.int/news/item/23-09-2020-managing-the-covid-19-infodemic-promoting-healthy-behaviours-and-mitigating-the-harm-from-misinformation-and-disinformation>

24. Seitz A. Fighting Wave of Misinfo, YouTube Bans False Vaccine Claims. *Medscape*. 2021 Sep 29. <https://www.medscape.com/viewarticle/959967>
25. Boone R. Misinformation Leads to Animosity Toward Healthcare Workers. *Medscape*. 2021 Sep 29. <https://www.medscape.com/viewarticle/959935>
26. Hollingsworth H. Doctors Grow Increasingly Frustrated Over COVID-19 Denial. *Medscape*. 2021 Oct 4. [https://www.medscape.com/viewarticle/960213?uac=397605ET&faf=1&sso=true&implID=3688711&src="https://sbcpa.orgWNL_dne5_211005_MSCPEDIT](https://www.medscape.com/viewarticle/960213?uac=397605ET&faf=1&sso=true&implID=3688711&src=)
27. Terry K. Most Americans Have Been Duped by COVID Misinformation: Survey. *Medscape*. 2021 Nov 9. <https://www.medscape.com/viewarticle/962627>
28. Almasy S, Maxouris C, Hanna J. Coronavirus hospitalizations in US reach an all-time high with more than 60,000. *CNN Health*. 2020 November 10. <https://www.cnn.com/2020/11/10/health/us-coronavirus-tuesday/index.html>
29. The White House. National COVID-19 preparedness plan. <https://www.whitehouse.gov/covidplan/>
30. Biden-Harris Campaign. The Biden plan to combat coronavirus (COVID-19) and prepare for future global health threats. 2020. <https://joebiden.com/covid-plan/>
31. U.S. Food and Drug Administration. Letter to Michelle Olsen at Moderna, TX, Inc. 2022 June 17. / <https://www.fda.gov/media/144636/download>
32. U.S. Food and Drug Administration. Janssen COVID-19 vaccine. 2022 May 5. <https://www.fda.gov/emergency-preparedness-and-response/coronavirus-disease-2019-covid-19/janssen-covid-19-vaccine>
33. Sun Y, Monnat SM. Rural-urban and within-rural differences in COVID-19 vaccination rates. *J Rural Health*. 2021 Sep 23:10.1111/jrh.12625. doi: 10.1111/jrh.12625.
34. Germani F, Biller-Andorno N. The anti-vaccination infodemic on social media: A behavioral analysis. *PLoS One*. 2021 Mar 3;16(3):e0247642. doi: 10.1371/journal.pone.0247642. PMID: 33657152; PMCID: PMC7928468.
35. Centers for Disease Control and Prevention. COVID-19 Vaccinations in the United States. https://covid.cdc.gov/covid-data-tracker/#vaccinations_vacc-people-additional-dose-totalpop
36. Katella K. Comparing the COVID-19 vaccines: How are they different? *Yale Medicine*. 2022 June 20. <https://www.yalemedicine.org/news/covid-19-vaccine-comparison>
37. Ellis R. COVID vaccines' protection dropped sharply over 6 months: Study. *WebMD News Brief*. 2021 Nov 5. <https://www.webmd.com/vaccines/covid-19-vaccine/news/20211105/covid-vaccine-protection-drops-study>
38. Ferdinands JM, Rao S, Dixon BE, et al. Waning 2-Dose and 3-Dose Effectiveness of mRNA Vaccines Against COVID-19–

Associated Emergency Department and Urgent Care Encounters and Hospitalizations Among Adults During Periods of Delta and Omicron Variant Predominance — VISION Network, 10 States, August 2021–January 2022. *MMWR Morb Mortal Wkly Rep.* 2022;71:255–263. doi:

<http://dx.doi.org/10.15585/mmwr.mm7107e2external icon>

39. New York Times. Track COVID-19 in the U.S. <https://www.nytimes.com/interactive/2023/us/covid-cases.html>

40. Moreland A, Herlihy C, Tynan MA, et al. Timing of State and Territorial COVID-19 Stay-at-Home Orders and Changes in Population Movement — United States, March 1–May 31, 2020. *MMWR Morb Mortal Wkly Rep.* 2020;69:1198–1203. DOI:

<http://dx.doi.org/10.15585/mmwr.mm6935a2>

41. Centers for Disease Control and Prevention. CDC updates and shortens recommended isolation and quarantine period for general population. Media statement, December 27, 2021.

