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The Social and Political Impact of the COVID-19 Pandemic

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The Social and Political Impact of the COVID-19 Pandemic

ISSUE EDITORS
Beth Redbird, Laurel Harbridge-Yong, and Rachel Davis Mersey

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The Social and Political Impact of the COVID-19 Pandemic: An Introduction

BETH REDBIRD, LAUREL HARBRIDGE-YONG, AND RACHEL DAVIS MERSEY

The COVID-19 pandemic highlights the importance of responsive institutions: governments and communities coordinating policy changes; media, social networks, and officials swiftly and accurately conveying information; and an engaged public. This special issue explores social and political factors that both shaped initial response to the pandemic, and were altered by it. Institutional inequalities and variations in government response created significant differences in health outcomes even as the contagious nature of the pandemic linked spaces and people. Thus COVID-19 created new crises, exacerbated inequalities, and led to broad social changes. Social scientists will spend decades unraveling the consequences of COVID-19. This issue challenges scholars to apply existing theories and frameworks, but also to see the pandemic as an event that stimulates us to reevaluate settled paradigms.

Keywords: COVID-19, information, inequality, policy, civic

The COVID-19 pandemic, which first appeared in the United States in the beginning of 2020, quickly created broad social and political upheaval, upending lives across society. That rapid impact had lasting effects, leading Yale Medicine to call 2020 "the year of disruption" (Katella 2021) as people, governments, and organizations wrestled with interwoven crises that threatened both lives and livelihoods. Two years later, with pandemic consequences con-

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tinuing, expectations shifted from ending the pandemic by eradicating the virus, to a "new normal" as individuals and institutions began to grapple with a future that includes an endemic COVID-19.

Although the COVID-19 pandemic created a public health crisis, it also was (and is) a social problem in that widespread adoption of advised public health behaviors relied on an interplay of policy, social communication, and public attitudes.[1] Policymakers grappled with whether and how to respond, information was carried to the public with varying degrees of urgency and accuracy, and as a result, individual attitudes and behaviors shifted in different ways. The increasing prevalence of highly contagious diseases such as SARS, MERS, and H1N1, and the novel spread of COVID-19 underscores the need to understand such events—not just the epidemiology of pandemics, but also the social responses that mitigate or exacerbate harms for individuals, groups, communities, and institutions.

The pandemic highlighted that effective health containment relies on a nimble political order, at all levels of government, that can rapidly absorb information to create, enact, and administer scientifically driven and adaptable policy. But effective societal response also required people be knowledgeable, active, and engaged in communities and political life—in other words, good citizens of an informed society. The effectiveness of this social-political interplay relied on a variety of public resources, including institutions, infrastructure, education systems, health providers, public assistance programs, community organizations, social trust and cooperation, networks, and cultural capital. Pre-pandemic inequality and geographic differences in these resources created variations in the effectiveness of community response (Capano et al. 2020; Ding et al. 2020; also see Hale et al. 2020). At the same time, the contagious nature of the pandemic linked individuals across geographies in new ways—previously confined local inequalities suddenly created consequences that could quickly reverberate across the national and world stages (Holtz et al. 2020).

The interactions between unequal social resources and varied government response (Killeen et al. 2020) had a significant impact on disease spread (Liu, Beeler, and Chakrabarty 2020; Gupta et al. 2021), creating a "patchwork pandemic" in the United States (Yong 2020) that concentrated hospitalizations and deaths in vulnerable communities (Patel et al. 2020).

Early cross-national research also displays the critical interplay between social and political responses. Countries varied substantially in both pre-pandemic resources and government actions (Capano et al. 2020), and the interaction generated substantial differences. For instance, countries in which citizens were more engaged in policy institutions responded with faster public health measures, such as testing programs, business shutdowns, economic stimulus, and border closures; and experienced higher public cooperation (Greer et al. 2021). Striking differences are emerging, however, even within similarly situated countries. Policy responsiveness and coordination differed between the United States and Canada (Béland et al. 2020), both liberal welfare-state regimes, as well as between the federal countries of Germany, Austria, and Switzerland (Czypionka and Reiss 2021). Although evidence is still emerging, early estimates suggest that, much like within the United States, harms from the pandemic were concentrated in poorer countries (Decerf et al. 2021; Fereira et al. 2021).

Theorizing interactions between government, social institutions, community organizations, and public action are central to social science. That these interactions played such a significant role in pandemic harms amplifies the need for researchers to investigate the social and political nature of the pandemic, not only to better prepare for future pandemics, but also to understand core phenomena that drive outcomes in natural disasters, security crises, and other large disruptions.

This issue of *RSF: Russell Sage Foundation Journal of the Social Sciences* is one early step in

1. As of the publication of this issue, the pandemic is ongoing. In addition, the social fallout created from COVID may last for decades. We use the past tense because the data and analysis presented in this issue are past looking.

this process. We recognize that, at the time of writing, we are only beginning to understand the relationships between COVID-19 and U.S. society, yet immediate themes are already emerging. It is clear that in some ways these themes reflect long-standing lines of inquiry within social science. This issue tackles emerging yet fundamental questions about the social and political dynamics that shaped initial response and how the pandemic altered these dynamics for individuals, communities, and institutions.

In scale, the number of U.S. deaths from the pandemic are expected to be similar to that for the HIV/AIDS epidemic—concentrated in years rather than spread over decades (Goldstein and Lee 2020). The sheer magnitude of the pandemic resulted in sweeping and rapid social changes, some of which may not be fully experienced or understood for decades. The articles in this issue deploy existing theories and methods, providing insight about pandemic consequences across diverse communities and domains. However, in studying one of the largest mortality threats of the last century, the contributors to this issue also see the pandemic as a crisis that requires reexamining and challenging established social science paradigms.

This introduction begins with a timeline of the pandemic in the United States, tracing both the epidemiological trajectory of the virus and the challenges that confronted policymakers and the public. We then detail some of the driving questions and debates that permeated the public consciousness, consumed popular media, and dominated academic discussions. Given the abrupt shock the pandemic posed early on, the massive scale of pandemic consequences, and challenges that continue to linger, it is difficult to know where scholars should focus first. Understanding pressing public questions may inform researchers about early scientific responses needed in addressing future crises. Finally, we discuss core themes of the issue and outline how the included articles help shed light on these pressing social concerns.

TIMELINE OF THE COVID-19 PANDEMIC

In December 2019, cases of a new pneumonia-like illness were identified in Wuhan, China.[2] By January 2020, scientists confirmed that the illness could be spread from person-to-person, prompting Chinese authorities to close businesses and enact curfews and movement lockdowns to contain the new virus. Unfortunately, it was too late. Soon new cases emerged in Europe and then the United States; the first known U.S. case was a traveler recently returned to Washington State from Wuhan.

The Early Outbreak and Efforts to Stop the Spread

The initial political response in the United States was mixed. On the one hand, the White House promptly declared a public health emergency, the U.S. State Department warned travelers to avoid China, and by the month's end, President Donald Trump suspended entry into the United States for any foreign national who had traveled to China in the last fourteen days.[3] On the other hand, the president's public comments often downplayed the crisis. In an interview with CNBC on January 22, President Trump said, "We have it totally under control. It's one person coming in from China, and we have it under control. It's going to be just fine" (Murray, Goller, and Heinrich 2020).

By February 2020, it was clear the new virus was spreading rapidly around the world. On February 11, the World Health Organization (WHO) named the virus SARS-CoV-2; both the virus and its resulting disease became known as COVID-19.

Many countries began introducing travel restrictions, but otherwise it was unclear how governments or communities should respond. Limited scientific evidence on how the virus is transmitted left governments grappling with which policies to implement and what recom-

2. This timeline draws heavily on the reporting of Derrick Taylor (2021) and Kathy Katella (2021). As of the publication of this article, genomic tracing suggests that the SARS-CoV-2 virus existed, and was capable of binding with human cell receptors, for many years prior to the pandemic (Voskarides 2022). That the virus was first noted in Wuhan does not exclude other possible geographies of origin.

3. Immediate family members of American citizens or permanent residents were exempt from this ban.

mendations to give their citizens. Initially, both the WHO and the United States discouraged mask-wearing, seeking to prevent panic buying of the limited supply of medical-grade masks needed for health-care workers (Molteni and Rogers 2020).[4] Later, the Centers for Disease Control and Prevention (CDC) would advise Americans with symptoms to wear masks or face coverings. They subsequently changed the recommendation to advise all Americans to wear masks in public.

In February, though, masking remained limited, and just two days before the first known COVID-19 death in the United States was reported, President Trump again downplayed the crisis. He said at a February 27 event at the White House, "It's going to disappear. One day, it's like a miracle, it will disappear" (Murray, Goller, and Heinrich 2020). The president's language reveals both the initial policy goal of "zero COVID-19 cases" and exemplifies how political leaders downplayed the crisis.

On March 11, the WHO declared COVID-19 a pandemic. As concerns about the spread of the virus rose, many states feared that hospitals would become overwhelmed. Both states and the national government struggled to address a nationwide shortage of personal protective equipment (PPE), namely, gloves and masks, for health-care workers.

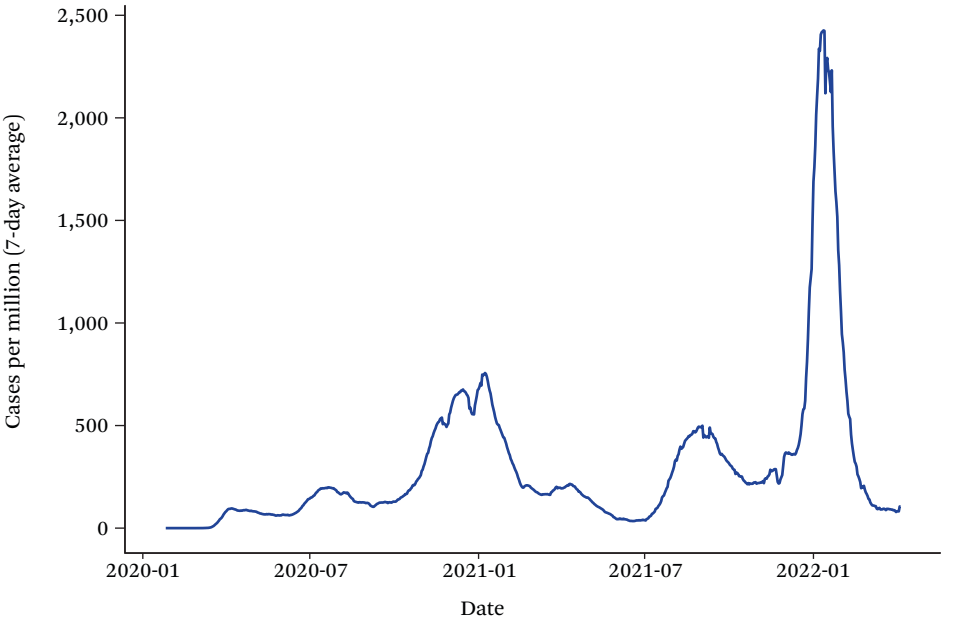
Across the country, there was wide variety in responses at all levels of government. This lack of coordination would be a pervasive theme in the U.S. response—a patchwork of information, policies, and outcomes that differed starkly across states and localities (Yong 2020). National, state, and local governments would disagree, would issue conflicting public guidelines, and would compete for limited supplies. The federal government would provide some early guidance and coordination. On March 13, the president issued two national emergency declarations under both the Stafford Act and the National Emergencies Act, and on March 18 invoked emergency powers via executive order under the Defense Production Act.[5] On March 19, he named the Federal Emergency Management Agency as the lead agency in pandemic response efforts, a designation previously held by the Department of Health and Human Services (Bragg 2020). The CDC provided further guidance about limiting gatherings of fifty or more people. Overall, concrete federal action to coordinate efforts to procure PPE, address hospital capacity, provide testing and quarantine guidelines, and garner necessary supplies was minimal (Bender and Ballhaus 2020; Stobbe and Perrone 2020). This response would ultimately come mostly from the states.

Some local and state governments took bold action. By the middle of March, the New York City public school system—the nation's largest, with 1.1 million students—ceased in-person instruction. It was followed by many other school districts across the country. When confronted with rising cases and a cruise ship docked outside San Francisco with many infected passengers, the Bay Area announced the first shelter-in-place order, asking residents to stay at home except when going to an essential job or shopping for essential needs, a practice that soon spread to the rest of the state (Hoeven 2020). By the end of the month, the United States was the hardest-hit country in the world, with at least 81,321 confirmed cases of COVID-19 and more than a thousand deaths (for case counts across time, see figure 1). New York and California would become the two states hit hardest by the first wave of the pandemic, which was concentrated primarily in population centers on the East and West Coasts. Early mortality rates revealed that those older than sixty-five were particularly susceptible to serious infection, hospitalization, and death; nursing homes were hit particularly hard. The greater risk of severe illness in older individuals and those with underlying health conditions prompted public discussion as to whether restrictions or requirements on the general population were needed.

4. At the time, lower-grade masks (such as construction-grade masks) were not believed to be particularly effective.

5. Robert T. Stafford Disaster Relief and Emergency Assistance Act, Pub. L. 100-707 (1998); National Emergencies Act, Pub. L. 94-412, 90 Stat. 1255 (1976), 50 U.S.C. § 1601-165; Defense Production Act of 1950, Pub. L. 81-774 (1950), as amended, Pub. L. 115-232 (2018).

Figure 1. New U.S. Daily COVID Cases



Source: Authors' tabulation based on *New York Times* (2021).
Notes: Data was tracking of cumulative counts of coronavirus cases in the United States, at the state and county level, over time. Data are compiled from state and local governments and health departments in an attempt to provide a complete record of the ongoing outbreak.

By April 2020, the pandemic had disrupted life around the world. Many countries closed their borders, sports teams canceled events, schools closed and shifted to remote learning, and nonessential employees were told to work from home. When people were outside their homes, they were encouraged to social distance (remain at least six feet apart) and some people began to wear masks. In early April, following more research about how the virus is transmitted and evidence that the virus could spread asymptomatically, the CDC changed its guidance, encouraging all Americans, not just those with symptoms, to wear face masks (Giordano and Calore 2020).[6] The goal, according to public health officials, was to "flatten the (epidemiological) curve" (*The Economist* 2020; Boumans 2021), reducing the exponential rate of transmission to decrease the risk that hospitals would be overwhelmed and unable to care for the influx of COVID-19 patients.

As states banned events and travel was canceled, shopping and dining habits shifted. As a result of changing consumption patterns, unemployment skyrocketed, primarily in service industries. In the span of a few weeks, nearly ten million Americans lost their jobs (Taylor 2021). In the last week of March alone, 6.6 million people applied for unemployment benefits (Taylor 2021). "The speed and scale of job losses was without precedent: Until March, the worst week for unemployment filings was 695,000 in

6. The federal guidance on wearing masks was mixed. On the one hand, CDC reports suggested that masks could reduce the spread of the virus and by the end of April, U.S. airlines announced rules requiring face masks (Taylor 2021; Katella 2021). On the other, some federal leaders continued to worry about the impact of mask recommendations on limited PPE supplies (spurring a rise in reusable cloth masks) and the White House offered little personal support to the action. At a White House briefing on April 3, 2020, the president said, "With the masks, it's going to be really a voluntary thing. You can do it, you don't have to do it. I'm choosing not to do it, but some people may want to do it and that's OK. . . . As I greet presidents, prime ministers, dictators, kings, queens . . . I don't see it for myself, I just don't" (Murray, Goller, and Heinrich 2020).

1982" (Taylor 2021). Most recent recessions largely hit male-dominated industries, but pandemic unemployment was concentrated in female-dominated jobs in service, education, and childcare. Coupled with closed schools and declining access to childcare, this significantly altered the pattern of women's lives (Landivar et al. 2020).

Throughout the pandemic, federal, state, and local officials would continue to face the challenge of balancing saving lives and saving livelihoods. By April 26, 2020, the global death toll surpassed two hundred thousand and cases topped 2.8 million, making many political leaders more concerned about the near-term consequences of the pandemic on mortality. The balance of reduced mobility, closed businesses, and shifts to online learning would be the subject of U.S. political contention throughout most of 2020.

The Dilemma of COVID-19 Restrictions and Pressure to Reopen

Although some states effectively leveraged social distancing and stay-at-home orders to "flatten the curve" through the late spring of 2020, by early summer case counts again began to rise as states "reopened" in different phases. Health experts warned of the dangers of too much interaction and large gatherings that could become super-spreader events. Cases rose the most in nineteen states in the South, West, and Midwest, which had been spared the worst of the pandemic in the earlier wave. Native American homelands were hit particularly hard, and by May, the Navajo Nation had the highest case rate per capita in the United States (Kim 2020).

In mid-May 2020, the U.S. federal government launched Operation Warp Speed, a public-private partnership that provided $18 billion in funding to accelerate development of vaccines that were intended for U.S. populations (Lancet Commission 2021). The goal of the program was to create three hundred million doses of vaccines by January 2021 (Government Accountability Office 2021). On May 27, COVID-19 deaths in the United States passed one hundred thousand, more than any other nation in the world.

