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MAY 2021

Why Vaccine Confidence Matters to National Security

A REPORT OF THE CSIS-LSHTM HIGH-LEVEL PANEL ON VACCINE CONFIDENCE AND MISINFORMATION

CO-CHAIRS
Heidi J. Larson
J. Stephen Morrison

PROJECT DIRECTOR
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CSIS | CENTER FOR STRATEGIC & INTERNATIONAL STUDIES

LONDON SCHOOL of HYGIENE & TROPICAL MEDICINE



THE VACCINE CONFIDENCE PROJECT

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Since 2008, the Global Health Policy Center's goal has been to generate independent, forward-thinking, and multifaceted analyses that reach a bipartisan audience and shape U.S. policy approaches on global health. We do this by undertaking policy-relevant research and bringing together diverse stakeholders—U.S. policymakers from across the aisle, global health experts, and global health and foreign policy practitioners—to discuss critical issues and develop recommendations regarding U.S. global health leadership, policies, and programs. To do this, we capitalize on our expertise in health security, infectious disease, and women's and family health, as well as the expertise of the broader CSIS expert community on regional politics, national security, and development challenges, to examine the geopolitical issues affecting current and future global health activities.

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About the LSHTM Vaccine Confidence Project™

The Vaccine Confidence Project™ (VCP) was established in 2010 to monitor public confidence in immunization programs by building an information surveillance system for early detection of public concerns around vaccines; by applying a diagnostic tool to data collected to determine the risk level of public concerns in terms of their potential to disrupt vaccine programs; and, finally, to provide analysis and guidance for early response and engagement with the public to ensure sustained confidence in vaccines and immunization. The VCP™ also developed a Vaccine Confidence Index™ as a tool for mapping and monitoring confidence globally.

Led by Prof. Heidi J. Larson, the VCP™ team is an interdisciplinary and international group of researchers with expertise in anthropology, digital analytics, epidemiology, policy, psychology, risk communications, and mathematical modelling. Vaccine confidence is not a one-dimensional issue, and so the VCP™ cuts across disciplines to produce innovative research and policy recommendations.

While the VCP™ is a global network of researchers and analysts, the core team is based at the London School of Hygiene & Tropical Medicine (LSHTM). Founded in 1899, the School is renowned for its research, postgraduate studies, and continuing education in public and global health. The School has an international presence and collaborative ethos, and is uniquely placed to help shape health policy and translate research findings into tangible impact.

About the High-Level Panel on Vaccine Confidence and Misinformation

In July 2020, the Center for Strategic and International Studies' (CSIS) Global Health Policy Center and the London School of Hygiene & Tropical Medicine's (LSHTM) Vaccine Confidence Project™ convened a high-level panel of experts to consider the urgent challenges of vaccine hesitancy, misinformation, and U.S. national security. In October 2020, the panel issued a call to action to address these issues in the context of the Covid-19 crisis.

The panel is co-chaired by J. Stephen Morrison, senior vice president and director of the CSIS Global Health Policy Center, and Heidi J. Larson, professor of anthropology, risk, and decision science and director of the Vaccine Confidence Project™ at the London School of Hygiene & Tropical Medicine. The panel's secretariat is based at the CSIS Global Health Policy Center and is headed by Katherine E. Bliss, project director and senior fellow, and supported by Michaela Simoneau, program manager.

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The panel is grateful to Michaela Simoneau, for coordinating the work of the high-level panel's secretariat and for her analytical contributions to the graphic elements in the report; Samantha Chivers, for supporting communications associated with the panel's events and publications; Moti Heda, Maggie Hicks, Noelle Huhn, Lauren Mann, and Michael Rendelman for research assistance; and the CSIS Global Health Policy Center staff for their support of this project. Special thanks also to the entire team from the CSIS Dracopoulos iDeas Lab for their prodigious efforts producing this report and the associated multimedia products.

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Letter from the Co-Chairs

As the second year of the Covid-19 pandemic unfolds, the United States has entered a new phase of heightened hope in the race to control the pandemic and get ahead of evolving variants, with an imperative to move with accelerated speed to vaccinate at scale and to address disparities at home and abroad.

Where does the United States remain most vulnerable? Public trust and confidence in vaccines, in science, and in public health authorities remain fragile but absolutely pivotal dimensions of vaccine acceptance. A weary and often skeptical public searches for answers in a confusing information environment, beset by misinformation, falsehoods, and conspiracies. Historical legacies and partisan divisions in the United States shape attitudes in profound ways. Solutions are not immediately evident, simple, or easy to implement. In the United States and elsewhere, widespread vaccine hesitancy and refusal, if not addressed strategically and sensitively, can be significant barriers to achieving herd immunity, reopening economies and society, and easing racial and social strife. These are matters, at base, of U.S. national security.

Launched in July 2020, the High-Level Panel on Vaccine Confidence and Misinformation, jointly organized by the CSIS Global Health Policy Center and the London School of Hygiene & Tropical Medicine's Vaccine Confidence Project™, has brought together experts in public health, cybersecurity, national security, and the social sciences. Its mandate is to unravel the tangled web of factors shaping vaccine behaviors and choices and to identify concrete measures that will strengthen trust and confidence. Much can be gained, in our view, through enhanced and innovative engagement and partnerships that improve community perception and understanding of public health policies and the science and values that inform them. If successful, these actions can better protect Americans' health, promote U.S. national security, and inform U.S. international engagement to support similar gains globally.

We invite you to read the panel's report and recommendations, hope you find them timely and useful, and welcome your thoughts.



HEIDI J. LARSON

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Director, Vaccine Confidence Project™
London School of Hygiene & Tropical Medicine*



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*Senior Vice President
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Members of the CSIS-LSHTM High-Level Panel on Vaccine Confidence and Misinformation

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Disclaimer

The panelists participated in their individual capacities, not as representatives of their respective organizations. This report represents a majority consensus; no panelist is expected to endorse every single point contained in the document. In becoming a signatory to the report, panelists affirm their broad agreement with its findings and recommendations. Language included in this report does not imply institutional endorsement by the organizations that panelists represent, and the opinions expressed herein, including any implications for policy, should not be attributed to those organizations.

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Passenger Stop



CHAPTER 01

Introduction

SINCE JANUARY 2020, THE OUTBREAK OF NOVEL CORONAVIRUS IN THE UNITED STATES HAS LED TO MORE THAN 32 MILLION CONFIRMED CASES, AND MORE THAN 577,000 DEATHS, WITH SEVERAL STATES REPORTING HOSPITAL SYSTEMS AND INTENSIVE CARE UNITS AT, OR OVER, CAPACITY.

The United States leads the world with more than one-fifth of the more than 153 million reported cases and nearly 20 percent of all reported deaths.¹

Confirmed Covid-19 cases in the United States have varied by state and county, with minority groups being hit especially hard.² Of the 15.9 million cases for which race or ethnicity data was available on May 3, 2021, 29.1 percent were Hispanic/Latino, yet Hispanics account for an estimated 18.5 percent of the population.³ And Blacks, an estimated 12.5 percent of the U.S. population, account for nearly 14 percent of deaths.

Under the administration of Donald J. Trump, the federal government invested billions of taxpayer dollars into Operation Warp Speed (OWS), a public-private partnership led by the Departments of Defense and Health and Human Services and involving multiple federal agencies and pharmaceutical companies, with the intent of delivering more than 300 million vaccines to people living in the United States by the end of 2021.

In December of 2020, the Food and Drug Administration (FDA) granted emergency use authorization for two vaccines, and on February 26 its Vaccines and Related Biological

Products Advisory Committee (VRBPAC) approved the application of Janssen Biotech Inc. (Johnson & Johnson) for emergency use authorization for its one dose vaccine.⁴ Following the completion of its own phase III clinical trials, AstraZeneca also indicated on March 22 that it will prepare to seek FDA emergency use authorization in the United States.⁵ The Department of Health and Human Services (HHS) has allocated shipments of vaccines to states, territories, tribal areas, and major urban centers, leaving distribution planning largely up to local governing bodies in those entities.⁶

In communities across the country, the percentage of positive tests in minority communities has been routinely higher than majority white neighborhoods in the same areas, and yet early vaccine distribution data shows that whites within eligible recipient groups have secured a disproportionately high percentage of available vaccines.⁷

“There have been a lot of opportunities to talk about the reasons why we have disparities in Covid-related outcomes in the United States. These disparities are not due to the acute nature of the emerging infectious disease, but are rooted in the systemic nature of what causes disparities in health outcomes and healthcare disparities overall. In order to eliminate these disparities in Covid-19-related outcomes, whether it be treatment disparities or the vaccine disparities that we have the potential to see, we need to engage multiple sectors of government beyond governmental public health in the Covid-19 response.”