<https://www.cdc.gov/media/releases/2021/s1227-isolation-quarantine-guidance.html#:~:text=Stay%20home%20for%205%20days,others%20for%205%20additional%20days>.

42. California Department of Public Health. Guidance for the use of face masks. March 3, 2023.

<https://www.cdph.ca.gov/Programs/CID/DCDC/Pages/COVID-19/guidance-for-face-coverings.aspx>

43. Centers for Disease Control and Prevention (CDC). COVID Data Tracker Weekly Review. April 14, 2023.

<https://www.cdc.gov/coronavirus/2019-ncov/covid-data/covidview/index.html>

44. Gun Violence Archive: Seven Year Review. <https://www.gunviolencearchive.org/>

45. Rong Z, Mai H, Kapoor S, Puelles VG, Czogalla J, Schädler J, Vering J, ... Ertürk A. SARS-CoV-2 Spike Protein Accumulation in the Skull-Meninges-Brain Axis: Potential Implications for Long-Term Neurological Complications in post-COVID-19. *bioRxiv.* 2023.04.04.535604; doi:

<https://doi.org/10.1101/2023.04.04.535604>

46. Edlow AG, Castro VM, Shook LL, Haneuse S, Kaimal AJ, Perlis RH. Sex-specific neurodevelopmental outcomes among offspring of mothers with SARS-CoV-2 infection during pregnancy. *JAMA Netw Open.* 2023;6(3):e234415.

<https://doi:10.1001/jamanetworkopen.2023.4415>

47. Frellick M. SARS-CoV-2 crosses placenta and infects brains of two infants: 'This is a first'. *MDedge Pediatric News.* April 6, 2023.

<https://www.mdedge.com/pediatrics/article/262261/covid-19-updates/sars-cov-2-crosses-placenta-and-infects-brains-two>

48. Chung J, Vig V, Sun X, Han X, O'Connor GT, Chen X, DeAngelis MM, Farrer LA, Subramanian ML. Genome-wide pleiotropy study identifies association of PDGFB with age-related macular degeneration and COVID-19 infection outcomes. *Journal of Clinical Medicine.* 2023; 12(1):109.

<https://doi.org/10.3390/jcm12010109>

49. Jackson C, Stewart ID, Plekhanova T, Cunningham PS, Hazel AL, Al-Shehly B, Aul R, ... Blaikley JF. Effects of sleep disturbance on dyspnoea and impaired lung function

following hospital admission due to COVID-19 in the UK: a prospective multicentre cohort study. *The Lancet, Respiratory Medicine*. April 15, 2023. [https://doi.org/10.1016/S2213-2600\(23\)00124-8](https://doi.org/10.1016/S2213-2600(23)00124-8)

50. Harris S. Psoriasis patients have higher risk of COVID-19 infection, but not hospitalization—COVID-19 mortality rates also similar among psoriasis and control groups. *MedPage Today*. January 20, 2023. <https://www.medpagetoday.com/reading-room/aad/psoriasis/102713>

51. Naveed Z, Velásquez García HA, Wong S, et al. Association of COVID-19 infection with incident diabetes. *JAMA Netw Open*. 2023;6(4):e238866. <https://doi:10.1001/jamanetworkopen.2023.8866>

52. O'Mary L. COVID remains a leading cause of death in the US. *WebMD Health News*. April 17, 2023. https://www.medscape.com/viewarticle/990857?ecd=wnl_dne7_230418_MSCPEDIT&uac=397605ET&implID=5347877

53. Bureau of Vital statistics, New York City. Summary of vital statistics 2020 bureau of vital statistics, New York City Department of Health and Mental Hygiene: The conquest of pestilence in New York City. April 27, 2023. <https://www.nyc.gov/assets/doh/downloads/pdf/vs/2020sum.pdf>

54. Ellis R. What effect has COVID-19 had on black children in the United States? *Medscape*. April 27, 2023. https://www.medscape.org/viewarticle/990385?sso=true&implID=5318733&uac=397605ET&src=wnl_tpal_230408_mscpedu