The summer of 2020 brought the second wave of increasing infections (a positively sloped epidemiological curve). On July 10, the United States set the single-day new case record for the seventh time in eleven days, surpassing sixty-eight thousand new cases a day. Across the full month of July, the United States recorded more than 1.9 million new infections. Lack of testing supplies and access to testing make even these enormous numbers a likely underestimate. By August, COVID-19 became the third leading cause of death in the United States after heart disease and cancer.

Although the effect of the pandemic on lives lost was massive (and growing), the pandemic also affected those who remained healthy. Disruptions from government and business responses to the pandemic left many struggling with continued unemployment. By May 2020, unemployment had stripped approximately 5.4 million Americans of health insurance (Dorn 2020). Those still employed faced challenges of going to work during pandemic lockdowns or of working from home without adequate childcare or schooling options. These disruptions exacerbated existing inequalities given that some groups were much better positioned than others to work remotely or use flexible work schedules to assist with childcare and remote learning. In late August, with little federal assistance, K–12 and college institutions began the school year with a patchwork of plans for in-person, hybrid, and remote learning that would do little to alleviate the burden on parents. For in-person employees, work location would emerge as a primary determinant in the risk of contracting COVID-19 (Chang et al. 2021).

In response to the continued dangers of the pandemic, and the need to balance lives and livelihoods, the federal government took a more proactive role in encouraging people to wear masks. On July 12, Trump wore a mask in public for the first time, at a hospital (Murray, Goller, and Heinrich 2020). On July 14, 2020, drawing on new scientific studies about the effectiveness of cloth mask coverings, the CDC called on all Americans to wear masks in public spaces to prevent the spread of COVID-19 (CDC 2020). The president expressed some support for mask-wearing—saying, for instance, in a speech on July 21, 2020, "We're asking that ev-

erybody that when you are not able to socially distance, wear a mask, get a mask" (Murray, Goller, and Heinrich 2020). However, he was rarely seen in public with a mask and mocked his opponent, presidential candidate Joe Biden, for always wearing one (Segers 2020).

The lack of a unified response from political leaders was matched by a polarized reaction in the public. Mask-wearing would crystalize as a significant political divide, and rates of mask-wearing would differ significantly by political party. Specifically, we know by examining data from the COVID-19 Social Change Survey (CSCS), a nationally representative panel survey of five thousand U.S. respondents (Redbird 2020; Bonilla, Harbridge-Yong, and Redbird 2021; Redbird, Bonilla, and Harbridge-Yong 2021), that the partisan divide in mask-wearing would increase to 20 percent by June of 2020, and would remain stable throughout the next 12 months (see figure 2a).

As case and death counts continued to rise, and with the presidential election less than two months away, President Trump continued to downplay the severity of the risk faced by Americans. On September 19, the night before the United States exceeded two hundred thousand deaths, the president said, "It affects virtually nobody. It's an amazing thing. It affects . . . elderly people with heart problems and other problems—if they have other problems that's what it really affects, that's it" (Murray, Goller, and Heinrich 2020). This rhetoric exemplifies the challenge government officials face during an election year, of providing accurate information about the risk of severe illness, hospitalization, and death, without decreasing political popularity.

The pandemic was front and center in the 2020 presidential race. In a Gallup public opinion poll taken in early November, 28 percent of Americans identified COVID-19 as the single most pressing issue in the United States, followed by poor governmental leadership at 22 percent (Gallup Organization 2020). The president alternated between downplaying the crisis and highlighting the accomplishments of his administration in responding to the crisis. Media coverage revealed that many of his statements, from both the White House and the campaign trail, were not based in fact (Paz 2020; Mason and Barabak 2020). Former Vice President Biden focused on the failings of the Trump administration and on his own plans to heal the nation and address the pandemic. The salience of the pandemic to the presidential race heightened when the president tested positive for COVID-19 on October 2 after a gathering in the White House Rose Garden (and accompanying indoor events) where a large group gathered to swear in Amy Coney Barrett to the Supreme Court. The president was hospitalized on October 2 at Walter Reed National Military Medical Center and returned to the White House on October 5.

Scientific advances in treating COVID-19 also increased throughout the fall. In October, the Food and Drug Administration (FDA) authorized approval for the drug remdesivir for the treatment of COVID-19. In November, the FDA granted emergency use authorization for an experimental antibody treatment (made by Regeneron), which had been given to the president during his hospitalization. Throughout the fall, multiple vaccines also moved through trials, giving hope that COVID-19 might soon be eradicated.

Despite optimism about medical advances and vaccine progress, the case count and death count continued to rise. In the late fall, scientists cautioned about a likely debilitating third wave during the traditional flu months of winter. On November 5, COVID-19 cases at colleges and universities in the United States hit a quarter of a million. On November 8, the United States passed the grim ten million COVID-19 case milestone. By November 18, the death toll exceeded 250,000. Further highlighting the exacerbating effect of the pandemic on existing inequalities, people of color disproportionately experienced both cases and deaths (Chang et al. 2021). As the holiday season approached, the CDC urged Americans to stay home, limit the size of gatherings, and avoid gathering with people outside their households. At the beginning of December, the CDC urged universal mask use indoors and anywhere people were outside their homes (Telford 2020).

Vaccines and a Path Out of the Pandemic

The first great hope for ending the pandemic came in December of 2020, when the FDA pro-

vided emergency use authorization for two mRNA vaccines—Pfizer-BioNTech (December 11) and Moderna (December 18). Both vaccines were approved under a two-dose protocol. Despite some concerns about new variants of the virus that might affect effectiveness of vaccines, demand was strong among large segments of the population. Vaccine effectiveness relies on uptake among a large proportion of the population. The federal government provided little coordination for distribution. These challenges, coupled with increasing vaccine hesitancy, hindered effectiveness. This was highlighted when the death toll in the United States surpassed three hundred thousand on December 14.

In January 2021, the race to vaccinate the American public began and a new president took control of federal pandemic response. President Biden set an initial goal of one hundred million coronavirus vaccinations in his first hundred days. His administration also increased federal involvement in vaccine manufacturing and distribution, which had been begun under the previous administration. For instance, President Biden used the Defense Production Act to help Pfizer obtain the heavy machinery it needed to expand its plant in Kalamazoo, Michigan (LaFraniere 2021). The federal government also deployed active-duty military service members to support community COVID-19 vaccination centers and played an instrumental role in the Federal Retail Pharmacy Program for COVID-19 Vaccination, which included twenty-one national pharmacy partners and independent pharmacy networks with about thirty-eight thousand locations (C. Lopez 2021; CDC 2021a). Pharmacies could charge for the vaccine, but it was completely covered by health insurers and offered for free at public health locations, paid for by government programs for those without insurance.

Throughout the winter months of 2021, vaccine demand outpaced supply despite rising vaccine hesitancy. States prioritized healthcare workers and nursing home residents, then opened vaccine access to older residents and other essential workers. In February 2021, the FDA granted emergency use authorization to a one-dose vaccine from Johnson & Johnson. With high demand and improved distribution systems, President Biden increased his vaccination goal to two hundred million vaccinations in the first hundred days (Mangan and Lovelace 2021).

New Variants and Vaccine Hesitancy

The optimistic tone was generally consistent with the perception that vaccines would end the pandemic and life might return to prepandemic norms, but continued vaccine hesitancy among some populations, coupled with the emergence of COVID-19 mutations and variants, prompted speculation that "zero cases" was an unlikely outcome—the pandemic was more likely to become endemic than vanish completely (Martinez 2021).[7] By May, vaccines were available to all adults in most states, although rural areas continued to experience supply difficulties. By late spring, vaccine demand began to wane because remaining unvaccinated populations were hesitant or outright resistant.

Patterns of vaccine uptake were strongly correlated with partisanship, Democrats being vaccinated at much higher rates than Republicans (G. Lopez 2021). Polling from Civiqs shows that by July 2021, 95 percent of Democrats reported either being vaccinated or wanting to be relative to only 54 percent of Republicans (Civiqs 2021). Among CSCS respondents, vaccine hesitancy was nearly 20 percent higher among Republicans at this time (see figure 2b) (Redbird 2020; Bonilla, Harbridge-Yong, and Redbird 2021; Redbird, Bonilla, and Harbridge-Yong 2021). This polarized pattern of behavior reflected the divergent messages people heard from political leaders about the severity of the pandemic, the value of the vaccines, and whether vaccination was a personal choice or a community responsibility.

On May 13, the CDC announced that people who were fully vaccinated did not need to wear

7. This perspective emerged among immunologists, infectious-disease researchers, and virologists as early as January 2021 (Phillips 2021).

masks indoors or outdoors in most circumstances (Abutaleb and McGinley 2021). This abrupt shift in policy, which many hoped would encourage vaccination among the remaining population, also led to further reduction in mask mandates among states, localities, and businesses.

Although COVID-19 case counts were low across most of the country in the early summer of 2021, by mid-July, concerns grew about the increasing spread of the Delta variant, a mutation that was more transmissible than the original SARS-CoV-2 virus (Kupferschmidt and Wadman 2021). Although unvaccinated Americans continued to make up the vast majority of COVID-19 hospitalizations, viral loads in breakthrough (vaccinated) cases of the Delta variant suggested that vaccine effectiveness decreased over time (Barry and Treffeisen 2021). On July 16, Los Angeles County reinstated an indoor mask mandate, regardless of vaccine status. Spurred in part by a July 4th super-spreader gathering in Provincetown, Massachusetts, the CDC revised its guidance on July 27, urging even vaccinated Americans to wear masks indoors in areas with high cases per capita. At the time of their revised recommendation, 63 percent of U.S. counties met that definition, up from 46 percent of counties a week earlier. The CDC also called for universal masking in K–12 schools, which led to political contention about mask mandates in schools in many school districts.

On August 2, 2021, the United States met the president's vaccination goal of 70 percent of adults receiving at least one vaccine shot (Suliman et al. 2021). The milestone was nearly a month behind his goal of reaching this threshold by the Fourth of July holiday. Later that month, on August 23, the FDA granted full approval to the Pfizer-BioNTech COVID-19 vaccine, moving the approval beyond emergency use authorization and making it easier for employers to mandate the vaccine (U.S. Food and Drug Administration 2021). Based on evidence of waning effectiveness, the FDA also began discussing approval for a third booster shot (Lovelace, Towey, and Mendez 2021).

As Delta cases surged across the country, hospitals in many states reached capacity. On September 9, 2021, President Biden announced that the Department of Labor would require all businesses with one hundred or more employees to ensure that their workers were vaccinated or tested at least once a week (Liptak and Collins 2021). The president expressed frustration that vaccine hesitancy limited the ability of the country to move beyond the pandemic. "We've been patient, but our patience is wearing thin, and your refusal has cost us," he said in his speech (Liptak and Collins 2021). The administration based the new mandate on federal laws allowing the government to protect workplace safety, but many Republicans viewed it as government overreach (even as many of them also opposed individual businesses mandating the vaccine), resulting in numerous court cases (National Academy for State Health Policy 2021; Timsit 2021). In January 2022, the Supreme Court, in a 6–3 decision, struck down the Biden administration's vaccine-or-test rule, declaring that, although Congress has given the Occupational Health and Safety Administration (OSHA) the power to regulate occupational dangers, it has not given the agency the power to regulate public health more broadly (Liptak 2022). The liberal minority of justices disagreed, arguing that the workplace threat from COVID-19 to employees is precisely what OSHA is commanded to do. In a small victory for the administration, the Supreme Court upheld a mandate requiring health-care workers at facilities receiving federal money to be vaccinated (Liptak 2022).

Delta was not the last highly transmissible variant. After emerging in South Africa, the Omicron variant spread around the world, quickly replacing Delta as the leading COVID-19 variant. Although the variant appeared to be less severe, on average, than Delta, reinfections and breakthrough infections in people who were fully vaccinated meant the virus spread exponentially (CDC 2021b). By mid-January 2022, daily cases exceeded previous records, with more than eight hundred thousand new infections reported each day (*New York Times* 2021). The rise of at-home tests kits and asymptomatic cases makes this a likely undercount of actual infections. This surge also resulted in a record number of COVID-19 hospitaliza-

tions[8]—150,000 patients nationwide—and a large (but not record) 1,900 deaths per day (*New York Times* 2021). Though booster shots had been approved for all adults the previous year (CDC 2021c), the CDC responded to climbing Omicron cases by approving third shots for all children ages twelve and older in January 2022 (Tin 2022).

Living with an Endemic COVID-19 Virus

For more than two years, the COVID-19 pandemic remade daily life, reshaping interactions with families, communities, workplaces, the nation, and the world. It disrupted modes of working, learning, and socializing—presenting significant challenges to the economic, physical, social, and mental well-being of many Americans. The pandemic touched more than individual lives. In many ways, it has altered the nature of community, organization, and attachment with consequences that cascade across social, political, cultural, and economic spheres.

At the time of this writing, the United States has experienced five waves of case surges. While vaccines decreased the likelihood of hospitalization and death during the more recent waves, the substantial increase in infections still had the power to overwhelm hospitals and create large-scale suffering. The United States is not alone in this pattern, nearly every country has experienced COVID-19 ebb and flow (Dong, Du, and Gardner 2020), a pattern of cyclical uncertainty and disruption. The suddenness with which cases can climb underscores the need to understand the social-political connection that creates rapid policy and responsive citizenship.

Surges and mutations have shifted our view of the future. The world increasingly views the end of the pandemic, not as eradication of the COVID-19 virus, but as an inflection point, beyond which the likelihood of serious illness and death are dramatically decreased. Under this revised reality, post-pandemic life is not a replica of the pre-COVID-19 age, but rather a new normal in which shifts in institutions also seek to mitigate the ongoing social, political, and cultural harms of COVID-19. The pandemic challenged our informational, social, and political systems in ways that will take decades to fully understand. But understanding the changes it created, and how those changes may reverberate across individuals and institutions for generations, is a place where social scientists can offer valuable insights. This special issue only begins to examine some of these challenges and consequences.

MEDIA, PUBLIC OPINION, AND THE SALIENT DYNAMICS OF COVID-19

Information exchange was foundational in the interaction between policy and public response. The media replayed and amplified the public reaction for policymakers, facilitated the exchange of health information, and inspired and disseminated scientific discovery. Individual choices of where to turn for information, played vital and expansive roles throughout the pandemic. Reports of case counts and, most grimly, the death toll were daily features in print, television, and digital news. Coverage, however, was not limited to health information. Reporting addressed political rallies for and against mask and vaccine policies; articles of fact and opinion were written about shifts in the American workforce as more people demanded flexible, work-from-home arrangements; and some media relied on data and scholars to inform thoughtful coverage of increasing inequality brought about by the pandemic.

After years of reports and conferences, detailing how the mainstream news media was failing and demanding ways to save the fourth estate, the pandemic did something modern newsrooms had not previously witnessed. It transfixed the nation on coverage for more than a news cycle. "TV news viewing was on a meteoric rise as the COVID-19 pandemic swept through the U.S.," audience measurement company Nielsen (2020) reported. In March 2020, alone, U.S. adults spent 215 percent more time online and on mobile devices, accessing current events and global news, relative to the same month in the previous year (Nielsen

8. This figure includes incidental infections of people with minor COVID-19 symptoms who are hospitalized for reasons other than the virus.

2020). The topic was vast and urgent, and information unfolded at a breakneck pace. This is the milieu of the 24-7 media: quick, evolving, and complicated—circumstances we understand, and are sadly familiar with, in the coverage of national tragedies such as mass shootings as well as in weather-related disasters, large-scale accidents, and national security issues. What may be unique to COVID-19 was its sustained presence in the discourse. "While that [initial] rise was soon followed by a steady leveling off," Nielsen explained in October 2020, "news consumption still remains a much larger part of the TV viewing day."

Additionally, COVID-19 was not exclusively a national issue. It was local, and it was everywhere. In an April 2020 study conducted by Pew, Americans acknowledged paying about equal attention to local and national news, and about half (46 percent), said local news was a major source for pandemic-related news (Shearer 2020). But taking all local information sources together, the local-first narrative became even more compelling. Two-thirds (64 percent), of U.S. adults named at least one local information source—including local news; state and local elected officials; and community newsletters and listservs—as a "major" resource (Shearer 2020). This rate differed among groups. Black Americans, who were disproportionately affected by the pandemic, were more likely to rely on local news organizations for information regarding COVID-19, mirroring previous studies finding that Blacks are more interested in, and more trusting of, local news (Atske et al. 2019).

The pandemic also shifted how Americans collected information. Understandably, it decreased contact with neighbors, friends, and coworkers. Data from the CSCS panel show the amount of information sought from these sources also decreased. Early months of the pandemic increased reliance on more formal news sources, but by May 2020, Americans also started becoming more skeptical of such sources. By the end of 2020, CSCS respondents were more likely to view media sources as biased and one-sided than during the early days of the pandemic (see figure 2c). This pattern may result from the conflicted political discourse, which was reflected in various media outlets. For instance, mixed messaging on the COVID-19 vaccine was more common in conservative media outlets than mainstream or liberal outlets (Bauder 2021).