*LaQuandra S. Nesbitt,
District of Columbia Department of Health*

Differential access to online registration services or availability to wait at mass vaccination sites during workday hours may account for some of the racial disparities in access to the Covid-19 vaccines. At the same time, historic experience of discrimination within the health system is contributing to vaccine hesitancy on the part of many Black and Latino populations.⁸

Insufficient attention has been paid to hesitancy and vaccine refusal among Republicans, including rural Republican voters. Recent surveys show that almost half of Republican men do not intend to get a Covid-19 vaccine.⁹ And 44 percent of Republicans indicate they will probably not, or definitely not, be vaccinated.¹⁰ Among Democrats, the number is much

lower, at 18 percent. As vaccine supply shifts from relative scarcity to abundance, there have been increased calls for former president Trump and other trusted Republican leaders to become more active in communicating the safety and value of vaccines to their supporters. In his February 28 address to the Conservative Political Action Conference (CPAC), former president Trump stated, “Everybody, go get your shot.”¹¹ On March 16 he further urged his followers to be vaccinated, saying he recommends the shots “to a lot of people who don’t want to get it, and a lot of those people voted for me.”¹²

“This pandemic has provided the deeply unfortunate answer to the question: ‘Will some leaders really seek advantage for themselves by deliberately politicizing otherwise uncontroversial public health steps that prevent mass death?’ In a crisis like this, responsible leaders have a duty of peer pressure: to persuade colleagues who possess influential platforms to be vocal vaccine proponents, and to confront and hold accountable disingenuous colleagues who seek to profit politically by perpetuating danger to us all.”

Joe Rospars, Blue State

The spread of misinformation through face-to-face conversations as well as through mainstream and digital media is also undermining confidence in vaccines. Extremist groups, including anti-vaccination groups, have used social media to spread misinformation and to organize protests or otherwise disrupt vaccination programs.¹³ And foreign actors, notably Russia and China, use misinformation about Covid-19 vaccines to raise questions about the motives of the U.S. government in distributing them to undermine the influence of the United States abroad.

With vaccines offering hope of slowing the outbreak, reaching Covid-19 herd immunity, restoring economic growth, and averting major national security challenges, it is important to understand both what makes people confident or hesitant about vaccines within the Covid-19 context and the extent to which misinformation is undermining vaccine confidence, as well as political stability.

In July 2020, the CSIS Global Health Policy Center joined with the London School of Hygiene & Tropical Medicine’s Vaccine Confidence Project™ to convene a bipartisan and international group of experts from public health, cybersecurity, public opinion research, and communications,

with the goal of assessing the implications of misinformation and vaccine confidence for U.S. national security within the Covid-19 context. The experts focused on two key questions: In what ways do vaccine hesitancy and misinformation impact national security? And what are the concrete, feasible steps that the U.S. government, Congress, social media, industry, advocates, and community leaders should stand behind to improve Americans’ health and security?

The High-Level Panel on Vaccine Confidence and Misinformation is co-chaired by J. Stephen Morrison, senior vice president at CSIS and director of the Global Health Policy Center, and Heidi J. Larson, professor of anthropology, risk, and decision science at the London School and founding director of its Vaccine Confidence Project™. Katherine E. Bliss, senior fellow with the CSIS Global Health Policy Center, is the project director.

As the panel met (virtually) over the summer and fall, members were emphatic about three things:

1. The dangerously low levels of public confidence in Covid-19 vaccines being reported represent a clear threat to the potential of the United States to effectively control and recover from the pandemic.
2. Making safe and highly effective vaccines accessible quickly and equitably is key to escaping the burden of an uncontrolled pandemic and reopening the economy and society. At the same time, the vaccines must be delivered to the public in a coordinated and equitable process built on reliable data, active outreach, and sensitivity to history to ensure public confidence in them.
3. Addressing the challenges of misinformation and disinformation about Covid-19 vaccines requires a multidisciplinary, multipronged approach.

In October, the panel issued a call to action, defining the challenge of waning vaccine confidence and misinformation about vaccines as a national security threat.¹⁴

This report builds on that call to action and recommends five steps to address the challenges of vaccine confidence and misinformation within the Covid-19 context:

1. Innovations in reaching diverse and underserved populations with vaccines delivered in the context of health and social services.
2. Pledges and actions by mainstream and digital media platforms to stop the spread of misinformation and to collaborate with health providers and the

scientific community to increase the availability of accurate content.

3. Increased engagement by key social and economic sectors to empower people to make informed choices about Covid-19 vaccines.
4. Greater executive branch coordination and action beyond the emergency.
5. Increased U.S. support for global immunization partners.

Since October, the panel has hosted a series of public discussions to facilitate interaction with a broad set of actors on ways to bolster vaccine confidence within the U.S. pandemic context. These online conversations have offered an opportunity to refine the original recommendations and reflect on the implications of the political transition and new efforts on the part of the Biden administration to strengthen public confidence in Covid-19 vaccines.

A number of educational programs have begun reaching out to key populations to help those who are hesitant

make informed decisions about Covid-19 vaccines. The Ad Council and COVID Collaborative have launched a \$50 million campaign—the COVID-19 Vaccine Education Initiative—to reach the communities hardest hit by the pandemic with the message that “It’s Up to You.”¹⁵ It is also encouraging social media “influencers” to share photographs and messages promoting the vaccines.¹⁶

“We need to look for trusted leaders in communities, train them up, and allow them to deliver the message. That really has been shown, in many settings, to be an effective way to get a public health message out. It is not an external person coming into a community to tell you what you need to do. It is someone who already has a level of trust, arming them with the information and data and letting them deliver that information and data in the language and the methods that work within those communities.”

Congressman Ami Bera (D-CA-07)

People line up early at the Jacob Javits Convention Center Covid-19 vaccination hub on March 4, 2021, in New York City.

TIMOTHY A. CLARY/AFP/GETTY IMAGES



The Black Coalition Against COVID-19 has mobilized healthcare personnel and other frontline workers to address the “reluctance on the part of many Americans, but particularly Americans of color, to follow the guidance that has been offered and, also, a very great reluctance to be willing to participate in the clinical trials for the vaccine and for accepting a vaccine once safe and proven.”¹⁷ And the CONVINCe project is a “global initiative to promote vaccine literacy generally and confidence in COVID-19 vaccines in particular.”¹⁸

“There is a lot more awareness today of the ways in which health misinformation can be deeply socially harmful: the organizations that have to counter these narratives are taking social media content more seriously, and the platforms are finally thinking about improving curation in what they surface. Countering health misinformation really requires a whole of society approach. My hope is that, particularly given the impactful experience of the pandemic, we will see sustained focus on developing solutions that will allow us to develop a better information ecosystem overall.”

Renée DiResta, Stanford Internet Observatory

Social media companies have taken deliberate steps to collaborate with public health authorities, including stepping up fact-checking efforts, banning ads that make false claims about Covid-19 vaccines, directing readers away from what is determined to be misinformation and toward public health sites, and altering algorithmic methods to reduce the amplification of false or inaccurate information about vaccines.¹⁹ Facebook has announced the formation of an independent oversight board to advise on the correct balance between freedom of expression and freedom from dangerous misinformation, and the company has taken measures to connect users with online tools that can help them learn when and where they can get a Covid-19 vaccine.²⁰

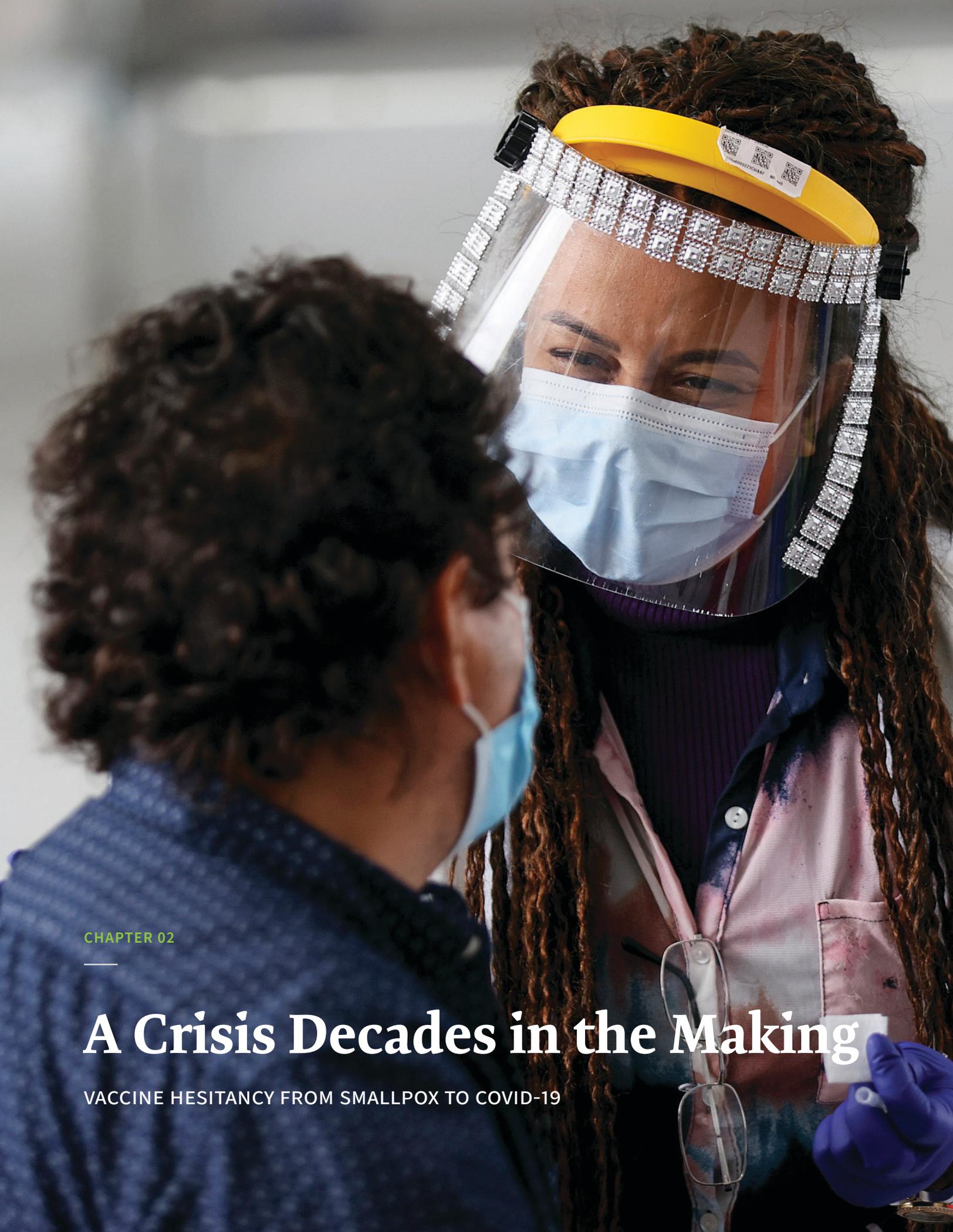
Since the presidential transition in January, the Biden administration has made bolstering vaccine confidence a priority, issuing an executive order creating a Covid-19 Equity Task Force and situating federal vaccination centers in minority communities hardest hit by the pandemic.²¹ With ambitious goals to accelerate the distribution of vaccines,