55. Levine H. Doctor's checklist for treating long COVID patients. *WebMD Health News*. April 04, 2023.

https://www.medscape.com/viewarticle/990429?ecd=WNL_trdalrt_pos1_230406&uac=397605ET&implID=5314563#vp_1

56. Rapaport L. Long COVID hitting some states, minorities, women harder. *WebMD Health News*. April 10, 2023.

<https://www.medscape.com/viewarticle/990582?src=FYE>

57. Gez Medinger G & Altmann D. *The Long COVID Handbook*. Cornerstone Press. October 20, 2022. ISBN: 9781529900125.

<https://www.penguin.co.uk/books/453380/the-long-covid-handbook-by-altmann-gez-medinger-and-professor-danny/9781529900125>

58. Adalja A. 'We're Struggling': Long COVID mystery has doctors in the dark. *WebMD Health News*. March 23, 2023.

<https://www.webmd.com/covid/news/20230323/long-covid-mystery-has-doctors-in-the-dark>

59. Cope J, Ingram I & Romanson B. Treating long-COVID brain fog with ME/CFS guidelines. *Medscape Psychiatry CDC Commentary*. March 27, 2023.

https://www.medscape.com/viewarticle/989887?ecd=WNL_trdalrt_pos1_230328&uac=397605ET&implID=5287936#vp_1

60. Office for National Statistics. Prevalence of ongoing symptoms following coronavirus (COVID-19) infection in the UK. March 30, 2023.

<https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/conditionsanddiseases/bulletins/prevalenceofongoingsymptomsfollowingcoronaviruscovid19infectionintheuk/30march2023>

61. Pena-Orbea, C., Lapin, B., Li, Y. et al. Sleep disturbance severity and correlates in post-acute sequelae of COVID-19 (PASC). *J Gen Intern Med.* 2023. <https://doi.org/10.1007/s11606-023-08187-3>
62. Tsampasian V, Elghazaly H, Chattopadhyay R, et al. Risk factors associated with post-COVID-19 condition: A systematic review and meta-analysis. *JAMA Intern Med.* Published online March 23, 2023. <https://doi:10.1001/jamainternmed.2023.0750>
63. Perez Giraldo GS, Ali ST, Kang AK, Patel TR, Budhiraja S, Gaalen JI, Lank GK,...Koralnik IJ. Neurologic manifestations of long COVID differ based on acute COVID-19 severity. *Ann Neurol.* March 26, 2023. <https://doi.org/10.1002/ana.26649>
64. Bosworth T. Explanation proposed for long-COVID symptoms in the CNS. *MDedge Neurology.* April 24, 2023. https://www.mdedge.com/neurology/article/262566/long-covid/explanation-proposed-long-covid-symptoms-cns?icd=login_success_email_match_norm
65. Tinker Ready T. Long COVID Mobile monitoring study hunts for answers. *WebMD Health News.* April 18, 2023. https://www.medscape.com/viewarticle/990927?src=wnl_edit_tpal&uac=397605ET&implD=5353445&faf=1
66. World Health Organization (WHO). Weekly epidemiological update on COVID-19 - 20 April 2023. Edition 139, April 20, 2023. <https://www.who.int/publications/m/item/weekly-epidemiological-update-on-covid-19---20-april-2023>
67. O'Mary L. New variant jumps to second place on COVID list. *WebMD Health News.* April 17, 2023. https://www.medscape.com/viewarticle/990828?ecd=wnl_dne1_230418_MSCPEDIT&uac=397605ET&implD=5347877
68. BBC News. XBB.1.16: India hospitals on alert as Covid-19 cases rise. April 10, 2023. <https://www.bbc.com/news/world-asia-india-65229417>
69. World Health Organization. WHO press conference on COVID-19 and other global health issues. March 23, 2023. <https://www.who.int/multi-media/details/who-press-conference-on-covid-19-and-other-global-health-issues---23-march-2023>
70. Centers for Disease Control and Prevention (CDC). COVID Data Tracker Weekly Review. April 14, 2023. <https://www.cdc.gov/coronavirus/2019-ncov/covid-data/covidview/index.html>
71. National Institutes of Health. SARS-CoV-2 infection weakens immune-cell response to vaccination: NIH-funded study suggests need to boost CD8+ T cell response after infection. Monday, March 20, 2023. <https://www.nih.gov/news-events/news-releases/sars-cov-2-infection-weakens-immune-cell-response-vaccination>
72. Mäkelä, A.R., Uğurlu, H., Hannula, L. et al. Intranasal trimeric shepabody inhibits SARS-CoV-2 including recent immunoevasive Omicron subvariants. *Nat Commun.* 2023; 14:1637. <https://doi.org/10.1038/s41467-023-37290-6>