Early coverage of the pandemic focused almost exclusively on the epidemiology of the disease. By the spring of 2020, however, that coverage had expanded to include social and cultural impacts on relationships, institutions, and communities. Of particular concern was the impact on young people. In response to a drop in the number of Texas high school seniors filling out college federal financial aid applications, the *Texas Tribune* reported, "Higher education leaders across Texas say high school counselors are struggling to connect with students virtually and students aren't receiving the same information about college applications and financial aid that they would be if they were in school every day" (McGee 2020). These concerns also received national attention. In reporting about college students, mental health, and the potential for suicide, the PBS *NewsHour*, hosted by Judy Woodruff, cited CDC data that "three out of four Americans between the ages of 18 and 24 report poor mental health tied to the pandemic" (Sreenivasan, Krane, and Thoet 2021). Reporter Hari Sreenivasan highlights an interview with Varun Soni, the vice provost for campus wellness and crisis intervention at the University of Southern California: "Soni says the string of recent American crises, combined with an overreliance on technology and social media, are making today's young people more anxious than ever before. And COVID isolation has made it worse." By the late summer and fall of 2021, coverage shifted to address increasing case counts among children with attention to the pressure on pediatric hospitals, school policies on masks, and vaccine approval status for children.

Media coverage also highlighted the ways COVID-19 exacerbated existing inequalities and created new ones. Pieces on the inequitable demands placed on working mothers during the pandemic were common enough to be reported nationally, locally, and repeatedly. Even a March 2021 *New York Times* article reporting that mothers were regaining jobs pointed out that "mothers were much likelier than fathers

to leave work because of school closures and caregiving responsibilities, and a variety of data shows that they are doing significantly more of the additional childcare, education and housework during the pandemic. Now, as more have returned to paid work, they are adding to the unpaid work they are already doing at home" (Miller 2021).

Other narratives also emerged that highlighted how the pandemic shaped racial inequalities. Although in some cases the media simply highlighted the disparate impacts of the pandemic, in others, the media contributed to a racialized dialogue, increasing the challenges faced by particular groups. For instance, frequent repetition of then President Trump's moniker "the Chinese virus" increased anti-Asian sentiment, "triggering xenophobic reactions and behaviors such as discrimination, hate crimes, and harassment against Chinese individuals" (Ittefaq et al. 2022, 19). Likewise, we saw media portrayals of the disproportionate impact of the pandemic on Black, Latinx, and Indigenous populations characterized by racialized discourse around preexisting conditions and overrepresentation in frontline and essential jobs.

The COVID-19 pandemic also highlighted problems in the social structures of American society. For instance, Ezra Klein (2020), writing for *Vox*, led the way in thinking of the pandemic as instigating a "loneliness epidemic." He explained, "But just as the coronavirus fallout threatens to cause an economic recession, it's also going to cause what we might call a 'social recession:' a collapse in social contact that is particularly hard on the populations most vulnerable to isolation and loneliness—older adults and people with disabilities or preexisting health conditions." Stories also focused on the inequitable economic consequences of the pandemic (Public Broadcasting Service 2020); the deleterious impact of COVID-19 on the fight against HIV/AIDS (Varney 2021); and increased rates of alcohol consumption, particularly among women (Tingley 2021).

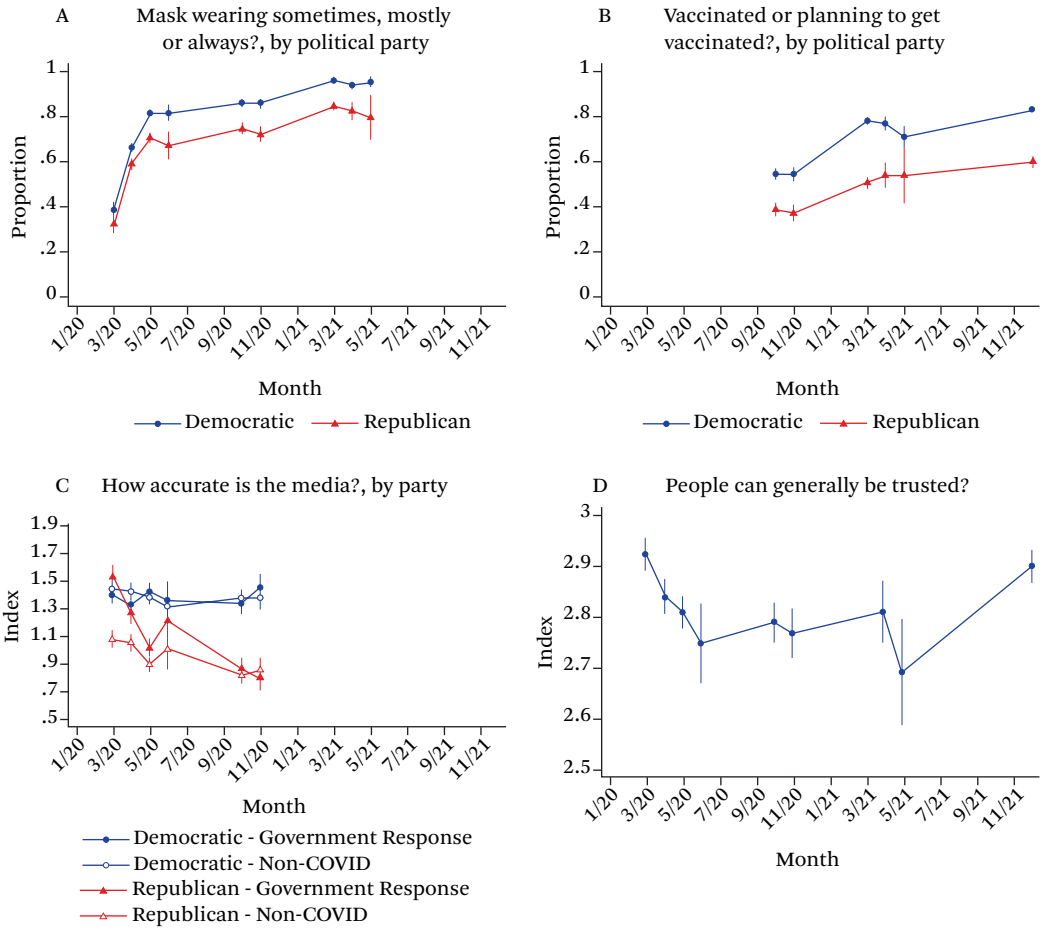
This media coverage emphasized the potential for the "social recession" to dramatically alter other forms of social cohesion and interaction. For instance, in April 2020, when the number of national cases was still under thirty thousand, generalized social trust began to decline (figure 2d). CSCS respondents were less likely to respond that "In general, people can be trusted." This decrease in trust may be partially the result of the nature of the pandemic, which encouraged separation and distance, while also highlighting that neighbors—and their own COVID-19 precautions (or lack thereof)—became more dangerous to individual health.

Trust in institutions also began to decline. CSCS results show that we became less trusting of federal and state governments (figure 3a) as well as law enforcement, courts, health-care workers, and scientists. During the course of the year, belief that U.S. institutions compared favorably to other nations of the world declined across the board, a phenomenon that included institutions that did not perform well during the pandemic such as the economy, health-care system, government effectiveness, education, and criminal justice system, but also less pandemic-related institutions such as transportation infrastructure and the military. Although in some instances this faith began to rebound by late 2020, in many instances it did not. Rather than produce unified support for governmental institutions and political leaders, which is often seen during wars and crises (Mueller 1973; Chanley 2002), the pandemic lessened social cohesion and polarized trust.

As our trust was eroding, so was our sense of community and solidarity. Since the beginning of the pandemic, CSCS panelists have been substantially less likely to agree that "I am deeply connected to my community," "I feel like I belong in my community," "my neighbors would help me if I needed it," and "I can rely on my family in a time of need." Respondents became significantly more likely to say "I can only rely on myself" and less likely to agree that "my actions have an effect on everyone around me." Throughout the year we also became less likely to see a death in the community as hard on everyone. This declining local solidarity (see figure 3b) was more pronounced in White attitudes, which declined steeply and continued to be low throughout the year. In contrast, non-White local solidarity started lower but declined less and rebounded quicker.

Declining solidarity extends beyond local

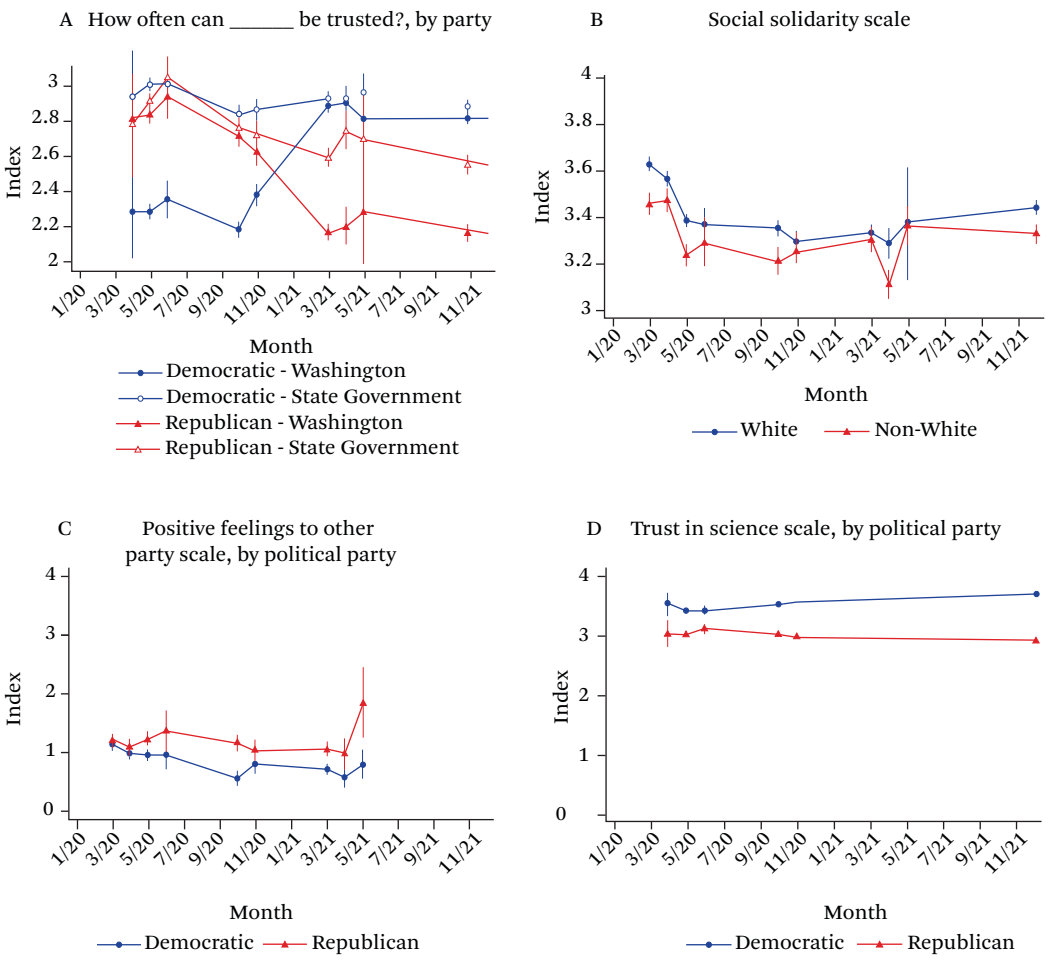
Figure 2. Public Opinion Responses from CSCS Panel



Source: Authors' calculations from the COVID-19 Social Change Survey (Redbird 2020; Bonilla, Harbridge-Yong, and Redbird 2021; Redbird, Bonilla, and Harbridge-Yong 2021).
Notes: Panel A. In the past month, how often do you wear a mask? (0 = occasionally or never; 1 = always, most of the time, or sometimes). Includes leaning partisans, but not independents. Panel B. Have you gotten (at least) the first dose of the vaccine to prevent COVID-19? If not yet vaccinated, will you get the vaccine? (0 = probably will not get, definitely will not get; 1 = yes, have gotten, definitely will get, probably will get). Includes leaning partisans, but not independents. Panel C. How accurate is the information from the media on [Government response to the coronavirus or noncoronavirus topics]? (1 = very inaccurate; 5 = very accurate). Includes leaning partisans, but not independents. Panel D. "How much can people be trusted?" (1 = can't really be trusted; 5 = can be trusted a lot).

community. Affective political polarization, which captures how negatively we feel about political outgroups (Iyengar, Good, and Lelkes 2012; Mason 2013) decreased in the early months of the pandemic (Boxell et al., forthcoming), perhaps because the common pandemic threat created a "rally around the flag" effect (Quarcoo and Kleinfeld 2020). This effect dissipated quickly, and feelings toward other-party members became more negative than pre-pandemic levels by the end of 2020 (figure 3c). We became less likely to rate someone across the aisle as intelligent, kind, open, or generous, and more likely to see them as mean, selfish, and hypocritical. Respondents also became less likely to agree that "Americans tend

Figure 3. Public Opinion Responses from CSCS Panel



Source: Authors' calculations from the COVID-19 Social Change Survey (Redbird 2020; Bonilla, Harbridge-Yong, and Redbird 2021; Redbird, Bonilla, and Harbridge-Yong 2021).
Note: Panel A. How much of the time do you think you can trust the government in [Washington / your state government] to do the right thing? (1 = never; 5 = always). Includes leaning partisans, but not independents. Panel B. "I'm responsible for the well-being of my community."; "It is important for people to look out for each other." "We are all connected."; "My actions have an effect on everyone around me."; "I am deeply connected to my community."; "My neighbors would help me if I needed it."; "I feel like I belong in my community." (1 = strongly disagree; 5 = strongly agree). Hispanic and Latino respondents coded as non-White. Scale Cronbach's alpha = 0.787. Panel C. "On a scale of 1–10, how well does this trait describe [the other] party? [patriotic; mean; intelligent; honest; selfish; open-minded; generous; hypocritical; places country over party]"; "On a scale of 1–10, how comfortable are you having [a member of the other party as]? [a neighbor; a friend; married to your child]". Includes leaning partisans, but not independents. Scale Cronbach's alpha = 0.934. Panel D. "How trustworthy are conclusions by scientists? [eating healthy; dealing with the coronavirus; reopening the economy; climate change; space exploration; treating depression; growing the economy; detecting earthquakes]". (1 = not at all trustworthy; 5 = very trustworthy). Includes leaning partisans, but not independents. Scale Cronbach's alpha = 0.897.

to come together in times of crisis" or that "it is important for Americans to work together."

Within this context, it becomes easier to see how declining solidarity and decreased trust in formal institutions may compound the larger environment of misinformation. Researchers have extensively documented how some media organizations may have a partisan bias and the public may engage in selective exposure (Festinger 1957; Iyengar and Hahn 2009) and motivated reasoning (Lodge and Taber 2013). However, the risks of misinformation and bias are made more problematic with the range of ideas and "expert" views available online that proliferated during the pandemic. By April 2021, reporting from National Public Radio on vaccine misinformation and hesitancy put a head on this point:

> CNN. ABC News. *The New York Times*. Fox News.
>
> Those are the publishers of four of the five most popular Facebook posts of articles about the Johnson & Johnson COVID-19 vaccine this week.
>
> They're ranked 2 to 5 in total interactions, according to data from the tracking tool CrowdTangle. The No. 1 posting, however, isn't from a news organization. Or a government official. Or a public health expert.
>
> The most popular link on Facebook about the Johnson & Johnson news was shared by a conspiracy theorist and self-described "news analyst & hip-hop artist" named An0maly who thinks the pandemic is a cover for government control.
>
> It's a stark example of what experts warn could be a coming deluge of false or misleading information related to the one-shot vaccine. (Parks 2021)

This is also an exemplar of behavior that we saw emerge before the pandemic persisting: Individuals approached the news with existing biases. An0maly shared a CNN story with a misleading caption with 1.5 million followers. As Sarah Roberts, a UCLA information studies professor explained to NPR, "The issue is this is a factual report. But the people reading the report either have such deeply held preconceived notions about its meaning or they lack appropriate context to receive the information" (Parks 2021). It is within this environment that we also see increased polarization in trusting scientists and scientific conclusions (figure 3d). This example highlights the need to better understand information and misinformation during the COVID-19 pandemic, and how it relates to the social and political structures of society.

As Roberts was in the story just cited, social scientists were often quoted in these stories and, in some cases, highlighted as groundbreaking thought leaders. The sociologist Zeynep Tufekci, also a contributing writer for *The Atlantic*, followed up her February 2021 piece "5 Pandemic Mistakes We Keep Repeating" with her March story "3 Ways the Pandemic Has Made the World Better" (2021a, 2021b). After coding for the virus and using our digital infrastructure, she argued, "we've unleashed the true spirit of peer review and open science." She detailed: "On January 10, 2020, an Australian virologist, Edward Holmes, published a modest tweet: 'All, an initial genome sequence of the coronavirus associated with the Wuhan outbreak is now available at Virological.org here.' A microbiologist responded with 'And so it begins!' and added a GIF of planes taking off. And so it did indeed begin: a remarkable year of open, rapid, collaborative, dynamic—and, yes, messy—scientific activity, which included ways of collaborating that would have been unthinkable even a few decades ago" (Tufekci 2021b).