the administration announced an agreement on February 11 with Pfizer/BioNTech and Moderna for the purchase of an additional 200 million doses, ensuring enough supply to vaccinate every adult in the United States by July 2021.²² In early March, the Biden administration announced a plan to purchase additional doses of the recently authorized Johnson & Johnson vaccine, made possible through a White House-brokered production arrangement with Merck & Co.²³ And during his televised speech on the one-year anniversary of the World Health Organization’s (WHO) declaration that Covid-19 was a pandemic, President Biden directed all states and territories to make all people age 18 and older eligible for vaccines by May 1, 2020.²⁴

The recent passage of the American Rescue Plan Act of 2021, a \$1.9 trillion bill, is a vitally important step and includes up to \$1 billion to support the U.S. Centers for Disease Control and Prevention (CDC) in conducting education dedicated to building confidence in vaccines, including Covid-19 vaccines.²⁵ And a White House announcement on March 25 promises to commit additional resources to bring federal investments for vaccine confidence-boosting activities up to \$3 billion, with a “focus on reaching communities hardest hit by the pandemic.”²⁶

“Restoring vaccine confidence is critical to restoring the public health, economy, and social cohesion of our country—as well as strengthening our national security and preparedness. Unfortunately, vaccinations have also become a domain of competition and disinformation stoked by those seeking to undermine trust in institutions, modern medicine, and the United States. Our enemies see the benefit of sowing doubt and discord to undermine vaccine confidence in the United States.”

Juan Zarate, K2 Integrity



CHAPTER 02

A Crisis Decades in the Making

VACCINE HESITANCY FROM SMALLPOX TO COVID-19

VACCINE HESITANCY IS NOT A NEW PHENOMENON, NOR IS IT CONFINED TO THE UNITED STATES.

It has been steadily globalizing over many years, accelerating in recent decades thanks to rapidly evolving technological changes. Concerns about immunizations surfaced soon after the first smallpox vaccines were introduced in the eighteenth century, with opponents in places ranging from Europe and the North American colonies to the viceroyalty of Peru and the Philippines either minimizing the threat posed by smallpox or warning that the vaccines would cause other health problems, such as syphilis or typhoid.²⁷ These issues resurfaced in the early twentieth century, when urban planners focused on modernizing major cities imposed vaccine requirements on unwilling populations, who sometimes protested publicly.²⁸

Popular concerns about vaccines, and vaccine requirements, have intensified as global immunization programs have expanded and the number of available vaccines have multiplied, particularly during the years since the advent of the internet and other digital technologies in the mid-1990s. Vaccine hesitancy is highly context-specific. Where vaccine-preventable diseases are no longer common, people can become complacent, questioning the need for vaccines and contributing to low coverage. Vaccine mandates can also trigger opposition by parents, who reject state school or sport district vaccination mandates or who question the sheer number of vaccines required for young children.

While vaccine hesitancy may manifest in context-specific ways, there are common overarching themes that drive it. Some people view scientific language as elitist and inaccessible, concealing true safety risks. The rush to introduce a vaccine for swine flu in 1976 backfired when more than 400 people developed Guillain-Barré syndrome after being vaccinated, leading to decades of concerns about immunization safety.²⁹ A 1998 *Lancet* article suggesting that the measles, mumps, and rubella (MMR) vaccine led to higher rates of developmental disorders in young children triggered a significant wave of vaccine hesitancy that persists, even though the research was afterward discredited, the article retracted, and the lead author, Andrew Wakefield, stripped of his United Kingdom medical license.³⁰

Another set of concerns centers around the political or economic motives of vaccine developers and manufacturers. In the United States, a campaign in the state of Maine to repeal laws requiring school-aged children to be immunized gained traction, under the slogan “Reject Big Pharma,” suggesting that popular concerns about profits accruing to vaccine manufacturers play a role in undermining vaccine confidence.³¹

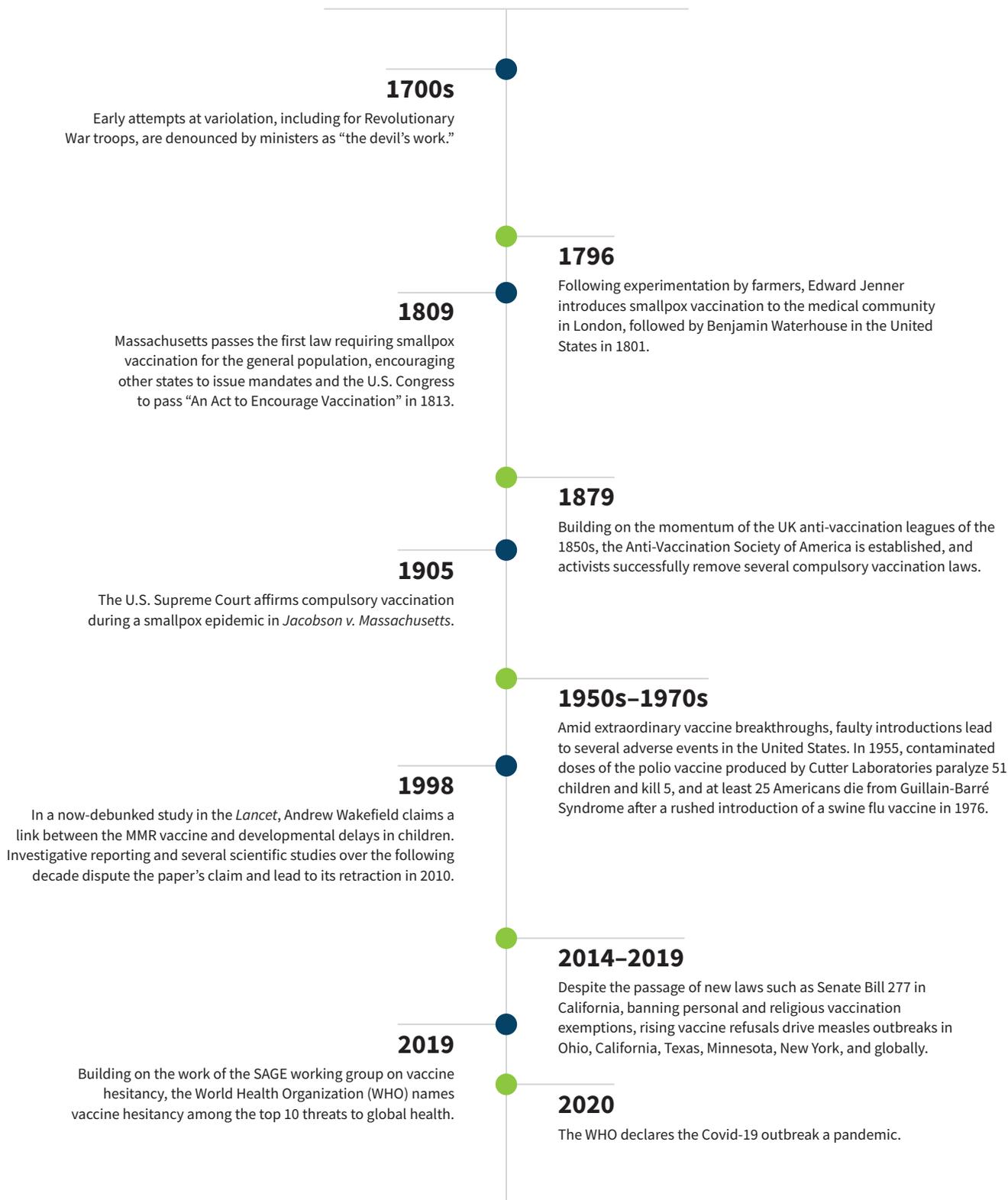
“We cannot forget nor ignore the larger context we are operating in. The politicization of the pandemic from day one, combined with our very polarized media environment, means that very different information and messaging content has been consumed by different segments of the public over the past year. There is perhaps no better calling for the need for leadership—bipartisan leadership—to help all Americans understand the true facts about vaccination so that they can make the best decisions for themselves and their families.”