73. Schäfer I, Oltrogge JH, Nestoriuc Y, et al. Expectations and prior experiences associated with adverse effects of COVID-19 vaccination. *JAMA Netw Open*. 2023; 6(3):e234732. <https://doi:10.1001/jamanetworkopen.2023.4732>
74. Labbé V, Contou D, Heming N, et al. Effects of standard-dose prophylactic, high-dose prophylactic, and therapeutic anticoagulation in patients with hypoxemic COVID-19 pneumonia: The ANTICOVID randomized clinical trial. *JAMA Intern Med*. Published online March 22, 2023. <https://doi:10.1001/jamainternmed.2023.0456>
75. Beasley D. Gilead details promising early COVID antiviral data, setting up larger studies. *Reuters Health Information*. April 05, 2023. https://www.medscape.com/viewarticle/990443?src=wnl_edit_tpal&uac=397605ET&implD=5313875&faf=1
76. Finnigan LEM, Cassar MP, Koziel MJ, Pradines J, Lamlum H, Azer K, Kirby D,...Raman B. Efficacy and tolerability of an endogenous metabolic modulator (AXA1125) in fatigue-predominant long COVID: a single-centre, double-blind, randomised controlled phase 2a pilot study. *eClinicalMedicine, The Lancet*. April 14, 2023. <https://doi.org/10.1016/j.eclinm.2023.101946>
77. Geddes L. Cancer and heart disease vaccines 'ready by end of the decade'. *The Guardian*. April 8, 2023. <https://www.theguardian.com/society/2023/apr/07/cancer-and-heart-disease-vaccines-ready-by-end-of-the-decade>
78. Fick M. AstraZeneca confident new COVID antibody protects against known variants. *Reuters Health Information*. April 19, 2023. https://www.medscape.com/viewarticle/990894?src=wnl_edit_tpal&uac=397605ET&implD=5356718&faf=1
79. O'Mary L. How effective is the COVID-19 vaccine in young children? *Medscape: advances in prevention and management of COVID-19*. April 27, 2023. https://www.medscape.org/viewarticle/990831?src=wnl_tpal_230422_mscpedu&implD=5362050&uac=397605ET&sso=true
80. Jain P. FDA expands authorization of Pfizer bivalent COVID-19 shots in kids. *Reuters Health Information*. March 15, 2023. <https://www.medscape.com/viewarticle/989665?src=FYE>
81. Leo L & Khushi Mandowara K. FDA advisers back full approval for Pfizer's COVID treatment Paxlovid. *Reuters Health Information*. March 17, 2023. https://www.medscape.com/viewarticle/989729?ecd=wnl_dne10_230320_MSCPEDIT&uac=397605ET&implD=5261677
82. Ault A. Scientists laud \$5B 'Project Next Gen' to fund new COVID vaccines. *Medscape Medical News*. April 13, 2023. https://www.medscape.com/viewarticle/990742?ecd=wnl_dne4_230414_MSCPEDIT&uac=397605ET&implD=5336450
83. Centers for Disease Control and Prevention (CDC). COVID Data Tracker Weekly Review. April 14, 2023. <https://www.cdc.gov/coronavirus/2019-ncov/covid-data/covidview/index.html>
84. Pradhan R. End of COVID emergency will usher in changes across the US health system. *Kaiser Health News*. March 22, 2023. <https://www.medscape.com/viewarticle/9899>

[82?ecd=wnl_dne10_230323_MSCPEDIT&uac=397605ET&implID=5271396#vp_2](https://doi.org/10.1001/jama.2023.1207)

85. Chua K, Nguyen TD, Zhang J, Conti RM, Lagisetty P, Bohnert AS. Trends in Buprenorphine Initiation and Retention in the United States, 2016-2022. *JAMA*. 2023; 329(16):1402–1404.