This issue represents another form of such collaboration. The tradition of meeting in person, with the authors of the articles enclosed here, at the Russell Sage Foundation offices in New York City was replaced with an online conference, that digital infrastructure that Tufekci notes "transformed" work. Additionally, others, including Beth Redbird—an author of this piece and an editor of this issue—moved quickly in early 2020 to begin to digitally gather the data that would document the impacts of COVID-19 to inform policymaking and facilitate future research (Redbird 2020; Bonilla, Harbridge-Yong, and Redbird 2021; Redbird, Bonilla, and Harbridge-Yong 2021).

There is no denying that the media led the way in telling us the stories of how lives were being changed during this pandemic. Media

have been abundant and ever present during COVID-19. They have been transmitting information, however varied in quality, that has provided a cadence to what we know about the pandemic. Their work has led to discourse among families, friends, and communities, addressed in workplaces and institutional correspondence. But, ultimately, as this brief introduction evidences, the media offered a scatter-shot approach.

It is also clear that media coverage alone does not help us understand the complex dynamics that explain why people differ in their interest in and acceptance of information; how communities are differentially impacted; and what resources best facilitate recovery, and the mechanisms by which some people have a more or less positive response to pandemic policies. The pandemic created broad-ranging, and often fast-moving, change in our social, political, and economic relationships. How much of that change dissipates, and how much becomes a long-term scar created by the pandemic, is a truth that will unfold over the next years and decades.

The CSCS panel data shed light on important public opinion trends during the first twenty-four months of the pandemic, but unpacking the institutions and information systems that intertwined the social and political consequences of COVID-19 requires the application of social science theory. Understanding how the pandemic altered information seeking and exacerbated inequalities in information, networks, and resources—and the ultimate impact of these inequalities on social, health, and policy outcomes—requires a multidimensional examination that varies across space and time. Likewise, unpacking how government response—at federal, state, and local levels—interacted with political and social information, identity, and trust, represents critical components in the trajectory of the pandemic. Without a doubt, these are just some of the important processes that shaped the pandemic, yet they represent several critical dimensions for how policymakers and the public responded to the crisis and how those experiences shaped individuals and communities.

Social scientists have theories and frameworks applicable to understanding information exchange, policy decision-making, and social institutions. Going forward, evidence-based interdisciplinary research is necessary to unpack the full and far-reaching consequences of the pandemic on society. Early examples include white papers on the extent to which misinformation broadcast on *Hannity* and *Tucker Carlson Tonight*, the two most popular cable news shows in the United States, influenced health outcomes (Bursztyn et al. 2020), on the deepening housing insecurity crisis (Duvisac, Brady, and Crowley 2020), and on racial inequities at the local level that were exacerbated or borne during the pandemic (Meehan et al. 2020). We are excited that this special edition, which was conceptualized in spring 2020, before mask mandates became commonplace, is one of the first organized efforts to bring together research around the social and political impacts of COVID-19 in the United States.

As the editors and the scholars featured in this volume, we were submerged in the pandemic and its consequences, sometimes dire ones. With that, we know that the work here is only a part of what social scientists will learn from COVID-19. There are all kinds of questions and considerations. Our aim, along with the authors featured throughout this volume, is to begin to understand the social complexities that underlie the pandemic.

THREE CORE THEMES: INFORMATION, INEQUALITY, AND GOVERNMENT RESPONSES

The previous discussion highlights the need to begin synthesizing research agendas that tackle questions of information, inequality, and government responses to crisis and the experiences of the COVID-19 pandemic. This is not a one-way street—social and political dynamics shaped responses to the pandemic and the pandemic itself altered those dynamics for individuals, communities, and institutions. In this issue, our goal is not to capture the full range of research on the social and political ramifications of the COVID-19 pandemic, given that these questions are too numerous and far ranging to cover in the scope of this issue. Rather, our goal is an interdisciplinary exploration of three core themes that emerged as salient to public opinion and through media explorations

in the early months of the pandemic—themes of information acquisition and exchange, inequality, and government responses and subsequent public perceptions.[9]

The social sciences offer a number of insights about these themes. For instance, ongoing transformations of the media environment—the mediating role of technology and social platforms, the creep of entertainment into news, and an overload of information in modern democracies—change the way citizens value information and expertise (Allen et. al. 2020; Edgerly and Vraga 2020; Prior 2005). The variety of intermediaries through which policy information is communicated is also increasing. Crucial examples include social influencers, media companies that may or may not look like traditional journalism organizations, political commentators, political parties, and direct communication from elected officials. The changing nature of the media and information landscape also raises concerns about the prevalence of misinformation and how to combat it (Lazer et al. 2018).

These transformations reveal inequality among Americans in civic skills and behaviors related to news and information consumption. For instance, the gulf within the American public is widening in a number of areas: the ability to distinguish between factual and opinion news statements (Mitchell et al. 2018); political participation (Edgerly et al. 2018); and vote choice (Tyson 2018). These issues are directly connected to citizens' power and status, but we do not yet understand the consequences related to COVID-19.

Information and resources are exchanged in communities at a variety of levels. Individuals exchange information, and as a result, those who are more embedded in informational networks have more power to survive disasters (Klinenberg 2015). Information is also exchanged between different institutions, levels of government, parties, and political leaders. The pattern and manner of such exchanges have been shown to affect public action during periods of social disruption (Garnett and Kouzmin 2007). Communication gaps, missed signals, information technology failures, turf battles, misunderstandings, and deliberate misinterpretations may alter or delay institutional and individual responses. More connected communities, by contrast, may create more responsive policy, particularly during fast-moving crises (Aldrich 2011a, 2011b).

The pandemic also brought other forms of social inequality into stark relief. Disasters and social disruptions often disproportionally harm the more vulnerable (Flanagan et al. 2011). Nonetheless, the geographic expansiveness, temporal longevity, and cyclical nature of the pandemic created larger challenges than past major disruptions (Perry, Aronson, and Pescosolido 2021).

As a result, differential access to social resources and disparities in policy responses exacerbated long-standing inequalities. Inequalities in historic access to vital institutions such as health care (Van Dorn, Cooney, and Sabin 2020), childcare (Malik et al. 2020), education (Doyle 2020), and even differences in the construction of neighborhoods and labor markets (Chang et al. 2021), not only concentrated the harms from COVID-19, but also may have increased the vulnerability of the whole of U.S. society in the same way the Great Recession reduced economic resilience (Redbird and Grusky 2016).

In other ways the social impact of the pandemic is not novel. The inequality take-off, which began in the late 1970s, increased the vulnerability of many American families (Piketty and Saez 2014). This not only increases the frequency and depth of crises (Bivens 2016; Dabla-Norris et al. 2015; Van Treeck 2015), but also but also reduces the ability of Americans to withstand disruption and recovery quickly. Following the Great Recession, the economy recovered faster than families, and some inequality consequences continue to linger. For instance, U.S. gross domestic product recovered quickly, yet employment did not recover for fifty-one months (Bivens 2016), with jobs in manufacturing, construction, and production lagging most (Redbird and Grusky 2016). Similarly, welfare use returned to prerecession lev-

9. Even within these themes, the research in this issue tackles just a slice of the complex issues raised by the pandemic.

els even though earnings and the number of Americans living in poverty did not return to 2007 levels for nearly a decade (Bishaw et al. 2020; see also Shaefer and Edin 2012).

The pandemic is similar in many respects to the Great Recession. Both were multi-year global crises marked by swift and dramatic changes in employment and earnings, however, America's rapid post-pandemic economic recovery might encourage a more optimistic view of the long-term consequences of the pandemic. Yet emerging discussions around the well-being of children suggest we may not fully see the consequences for learning, achievement, and earnings for decades (Kamenetz 2022).

Pandemic generated inequality was likely magnified by the patchwork response to COVID-19 across states and localities. Several social science perspectives speak to causes of the inconsistent U.S. response. For instance, theories of federalism and policy diffusion offer valuable insights about the dynamics that shape which policies diffuse from state to state, or vertically from local, to state, to federal institutions (see Karch 2007; Butler et al. 2017; Shipan and Volden 2006). These perspectives also point to the factors that can drive diffusion and the adoption of similar policies—shared experiences of the problem (Elcheroth and Drury 2020), institutional capacities (Capano et al. 2020), and shared political orientations (Butler et al. 2017), among others. At the same time, the nationalization of politics (Hopkins 2018) and theories of political competition for majority control in Congress and the presidency (for example, Lee 2016) highlight the incentives for political officials to emphasize competing perspectives and their different policy views, pointing to one reason that responses to the pandemic differed by the partisanship of the elected leaders. Whether policymakers adopt policies based on the likely success of the policy at mitigating the harms of the pandemic or based on their political goals can have important consequences for the overall effectiveness of the government response to the COVID-19 pandemic. The patchwork nature of the pandemic also exacerbated inequalities in health access, care, and mortality.

Both the effectiveness of government responses to the COVID-19 pandemic and the public response to those policies also hinge on how much trust people have in their government. Public trust in government plays a central role in how people respond to policies that call for personal sacrifices (Hetherington 1998). Social science frameworks highlight the potential for crises to produce a "rally around the flag" (Mueller 1973; Chanley 2002), leading to increases in solidarity, trust in government, and approval of leaders. But this vein of research also demonstrates that crises can reduce trust, as scholars have shown for economic downturns, natural disasters, and earlier pandemics outside the United States (Stevenson and Wolfers 2011; Nicholls and Picou 2012; Bangerter et al. 2012).[10] Over the last two decades, trust in government in the United States has become increasingly polarized along party lines (Hetherington and Rudolph 2015), suggesting that partisan attachments may override a sense of national solidarity in the face of the pandemic. Over the course of the initial COVID-19 pandemic response, officials at the state and federal levels called on the public to sacrifice their livelihoods to save lives, but these calls differed widely across region, political party, and other cleavages. Social science frameworks can help us understand why people responded in specific ways, and the nature of pandemic responses may also highlight important features that are underappreciated in existing frameworks.

Critically, information, economic and social resources, political trust, and a multitude of other resources that may help people respond and recover from the COVID-19 pandemic are not distributed equally. These inequalities are the focus of inquiry across many social science disciplines and the scholars in this issue tackle a range of questions at the intersection of information, inequality, and government responses to the pandemic.

10. Some evidence suggests that, outside the United States, the public rallied around their elected leaders and trust increased (for evidence on the early responses to the COVID-19 pandemic in Denmark, see Baekgaard et al. 2020).

This exploration involves two related directions of inquiry. First, we seek to take the theoretical frameworks that have informed work in our respective disciplines and apply them to understanding the challenges presented by the COVID-19 pandemic. Second, we consider the ways in which existing frameworks are limited or incomplete in helping us understand the pandemic. How should our scholarly understanding of information seeking and exchange, inequalities, and government responses and public perceptions of that response, change as a result of the COVID-19 pandemic?

Overview of Articles in This Issue

The first theme of this issue is information. The authors explore very different sources of information—community networks in person, informational spread online, and elected officials—but share an interest in understanding how informational networks, the accuracy of information, and the source of information affected how people dealt with a novel crisis. Courtney Page-Tan, Summer Marion, and Daniel Aldrich focus on the spread of information within communities about how to curtail the spread of COVID-19 and flatten the curve during the early months of the pandemic. Their article captures how the horizontal and vertical linkages between individuals, communities, and information sources measurably altered health-related behaviors during the pandemic. Although this research points to the value of information spread to promote healthy behaviors during COVID-19, misinformation can also spread through networks. The article by Kevin Leicht and his colleagues examines whether the labeling of misinformation on COVID-19 by Facebook affects individuals' trust discernment and sharing behaviors of COVID-19 information. In contrast to Facebook, Twitter did not actively label COVID-19 misinformation, providing the researchers with a natural comparison.

The second core theme of this issue is inequality. The interdependent nature of institutions can create cascading crises, exacerbating existing inequalities and creating new ones. Because inequalities shape people's health outcomes, their support systems, and government responses during the pandemic, COVID-19 created circumstances during which inequality had as much potential to be contagious as the virus. In their interviews of community-based organizations in the bay area, Alison Cohen and colleagues find that the pandemic was not an isolated crisis, but instead the product of a longer trajectory of structurally produced inequalities (for example, Laster Pirtle 2020) "endemic to capitalist structures." Drawing on feminist and racialized capitalist frames, they explore not only the new challenges posed by the COVID-19 pandemic but also how the pandemic reproduced challenges experienced by vulnerable communities even during "normal" times—resulting in thinking jointly and expansively about addressing community needs.

The insights from these works also highlight the importance of thinking about intersecting identities, social challenges, and the resources individuals have to navigate the pandemic. Carla Pezzia, Magda Rogg, and Tammy Leonard explore questions of inequality through a focus on the unique challenges faced during the pandemic by lower-income older adults. Their interviews highlight the impact of pandemic-related disruptions on social ties, resources, and institutions (including government support programs), and how these populations have responded to these disruptions. In their article examining the protests for racial equality, sparked by George Floyd's murder in May 2020, Claire Kamp Dush and her coauthors highlight the importance of the COVID-19 pandemic as one of several overlapping stressors in the lives of Americans of color, a poignant example of how structural inequalities layer and interlace to create cascading crises and exacerbating existing inequalities. The Black Lives Matter movement for racial equality, sparked by George Floyd's murder in May 2020, added another reminder of inequality, and thus another source of stress, for Black Americans. Drawing on a stress process framework and a minority stress model to examine the connections between stress and mental health challenges, their findings emphasize the importance of watershed moments in the creation of just societies.

Long-standing inequalities in health, economics, and environment made American In-

dians and Alaska Natives particularly vulnerable to the pandemic. Native mortality and hospitalization rates have been among the highest in the country. Laura Evans and her coauthors examine how representation through Native state legislators increased state policy responsiveness and Native control of health institutions increased access to life-saving information. Their research highlights the importance of tribal sovereignty, state recognition, and active cooperation and respect between governments in addressing inequalities exacerbated by the pandemic.

Coordination and cooperation are important topics in our third core theme of this issue, which focuses on government response to the COVID-19 pandemic and public perceptions of this response. High levels of polarization and federalism in American politics contribute to the informational and policy inconsistencies across states, affect how citizens evaluate the response of their government and determine which entities to trust, and increase the importance of local and community organizations. These challenges also affect the likelihood for equitable and cooperative social responses to an intertwined public health and economic crisis. With an eye toward how federalism and extreme polarization posed challenges to the COVID-19 response, Sarah James, Caroline Tervo, and Theda Skocpol examine differences in state-level data collection and COVID-19 mitigation strategies. They focus on multiple stages of policy response—gathering and publicizing information, initial pandemic mitigation measures, and approaches to vaccination—and what factors explain variation in state responses. Their findings point to how federalism, combined with politicization of COVID-19 messaging, created obstacles to an effective and unified governmental response. Because of polarization and the increasing politicization of COVID-19 policies, federalism produced a patchwork of policies, many of which did not reflect the needs stemming from varying case counts across states or the ideal patterns of policy learning and diffusion in frameworks of federalism. Their work also points to an underappreciated aspect of partisanship in contemporary theories of polarization—intraparty divisions within the Republican Party and alignment with Trump. Principles of federalism and decentralization were applied selectively, in accordance with partisan and presidential priorities.

The structure of American politics, with individual identities and government roles at both the state and federal levels, also shapes public perceptions of the government response and which political actors people trust for information. Emily Pears and Emily Sydnor tackle the linkage between partisanship, ideological views as they relate to federalism, state identity, and whom people trust for information about the COVID-19 pandemic. Their work thus falls at the intersection of the information and government response themes. Research in political psychology has pointed to the importance of core social identities in how people make sense of political events and respond to political leaders. Partisanship and national identities have received the most attention in the literature (for example, Huddy and Khatib 2007; Huddy, Mason, and Aarøe 2015; Mason 2018). Pears and Sydnor focus on the decentralized nature of the U.S. response to COVID-19 and the importance of people's state identities, in addition to their political identities, for how they determined which political leaders they trusted. Their findings highlight the power of partisanship in whom people trusted for information, but also the limits of partisanship; for instance, state-level policy responses and state-based identities affect trust as well. Their insights about divergent patterns of trust by party help us further understand why the politicization of COVID-19 among elected officials spread to staunch disagreements by party in the public about how the government and localities should respond.