Mollyann Brodie, Kaiser Family Foundation

A third narrative about vaccines emphasizes personal liberties and choice. In recent surveys, white men and those who identified as Republicans were more likely to express reservations about Covid-19 vaccines than their Black or more politically liberal counterparts.³² For rural respondents who said they were unlikely to choose to be vaccinated, the attitude may reflect a perception that Covid-19 has had a limited impact in their communities.³³ For some populations, vaccine hesitancy is also a link to conspiracy theories and political movements that broadly reject government law enforcement or

The Rise of Vaccine Hesitancy

This timeline highlights moments in the evolution of vaccine hesitancy in the United States. It does not include milestones that may contribute to contemporary mistrust of government or the medical establishment more broadly.



regulatory authority.³⁴ This viewpoint has strong religious components, with some adherents rejecting government science because they see it as undermining a Christian nationalist outlook.³⁵

Since the early 2000s, several initiatives have examined vaccine confidence from diverse angles, seeking to understand the nuanced distinctions between people who have questions about vaccine safety and efficacy and those who are more ideologically opposed to them. The Vaccine Confidence Project™ (VCP™) at the London School of Hygiene & Tropical Medicine was established in 2010 to “build a multi-disciplinary network of biomedical scientists, decision-making experts, psychologists and social scientists to examine the influences that affect individual decisions on whether to immunize.” With its Vaccine Confidence Index™, as well as social media listening and qualitative research, the VCP™ has built a body of work assessing the roles of trust and risk perception in shaping people’s views on immunizations in diverse locales.³⁶

In 2012, recognizing the growing scope and scale of the issues around waning vaccine confidence, the WHO’s Strategic Advisory Group of Experts on Immunization (SAGE) convened a “vaccine hesitancy” working group which was active from March 2012 to November 2014. The working group was tasked to define vaccine hesitancy; identify potential metrics and assess its impact in different settings; and suggest activities and the role of the WHO in addressing vaccine confidence challenges.³⁷

More recently, in 2019, a coalition of global partners, including foundations, government agencies, multilateral institutions, and program implementers, established the Vaccination Demand Hub to research the behavioral and social drivers of vaccination demand and acceptance in diverse settings and to test interventions to improve understanding and awareness of the benefits of immunizations, including dialogue with civil society groups.³⁸

Several additional groups have also focused on the challenges of misinformation, including the Sabin Vaccine Institute; First Draft; ORB International; the George Washington University Institute for Data, Democracy and Politics; the Stanford Internet Observatory at the Stanford Cyber Policy Center; and the Harvard Kennedy School.³⁹ Work on vaccines and misinformation in many of these institutions was underway before Covid-19, but it has become urgent as rumors and fears have proliferated at an exceptional pace.

“Science could be characterized as incremental verification toward truth, and in fact that is part of the issue now with Covid generally. The amount of science that has gushed towards us is really phenomenal, and as we learn, we also learn that the things we thought were true yesterday are not true today. For the public, this is really difficult, and it ends up dismissing the experts. In this Covid context—the Covid vaccine discussions and even more broadly—we must help people watch science in real time.”

Bruce Gellin, Sabin Vaccine Institute

When it comes to Covid-19, vaccine fears were already present before the launch of OWS, although the language of “warp speed” has amplified concerns about Covid-19 vaccines being developed too quickly.⁴⁰ Multiple news outlets have set up rumor-trackers to monitor and assess the narratives about Covid-19 vaccines that seem to be most prevalent.⁴¹ These range from claims that Jewish scientists have created the vaccines to alter recipients’ DNA to rumors that vaccines cause women to become infertile. Another theory proposes that the vaccines are meant to insert microchips or other kinds of tracking devices into peoples’ bodies.⁴²

There is fertile ground in the historic neglect and abuse of minority populations by health authorities, ranging from the infamous Tuskegee syphilis experiments on Black men begun in the 1930s to deliberate sterilizations of Mexican-American women in California in the 1970s.⁴³ The increase in reported hate crimes against Asian Americans during the pandemic has also stirred concerns among immigrant communities and people of Asian descent about visiting vaccine sites.⁴⁴

“Providing equitable access and motivating patients to take the vaccine requires all of us to understand the history, good and bad, of people of color and health in this country and to help us move forward together. History cannot and must not be discounted. It is part of our jobs as healthcare communicators to listen, to discuss, and to accept an individual’s total reality, the whole person. Not to judge, and not to try to make history irrelevant. Your story—like mine, like all of ours—matters greatly.”

*Denise A. Gray-Felder,
Communication for Social Change Consortium*

Barriers to Vaccine Confidence

While ease of access can be a large driver of vaccine acceptance, underlying mistrust in science, authority, or institutions may also serve as a barrier to vaccination. This chart explains some of the different, overlapping reasons people may have for being hesitant about vaccines.

SAFETY CONCERNS

Some individuals have genuine questions about the safety and efficacy of vaccines, and their hesitancy is not necessarily driven by a lack of trust in science or authority, but by a lack of information and an apprehension about a new intervention. Particularly in the context of Covid-19 vaccines, people may have concerns about the perceived speed of development, side effects, may feel that they do not have enough information about the vaccines from trusted sources, or may feel overwhelmed trying to make sense of the constant flow of new, often unverified information—what the World Health Organization has called the "infodemic."

ALTERNATIVE HEALTH

Some individuals may argue that vaccines are unnatural or not medically necessary, temporarily link negative personal experiences to vaccination, or may feel that they can make judgements about the available science, and which vaccines to take when, on their own terms. Alternative health communities may focus on homeopathy, naturopathy, and spiritual healing as alternatives to modern medical practices, rejecting the legitimacy of vaccination.

A LEGACY OF DISCRIMINATION

Historically disadvantaged communities, particularly communities of color, often cite systemic disparities in healthcare and a legacy of discrimination and government abuses as reasons for their enduring mistrust of the healthcare system. Many of these communities have been disproportionately impacted by the Covid-19 pandemic, so their questions about safety and efficacy are rooted not in a misunderstanding about the severity of the virus, or even a lack of trusted providers, but in mistrust of institutions.

GOVERNMENT REQUIREMENTS

Some groups opposed to vaccines have used arguments around personal choice and freedom to oppose vaccination. Following recent U.S. measles outbreaks in the 2010s, such opposition to state or district vaccine mandates has been gaining traction, particularly online. As with the anti-masking and reopening movements of the Covid-19 pandemic, these positions reflect a broader shift from a debate over facts and social responsibility to arguments around personal freedom and mistrust of authority.

POLITICAL ARGUMENTS

The Covid-19 pandemic has exposed differing levels of hesitancy based on political affiliation and the urban/rural divide. People of different political leanings may have faith in different authority figures, and individuals who have not been aware of serious cases of Covid-19 within their immediate social circles may be less likely to believe that vaccines are medically necessary to prevent infection with SARS-CoV-2.

RELIGIOUS OR MORAL OBJECTIONS

Religious leaders across several faiths and denominations have affirmed the importance of vaccination and the acceptability of vaccines under religious doctrine. Even so, some individuals may refuse vaccines based on arguments that equate vaccination to the apocalyptic "Mark of the Beast" described in the Book of Revelations in the Christian Bible or concerns about the origins of the cell lines used in vaccine research.

CONSPIRACY THEORIES

There is a small, vocal minority that adheres to and promotes conspiracies about vaccines, which may contribute to mainstream misinformation and hesitancy. Many of these hardline activists against vaccines are driven by a more general mistrust of science, government, public institutions, or private industry, and may also espouse conspiracies about QAnon, genetically modified foods (GMOs), 5G technology, etc.

While setting up vaccination hubs in centralized locations may help reach many people, the lessons from decades of global efforts to reach children in remote or hard-to-reach populations with vaccines are also relevant.⁴⁵ Offering vaccines in spaces beyond the health clinic, including markets, parks, recreation centers, and transportation hubs, and making appointments available to people outside of working hours will reach some who face challenges in getting to health facilities during conventional hours of operation. But making vaccines accessible is only part of the equation. Going door to door, talking with household decisionmakers, and answering their questions is also important.⁴⁶ This will require additional efforts to meet people where they are, at times and places that are most convenient for them, and to engage in meaningful exchange about their concerns.

“We wanted to look beyond politics to what is driving these divisions. And one factor has to do with people’s personal concerns, worries, sense of need. This is connected with politics, it is correlated, but it goes beyond politics. The American public is not monolithic, so how you respect people where they are is to start to see the different ways in which people are approaching this, and to help address their concerns.”

Cary Funk, Pew Research Center



CHAPTER 03

Health and Community within the Information Revolution

THE ROLE OF NEW DIGITAL COMMUNICATIONS IN AMPLIFYING THE SPREAD OF MISINFORMATION ABOUT CORONAVIRUS VACCINES HAS BEEN CENTRAL TO DEBATES ABOUT VACCINE CONFIDENCE IN THE COVID-19 CONTEXT.

The ability to reach hundreds of thousands of followers or contacts quickly with just a click of a mouse makes controlling the transmission of false information uniquely challenging, particularly when it is disseminated through a complex network of contacts.

“Based on some relatively recent research, we have learned that on social media, false news travels faster and farther than real news does—often much faster and much farther. If disinformation is picked up often enough, then it will be shown to more users, and soon the disinformation spreads quickly and broadly. Social media acts like a confirmation-bias machine, as others have noted. You can begin to see how this scales and can move public opinion in the wrong direction.”

Frederick R. Chang, Southern Methodist University

Digital communications have facilitated the broad dissemination of messages undermining trust in public institutions, such as the executive branch and Congress, as well as public health measures, including vaccines.