<https://doi.org/10.1001/jama.2023.1207>

86. Splete H. Why Is Buprenorphine Use Flatlining? *Medscape Medical News*. April 26, 2023.

https://www.medscape.com/viewarticle/991234?ecd=WNL_mdpls_230428_mscpedit_psy_ch&uac=397605ET&spon=12&implID=5380143#vp_1

87. National Safety Council. Drug Overdoses. April 30, 2023.

<https://injuryfacts.nsc.org/home-and-community/safety-topics/drugoverdoses/#:~:text=The%20number%20of%20preventable%20deaths,also%20an%20all%2Dtime%20high>

88. McNamara D & Davis KW. COVID emergency orders ending: What's next? *WebMD Health News*. February 1, 2023.

https://www.medscape.com/viewarticle/987781#vp_2

89. Centers for Disease Control and Prevention (CDC). COVID-19 by county. *CDC COVID-19 Your Health*. August 11, 2022.

<https://www.cdc.gov/coronavirus/2019-ncov/your-health/covid-by-county.html>

90. California Department of Public Health. Guidance for the use of face masks. March 3, 2023.

<https://www.cdph.ca.gov/Programs/CID/DCDC/Pages/COVID-19/guidance-for-face-coverings.aspx>

91. California Department of Public Health. State Public Health Officer Order of March 3, 2023.

<https://www.cdph.ca.gov/Programs/CID/DCDC/pages/covid-19/order-of-the-state-public-health-officer-health-care-worker-vaccine-requirement.aspx>

92. Pradhan R. End of COVID emergency will usher in changes across the US health system. *Kaiser Health News*. March 22, 2023.

https://www.medscape.com/viewarticle/989982?ecd=wnl_dne10_230323_MSCPEDIT&uac=397605ET&implID=5271396#vp_2

93. Noridian Healthcare Solutions. COVID-19 over the counter (OTC) test coverage ends May 11, 2023. *Medicare Fees and News*. April 5, 2023.

<https://med.noridianmedicare.com/web/jea/article-detail/-/view/10521/covid-19-over-the-counter-otc-test-coverage-ends-may-11-2023>

94. Sullivan A. Veterans, carpenters, and vaccines: What's at stake if US COVID aid is canceled. *Reuters Health Information*. March 20, 2023.

https://www.medscape.com/viewarticle/989779?src=wnl_edit_tpal&uac=397605ET&implID=5266608&faf=1#vp_1

95. Wingrove P. Moderna expects to price its COVID vaccine at about \$130 in the US. *Reuters Health Information*. March 21, 2023.

https://www.medscape.com/viewarticle/989904?src=wnl_edit_tpal&uac=397605ET&implID=5269681&faf=1

96. Doheny K. As COVID Tracking wanes, are we letting our guard down too soon? *WebMD Health News*. April 12, 2023.

https://www.medscape.com/viewarticle/990676?src=wnl_edit_tpal&uac=397605ET&implID=5334663&faf=1#vp_1