The question of trust in government is also central in the article by Elizabeth Suhay and her coauthors. They explore trust as both a consequence of government responses to the pandemic and as a cause of whether citizens comply with government health agency recommendations. Their results also highlight the importance of the federal structure and the information that political officials were sharing with the public. Higher trust in state and local governments is associated with an increased likelihood of healthy behaviors, whereas

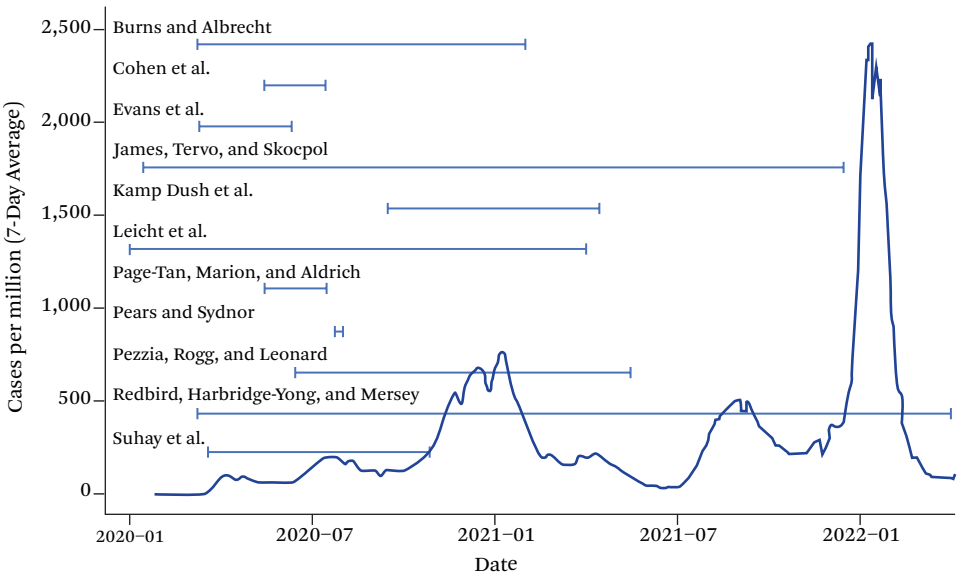
greater trust in the federal government (which, at the time of the Trump administration, was often providing information at odds with guidance by health experts on topics such as mask-wearing) is associated with a lower likelihood. In the same vein as the articles in this issue by James, Tervo, and Skocpol and by Pears and Sydnor, this piece highlights how the politicization of COVID-19 messages at the national level affected the value of information coming from the federal government. These articles emphasize the important intersection of government as a recipient/processor of information and as a source of information, and how people's partisan and other social identities shape their responses to the government.

The final article in this section explores how policy choices by governments are interconnected in ways that can produce unintended consequences. Andrew Burns and Kat Albrecht highlight the unintended consequences of the government's public health response to COVID-19, including by limiting policy solutions to the opioid epidemic. Through syndemic and assemblage frameworks, they study how the pandemic complicated or halted the enactment of various policies aimed at reducing overdose mortality and supporting people seeking substance abuse treatment, as well as how substance abuse provided challenges for the COVID-19 response, for both individuals and communities.

Although each of these articles tackles a separate research question relevant to the author's discipline, collectively they speak to the interconnectedness of the pandemic. The pandemic, while creating far-reaching and perhaps long-lasting consequences, was also fast moving and uneven in its impacts. To illuminate the following work in context, in figure 4 we outline the periods of data collection for the articles in this issue. We place the timelines of study in the larger timeline of U.S. COVID-19 daily cases so that readers may understand the environment in which the research was conducted.

The articles printed here represent early work in the ongoing scientific process of unpacking and understanding the complex, and often interwoven, events that occurred during the pandemic. This work offers new insights into the consequences of COVID-19 and related

Figure 4. Data Collection Timeline, by Author in This Issue



Source: Authors' tabulation.
Notes: Dates represent period of primary COVID data collection. Background image is case counts from figure 1.

social and political processes, but it is simply the tip of an iceberg. The years and decades to follow will see much more research in this area, including exploration of the educational and economic implications of the pandemic, presented in forthcoming issues of this journal.

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PART I

Information

Information Trust Falls: The Role of Social Networks and Information During the COVID-19 Pandemic Among Suburbanites

COURTNEY PAGE-TAN, SUMMER MARION, AND DANIEL P. ALDRICH

Public cooperation with health experts and authorities plays a critical role in curbing the spread of disease during outbreaks such as the COVID-19 pandemic. Through data collected using mixed methods in May and June of 2020, we investigate the influence of information from horizontal and vertical ties on the likelihood that individuals would practice safe and healthy behavior. We look at actions such as staying home, wearing personal protective equipment, and increased handwashing in two northeastern U.S. metro areas. Controlling for factors thought critical in previous studies, our analysis of more than eight hundred survey responses and more than sixty interviews finds that reliance on information from horizontal and vertical ties correlates significantly with behaviors designed to curb the spread of the virus.

Keywords: COVID-19, social capital, horizontal ties, vertical ties, information, civic networks

At the start of the novel coronavirus pandemic in February and March 2020, individuals in the United States and elsewhere were inundated with public information about the disease now known as COVID-19. A variety of government, media, and civil society sources pushed actions to curb the spread of the virus and "flatten the curve." Advice included avoiding contact with sick people, staying home when ill, cleaning and disinfecting frequently touched objects and surfaces, and by April, wearing a face mask and maintaining a distance of six feet from oth-

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ers. Staying home and mask-wearing in public play important roles in curbing the virus's spread (CDC 2020a, 2020b; Soltesz et al. 2020; Trauer et al. 2021). Health communication was critical in this effort, yet when the Centers for Disease Control and Prevention (CDC) began recommending near-universal mask-wearing in public, there was little precedent for understanding how Americans would respond to large-scale health communication efforts (Fisher et al. 2020), especially among less vulnerable groups.

In this study, we examine the effects of information and social ties on healthy behaviors among individuals with high human capital in the early months of the COVID-19 pandemic. Although our sample is not a nationally representative one, its demographic characteristic match 235 counties in the United States where more than seventy-four million North Americans live and that host many of the largest land-grant universities. An original survey having been administered in May and June of 2020 in neighborhoods in Boston and New York City,[1] our team collected data on changes in behavior at the individual level along with the information sources these 822 individuals relied on during the first wave of the virus. We also carried out more than sixty face-to-face interviews and doublechecked our results with a nationally representative sample of 5,275 respondents from the U.S. Census Pulse survey (2022).

Controlling for a variety of factors, including age, income, education, gender, political partisanship, employment status, and marital status, we find evidence that contact with and reliance on information from horizontal and vertical ties had a measurable effect on behaviors during the pandemic. Horizontal ties are high trust, frequently contacted connections between friends, extended kin, and family, and also connections with people from different backgrounds through institutions, including workplaces, faith-based organizations, and horizontal associations. Vertical ties involve "respectful and trusting ties to representatives of formal institutions," which may involve only occasional, single-direction communication (Szreter and Woolcock 2004, 665). In this study, respondents routinely cited reliance on their close networks for information and support while looking to authorities—including mayors, governors, and Dr. Anthony Fauci—for guidance on health practices. Relying on information from vertical and horizontal ties strongly correlated with altered behaviors relating to the adoption of nonpharmaceutical interventions (NPIs), such as wearing personal protective equipment (such as masks and gloves), avoiding public spaces, and handwashing.

This article advances the field in several ways. First, although many studies have sought to understand protective behaviors during the pandemic, they have relied on single types of data, whether qualitative or quantitative (Liu and Mesch 2020; Ozdemir et al. 2022). To move beyond the challenges of any one methodological framework, we use mixed methods to gather both interview and survey data, using large- and small-*N* samples (Lieberman 2005; King, Keohane, and Verba 1994).

Next, although studies of crises and health communication often focus on vulnerable populations such as the elderly, minority communities, and the disabled (see Vinck et al. 2019), scholars understand less about how higher-income, highly educated Americans respond to such efforts. Such individuals are highly prized by political campaigns (Kurtlzeben 2018), often holding leadership positions in civic and political groups (Askarinam and Hounshell 2022). Further, although individuals in our sample live in two large metro areas in the United States (New York and Boston), they closely mirror the demographics of the 235 U.S. counties that are home to more than 22 percent of the country. Our work complements other ongoing COVID-19 research examining smaller subsets of the overall U.S. population to paint a fuller picture of the outcomes (Burns and Albrecht 2022, this issue; Evans et al. 2022, this issue; Pezzia, Rogg, and Leonard 2022, this issue).

The results of our analysis bring important implications for the study of information and social ties. Horizontal and vertical ties were crit-

1. The majority of respondents are from Boston, Brighton, Brookline, Brooklyn, Cambridge, Chelsea, Dedham, Dorchester, Newton Center, Roslindale, Staten Island, or West Roxbury.

ical sources of information and behavioral change in the early months of the pandemic. In an era of misinformation (Galvão 2021) and deliberate disinformation, generalized communication strategies are unlikely to have broad impact. More broadly, this work contributes to a long-standing need to better integrate social science perspectives with public health research, underscored by the COVID-19 pandemic (see, for example, Kleinman 2010; Davies and Wenham 2020). When asked about misinformation during the pandemic in a December 2021 interview, former National Institute of Health (NIH) Director Francis Collins lamented, "I wish I had more insights from behavioral social science research on how this has come to pass" (Subbaraman 2021). This research contributes to understanding how Americans receive and act on information presented as part of health education campaigns, adding critical context to an area of work predominantly focused (with good reason) on low- and middle-income countries and vulnerable groups (see Howard et al. 2017; Vinck et al. 2019).

HOW NETWORKS INFLUENCE BEHAVIOR

Much research has underscored that networks influence our behavior: the choices and encouragement of people with whom we interact encourage us to alter our behavior in a process known as social contagion. A field experiment in Minneapolis and Denver showed that voters transmitted their motivation to vote from household member to household member (Nickerson 2008). Contact with advertisements and messages on social media platforms such as Facebook can influence network members to take on more activist behaviors (Kwon, Stefanone, and Barnett 2014). So too health-related behavior can be altered by network members talking about and encouraging activities such as quitting smoking or exercising (Latkin and Knowlton 2015).

These networks can include a pair of actors, or dyads, where information is directed from one actor, the source, to another, the target, but is not necessarily reciprocated (Yang, Keller, and Zheng 2017). Elements of these social networks, such as the information, influence, social credentials, or reinforcement provide individuals with resources that can be mobilized for action or gain (Coleman 1988; Lin 2001), which Nan Lin defines as social capital, or "the resources embedded in social networks accessed and used by actors for actions" (2001, 25). These networks can remain open and dispersed, allowing for bridges and weak ties to emerge and still facilitate information or influence, or dense and closed, giving greater leverage to realize the gains of social capital (Granovetter 1973; Lin 2001).

Research on social capital categorizes social ties into horizontal and vertical ones (Woolcock 2002); these function in different ways and lead to varied outcomes during shocks and crises. Close horizontal ties can facilitate physical, emotional, and financial support during an event (Hurlbert, Haines, and Beggs 2000). Tightly knit horizontal ties often between friends or family, for example, help would-be evacuees and affected individuals make critical, often life-saving choices about departure and return. A study of more than 1.5 million social media users before and during Hurricanes Harvey, Irma, and Maria demonstrated that broader and more diverse networks motivated people to evacuate from low-lying areas (Metaxa-Kakavouli, Maas, and Aldrich 2018). Communities with stronger horizontal social ties bring back more evacuees after shocks as well (Aldrich 2012).

Beyond horizontal ties, vertical ties to decision-makers also matter in shocks. Although more than fifty coastal towns and villages were devastated by Japan's tsunami of March 2011, only one community—a city with a connection to well-resourced decision-makers in Tokyo—received central government funds for expensive reconstruction projects (Aldrich 2019). One-way vertical ties (individual trust in government officials), have also been shown to matter in disasters; in the 2014 Ebola outbreak in West Africa, for example, individuals expressing distrust in local officials were less likely to adopt preventive behaviors (Vinck et al. 2019). How these horizontal and vertical ties influenced health behaviors early in the pandemic remains an open question.

METHODS AND DATA

This study undertakes both quantitative and qualitative analyses to understand the associa-

tions between reliance on information from horizontal and vertical ties and behavioral change during the COVID-19 pandemic. We draw on an original dataset ($N = 822$) from a survey (Aldrich et al. 2020) conducted in May and June of 2020 in the Boston and New York City metro areas, including zip codes 02127, 02132, 02135, 10304, 10301, 11223, 11224. We recruited individuals by mail and social media, purchasing contact information from Valassis. Participants recruited by mail received a personalized letter of invitation with a paper survey and a prepaid return envelope. Those recruited by social media were recruited on Facebook with Facebook ads in our select zip codes and were invited to complete a survey identical to the paper survey via the Qualtrics survey platform.

Quantitative surveys captured respondents across a broad range of demographic characteristics—gender, age, income, education, and social capital—but the average respondent was a White, highly educated woman. Table 1 displays the demographic distribution of our sample. These findings are consistent with what we know of social science survey participants, especially in web-based surveys. Previous work on the racial, gender, and socioeconomic characteristics participation rates have found that non-Hispanic Whites and Asians are more likely than Black participants to participate in surveys, higher levels of education are associated with survey completion (Jang and Vorderstrasse 2019; Reinikainen et al. 2018), and women are more likely than men to participate in self-administered surveys (Mulder and de Bruijne 2019).

Social scientists typically seek to capture large, representative samples and use statistical techniques such as weighting to reproportion their sample to look like the broader population should they fail (D'Exelle 2014). Yet epidemiologists and social scientists alike acknowledge the value of nonrepresentativeness in causal investigation (Rothman, Gallacher, and Hatch 2013). We build on the work of other articles in this issue that have looked at specific demographic groups such as vulnerable older adults (Pezzia and Leonard 2022, this issue), Native Americans (Evans et al. 2022, this issue), and residents of small towns (Burns and Albrecht 2022, this issue). We apply poststratification weights only to gender, leaving our nationally nonrepresentative sample to match 235 counties in the United States with similar attributes, home to more than seventy-four million Americans. To calculate our matching counties, we selected U.S. counties that exceed the 2021 Census Bureau national averages of median household income (> $64,994), percentage White alone, not Hispanic or Latino (> 60.1 percent), and percentage bachelor's degree or higher (> 32.9 percent). The 235 counties matching these demographics include a number of large metro areas (for a complete list and map of matching counties, see figure A.1 and table A.4 in the online appendix at https://www.rsfjournal.org/content/8/8/32/tab-supplemental). We confine our conclusions about behaviors to individuals with higher levels of human capital and to residents in urban and suburban communities whose votes are coveted and whose behaviors are scrutinized during elections (Kurtzleben 2018). Finally, we used a nationally representative dataset of 5,275 respondents from the 2022 U.S. Census Pulse surveys to double-check our results.

We carried out follow-up semi-structured interviews with a subset of survey participants in June and July 2020 ($n = 62$) to add depth and causal process to our quantitative results. Interview participants were recruited via positive responses to a survey question about their willingness to participate in a follow-up interview. All interviews were conducted via Zoom by a team of two researchers, using an instrument designed to further probe responses to each segment of the survey instrument. Interviews were transcribed by Amazon Web Services' Transcribe service for analysis. Table 2 displays the demographic distribution of our interviewees.

We analyzed the data from our qualitative interviews with a reflexive thematic analysis (Richards 2021), which includes the following five steps: collect the data, code the data, categorize the data, create themes, and interpret themes. We trained a team of three graduate students to code text segments in interview transcriptions that demonstrated both reliance on information from social ties and the subse-

Table 1. Descriptive Statistics of the Control Variables for the Large-*N*, Quantitative Analysis

Control Variable	Obs	Percent
Age [a]		
18–24	64	7.88
25–34	241	29.68
35–44	141	17.36
45–54	111	13.67
55–64	138	17
65–74	90	11.08
75+	27	3.33
Income [b]		
Less than $40,000	146	18.62
$40,001–$60,000	131	16.71
$60,001–$80,000	106	13.52
$80,001–$100,000	92	11.73
$100,001–$120,000	94	11.99
Over $120,001	215	27.42
Education [c]		
Some high school	10	1.27
High school diploma	46	5.84
Some college, no degree	74	9.39
Bachelor's degree	288	36.55
Master's degree or professional degree	370	46.95
Gender [d]		
Female	607	74.57
Male	193	23.71
Other	14	1.72
Race [e]		
White	678	82.48
Non-White	144	17.52
Political Party [f]		
Republican	58	7.42
Democrat	490	59.61
Independent	201	25.70
Other	33	4.22
Employment Status [g]		
Employed full time (forty or more hours per week)	450	54.81
Employed part time (up to thirty-nine hours per week)	80	9.74
Furloughed	30	3.64
Homemaker	19	2.31
Retired or not looking for work	120	13.40
Student	43	5.24
Unable to work	32	3.90
Unemployed and currently looking for work	57	6.94
Marital status [h]		
Single, never married	353	43.15
Married or domestic partnership	371	45.35
Widowed	24	2.93
Separated	7	0.86
Divorced	63	7.70

Source: Authors' tabulations.

[a] $N = 812$; [b] $N = 784$; [c] $N = 788$; [d] $N = 814$; [e] $N = 822$; [f] $N = 782$; [g] $N = 821$; [h] $N = 818$.