But while the digital technologies associated with social media create some new challenges, it is important to note that misinformation about vaccines travels along diverse pathways and that older debates about free speech and censorship have been important as well.

Newspapers and magazines, sometimes called legacy or traditional media, along with radio, have historically played a role in transmitting information and shaping public opinion. In the late nineteenth century in the United States, multiple publications flourished using what have come to be known as “yellow journalism”—practices that stoke rumors and public concerns to boost circulation.⁴⁷ It was not until the establishment of schools of journalism, codification of ethical guidelines for reporting and professional conduct, and landmark Supreme Court decisions around freedom of the press in the 1930s that a commonly accepted set of practices related to investigations, reporting of content, and protection of first amendment rights to free speech became widely disseminated.

“Credible sources are reporting on conspiracy theories, giving them oxygen and amplifying them, perhaps beyond the fringe where they would have otherwise stayed. We need a comprehensive strategy regarding under what conditions is it even worth debunking conspiracy theories versus simply keeping them on the fringe. We need to take a targeted and tailored approach there, which perhaps may be much more about preventing them from having a megaphone when everybody else just has their voice.”

David A. Broniatowski, the George Washington University

But the rapid evolution of new social media, accelerated by the adoption of cell phone technologies, has taken the processes of reporting, videotaping, and sharing information out of the exclusive hands of reporters and enabled the public to create and share their own news. This has led to important developments, such as the use of bystander videos as evidence of police abuses or the democratization of space for citizen journalists to post, share, comment, and debate opinion on public events without editorial review. It also enables propaganda networks intent on undermining U.S. global influence to raise questions about the safety of U.S.-made vaccines while amplifying posts portraying those produced in Russia or China in a more positive light.⁴⁸ Whether people

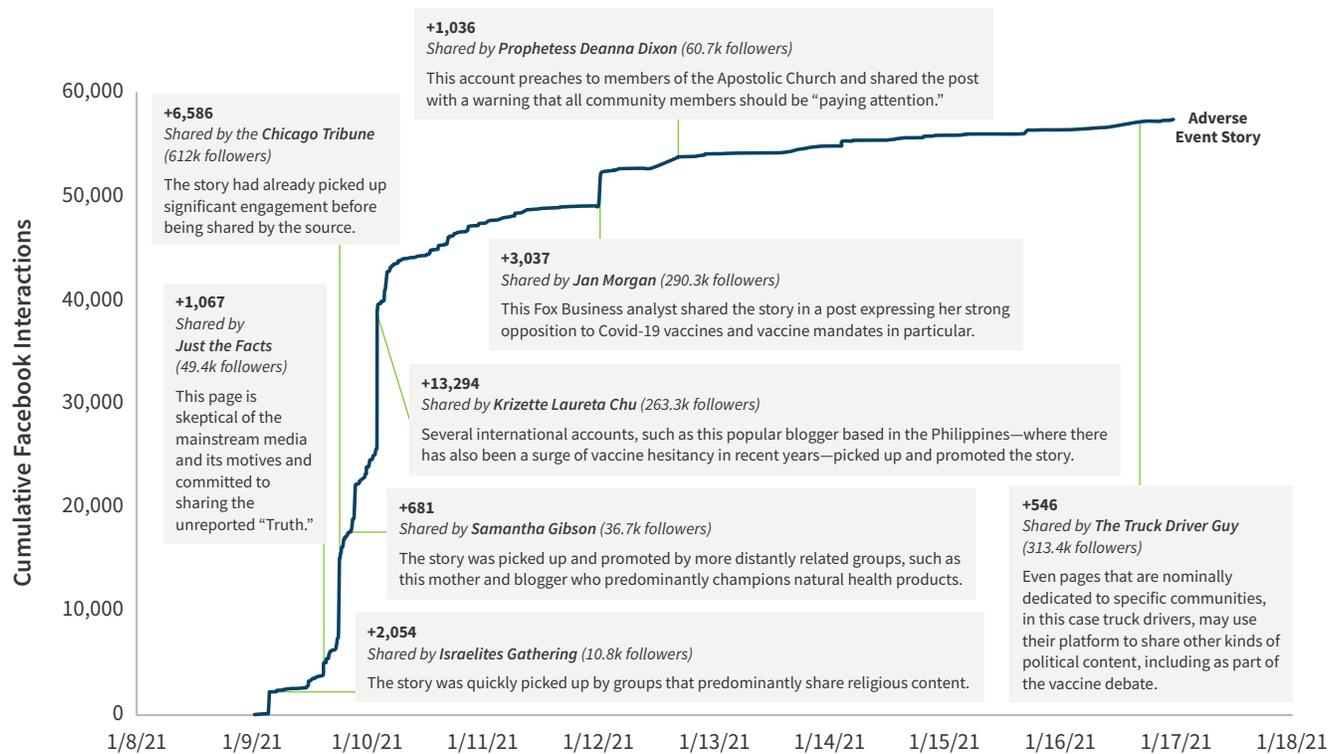
have a right to use their subscription to a private service such as Facebook, Twitter, TikTok, WhatsApp, Snapchat, or YouTube to sow doubt or disseminate false information has become a highly debated, vexing question. Among social media companies, there is no clear consensus on how to proceed.

Recognizing that their platforms have been used to spread misinformation, sometimes inadvertently and sometimes deliberately, companies have taken steps to censor or suppress malign content and bolster public health content. In October, YouTube announced it would ban Covid-19 vaccine information posted on its platform if it contradicted that of local health authorities or the WHO.⁴⁹

In December, as Covid-19 vaccines were approved and began to be distributed, Twitter announced that it would begin prioritizing “the removal of the most harmful misleading information and during the coming weeks, begin to label Tweets that contain potentially misleading information about the vaccines.” Furthermore, it released a comprehensive “misleading information” policy in March outlining steps the company will take to ensure the platform is not used to share demonstrably false or harmful information.⁵⁰ And Facebook has established the Covid-19 Information Center to connect people to official health sources, including messaging to increase immunization coverage. Facebook also recently announced an expansion of its policies to

Mis-influencers

Even as social media platforms take a harder stance against deliberately false claims about vaccines, misleading headlines and truths taken out of context fuel the online debate. A January 2021 article from the *South Florida Sun Sentinel*, republished by the *Chicago Tribune*, used a headline that implicates a Covid-19 vaccine in a doctor’s death two weeks later. Even though the CDC has not detected any patterns in cause of death that would indicate a safety problem with Covid-19 vaccines, the story was amplified by social media influencers across several different communities. Since being posted, the article has been interacted with over 4.7 million times on public and private Facebook pages and groups. The graph below tracks increasing engagement with the story, including reactions, likes, shares, and comments on public Facebook pages and groups, from January 9, 2021, through January 16, 2021.



Source: “Selected Adverse Events Reported after COVID-19 Vaccination,” U.S. Centers for Disease Control and Prevention, April 27, 2021, <https://www.cdc.gov/coronavirus/2019-ncov/vaccines/safety/adverse-events.html>; Data accessed using CrowdTangle, a public insights tool owned and operated by Facebook; Andrew Boryga, “A ‘healthy’ doctor died two weeks after getting a COVID-19 vaccine; CDC is investigating why,” *Chicago Tribune*, January 7, 2021, <https://www.chicagotribune.com/coronavirus/fl-nc-miami-doctor-vaccine-death-20210107-afzysvqqjbgwnetcy5v6ec62py-story.html>; and Miles Parks, “Few Facts, Millions Of Clicks: Fearmongering Vaccine Stories Go Viral Online,” NPR, March 25, 2021, <https://www.npr.org/2021/03/25/980035707/lying-through-truth-misleading-facts-fuel-vaccine-misinformation>.

suppress content that “coordinates, depicts, admits to, or promotes the active and deliberate spread of communicable diseases” and prohibit posts that coordinate “interference with the administration of the Covid-19 vaccine.”⁵¹

But with attorneys general of 12 states calling on social media leaders to do more to enforce their own policies with respect to vaccine misinformation, and, in particular, to step up efforts to mitigate the influence of a small number of social media users who appear to be highly influential in transmitting and amplifying false information, the pressure for a more comprehensive approach by the platforms is growing.⁵²

Managing posts that merely pose concerns or stimulate dialogue and sharing of perspectives has become controversial and raises analytical questions about posters’ intent and ethical dilemmas about who gets to determine which posts constitute false information, as opposed to questions or uncertainty, about Covid-19 vaccines. How to use automation to amplify public health content, including messages that encourage people to get vaccines, is another important challenge.

“It is critical to exercise caution in balancing safety and freedom of expression when it comes to addressing vaccine misinformation. We need to take a strong stance to address vaccine misinformation without impeding on legitimate vaccine debate. Completely banning all types of vaccine discussion carries a number of unintended consequences. For example, it may result in people starting to be less confident in vaccines—they may feel that there is something more conspiratorial going on. That is why we need to allow legitimate public debate, especially when it comes to questions on the equitable access and distribution of vaccines.”

Sarah Shirazy, Facebook, Inc.

A related issue is the use of social media by disruptive and sometimes anti-vaccine groups to share messages and organize for protest purposes. There is evidence that de-platforming individuals or groups and denying them access to particular social media sites can lead them to seek underground outlets and operate more secretively, even as they are cut off from reaching a large, mainstream audience.⁵³

Made to Go Viral

‘PLANDEMIC’

Well before the first Covid-19 vaccines had even entered phase III clinical trials, much less been approved and distributed to health departments around the country, an online film, “Plandemic,” spread misinformation about the vaccines being developed to prevent infection with SARS-CoV-2, including the motives of the companies developing them and the intentions of government scientists.