97. O'Mary L. Single bivalent COVID booster is enough for now: CDC. *WebMD Health News*. March 31, 2023. https://www.medscape.com/viewarticle/990339?ecd=wnl_dne5_230403_MSCPEDIT&uac=397605ET&implID=5302708
98. O'Mary L. FDA to OK second COVID booster for people 65 and older. *WebMD Health News*. April 04, 2023. https://www.medscape.com/viewarticle/990427?ecd=WNL_trdalrt_pos1_230405&uac=397605ET&implID=5311335
99. Essley Whyte L & Armour S. FDA may authorize additional Covid-19 booster shots. *Wall Street Journal: Health*. March 21, 2023. https://www.wsj.com/articles/fda-may-authorize-additional-covid-19-booster-shots-c85c0672?st=r8ieps7j1v05mrf&reflink=desktopwebshare_permalink
100. Ramirez-Feldman L. Is another bivalent COVID booster shot on the way? Here's what we know. *Yahoo News*. March 8, 2023. <https://news.yahoo.com/is-another-bivalent-covid-booster-shot-on-the-way-heres-what-we-know-143828625.html?guccounter=1>
101. Branswell H. FDA offers radio silence on question of spring Covid boosters, as other countries push ahead. *Stat*. March 16, 2023. <https://www.statnews.com/2023/03/16/fda-offers-radio-silence-on-question-of-spring-covid-boosters-as-other-countries-push-ahead/>
102. American Psychological Association Services, Inc. (2020). Phone only telehealth services for Medicare during COVID-19. <https://www.apaservices.org/practice/clinic/covid-19-telehealth-phone-only>. Accessed May 1, 2022.
103. Lepkowsky CM. Telehealth reimbursement allows access to mental health care during COVID-19. *American Journal of Geriatric Psychiatry*. 2020;28(8):898-899. <https://doi.org/10.1016/j.jagp.2020.05.008>
104. Dobransky K, Hargittai E. The disability divide in internet access and use. *Information, Communication & Society*. 2006;9(3):313-334. doi:10.1080/13691180600751298
105. Tanis ES, Palmer S, Wehmeyer M, Davies DK, Stock SE, Lobb K, Bishop B. Self-report computer-based survey of technology use by people with intellectual and developmental disabilities. *Intellectual and Developmental Disabilities*. 2012;50(1):53-68. doi:10.1352/1934-9556-50.1.53
106. Davies DK, Stock SE, King LR, Brown RB, Wehmeyer ML, Shogren KA. An interface to support independent use of facebook by people with intellectual disability. *Intellectual and Developmental Disabilities*. 2015;53(1):30-41. doi: 10.1352/1934-9556-53.1.30
107. Anthony DL, Campos-Castillo C, Lim CPS. Who isn't using patient portals and why? Evidence and implications from a national sample of US adults. *Health Affairs*. 2018;37(12):1948-1954. doi:10.1377/hlthaff.2018.05117
108. Lepkowsky CM. Functional Assessment of Comfort Employing Technology Scale (FACETS): A brief intake instrument to facilitate treatment planning and communication with patients. *Psychology Behav Med Open Access J*. 2017;1(1):9-13. http://ologyjournals.com/pbmoaj/pbmoaj_00002.pdf
109. Lepkowsky CM. Technological diversity: A cost-saving, person-centered alternative to systemic technocentrism and technological

provider bias. *Psychology Behav Med Open Access J.* 2017;1(1):1-7.

http://ologyjournals.com/pbmoaj/pbmoaj_00001.pdf

110. Lepkowsky CM. Functional Assessment of Currently Employed Technology Scale (FACETS) 4.0: Update on a brief intake instrument to facilitate treatment planning and communication with patients. *International Journal of Medical Science and Clinical Invention.* 2020;7(5):4802-4809.

<https://doi.org/10.18535/ijmsci/v7i05.03>

111. Niehaves B, Plattfaut R. Internet adoption by the elderly: employing IS technology acceptance theories for understanding the age-related digital divide. *European Journal of Information Systems.* 2014;23(6):708–726.

<https://www.tandfonline.com/doi/full/10.1057/ejis.2013.19>

112. Vroman KG, Arthanat S, Lysack C. “Who over 65 is online?” Older adults’ dispositions toward information communication technology. *Computers in Human Behavior.* 2015;43:156-166. doi:10.1016/j.chb.2014.10.018

113. Anderson M, Perrin A. Tech adoption climbs among older adults. *Pew Research Center: Internet & Technology.* 2017.

<http://www.pewinternet.org/2017/05/17/tech-adoption-climbs-among-older-adults/>.

Accessed 06/24/2017.

114. U.S. Census Bureau. Computer and internet use in the United States: 2003. 2003. <https://www.census.gov/prod/2005pubs/p23-208.pdf>. Accessed 06/24/2017.

115. Lepkowsky CM, Arndt S. The internet: Barrier to health care for older adults? *Practice Innovations.* 2019;4(2):124-132.

<https://doi.org/10.1037/pri0000089>

116. Center for Medicare Advocacy. CMS report finds access to care problems for low-income Medicare beneficiaries. 2015.

<http://www.medicareadvocacy.org/cms-report-finds-access-to-care-problems-for-low-income-medicare-beneficiaries/>. Accessed 08/15/2018.

117. Hoffman D, Novak T, Schlosser A. The evolution of the digital divide: how gaps in internet access may impact electronic commerce. *Journal of Computer-Mediated Communication.* 2000;5(3):JCMC534,

<https://doi.org/10.1111/j.1083-6101.2000.tb00341.x>

118. DiMaggio P, Hargittai E. From the 'Digital Divide' to 'Digital Inequality': Studying internet use as penetration increases. *Center for Arts and Cultural Policy Studies.* Working Paper #15. (2001).