Table 2. Descriptive Statistics of Small-*N*, Qualitative Analysis

Variable	Obs	Percent
Age [a]		
18–24	2	3.23
25–34	14	22.58
35–44	17	27.42
45–54	6	9.68
55–64	17	27.42
65–74	5	8.06
75+	1	1.61
Income [b]		
Less than $40,000	10	16.95
$40,001–$60,000	6	10.17
$60,001–$80,000	11	18.64
$80,001–$100,000	8	13.56
$100,001–$120,000	4	6.78
Over $120,001	20	33.90
Education [c]		
Some high school	-	-
High school diploma	-	-
Some college, no degree	5	8.20
Bachelor's degree	23	37.70
Master's degree or professional degree	33	54.10
Gender [d]		
Female	48	77.42
Male	13	20.97
Other	1	1.61
Race [e]		
White	59	95.16
Non-White	3	5.84
Political party [f]		
Republican	4	6.56
Democrat	18	29.51
Independent	37	60.66
Other	2	3.28
Employment status [g]		
Employed full time (forty or more hours per week)	36	58.06
Employed part time (up to thirty-nine hours per week)	4	6.45
Furloughed	4	6.45
Homemaker	3	4.48
Retired or not looking for work	4	6.45
Student	4	6.45
Unable to work	2	3.23
Unemployed and currently looking for work	5	8.06
Marital status [h]		
Single, never married	27	43.55
Married or domestic partnership	29	46.77
Widowed	2	3.23
Separated	1	1.61
Divorced	3	4.84

Source: Authors' tabulations.

[a] $N = 62$; [b] $N = 59$; [c] $N = 59$; [d] $N = 62$; [e] $N = 62$; [f] $N = 61$; [g] $N = 62$; [h] $N = 62$.

quent behavioral change. With each segment, the graduate students coded the presence of reliance on information from social ties and the subsequent behavior change. We then categorized the data into the nature of the source of information. We then created themes generated deductively from the social capital literature, which signify horizontal and vertical ties.

Our study includes three dependent variables: avoidance of public spaces to minimize viral transmission, use of personal protective equipment, and increased frequency of handwashing (see table 3). These three behaviors were routinely promoted as effective and protective behaviors to curb the spread of COVID-19 throughout the pandemic. Individuals were asked, "Please indicate any changes in your behavior due to COVID-19 or related stay in place orders." Responses to "Avoided going to public places," "Started using personal protective equipment (such as masks and gloves)," and "Increased frequency of handwashing" were coded 1 if the individual reported the behavior and 0 if the individual did not (see table 3).

Emergent themes we observed from the interviews, such as that with Gabrielle, demonstrate respondents came to trust authorities even if their only connections came from one-way, media interactions: "Such as Dr Anthony Fauci, I learned the science behind the pandemic. I learned, um, I watched as the science evolved and we became more aware of what it was and what it meant."

Meghan similarly talked about building trust through broadcasts from an elected figure: "And I would add that the other place I did go for information was Governor Cuomo. So I would listen to his daily conferences. . . . Well this is gonna sound really hokey but I felt like he was being honest because he was saying how bad it was."

Further, when asked about vertical ties to local elected officials, informants responded as follows:

> Yeah, so I probably once a week watch Mayor Walsh's or Charlie Baker's press conferences to the Boston.com link to get direct information from them. . . . Um, yeah, I think, and also just trying to make good decisions from my family about you know, what's safe, what kind but parts of the reopening do I want to participate in what don't I want to do? And so on. (Beth)

> Yeah. So it was daily briefings with Cuomo. It was like the highlight of my day. I just felt they were very realistic and factual based. So I appreciated that without all the speculation and rhetoric from other sources. . . . His daily updates were informative. They were fact based and they were science based, so I appreciated that. The CDC and WHO I Googled and went

Table 3. Descriptive Statistics of Dependent Variables for the Large-*N* Quantitative Analysis

Variable	Obs	Percent
Increased frequency of handwashing		
Yes	754	91.73
No	68	8.27
Started using personal protective equipment (such as masks, gloves)		
Yes	781	95.01
No	41	4.99
Avoided public places		
Yes	679	82.6
No	143	17.4

Source: Authors' tabulations.
N = 822.

> on the CDC website a lot, especially concerning the baby and using masks and, you know, just general information like that. And then, um I know me and my friends were talking once a day and they said something that says what's good. . . . Well, we stay in the house a lot. Um, wearing a mask—I've become much more conscious of washing my hands than I had been previously. I washed them, but not like I do now. Um, I carry hand sanitizer. Now, any time I go anywhere, I come from there, I put it on my hands before I get in my car. (Gigi)

These vertical ties match the definition of linking social capital, which involves "respectful and trusting ties to representatives of formal institutions" (Szreter and Woolcock 2004, 665). These connections capture aspects of political participation, including political efficacy and political trust (Poortinga 2012, 288).

Horizontal ties capture the high trust, frequently contacted connections involving friends, extended kin, and family (Adler and Kwon 2002). This form of social capital often results in homophily—high levels of demographic, attitudinal, racial, and linguistic similarity—in these networks (Mouw 2006). These thick connections inform life-saving decisions when neighbors knock on doors before a fire spreads out of control or rescue family and friends nearby who are trapped beneath the rubble of collapsed homes (Aldrich 2012). In our interviews, when asked to explain the information they relied on to get through the coronavirus outbreak, individuals routinely cited the importance of these ties: "Originally in the beginning, I was looking at all the news and it just got very overwhelming. And there were a lot of sources that didn't feel very reliable. So eventually I just started asking my closest friends who were really following experts to sort of guide me on like, Okay, what are the new policy things? What are the changes? How much worse has it gotten? Because I just couldn't take it. And I knew that my friends were really looking at reliable news sources. (Christina)"

Horizontal ties also include ties that connect people from different backgrounds through institutions, including workplaces, faith-based organizations, and horizontal associations. Early research on "thin" or "weak" ties indicated their tremendous power in helping young job searchers find work through their extended networks (Granovetter 1973). Even a small, neighborhood-based childcare center can provide users and their families with critical information and assistance (Small 2009). For example, in our interviews, individuals cited the importance of these ties to practicing their faith in the pandemic:

> One thing I would say is that our rabbi was very strict about everything, and it made us feel very supported as, like the community that, like he took [COVID] seriously and also meant that like when he decided to start doing services again. So he made it very safe so that I felt comfortable that my husband could go back to a synagogue and pray there like, for example, like he had it outdoors. And everyone has to stand six feet apart. And everyone has to wear a mask and, you know, like otherwise like, I feel like he couldn't have gone back in the community if he hadn't taken it seriously. (Candice)

To understand the associations between reliance on information from horizontal and vertical ties and the practice of prescribed safe and healthy behavior during the pandemic, we used an iterated principal factor analysis to categorize the sources of information individuals relied upon based on the themes from interviews we conducted and on survey responses to the following question: "Which of the following sources have you relied on for information during the COVID-19 outbreak?" (for the full qualitative script and quantitative survey questions, see the online appendix).

The variables in our factor analysis loaded on two key factors: reliance on information from horizontal and reliance on information from vertical ties (see table 4). Information received and relied on from friends, neighbors, family, coworkers or colleagues, and community organizations and groups (such as church, temple, mosque, neighborhood groups) were categorized as reliance on information from horizontal ties.

Information from local elected officials, lo-

Table 4 Results from a Factor Analysis of Sources of Information Relied on During COVID-19

Survey question: Which of the following sources have you relied on for information during the COVID-19 outbreak? Please check all options that apply.

	Factor Loading	
Survey Item	1	2
Factor 1: Reliance on vertical ties		
Local elected officials (such as city mayor)	0.4699	
Local government agencies (for example, local health department)	0.587	
Local K–12 school district		
State elected officials (for example, Governor Cuomo / Baker)	0.4878	
State government agencies (such as state health department)	0.5471	
Federal elected officials (for example, President Trump)		
Federal government leaders (e.g., Dr. Fauci)	0.5164	
Center for Disease Control and Prevention (CDC) or National Institute of Health (NIH)	0.5452	
World Health Organization (WHO)	0.457	
Employer	0.4699	
Factor 2: Reliance on horizontal ties		
Coworkers or colleagues		0.4662
University or college		
Community organizations and groups		0.3529
Friends		0.7765
Neighbors		0.4753
Family		0.6132

Source: Analysis in STATA from original data collected by authors.
Note: N = 822. Loading values < 0.3 not displayed. The extraction method was an iterated principal factor analysis with promax oblique rotation.

cal government agencies, state elected officials, state agencies, federal government leaders, CDC, NIH, and the World Health Organization (WHO) were categorized as vertical ties, consisting of trust in or relationships between people separated by levels of power and authority (Szreter and Woolcock 2004). These ties provide information and resources that are often unavailable locally. In our interviews, individuals routinely cited reliance on the CDC, the NIH, Governors Baker and Cuomo, and Fauci:

> Well, they're trusted institutions, they're institutions that I associate strongly with making decisions and issuing information based on science, not based on politics or the political moment that they would actually assess the risks and tell us. . . . There [was] a lot of uncertainty early on . . . the role of masks and how important masks were. So I relied heavily on those institutions to evaluate the science. . . . I trusted the CDC and NIH to actually evaluate [all of the claims made by researchers] publishing in not yet peer-reviewed pieces and tell us what we actually should and should not take away from them. (Christopher)

> The CDC and the NIH I think provided many guidelines for what you should be doing? Whether it's wearing mask or social distancing or, you know, touching surfaces or how to clean things on. I relied on them personally, but also for my job [with] Zipcar. . . . relied on a lot of both local and federal and state regulations to figure out how we could safely . . . support our employees and our members. (Emmie)

Work on vaccine hesitancy (Khubchandani et al. 2021) and responses to health recommendations during COVID-19 (Grossman et al. 2020) identifies factors correlated with accepting and acting on new information. Building on this literature, we controlled for demographic characteristics (see table 2), including age (O'Malley, Kerner, and Johnson 1999), income (O'Malley, Kerner, and Johnson 1999), education (Khubchandani et al. 2021), gender (Burke 2001; Carpenter et al. 2011; O'Malley, Kerner, and Johnson 1999), and political party affiliation (Malka, Krosnick, and Langer 2009; Grossman et al. 2020; Khubchandani et al. 2021; Barrios and Hochberg 2020; Gadarian, Goodman, and Pepinsky 2021; Allcott et al. 2020; Clinton et al. 2021).

ANALYTICAL STRATEGY

For our quantitative analysis, we use logistic regression models to test the reliance individuals had on vertical and horizontal ties and our three dichotomous dependent variables: avoidance of public spaces, use of personal protective equipment, and increased frequency of handwashing. We structure additional regression models, including ordinary least squares, Poisson, and negative binomial regression models to ensure the results we uncovered in our logistic regression were not artifacts of model choice. All three of the models have heteroskedasticity–robust standard errors, and multicollinearity tests indicated low levels of collinearity between the variables in our models. The variance inflation factor for the models was less than 3.79, which is well below the accepted threshold (Salmerón Gómez et al. 2016). Further, to correct for oversampling of women in our study, we applied a post-stratification weight to our models based on the gender distribution reported by the Census Bureau.

RESULTS

The results of our statistical analyses are organized by three behaviors designed to curb the spread of the virus promoted by the CDC: avoiding public places, using personal protective equipment, and practicing frequent handwashing.

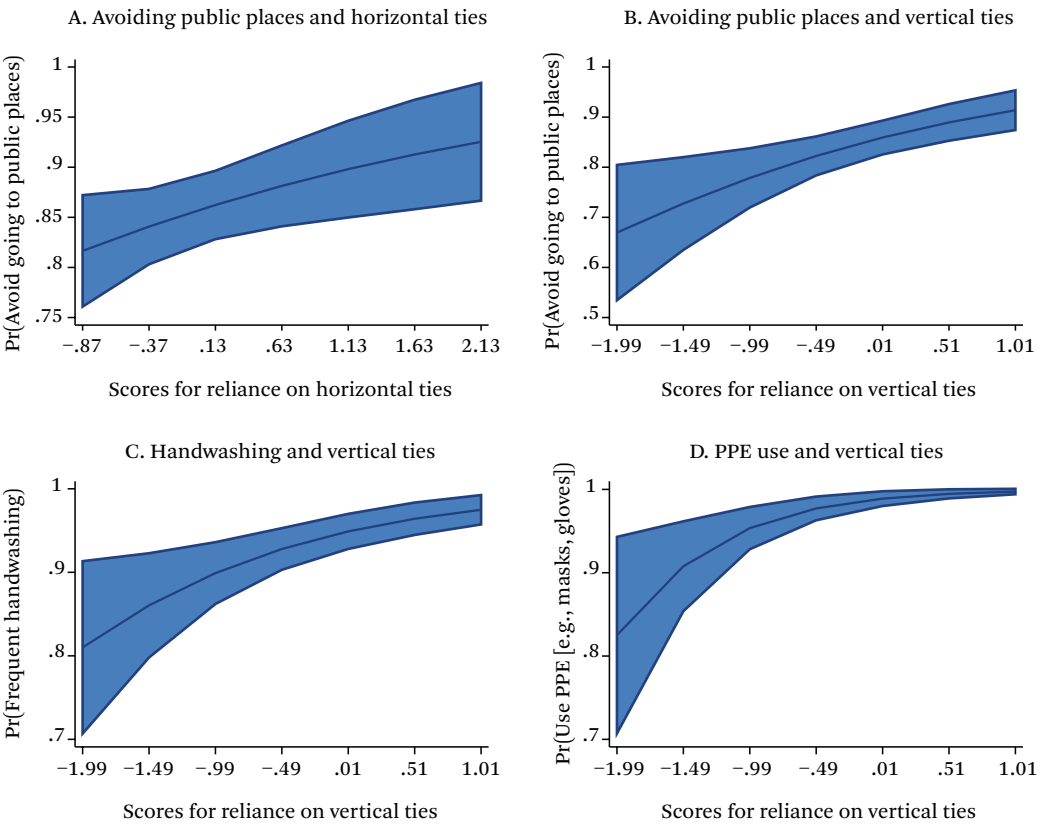
Staying Home and Avoiding Public Places

In our first model (table A.1), our results indicate that individuals in our study who relied on information from their horizontal and vertical ties were more likely to indicate avoiding public places in May and June of 2020. A one-unit increase in reliance on information from horizontal ties results in a 1.407 ($p < .05$) increase in the odds of an individual avoiding public places. A one-unit increase in reliance on information from vertical ties results in a 1.736 ($p < .01$) increase in the odds of an individual avoiding public places. Further, holding all other variables at their mean, post-estimation predictive margins reveal that (figure 1a, figure 1b) the probability of avoiding going to public places goes from 82 percent to 93 percent from the lowest to highest measures of relying upon horizontal ties, and from 67 percent to 91 percent from the lowest to highest measures of relying on vertical ties. Gender, race, and employment status were also significant variables in this model. Women were more likely than men in the reference group to report avoiding public places (1.671, $p < .1$). Non-White individuals were less likely than White individuals in the reference group to report avoiding public places (–0.565, $p < .1$). Further, individuals unable to work were more likely than individuals employed full time in the reference group to indicate avoiding public places (9.443, $p < .01$).

Using Personal Protective Equipment

In our third and final model (table A.3), our results indicate that individuals in our study who relied on information from vertical ties were more likely to report increased handwashing in May and June of 2020. A one-unit increase in relying on vertical ties resulted in a 2.089 ($p < .05$) increase in the odds of an individual increasing the frequency of handwashing. Holding all other variables at their mean, predictive margins indicate (figure 1d) that the probability of increased handwashing went from 81 percent to 97 percent from the highest and lowest measures of relying on vertical ties. Age, income, education, and marital status were also predictors of handwashing. Those who were seventy-five years old and older (21.53, $p < .05$), reported incomes of between $60,001

Figure 1 Margin Plots



Source: Authors' tabulation, analysis, and visualization in STATA from original data.
Note: Adjusted predictions with 95 percent CIs.

and $80,000 (3.207, $p < .1$) and between $100,001 and $120,000 (13.17, $p < .01$), and had some college, no degree (4.633, $p < .1$) were more likely than those in their respective reference groups to report handwashing. Widowed individuals (0.0715, $p < .05$) were less likely than those who were single or never married to report increased handwashing.

Increased Handwashing

In our second model (table A.2), our results indicate that individuals in our study who relied on information from vertical ties were more likely to report the use of personal protective equipment (PPE), such as masks or gloves, in May and June of 2020. A one-unit increase in reliance on vertical ties results in a 4.352 ($p < .01$) increase in the odds of an individual using PPE. Holding all other variables at their mean, predictive margins indicate (figure 1c) that the probability of wearing a mask, for example, went from 83 percent to 99.7 percent from the highest and lowest measures of reliance on vertical ties. Other factors, including income, education, employment status, and marital status were statistically significant predictors of PPE use. Those who reported an income of between $40,001 and $60,000 (7.827, $p < .01$), between $60,001 and $80,000 (5.094, $p < .05$), between $100,001 and $120,000 (25.65, $p < .05$), and more than $120,001 (8.024, $p < .01$) were more likely to report using PPE relative to those who reported an income of less than $40,000. Those who were retired or not looking for work (−0.223, $p < .1$) were less likely to report using PPE relative to those employed full time in the reference group. Further, those who were married (−0.435, $p < .1$) were less likely to report

using PPE relative to those who were single or never married in the reference group.