The hashtag “#Plandemic” actually first appeared in January 2020, shortly after reports of a new viral pneumonia emerged out of China. By the time the film “Plandemic” was made available online in early May, its claims that the virus originated in a laboratory and that elite government scientists were profiting from the outbreak resonated with thousands. Featuring Judy Mikovits, a former researcher who claimed her warnings about viruses and vaccines had been suppressed by top government scientists, the video was first posted to Facebook on May 4. Within a week, it had been shared thousands of times and had accrued 8 million views on Facebook, YouTube, Twitter, and Instagram.

Interest groups and key influencers with large online followings facilitated the transmission of the video and its messages that sought to delegitimize public health expertise. The film’s posting to a QAnon Facebook page reached thousands of followers of the extremist, right-wing conspiracy theory with its anti-vaccine, anti-elite message. When celebrity doctors who themselves questioned the utility of vaccines shared “Plandemic” posts with their followers, those who were opposed to vaccine mandates reshared the trailer and facilitated its further spread. The film’s mass circulation was further fueled by its posting to a Facebook group for tens of thousands of people questioning the existence of SARS-CoV-2 and organizing against rules closing businesses and imposing social distancing.

By the time posts debunking the claims of “Plandemic” began to circulate, just a few days after the film was posted, its contents had already been seen by millions and shared in countries around the world. The film has been taken down, and its second part, released in August, was suppressed, but many of the claims it made continue to circulate on the internet.

Sources: Matthew D. Kearney, Shawn C. Chiang, and Philip M. Massey, “The Twitter origins and evolution of the COVID-19 ‘plandemic’ conspiracy theory,” *Harvard Kennedy School (HKS) Misinformation Review* 1, no. 3 (October 2020), <https://misinforeview.hks.harvard.edu/article/the-twitter-origins-and-evolution-of-the-covid-19-plandemic-conspiracy-theory/>; Renee DiResta and Isabella García-Camargo, “Virality Project (US): Marketing meets Misinformation,” Stanford Internet Observatory, May 26, 2020, <https://cyber.fsi.stanford.edu/io/news/manufacturing-influence-0>; and Sheera Frenkel, Ben Decker, and Davey Alba, “How the ‘Plandemic Movie and Its Falsehoods Spread Widely Online,” *New York Times*, May 20, 2020, <https://www.nytimes.com/2020/05/20/technology/plandemic-movie-youtube-facebook-coronavirus.html>.



CHAPTER 04

Vaccines for Health and National Security

IN THE SPACE OF ONE YEAR, THE COVID-19 OUTBREAK HAS SHARPENED AND CLARIFIED THE ARGUMENT THAT PANDEMIC PREPAREDNESS AND RESPONSE ARE INDEED MATTERS OF U.S. NATIONAL SECURITY.

A sea change in outlook has occurred among policymakers and average citizens alike, cutting across partisan lines: until the pandemic is effectively controlled, neither the economy nor society can reopen safely and effectively. In the meantime, social instability, including racial strife, is likely to persist.

“Reopening our economy, restoring American leadership in the world, those are fundamental national security interests. And if we are being held back by excessive vaccine distrust, that is going to postpone and delay the arrival of that moment of reaching herd immunity. It is a national security problem, and it is one that requires a strategic approach—high level leadership using every tool at its disposal to try to raise public confidence and trust.”

J. Stephen Morrison, CSIS Global Health Policy Center

Early actions taken by the Biden administration reflect these changes in security approaches. The president’s first National Security Memorandum, issued on January 21, signaled that controlling the pandemic is the White House’s top national

security priority.⁵⁴ It laid down the responsibilities and key taskings to assert national, federal leadership in controlling community transmission of SARS-CoV-2. Accompanying the directive was a national strategy of almost 200 pages, 13 executive orders, and three presidential memoranda outlining plans to battle the pandemic.⁵⁵ Of the \$1.9 trillion in the recently passed American Rescue Plan Act of 2021, an estimated \$400 billion covers pandemic response, with up to \$1 billion for confidence-building activities for Covid-19 and other routine vaccines.⁵⁶

“America’s strength and resiliency have been tested throughout this pandemic, and our often tragic response was viewed by the world in horror by our allies and glee by our enemies. And, in many respects, as we think about opening up, even the capacity of Americans to travel abroad will be in limbo for some time. America has been isolated, literally and strategically, and the path forward is for us to overcome vaccine hesitancy, convince reluctant populations, and reach national immunity. When President Biden says, ‘America is back,’ the reality is not quite yet.”

Juliette Kayyem, Harvard Kennedy School

That the pandemic response is a U.S. national security priority should come as no surprise. The corrosive economic impacts of the pandemic continue to worsen, despite stimulus packages, payroll protection plans, and other actions taken at the federal, state, and community levels to prevent evictions and keep commercial interests afloat. In 2020, China overtook the United States as the principal destination for foreign investment, and with many schools and universities remaining in a hybrid or distance learning mode, U.S. research and development competitiveness, which had already lagged behind other Organisation for Economic Co-operation and Development (OECD) countries in recent years, could drop further.⁵⁷ The March 2021 jobs report showed that economic recovery in the United States remains slow, with unemployment remaining at 6.2 percent and the number of unemployed around 10 million people.⁵⁸ The United States’ poor performance in addressing the pandemic has also exacerbated the trend of declining enrollment of foreign students, while the suspension of visa services and recall of consular staff from overseas postings has slowed the recruitment of foreign workers to the high-tech sector.⁵⁹

A national vaccine program that reaches 80 percent or more of the population in an equitable manner stands at the very heart of the U.S. government’s pandemic strategy. The proliferation of new and potentially more transmissible or deadly viral variants adds to the urgency surrounding a successful national vaccination campaign and underscores the importance of encouraging the equitable distribution of vaccines abroad, given that only a universal resolution to the pandemic will leave the United States, along with other countries, truly safe.

“We need a minimum 65 percent uptake of the vaccine for it to achieve what it is designed to achieve. We are right on the edge of it being able to achieve what it is designed to achieve, and therefore us being allowed to get back to some kind of normality, for the economy to start running again. And by exposing people to disinformation we are chipping away at that.”

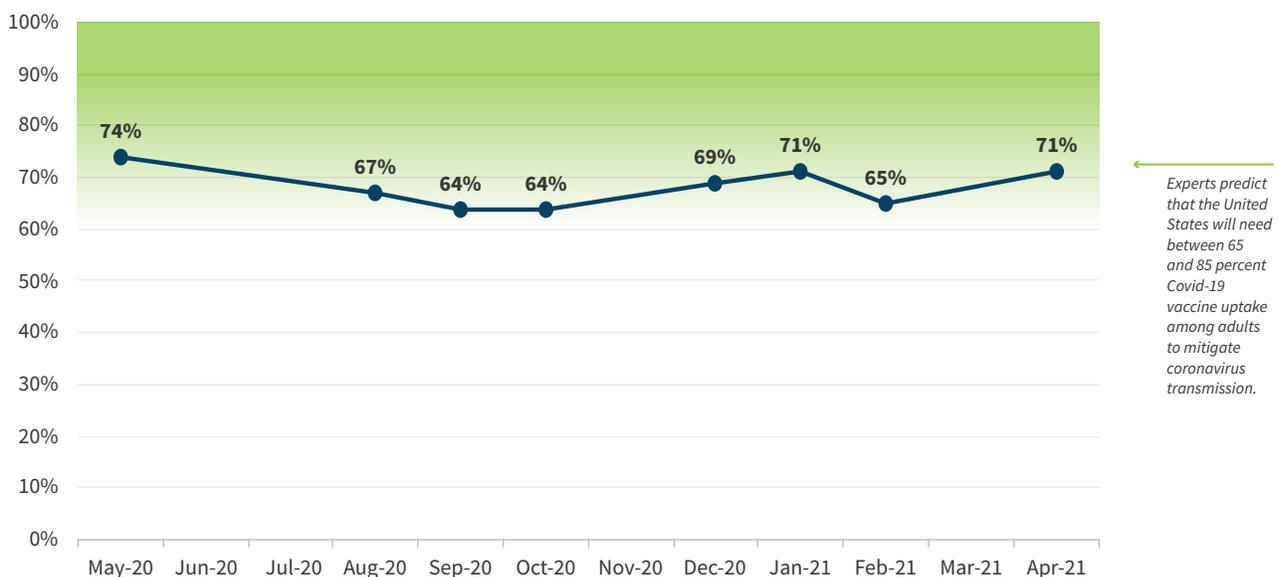
Johnny Heald, ORB International

By implication, then, the factors that impede the realization of U.S. national (and global) vaccine goals are national security matters. These include historical alienation, disparities, misinformation campaigns, and lack of public trust and confidence in science and vaccines, as well as disinformation campaigns by foreign governments such as Russia and China to discredit U.S.-produced vaccines. Accordingly, they merit high-level attention and a systematic set of focused policies and programmatic action.