<https://www.semanticscholar.org/paper/From-the-%27Digital-Divide%27-to-%27Digital-Inequality%27%3A-DiMaggio-Hargittai/dafc2865017233566d415370125286e41fd24ad2>

119. Dimaggio P, Hargittai E, Celeste C, Shafer S. Digital inequality: From unequal access to differentiated use. *Social Inequality.* 2004:255-400. ISBN 0871546205, 9780871546210.

<https://www.scholars.northwestern.edu/en/publications/digital-inequality-from-unequal-access-to-differentiated-use>

120. Payán DD, Rodriguez HP. Telehealth disparities. *Health Affairs.* 2021;40(8):1340. doi:10.1377/hlthaff.2021.00940

121. Hayes SL, Salzberg CA, McCarthy D, Radley D, Abrams MK, Shah T, Anderson G. High-need, high-cost patients: Who are they

and how do they use health care? A population-based comparison of demographics, health care use, and expenditures. *The Commonwealth Fund*. 2016.

<https://www.commonwealthfund.org/publications/issue-briefs/2016/aug/high-need-high-cost-patients-who-are-they-and-how-do-they-use>.

122. Uscher-Pines L, Arora N, Jones M, Lee A, Sousa JL, McCullough CM, Lee S, Martineau M, Predmore Z, Whaley CM, Ober AJ. Experiences of health centers in implementing telehealth visits for underserved patients during the COVID-19 pandemic: *Results from the Connected Care Accelerator Initiative, Santa Monica, Calif: RAND Corporation, RR-A1840-1*. 2022. As of May 04, 2022: https://www.rand.org/pubs/research_reports/RRA1840-1.html.

123. Equity in Telehealth: Taking Key Steps Forward. *American Medical Association*. 2022. <https://www.ama-assn.org/system/files/issue-brief-equity-in-telehealth.pdf>. Accessed May 10, 2022.

124. Maheu MM. Audio-Only Telehealth Update: A Classic Solution to a Modern Crisis. *Telehealth.org*. 2022. <https://telehealth.org/audio-only-telehealth/>

125. American Medical Association. 2021 Telehealth Survey Results. 2022. <https://www.ama-assn.org/system/files/telehealth-survey-report.pdf>

126. American Psychological Association. Telehealth after the pandemic: CMS outlines proposed changes. 2021.

<https://www.apaservices.org/practice/reimbursement/government/telehealth-after-pandemic>

127. American Psychological Association. Recent changes in CMS guidance for telehealth regarding the in-person visit requirement and place of service codes. 2022. <https://www.apaservices.org/practice/clinic/cms-telehealth-service-codes>

128. Centers for Medicare and Medicaid Services (CMS). CY2022 Telehealth update Medicare physician fee schedule. <https://www.cms.gov/files/document/mm12549-cy2022-telehealth-update-medicare-physician-fee-schedule.pdf>

129. Marshall L. Will telehealth save patients money or drive up costs? Yes and yes, experts say. *WebMD Health News*. April 05, 2023. https://www.medscape.com/viewarticle/990475?src=wnl_edit_tpal&uac=397605ET&implD=5313875&faf=1

130. Vyas A, Mitra R, Shankaranarayana Rao BS, Chattarji S. Chronic stress induces contrasting patterns of dendritic remodeling in hippocampal and amygdaloid neurons. *J Neurosci*. 2002 Aug 1;22(15):6810-8. doi: 10.1523/JNEUROSCI.22-15-06810.2002. PMID: 12151561; PMCID: PMC6758130.

131. Lepkowsky CM. COVID-19, Telehealth and Access to Care. In: Kumar, V., editor. *SARS-CoV-2 Origin and COVID-19 Pandemic Across the Globe* [Internet]. London: *IntechOpen*; 2021 [cited 2022 Jun 18]. Available from: <https://www.intechopen.com/chapters/77880> doi: 10.5772/intechopen.99300