DISCUSSION

Much has been made of the role of political party identification in determining behavior during the COVID-19 pandemic (Grossman et al. 2020; Khubchandani et al. 2021; Barrios and Hochberg 2020; Gadarian, Goodman, and Pepinsky 2021; Allcott et al. 2020; Clinton et al. 2021). For example, newspaper articles and blogs alike have emphasized that Republicans seem less likely to take on mask-wearing or engage in physical distancing and the other preventive measures endorsed by health agencies. However, in our models consisting of primarily Independents and Democrats to accurately characterize the partisanship of the geographies we sampled, we did not find party affiliation to be a significant predictor. Instead, our research pushes us to look beyond simple party affiliation to the role of social networks—horizontal and vertical ties—that influenced healthy and safe behavior during the COVID-19 pandemic.

Our findings indicate vertical ties with entities of power, or the reliance individuals had on mayors, governors, and government leaders such as Dr. Fauci, was a statistically significant variable in all three of our models. These findings confirm that the information from these sources of power and prestige was associated with a higher probability that survey participants would report staying home during the pandemic, using PPE, and increasing the frequency of handwashing. In the case of PPE use, vertical ties were associated with the near-universal use of facemasks or gloves during the early months of the pandemic. In terms of staying home, horizontal ties were also important.

Our qualitative findings (discussed in the following section) from sixty-two one-on-one interviews suggest that reliance on horizontal ties, in particular, played a role, for example, in getting to and from work in a way that avoided the public. In our follow-up interviews of survey participants, individuals further confirm these findings. Direct quotes are reported in the participants' own language; respondent names have been changed to pseudonyms to protect their identity.

Staying Home and Avoiding Public Places

Many interview participants noted the importance of drawing on close horizontal ties not just for information but also for assistance in staying home in the early months of the pandemic. This resonates with findings from previous disasters, finding that individuals make important decisions about whether to stay home or evacuate during crises, and if they evacuate, whether to return (Aldrich 2012; Metaxa-Kakavouli, Maas, and Aldrich 2018), as well as previous findings on adherence to physical distancing during COVID-19 (Petherick et al. 2021). Similarly, our interviews show how individuals relied on horizontal ties to grapple with more quotidian questions—such as whether to avoid non-essential errands or take public transportation to work.

> Now, my thing was with my family, I work outside. So they were always telling me [to] make sure I stay away from people. Um, if somebody approaches me, make sure I had my mask on that my sister made for me. (Katy)

> The majority of people in my neighborhood . . . followed the rules. Everyone in my building was all of a sudden working from home, everyone wearing a mask when they go outside. My neighborhood, my community, groups that I'm part of totally flipped from in-person engagement to online, and so totally changing how we socialize and meet and work. . . . And so we've created new programs that do that, to engage people from home. (Abbie)

> My roommate is back to work. He works in construction. And instead of having him take the train, I drive him back and forth to work almost every day when I can, just to avoid that. Our entire lives, my husband and I are very much go, go, go. . . . We were doing all the grocery orders, the Amazon Prime (now), or Whole Foods delivery. And then my husband really wanted to go grocery shopping. So we finally let up on that, but we certainly [are not shopping like in] the past. You would need something, and you would just run to the grocery store. Now we are really trying to minimize those trips. (Adel)

Although horizontal ties played important roles in facilitating preventive behavior in regard to staying home, some participants reported another side of this story: divergent attitudes and behaviors in regard to avoiding public places drove some interview participants apart from individuals they previously considered close ties.

> I do think that people's true colors have come out, from what they're posting [on social media] or if they're wearing a mask or if they're going out to eat five times a week. . . . it's just, you know, I'm realizing very quickly that I'm surrounded by a lot of people I'm similar to, but at the same time, you thought you knew somebody and you're like, "oh, no, no, no." We are not watching the same news sources, we are not politically aligned. (Abbie)

Beyond this, vertical ties were also key sources of information for messages about every individual preventive behavior examined in our study, including mask-wearing, staying home, and avoiding public places. Yet some participants also reported mixed messaging regarding mask-wearing had detrimental effects on trust in elected officials and institutions, at the federal level in particular. In some cases, mixed messaging from the federal government was cited as a reason for relying more on local elected officials, whom they saw as more trustworthy and reliable. In addition, when prompted by the interviewer, after stating they relied primarily on local elected officials, to explain why, some participants noted that they felt stronger resonance with messages from elected officials highlighting the potential for adoption of preventive behaviors to protect others.

> Because when I listened to the governor and the mayor speak, they were much more aggressive about protecting the community than what was coming out from national leaders. And by that time . . . it seemed long past due because by that point it was really getting around. I think our first case in Boston was in January and that was publicized. So we were walking around for two more months between January and mid-March before it really reached crisis level, and whenever they would talk about it in their news conferences, they were taking a much more serious approach to, you know, this is the only way we can stop this. (Meghan)

> And I would add that the other place I did go for information was Governor Cuomo. So I would listen to his daily conferences. . . . [Interviewer prompt to expand on this, and why she relied on him as a resource] Well this is gonna sound really hokey but I felt like he was being honest because he was saying how bad it was. And I think the other thing that kept coming through to me with his conferences was [that] we don't have a cure yet. We really don't have a treatment yet. But what we can do for each other is, you know, I hate to use the word *flatten the curve*, but you know, he would describe what it was like in emergency rooms and that his point was, if we can just keep it to the point where what is coming to our medical facilities is manageable, [that] will be helping all of us. And so to me, that message really resonated. (Meghan)

Increased Handwashing

Participants tended to rely on information from vertical ties to non-elected federal officials—and Dr. Anthony Fauci, in particular—for messaging on handwashing. For example, one participant (Mitchell) attributed their information on "wearing a mask, washing your hands, and those kind[s] of prevention strategies" to the CDC. Even when participants did not remember the exact source of recommended interventions, once they had internalized a behavior change, they sometimes attributed it to a trusted expert source, such as Dr. Fauci.

> You're gonna go to the national elected officials, right? Not anything from local elected officials but for the fact that they encouraged, you know, or demanded we follow what Fauci was recommending. [Interviewer: Was there anything specific you learned from Dr. Fauci that you didn't learn elsewhere?] Well, you know, I'm assuming he was one of the first ones to say wash your hands. Wash your hands. Wash your hands. Wear a mask. Stay away. Stay home. Wash your hands, wash your

> hands, buy sanitizer, make sanitizer, get sanitizer. No matter how you get it, wipe down your house. Wipe down things other people touch. Wipe it down, wipe down, wipe down, and wash your hands. (Natasha)

Using Personal Protective Equipment

Finally, vertical ties were key sources of information for messages about the importance of mask-wearing and avoiding public places, as participants noted:

> Governor Baker, because he's the Massachusetts governor. I think he's done a terrific job, but I wanted to keep track of each step along the way. In the beginning, because the outbreak had been in New York, where my daughter and my grandchildren live. I had been watching that Governor Cuomo, who also did a fantastic job. I did watch Mr. Trump for about six weeks, and at that point I decided that I really wasn't getting accurate information from him. (Alexa)

> Well, I think collectively all of them as the push to wear a mask was more strongly pushed on, by the case was made that you should wear it we embraced that fully. That was not a problem. Uh, the social distancing part of it. We embraced fully. That was not a problem. The stay at home portion of it on how you act when you go out. Not a problem. We listened to what was suggested. (Natasha)

Broadly, findings demonstrating an association between information from vertical ties and the adoption of preventive behaviors echo earlier findings regarding network effects on the adoption of health behavior (Latkin and Knowlton 2015). In doing so, they offer a more granular view of the way variation in types of social ties affects information individuals choose to rely on in crises.

THEORETICAL AND POLICY IMPLICATIONS

Our findings resonate strongly with those of other investigations that have used nuanced categorization of social capital to illuminate the role of horizontal and vertical social capital (Fraser and Aldrich 2021; Hawkins and Maurer 2010; Kyne and Aldrich 2020; Page-Tan 2020, 2021; Poortinga 2012). Research envisioning social capital in a single dimension fails to advance our understanding of how vertical, horizontal, inclusive, and exclusive ties can operate differently from one another. Furthermore, our inclusion of one-way ties expands on previous definitions of vertical social capital, facilitating valuable overlap with previous work on the role of trust in outbreak response (Vinck et al. 2019).

We find that information from trusted entities with political and administrative power shared a strong association with recommended behavior to protect individuals from contracting and spreading the novel coronavirus. Further, staying home or avoiding public places was correlated with information—and often assistance—from close, tightly knit horizontal ties. For example, one interviewee drove her roommate to and from a construction job every day to protect him from commuting via public transit. By measuring and testing these various ties, we can better understand and leverage these social ties in crises and emergencies. In sum, this research speaks to the importance of avoiding monolithic measurements of networks and trust, which would miss the differential effects of the different horizontal and vertical ties.

Further, our findings hold implications for previous work on outbreaks showing negative effects of misinformation on institutional trust and adopting preventive behaviors (Daszak et al. 2021; Vinck et al. 2019). Although we find information from trusted entities of power (vertical social capital) strongly associated with the adoption of preventive behaviors, information from federally elected officials (namely, former President Trump) known to be frequent sources of misinformation was not a significant factor in our analysis (see Kessler 2021). Some interview participants discuss the loss of trust in federally elected officials and federal institutions due to misinformation and mixed messages, resonating with findings from research during previous outbreaks (Vinck et al. 2019). Yet precedent is limited for large-scale health communication campaigns during outbreaks in the United States today (Fisher et al. 2020). Our findings complement initial studies fo-

cused on vulnerable communities (Pezzia, Rogg, and Leonard 2022, this issue; Evans et al. 2022, this issue; Burns and Albrecht 2022, this issue), reinforcing the importance of horizontal and vertical ties among a large, constituent group constituting one-fifth of the country. This underscores the need for further research to understand the dynamics of health communication, misinformation, and institutional trust in the U.S. context during the COVID-19 pandemic.

These findings have implications for policymakers both preparing for and responding to future outbreaks and other prolonged crises. Our research suggests that policies focused on disseminating information through community-level influencers and leaders—whether in faith-based organizations, civil society organizations, or schools—may have beneficial effects because these individuals' beliefs and behavior can serve as a bellwether for others in their networks. Our findings furthermore reinforce the importance of horizontal ties in facilitating decisions regarding movement and travel during crises. When it comes to decisions about whether and how to avoid public spaces during an outbreak, the presence of close horizontal ties may mean the difference between getting a ride or taking public transit and between wearing a mask or going out unprotected. Therefore, policies facilitating the development of close ties within community and neighborhood networks—such as the development of community centers and funding for neighborhood-based civic groups—may lay the groundwork for the uptake of safe behaviors during future outbreaks by providing individuals with necessary social support structures.

Limitations and Research Agenda

As true of all social science studies, our research comes with limitations. Our respondents are not a representative sample of the U.S. population, but instead an oversampling of high-income, highly educated people in New York and Boston. Whereas social scientists typically seek massive samples to better generalize about the behaviors of larger populations, we build on research recognizing the importance of a focus on a smaller subdemographic (Burns and Albrecht 2022, this issue; Evans et al. 2022, this issue; Pezzia, Rogg, and Leonard 2022, this issue). This demographic tends to participate more often in civil society organizations as leaders (Keohane 2020) and serve as important swing voters in elections (Kurtzleben 2018). A consequence of this high human capital demographic is that our respondents tend to belong to civically engaged groups, unlike others who may engage in antidemocratic, intolerant, or high-risk behavior (Van Deth and Zmerli 2010). Whereas our sample focused on metropolitan areas, the demographic features of our respondents matched with some seventy-four million Americans who live in 235 counties across the nation.

To confirm the broader results of our sample and the possibility of generalizing our results, we conducted an additional analysis of data from the U.S. Census Bureau (2022) Household Pulse Survey, a dataset that better represents the nation. Although the Pulse survey did not capture horizontal and vertical as deeply, it did capture government trust and behavioral change during the pandemic. We performed a weighted logistic regression of individuals who had not yet received the COVID-19 vaccine. Among them, we see the odds of eating indoors at restaurants during the pandemic are predicted to be 0.670 times less ($p < .001$) among those who trusted government officials, versus those who indicated they did not trust the government (for details, see table A.4). These findings from an external dataset further confirm the importance of relying on linking ties in a pandemic for information, a key finding in our study, and a finding in a study of government trust and compliance with mask-wearing and social distancing guidelines (Suhay et al. 2022, this issue).

A second limitation is that we did not explicitly ask our respondents about their parental status, a factor that may affect sources of information and trust in those sources (Modestino et al. 2021). However, we did collect data on school administrators as a source of information and this factor was not statistically significant in our models. A third challenge is that our surveyed population—and the 230+ counties with similar demographics—strongly lean Democratic (almost all matched counties voted

for Biden rather than Trump, for example). The vertical ties we see to authorities like Governor Cuomo and Dr. Fauci likely correlate with reinforcement from partisan media sources and their own horizontal networks. Thus we cannot make inferences about Republican individuals in red-leaning areas where partisan media sees these authorities as untrustworthy.

Future research, then, should seek to include survey questions about participant parental status and better include a broader set of partisan respondents to ensure broader generalizability across the broader U.S. population.

CONCLUSION

The COVID-19 pandemic called for public health communication efforts of a scope and scale unprecedented in the United States today (Fisher et al. 2020), in that Americans were inundated with information about the importance of nonpharmaceutical interventions—such as staying home and avoiding public places, wearing PPE, and handwashing—to curb the spread of disease. Our research demonstrates the importance of social networks—information embedded in horizontal and vertical social capital—to individual adoption of safe behaviors. Associations between vertical social capital and adoption of all three preventive behaviors we study, alongside an association between close horizontal ties and avoiding public places during the early months of the pandemic, further underscore the importance of using nuanced categorizations of social capital, as opposed to treating social capital as a monolith (see also Fraser and Aldrich 2021; Hawkins and Maurer 2010; Kyne and Aldrich 2020; Page-Tan 2020, 2021; Poortinga 2012).

These findings represent an early step in unpacking the complex dynamics of social and civic networks as information sources for health communication in the United States during COVID-19. Interpretation of our findings is limited by the nature of our sample, which is limited to two northeastern U.S. metro areas, namely, Boston and New York. Survey participants were disproportionately White, upper-middle-class, and politically liberal, mirroring a suburban population subset of seventy-four million people to add critical context to studies of health communication typically (and rightfully) focused on vulnerable groups. In highlighting weaknesses in the U.S. health-care system—including inexperience with mass health communication efforts—the pandemic underscores the need to understand how such efforts are received across broad swaths of the population, including privileged groups historically facing fewer obstacles in access to health care. Future studies should examine the extent to which these findings hold among samples more demographically representative of the U.S. population. Further, panel data are needed to capture variation and trends over the course of a prolonged crisis. To address this, our research group conducted follow-up studies in February 2021 and February 2022.

Developing a more nuanced understanding of the role civic networks play in information-sharing during prolonged crises has important implications for policymakers and communities. This applies to both preventive initiatives—such as incentivizing the development of horizontal ties within neighborhoods and communities—as well as crisis response efforts—including targeting health communication to reach key stakeholders within community networks. Further, these findings contribute to integrating social science approaches with public health research to better inform policy in future crises (see Subbaraman 2021). Given that our societies are certain to face shocks in the future, sophisticated, social capital, and social-infrastructure-based responses will better help us build resilience to these shocks.

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The Presentation of Self in Virtual Life: Disinformation Warnings and the Spread of Misinformation Regarding COVID-19

KEVIN T. LEICHT, JOSEPH YUN, BRANT HOUSTON, LORETTA AUVIL, AND EAMON BRACHT

In our analysis, we examine whether the labeling of social media posts as misinformation affects the subsequent sharing of them by social media users. Conventional understandings of the presentation of self and work in cognitive psychology provide different understandings of whether labeling misinformation in social media posts will reduce sharing behavior. Part of the problem with understanding whether interventions will work hinges on how closely social media interactions mirror other interpersonal interactions with friends and associates in the offline world. Our analysis looks at rates of misinformation labeling during the height of the COVID-19 pandemic on Facebook and Twitter, and then assesses whether sharing behavior is deterred by misinformation labels applied to social media posts. Our results suggest that labeling is relatively successful at lowering sharing behavior. We discuss how our results contribute to a larger understanding of the role of existing inequalities and government responses to crises such as the COVID-19 pandemic.

Keywords: misinformation, post-truth, labeling

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Did you know that COVID-19 was a conspiracy by Bill Gates to profit from the creation of a vaccine? That the virus has undergone mutation in laboratories in Iceland so that vaccine development will be stopped? That the pandemic was a global conspiracy against the Trump administration? That the virus escaped from a chemical weapons factory in China? These and a variety of other dubious and downright harmful stories have been circulating on social media for months.