Ensuring a high level of confidence in Covid-19 vaccines among members of the U.S. military, which has a complicated history with respect to vaccine confidence, is important as well. Since the 1960s, anthrax vaccines had been available in the United States to people who might have been exposed to the bacterium, but in the late 1990s the Department of Defense began requiring troops to be immunized against infection with anthrax, citing the potential for adversaries to deploy anthrax as a biological weapon.⁶⁰ But mistrust was fueled by a high number of people reporting adverse reactions after their initial injections, leading some to leave the military altogether.⁶¹

The Tipping Point: Vaccine Confidence in the United States

Depending on the threshold required for herd immunity, vaccine confidence could determine whether the United States is able to reach sufficient coverage to mitigate transmission of the coronavirus. The graph below tracks the percentage of survey respondents who indicated that if a Covid-19 vaccine were available to them, they would take it.



Source: “Global vaccines research: Polls & Reports,” Ipsos, July 2020–February 2021, <https://www.ipsos.com/en/global-vaccines-research#polls>; “COVID-19 vaccination intent has soared across the world,” Ipsos, March 11, 2021, <https://www.ipsos.com/en/covid-19-vaccination-intent-has-soared-across-world>; “Axios-Ipsos poll: Parents split on vaccinating kids,” Ipsos, April 6, 2021, <https://www.axios.com/adults-say-yes-to-the-vaccine-for-themselves-not-their-kids-a59af424-c312-4bcb-b4b2-94f3b88ec3ac.html>.

The circulation of digital posts arguing that the Pentagon downplayed servicemembers' concerns may contribute to hesitancy in the current context. Nevertheless, a high rate of Covid-19 vaccination among military communities will help enhance operational readiness.⁶² It can also promote the health and well-being of the members of the military and their families, who play influential roles within their communities, whether in the United States or on bases abroad.

“Reports of high levels of vaccine hesitancy among members of the military and their families are cause for alarm, not just in terms of operational implications for military readiness and health protection, but also in terms of the important roles that military members and their families play in communities at home and overseas. Maintaining a public health-focused approach, including reliable data, active outreach, and sensitivity to history while actively countering disinformation, is equally essential for military communities.”

Rebecca Hersman, CSIS International Security Program

The Dodger Stadium Vaccine Protests

In January 2021, Los Angeles County in California saw a post-holiday surge of Covid-19 cases, with 8,000 hospitalizations and 200 to 300 deaths per day. As distribution of the recently approved Pfizer/BioNTech and Moderna vaccines began to scale up, the county designated Dodger Stadium, home of the Los Angeles Dodgers baseball team, as a mass vaccination site capable of serving 8,000 people a day. On January 30, an anti-vaccine protest at the stadium disrupted vaccination activities for several hours and gained national and global media attention.

In interviews after the event, organizers, who used the “Shop Mask Free Los Angeles” Facebook page to issue a call to action, said they were inspired by the death just days earlier of baseball legend Hank Aaron, rumored to have died after receiving a dose of Covid-19 vaccine. Protesters, some of whom traveled long distances to join the event, stated stringent social distancing requirements or frustration with the leadership of Governor Gavin Newsom as reasons for joining, while QAnon followers and members of some conservative religious groups cited concerns over government decisionmaking and authority.

Although participants' reasons for joining the protest activity were diverse, their shared frustration with government and concerns that government recommendations are not informed by reliable science fueled their engagement in the late January episode.

Sources: City News Service, “LA County COVID-19 Hospitalizations Down Nearly 80% From January Peak,” NBC News Los Angeles, February 27, 2021, <https://www.nbctv.com/news/coronavirus/southern-california-coronavirus/la-county-covid-19-hospitalizations-down-nearly-80-from-january-peak/2537752/>; and Isaac Stanley-Becker, “Anti-vaccine protest at Dodger Stadium was organized on Facebook, including promotion of banned ‘Plandemic’ video,” *Washington Post*, February 1, 2021, <https://www.washingtonpost.com/health/2021/02/01/dodgers-anti-vaccine-protest-facebook/>.



CHAPTER 05

Recommendations

BOLSTERING CONFIDENCE NOW AND PREPARING FOR THE FUTURE

WITH THE SUCCESSFUL DEVELOPMENT AND DISTRIBUTION OF NEW VACCINES, THERE IS HOPE IN THE UNITED STATES THAT THE ACUTE PHASE OF THE SARS-COV-2 PANDEMIC MAY SOON COME TO A CLOSE.

Safe and effective vaccines have been developed at record speed, and these products are beginning to reach communities across the country at an accelerating pace and with greater sensitivity to the gross disparities in access according to race and socioeconomic status. Supply constraints and logistical and financial barriers are easing. The Biden administration is putting a detailed strategy in place to strengthen the federal approach to supporting states and local communities in their response. Congress has passed a \$1.9 trillion fifth emergency funding supplemental, signed into law on March 11, 2021. Those resources are already beginning to flow in support of many of the key initiatives discussed in this report and will be valuable in advancing the additional actions recommended below.

Social media platforms have also made significant public commitments to remove and reduce misleading content, provide accurate information, and bring these efforts to scale. They have resolved to address outstanding and complex issues around posts discouraging vaccination in a manner that falls short of censorship or removal, as well as to implement nuanced measures that are fair, proportionate, and respectful of free speech and healthy discourse. At the same time, the U.S. government and

its allies have become more aggressive in tracking and countering Russian and Chinese online disinformation campaigns aiming to undermine confidence in Western vaccines.

“The impact of mis- and disinformation on vaccine confidence goes beyond the obvious. It adds confusion and ambiguity to factual information causing mistrust of medicine. The ripple effect of this undermines public health, national security, and the work to maintain economic stability. In a world of ubiquitous information, critical thinking can discern the truth. We need to ask, ‘who is delivering the information and why do they matter?’”

Elizabeth Wehr, Parsons Corporation

Equally important, public confidence and trust—in vaccines, authorities, and science—continue to fall significantly short of what is truly required to exit the pandemic crisis, undermined by misinformation and falsehoods. Fully one-third of American adults remain uncertain and hesitant about the Covid-19 vaccines. It is not yet clear what the impacts of social media reform measures will be.

What is at stake is fundamentally a matter of national security: achieving herd immunity that truly and rapidly restabilizes public health, economic vitality, and society.

“As always, bipartisanship must be at the center of national security discussions. Make no mistake, biodefense is absolutely a matter of national security. We have far too much politicization in this country, but the health and safety of our citizens cannot continue to be one of those areas. Americans need to know that their doctors and nurses are absolutely committed to protecting their health, and that the decisions on how, when, and to whom the vaccine is being distributed are being made by individuals who have been empowered to follow the science and make the best decisions possible for the good of the American people.”

Susan W. Brooks, former congresswoman (R-IN-05)

To move the United States forward and support its external partners, the CSIS-LSHTM High-Level Panel on Vaccine Confidence and Misinformation recommends bolstering efforts in five critical areas:



1 | Innovations in reaching diverse and underserved populations with vaccines delivered in the context of health and social services.

The Biden administration has called for the public sector, at the national, state, and local levels, and regardless of party affiliation, to take the lead in strategically engaging populations with the greatest disparities in the face of Covid-19 and that harbor the greatest skepticism about vaccines. Given the exceptionally high levels of hesitancy and refusal reported among Republican voters, there is a special case for elected Republican leaders to become active in promoting Covid-19 vaccines.

The panel advocates that the delivery of safe and effective vaccines be brought as close as possible to where people live, and that vaccines be delivered as part of a platform of wrap-around health and social services that address, in a comprehensive way, the negative economic impacts that have left millions unemployed, underemployed, and unable to afford housing, food, and other necessities.

Enlisting trusted community leaders will be essential in advancing such efforts. Community health centers and mobile outreach clinics serving rural and other remote populations are particularly promising places to institute such an approach. These innovations can also be introduced in pharmacies, hospitals, clinics, and mass vaccination sites. The provision of vaccines, along with complementary services, will foster greater trust, multiply the points of engagement, create incentives that enhance the ease of access to vaccines, and improve the quality and flow of information from trusted sources.

“We have not been able to change behavior because oftentimes we have been working from the standpoint of our science and our evidence is enough. We wear our white coats. We use the banner of public health, or science, or health, or healthcare. And we miss the opportunity to be part of the community. Ultimately, we have to engage because we are a member of a community. We have to rely on our leaders and our partners, including faith leaders. Health happens where you live, learn, work, worship, and

play and not just in the four walls of the healthcare system—we have to remember that when we work toward engaging our communities.”

Umair A. Shah, Washington State Department of Health



2 | Pledges and actions by mainstream and digital media platforms to stop the spread of misinformation and to collaborate with health providers and the scientific community to increase the availability of accurate content.

The panel recommends that the leadership of U.S. mainstream media outlets, working through the heightened coordination that an alliance of digital media platforms could provide, build upon the recent advances in content moderation and lay down common principles of transparency and accountability, establish shared standards and definitions, and spotlight best practices and lessons learned. Social media platforms can effectively mitigate the presence of harmful content and alter algorithms to prevent the automatic spread and reinforcement of misinformation and disinformation (e.g., “filter bubbles”) as well as develop and optimize other automatic processes that serve to amplify and disseminate accurate information.

In addition, new research and survey group partnerships could analyze the impacts of reform measures upon behavior and choices, convene regularly, and issue annual reports. Following on the publication by the Sabin-Aspen Vaccine Science and Policy Group in June 2020, such efforts could be shared with, and help inform the strategies of, health providers and the global immunization community.⁶³

“The political effect of the internet allows many competing narratives. Yet, at the same time, it is not a marketplace of ideas, and the truth will not always win out. So do we restrict ourselves to a calm recitation of fact? Or do we challenge falsehood more assertively? It is important to understand the roots of public concern, and to think about practical steps as we move towards encouraging people to be amenable to being vaccinated.”