132. Webb RM, Kurtz L. Politics v. science: How President Trump's war on science impacted public health and environmental regulation. *Prog Mol Biol Transl Sci.* 2022;188(1):65-80. doi: 10.1016/bs.pmbts.2021.11.006. Epub 2022 Jan 27. PMID: 35168747; PMCID: PMC8793038
133. Gostin LO. The US turns its back on women's reproductive rights: Sweeping restrictions criminalise women and healthworkers, widen inequality, and increase deaths. *BMJ.* 2022;377:o1206
<http://dx.doi.org/10.1136/bmj.o1206>
134. Associated Press. Idaho governor signs 'abortion trafficking' bill into law. *AP News.* April 6, 2023.
<https://apnews.com/article/idaho-abortion-minors-criminalization-b8fb4b6feb9b520d63f75432a1219588#:~:text=The%20new%20%E2%80%9C%20abortion%20trafficking%20%E2%80%9D%20law,their%20parents'%20knowledge%20and%20consent.>
135. Bennett B & Bennett B. Girls need to know about their periods. Now Florida Republicans want to ban that, too. *USA Today.* April 24, 2023.
<https://www.msn.com/en-us/news/us/girls-need-to-know-about-their-periods-now-florida-republicans-want-to-ban-that-too/ar-AA1afLft?ocid=sapphireappshare>
136. Marques P, Madeira T, Gama A. Menstrual cycle among adolescents: girls' awareness and influence of age at menarche and overweight. *Rev Paul Pediatr.* 2022; 40:e2020494.
137. American Civil Liberties Union (ACLU). Over 120 bills restricting LGBTQ rights introduced nationwide in 2023 so far. *ACLU Press Release.* January 19, 2023.
<https://www.aclu.org/press-releases/over-120-bills-restricting-lgbtq-rights-introduced-nationwide-2023-so-far>
138. Reuters. White House says attacks on LGBTQ rights are 'dangerous'. *Reuters US News.* March 10, 2023.
<https://www.reuters.com/world/us/white-house-says-attacks-lgbtq-rights-are-dangerous-2023-03-10/>
139. American Civil Liberties Union (ACLU). 2023 Legislative session: The ACLU is tracking 469 anti-LGBTQ bills in the U.S. *ACLU Press Release.* April 21, 2023.
<https://www.aclu.org/legislative-attacks-on-lgbtq-rights>
140. Gun Violence Archive: Seven Year Review. <https://www.gunviolencearchive.org/>
141. Hochwald L. Physicians may retire en masse soon. What does that mean for Medicine? *Medscape Medical News.* April 18, 2023.
https://www.medscape.com/viewarticle/990903?ecd=wnl_dne1_230419_MSCPEDIT&uac=397605ET&implID=5351615#vp_1
142. Association of American Medical Colleges. The Complexities of Physician Supply and Demand: Projections From 2019 to 2034.
<https://www.aamc.org/media/54681/download>
143. Dillon J. The doctor's visit of the future: Less touching, more tech. *WebMD Health News.* April 27, 2023.
https://www.medscape.com/viewarticle/991319?ecd=wnl_edit_tpal&uac=397605ET&implD=5381615&faf=1#vp_1

144. Cooney E. Estimates of long Covid are startlingly high. Here's how to understand them. *STAT Health*. July 6, 2022.

<https://www.statnews.com/2022/07/06/understanding-long-covid-estimates/>

145. Perez Giraldo GS, Ali ST, Kang AK, Patel TR, Budhiraja S, Gaelen JI, Lank GK, Clark JR, Mukherjee S, Singer T, Venkatesh A, Orban ZS, Lim PH, Jimenez M, Miller J, Taylor C, Szymanski AL, Scarpelli J, Graham EL, Balabanov RD, Barcelo BE, Cahan JG, Ruckman K, Shepard AG, Slutzky MW, LaFaver K, Kumthekar PU, Shetty NK, Carroll KS, Ho SU, Lukas RV, Batra A, Liotta EM, Korolnik IJ. Neurologic Manifestations of Long COVID Differ Based on Acute COVID-19 Severity. *Ann Neurol*. 2023, Mar 26. doi: 10.1002/ana.26649. Epub ahead of print. PMID: 36966460.

146. Lu P, Zhou T, Santibanez TA, Jain A, Black CL, Srivastav A, Hung M-C,...Singleton JA. COVID-19 bivalent booster vaccination coverage and intent to receive booster vaccination among adolescents and adults. *Morbidity and Mortality Weekly Report*. 2023;72(7):190-198.

<https://www.medscape.com/viewarticle/988537>