James A. Lewis, CSIS Strategic Technologies Program



3 | Increased engagement by key social and economic sectors to empower people to make informed choices about Covid-19 vaccines.

The Biden administration has recently forged new partnerships with leadership of critical social and economic sectors, urging them to step forward and speak loudly and often. Those who have the most to gain by a successful Covid-19 vaccine introduction—and the most to lose if that effort fails—have committed to expand their activism, raise their voices, and marshal their influence to engage their respective communities in a sustained dialogue about the merits and risks of vaccines. The Ad Council and other private groups, for example, are developing outreach communication plans to educate employees and their families about the benefits of Covid-19 vaccines.

The panel recommends these efforts be rapidly deepened and expanded, with a special focus on enlisting active contributions by trusted Republican leadership.

Iconic cultural figures with substantial media presence and bipartisan reach can be highly impactful in supporting dialogue and disseminating messages to a broad audience. Much conversation is already under way, but far more is warranted among educational institutions, businesses, healthcare providers, the farming sector and food processing industries, grocery stores, and the security and law enforcement communities.

The U.S. military—which remains one of the most trusted institutions in the United States—has an important role to play in encouraging the adoption of early vaccination for members of the armed forces and leading through dialogue and example.

“Covid-19 vaccines are one of the world’s greatest examples of successful public-private sector collaboration. However, vaccines can only work when people have access to vaccination and choose to get vaccinated. Now is the time for private and public sectors to redouble our efforts in a transparent and unified way to build trust in vaccination and strengthen immunization programs to help end the pandemic and protect people everywhere from other vaccine-preventable diseases.”

Julia Spencer, Merck & Co., Inc.



4 | Greater executive branch coordination and action beyond the emergency.

The United States cannot lose sight of the pressing need for critical executive branch reforms that can harness innovations from the pandemic and ensure lasting impact beyond the current crisis. Early in the Biden administration, there are opportunities for progress on diverse fronts.

The White House has established a powerful Covid-19 Response Team, recently re-established a National Security Council directorate for global health security and biodefense, and launched an Equity Task Force. It has elevated the head of the White House Office of Science and Technology to cabinet rank.

These entities, along with the Department of Defense, the Department of Health and Human Services, the Department of Homeland Security, the Department of State, and the Office of the Director of National Intelligence, in collaboration with the Domestic Policy Council, can contribute expertise and authorities to a coordinated U.S. policy formulation that prioritizes addressing misinformation and disinformation and determines which strategies are most effective for bolstering vaccine confidence and improving awareness about the benefits and limitations of vaccines. Part of that effort should include establishing a mechanism for tracking progress and creating a more coherent and predictable White House engagement approach with social media platforms and technology companies, independent media, biopharmaceutical companies, healthcare providers, citizen groups, and cybersecurity experts.

Sustained CDC leadership is essential to strengthening vaccine confidence and addressing misinformation about Covid-19 and routine vaccines. An empowered and strengthened CDC should take the lead in devising a strategic health communications initiative informed by social and behavioral science research to gain insights into the determinants of group belief systems and to help people understand and make sense of safety and efficacy data regarding the diverse Covid-19 vaccines offered through public programs. It can expand its engagement with state-level officials and civil society organizations to identify communities with low vaccination coverage and at high risk of outbreaks related to vaccine preventable diseases. That will lead to a better understanding of the factors driving under-vaccination and help inform culturally and linguistically appropriate communications campaigns in such communities.



Then U.S. president-elect Joe Biden celebrates with Tabé Mase, nurse practitioner and head of employee health services, after receiving a Covid-19 vaccination at the Christiana Care campus in Newark, Delaware, on December 21, 2020.

ALEX EDELMAN/AFP/GETTY IMAGES

That strategy should provide consistent, science-based information to all audiences, both domestic and global, to counter misinformation and disinformation across multiple media platforms. The CDC should oversee expanded technical expertise to U.S. states, municipal and local health authorities, and the United States' key partner governments, alliances, and international organizations.

“States play a key role in educating the public and building vaccine confidence. Timely and transparent communication at the state level helps ensure understanding of vaccine development, the benefits of vaccination, and how to get vaccinated. State level messaging can also help address misinformation, amplify public trust, and highlight vaccine acceptance across communities. To effectively engage hard to reach and historically marginalized populations, states closely coordinate with local and community partners to identify trusted messengers and develop targeted approaches to increase vaccine access, uptake, and equity.”

Kate Johnson, Aurrera Health Group



5 | Increased U.S. support for global immunization partners.

As the Department of State and White House, joined by other departments and agencies, develop a global health security strategy to define U.S. diplomatic and programmatic priorities as well as key alliances and partnerships, they should elevate efforts to strengthen public confidence in vaccines, public health, and science globally.

Helping to make more vaccines globally accessible is an important first step. At the March 12 Quad Leaders' Summit, the United States, along with India, Australia, and Japan, committed to a partnership to expand Indian private sector vaccine production by 1 billion doses by the end of 2022.⁶⁴ On March 18, President Biden announced that the United States would loan Mexico and Canada 2.5 million and 1.5 million doses, respectively, of the AstraZeneca vaccine, and on April 26, the White House announced it would share 60 million doses of the AstraZeneca vaccine internationally, pending a safety review and clearance of the product for export.⁶⁵

Encouraging other countries to contribute to global vaccine supplies should be a high priority. The recent U.S. commitment of \$4 billion to Gavi, the Vaccine Alliance, to support the COVAX Facility's effort to deliver 2 billion doses to 20 percent or more of the populations of 92 lower- and lower-middle-income countries over the next two years can be leveraged to encourage other donors to reinforce their support for the initiative.⁶⁶

“At this critical time, the United States needs to more fully align with the global community around critical steps that must be taken and the importance of a coordinated, concerted effort. More than ever, we all must recognize that no nation can be safe until everyone around the world is safe.”

Margaret Hamburg, U.S. Food and Drug Administration (former)

The United States can also ensure that there is sustained action to redress misinformation, including that disseminated by sovereign states such as Russia and China.

There are many ready operational partners with knowledge and expertise to contribute, including the WHO, the United Nations International Children's Emergency Fund (UNICEF), and Gavi.⁶⁷ Trust and confidence in vaccines, and addressing misinformation about them, are central to the mission, and eventual success, of the COVAX Facility's efforts to ensure equitable distribution of Covid-19 vaccines globally.

“The pandemic has underlined once again that rumors do not stop at borders. We have seen examples of vaccine misinformation emerge and then speed across different countries as messages are shared between friends and family in different online spaces and groups. The response to vaccine misinformation has to be global, which requires fact-checkers, newsrooms, and civil society to collaborate, and the platforms to respond adequately to the same rumors irrespective of language or location.”

Claire Wardle, First Draft

The United States, while working with the WHO and its member states to understand the origins of the SARS-CoV-2 outbreak in China and to implement meaningful reforms within that body related to disease detection and outbreak control, can also provide significant, timely support to the WHO, UNICEF, and Gavi, along with the Vaccination Demand Hub, in forging a strategic coordinated response to the spread of misinformation and disinformation related to Covid-19 vaccines.

Equally essential will be a high-level diplomatic strategy that brings in new partners. Washington should use its influence and resources to shape a coordinated international approach to the shared concerns of vaccine confidence and misinformation, recognizing that domestic messages about vaccines travel internationally along digital networks and resonate in diverse overseas settings. This will require making the case that vaccine confidence and misinformation are matters of global security, are fundamental to any global solution to the pandemic, and should be systematically incorporated into high-level dialogues and action plans at the UN Security Council, the G7 and G20, the Quad (United States, India, Japan, and Australia), and the renewed U.S.-European transatlantic relationship.

“This is a huge opportunity to rebuild trust in science. Never before in the history of vaccines has the public ever been so exposed to how vaccines are developed. Never have we had such the opportunity to show the value of vaccines in getting life back to normal. We must use this opportunity to build trust at multiple levels and turn the tide on vaccine skepticism.”

Heidi J. Larson, LSHTM Vaccine Confidence Project™

This moment in the history of the United States—and the world—remains fragile and uncertain, and there is good reason for caution. Viral variants are proliferating, the virus remains unpredictable, and communities suffering from pandemic fatigue may prematurely relax their own requirements to prevent disease transmission. More needs to be done now to strengthen confidence, shape the digital environment, and bring trusted, reliable science to skeptical and anxious publics in order to ensure a high level of vaccination coverage and mitigate the Covid-19 pandemic.

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Graphics

THE RISE OF VACCINE HESITANCY

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BARRIERS TO VACCINE CONFIDENCE

Categorization adapted from the following works among others: David A. Broniatowski et al, “Facebook Pages, the “Disneyland” Measles Outbreak, and Promotion of Vaccine Refusal as a Civil Right, 2009-2019,” *American Journal of Public Health* 110, no. 53, suppl. 3 (October 2020): S312-S318, <https://doi.org/10.2105/AJPH.2020.305869>; Anna Kata, “A postmodern Pandora’s box: Anti-vaccination misinformation on the Internet,” *Vaccine* 28, no. 7 (February 2010): 1709-1716, <https://doi.org/10.1016/j.vaccine.2009.12.022>; and Kaiser Family Foundation, “COVID-19 Vaccine Monitor,” <https://www.kff.org/coronavirus-covid-19/dashboard/kff-covid-19-vaccine-monitor-dashboard/>.

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