The spread of dubious or downright false information (sometimes referred to as *fake news*, referred throughout this document as *misinformation*) is a growing social, cultural, and scientific dilemma, and the situation is especially troubling when it comes to information about medicine and public health (see Ross 2008; Vogel 2011). The most recent manifestation of the consequences of dubious medical information is the spread of measles and its link to anti-vaccination websites and memes (Glenza 2018). This, however, is only the most recent manifestation—others include the peddling of conspiracy theories and fake cancer cures (Ghenai and Mejova 2018; Ross 2008; Vogel 2011), organized misinformation about stem cell research (see Marcon, Murdoch, and Caulfield 2017), and the spread of dubious claims about alternative medicines (see Barratt 2018). Further evidence indicates that some of this dubious information is deliberately produced for financial gain or to fuel cultural discord (Ross 2008; Broniatowski et al. 2018; Kavanagh and Rich 2018).

Sadly, the situation is no better when it comes to COVID-19 pandemic and its ongoing effects on the world's population and social order. The pandemic has provided a perfect storm in which misinformation thrives, as seen in the rise of QAnon, which brings together the various threads of conspiracy theories and COVID-19 to produce a constant source of dangerous rumors and accusations. The actual source of the virus is a matter of some contention (Suciu 2020). The lack of an obvious cure or magic bullet to treat the virus is also a major catalyst of misinformation (Brennan et al. 2020). A now long-standing subset of U.S. citizens has little confidence in American mainstream institutions, including governments, the media, and the scientific community (Twenge, Campbell, and Carter 2014). The overall uncertainty of the pandemic situation increases the temptation to blame others and look for outside scapegoats for problems (Schild et al. 2020). Finally, some evidence suggests that active influencers are taking advantage of the general confusion to deliberately sow discord and institutional disintegration (Jurkowitz and Mitchell 2020).

This project seeks to understand how COVID-19 misinformation spreads and, especially, what effect social media labels have on the sharing of misinformation on social media sites.

COVID-19 BACKGROUND

As of April 2022, the total number of deaths in the United States due to COVID-19, the viral infection caused by a coronavirus known as SARS-CoV-2, exceeded 950,000. The total number globally, at the same time, was more than six million. These astonishing numbers have grown exponentially since early 2020. For a full time line of the pandemic, see the introduction of this issue (Redbird et al. 2022, this issue).

All of this upheaval was created by a virus that scientists initially knew little to nothing about. Yet a few things became clear as the pandemic has rolled on in those early months:

1. The virus first crossed over to human populations near Wuhan, China, sometime in the fall of 2019.
2. The virus could spread from person to person, even from carriers who have no symptoms.
3. Transmission via touching surfaces was debated: major routes seemed to be person to person via small droplets expended when the infected person coughs, sneezes, or exhales; another possibility was when someone touches an infected surface and then their eyes, nose, or mouth. (Doctors Without Borders 2020)
4. Standard protections from the virus included vigorous handwashing, social distancing (the six-foot rule), proper cough

and sneeze etiquette, self-quarantining if one became ill or were exposed to someone who was, and avoiding crowded public gatherings. Masks were recommended when social distancing was not possible, though some worried that this guidance would create a shortage of masks and protective gear for frontline health-care workers (but see Doctors Without Borders 2020).

5. Approximately 80 percent of those infected developed minor symptoms and recovered at home. Another 15 percent developed severe symptoms and require hospitalization, and approximately 1 to 5 percent became critically ill, needing extensive medical intervention to save their lives (Baud et al. 2020; Rajgor et al. 2020).
6. COVID-19 seemed especially lethal among the elderly and people with respiratory problems. At first, it seemed that children were affected far less.
7. COVID-19 data collection, especially in the United States, was hampered by the dispersion of health statistics data collection to individual states, and wide differences in testing regimens in different parts of the country and around the world (See James, Tervo and Skocpol 2022, this issue).

This information represented something close to a scientific consensus as of mid-May 2020.

JUST WHEN WE NEEDED EXPERTS, WE IGNORED THEM OR SENT THEM PACKING

One would think that the onset of a pandemic would lead national leaders to rely on the information and recognition of experts. But one would be wrong. A number of writers and reporters have commented on the large numbers of scientists leaving government service since the beginning of the Donald Trump administration (Gowen et al. 2020; Friedman and Plumer 2020). According to the Office of Personnel Management (and analyzed by the *Washington Post*) more than 1,600 federal scientists left government employment in the first two years of Trump's tenure (Gowen et al. 2020). Those exits included voluntary departures, firings, and resignations under pressure. The Brookings Institution regularly tracked turnover in the Trump administration, focusing on the so-called A Team, made up of members of the executive office of the president. Among these higher-level employees, the turnover rate was 86 percent as of May 15, 2020, and multiple turnovers occurred in 38 percent of the A-Team positions (Dunn Tempas 2020). This turnover rate is higher than that of the five most recent presidents (Dunn Tempas 2018). Unfortunately, it is not possible to separate voluntary exits from resignations under pressure or from firings in the Brookings data.

The almost systematic silencing of experts during the COVID-19 pandemic is tied to larger problems produced by social, cultural, and media fragmentation that undermine professionals whose knowledge depends on sound scientific and rational reasoning (see, for example, Leicht 2016; Leicht and Fennell 2022). Most damaging is the appearance of a "war on expertise" and the implications this has for the future of professional expert knowledge (Nichols 2017). Recent writers suggest a campaign against established knowledge that imperils democracies and their citizens. The traditional role of the expert (in our case synonymous with the professional) is to collect and interpret knowledge for citizens in specific areas. The traditional division of labor as Durkheim describes it requires that people defer to professional judgments in specific areas of expertise. The combination of lots of different experts in lots of different areas (and the commitment of professionals to defer to others outside of their areas of expertise) leads to an active dialogue where debates center around factual knowledge and interpretation with citizen input.

In Tom Nichols's analysis, this dynamic has fallen victim to a pseudo "democratization of knowledge" where everyone's opinion is of equal value regardless of what the conveyor actually knows (2017, 5). Any suggestion of factual, scientific, or logical errors in an argument is met with a direct attack suggesting the critic is elitist, out of touch, or worse. This form of aggressive ignorance denies that people who have studied a topic for years know anything of

value that cannot be Googled (62). Nichols points out that the forms of pseudo-expertise this flattened hierarchy has created are elusory and dangerous. Google will confirm any random opinion we have, no matter how fanciful. So-called citizen journalists don't do very good journalism. Pontificators and pundits talk about everything from global warming to heart surgery and know next to nothing about any of it. Worse still, the so-called expert citizen is seldom corrected when wrong and their opinions do not change, unlike professionals, for whom a check-and-balance system is in place that makes corrections (sometimes slowly). In some cases, the almost complete free pass granted by publics and supporters to these bogus claims has led many to conclude that we are entering a "post-truth" world (see Rose 2017; Gibbs 2016).

Tied to the silencing of experts is the creation of the COVID-19 *infodemic*—the spread of bogus misinformation and conspiracy theories about the virus's origin and potential treatments and cures. To some extent this dimension of the pandemic simply mirrors more widespread problems in the spread of health misinformation via the web regarding vaccinations, cancer cures, and so on (see table 1).

The Trump administration and Trump's enablers fueled this misinformation as well:

> Trump dismissed the reports on COVID-19 as little more than the flu.
>
> He significantly delayed or did not understand the need for widespread testing and left testing activities to the states.
>
> He then promoted the use of hydroxychloroquine as a potential vaccine or prophylactic and began taking it himself despite the lack of evidence that it works and plenty of evidence that the side effects (including heart palpitations) were dangerous.
>
> The administration claimed the number of cases would "converge toward zero" by May 1, 2020.
>
> When it was clear that social distancing was harming the economy, Trump declared that the "cure was worse than the disease."
>
> He then asserted that states led by Democrats had mismanaged their responses to the virus and mismanaged their state economies (despite evidence that cases were rapidly spreading to Trump stronghold areas).
>
> Trump was in virtually continuous conflict with his own health experts (most notably Anthony Fauci) and attacked any and all sources of information suggesting the U.S. response was too feeble, too decentralized, and too late. (Beer 2020)

This fragmented national response left state and local governments and health-care providers to their own devices (see James, Tervo, and Skocpol 2022, this issue). Individual states secured their own medical supplies though in some cases the federal government prevented the delivery of personal protective equipment and medical devices the states had attempted to purchase. In practice, this meant fifty individual responses to the pandemic rather than a coordinated national response. Politicians

Table 1. Examples of COVID-19 Misinformation and Conspiracies

- The virus was created in a Chinese chemical weapons factory and escaped.
- Bill Gates created the COVID-19 virus to profit from the development of a vaccine.
- The CDC inadvertently released the COVID-19 virus from one of their labs.
- The virus is a "Democratic Hoax" to damage President Trump.
- The COVID-19 virus is just like the flu.
- COVID-19 can be cured with massive doses of vitamin C.
- COVID-19 can be cured by blowing a hairdryer up your nose.
- COVID-19 can be cured by drinking a mixture of water and bleach.
- COVID-19 is being deliberately mutated by laboratories in Iceland.
- Most people labelled as COVID-19 fatalities died from other causes.

Source: Authors' tabulation.

around the country took their cues from the White House and did not enforce social distancing in the belief that the consequences of the pandemic were "greatly exaggerated," systematically ignored information that their populations were vulnerable and their health-care systems could not cope, or suppressed data on COVID-19 cases, hospitalizations, and deaths leading to protests from local health-care providers and scientists.

The inadvertent or deliberate confusion arising from the systematic sidelining of scientific experts combined with the recession caused by the pandemic shutdown to heighten conflict—both cultural and economic—around the country and often the world. The most visible manifestations of this were demonstrations and protests by citizens seeking to open the economy in spite of widespread evidence that lax social distancing guidelines would increase the number of cases, tax health-care systems, and lead to more deaths. There is considerable debate among journalists and observers about whether these protests were genuine outcries of economic distress, fueled by misinformation about the pandemic, or (worse still) "astroturfed" by specific national organizations looking to sow discord in areas controlled by Democrats (see Graves 2020).

Social Media, Fake News, and Labeling Misinformation—Will it Work?

Misinformation, as it is used in this analysis, refers to "cases in which people's beliefs about factual matters are not supported by clear evidence or expert option" (Nyhan and Reifler 2010, 305). This is an appropriate definition in cases, such as COVID-19, characterized by a rapidly developing scientific consensus (see also Vraga and Bode 2017). Most analysts distinguish between *misinformation,* defined as false or inaccurate information circulating as a result of honest mistakes, negligence, or unconscious biases; *disinformation,* referring to false information deliberately designed to deceive others; and *fake news,* referring to "fabricated information that mimics legitimate news media content without a news organization's process or intent" (Lazer et al. 2018, 1094; see also Gentzkow 2017; Pennycook and Rand 2019; Fallis 2015; French and Monahan 2020; McCloskey and Heymann 2020).

In this research, the scientific consensus about COVID-19, its likely spread, and mitigation strategies came together fairly rapidly despite, as stated, some disagreements about transmission via hard surfaces, masks, and the like. We are interested in the dissemination of COVID-19 social media posts that social media companies have labeled as misinformation. The labels, as of April 2022, do not distinguish among misinformation, disinformation, and fake news, though our larger project examines differences in the spread of posts with those distinctions (Leicht et al. 2021). We settle on the more benign term of misinformation because the social media labels do not distinguish between types of falsehoods and we are not privy to the motives of those who share the content.

Research identifies several major factors fueling the spread of misinformation and fake news. First is the diversification and globalization of scientific practice has led to the questioning of the "loyalty" of scientists as part of larger phenomenon of questioning the loyalties of a wide range of elite practices. Second is the deliberate fueling of political discord by those seeking to benefit from the anger and disorientation that results from disinformation campaigns. Third is *motivated reasoning* combined with cultural and media fragmentation, which draws people toward media that confirm their biases and silos them in attitudinal echo chambers that reinforce attitudes (see Kavanagh and Rich 2018; Leicht 2016). The question we address is whether the labeling of Facebook posts limits their spread in ways that would be consistent with social psychological theories about the presentation of self, cognitive processing, and motivated reasoning (see Goffman 1964; Pennycook and Rand 2019; Eagly and Chaiken 1998; Kleinhesselink and Edwards, 1975; McPherson 1983; Tabor and Lodge 2006; Lord, Ross, and Lepper 1979; Kunda 1990; Schaffner and Roche 2016; Epley and Gilovich 2016; Spinney 2017).

Fortunately, an ever-growing body of work within the journalism field on fact-checking and seeking the origins of antiscience rumors aids our research (for a list, see Leicht et al.

2020). As part of the wider effort to label misinformation, Facebook and Twitter are engaging in preliminary attempts to flag misinformation and at least label it, if not remove it. As of August 2020, Facebook began labeling posts it evaluated in regard to COVID-19 as dubious; such posts now come with a flag. However, despite claims to the contrary, Twitter posts are not flagged as misinformation and Twitter imposes relatively few limits on the spread of dubious information. In this analysis, we take advantage of a natural experiment, comparing the spread of dubious COVID-19 claims before and after Facebook started labeling posts. We explain this in the data and methods section.

To understand why labeling and fact-checking might affect the sharing of social media posts labeled as misinformation, it is useful to start with the work of Erving Goffman (1964; for updated treatments in relation to social media, see Hogan 2010; Bullingham and Vasconcelos 2013). Goffman spent a great deal of his career describing the intricacies of interpersonal interaction through what was eventually termed the dramaturgical perspective. In this perspective, face-to-face social interaction has four critical components (see Hogan 2010):

1. People engage in interaction rituals and other face-to-face encounters "putting their best foot forward" (that is, appearing intellectually competent, well-mannered, and engaged).
2. The group of people interacting have a collective interest in supporting actions that confirm or otherwise support similar attempts by others. When interaction disconnects occur, observers often help in various forms of verbal and nonverbal repair to restore the interaction to normalcy and to bolster the transgressor's sense of competence and engagement.
3. Our interactional selves contain a front and a back stage. The front stage represents our public self as we attempt to cultivate an image of competence, rationality, and sanity. Our backstage represents the psychological and interactional places where we can express misgivings, anger, and distress without fear of damaging our front-stage image.
4. We move from one social encounter to another, regulating our front-stage behaviors to present and maintain a consistent sense of a competent self, and we (usually) assist others in maintaining their sense of a competent, front-stage self as well.

The implications of Goffman's work for the study of online interactions are clear (see also boyd 2007; Marwick and boyd 2010; Mendelson and Papacharissi 2010; Lewis, Kaufman, and Christakis 2008; Quan-Haase and Collins 2008; Schroeder 2002; Tufekci 2008). The internet generally, and social media communications in particular, have been described as a free for all of sharing ideas, creating localized chat groups and online communities. If individuals view themselves as accountable to those communities, it would lead to the sharing and creation of posts that will lead to approval (or "likes") by community members. Hence a "rational and competent" member of a social media group may care for or pay attention to their presentation of self in much the same way people do in face-to-face interactions.

In the standard interpretation of the Goffman model, a person's desire to appear rational and competent would lead others to share social media posts labeled as misinformation less than other posts. The reason would be relatively straightforward—no one wants to appear to believe dubious and ungrounded things or the same attributes ("dubious and ungrounded") will likely be applied to them. Imagine the horror some might experience when an array of the posts they share are labeled as misinformation and that moniker appears repeatedly on their feed.

But some debate centers on whether this relatively straightforward interpretation would follow in a social media environment. Several key differences might yield different results. First, it is not completely clear that a person's social media friends or followers have the same status as those personally encountered face to face in public or private settings. Second, debate is ongoing about whether access control,

the ability to limit views to friends or specific groups of people, on social media sites creates a "back stage" where a public persona is less on display (boyd 2006; Lewis, Kaufman, and Christakis 2008; Robinson 2007). Third, unlike interpersonal interactions, where people speak and utterances are (usually) quickly forgotten and have no history, social media posts exist on curated platforms, much like art and film, where the ability of others to see and react is decontextualized (see Hogan 2010).

In each of these deviations from the classical Goffman conception (and in many of cognitive and social psychology conceptions discussed), the effects of labeling posts are less than clear. If social media friends are not really interpersonal friends, then connections to them are weak and the same rules that apply to interpersonal interaction may be loosened in online communications. If social media is viewed as a backstage environment where access is restricted, then bizarreness and the embrace of alternative facts may be rewarded rather than punished. Finally, if posts are curated communications, then the interpersonal tie with the reader is severed and the attempt to draw attention to the post, regardless of what that attention might entail, is a driving force rather than the appearance of a competent, rational self. All of these processes might reinforce a user's willingness to share social media posts that involve misinformation and to not associate this with their overall presentation of self.

In summary, Goffman's perspective would assume that social media posts and platforms are significant expressions of one's self-perception and self-concept. The user is at some level communicating something about themselves and their cognitive-emotional and social status via social media posts. The real questions come down to these: one, how close social media posts are to face-to-face interactions and the real or implied rules they follow; two, what the reference groups are for social comparisons and evaluations of self; and, three, how much cognitive energy the user is putting into evaluating what they post. Gordon Pennycook and David Rand (2019), for example, suggest that the inaccurate evaluation of information may be due to cognitive laziness rather than a conscious attempt to defend a consistent position. In the social psychological work cited, motivations for collecting and evaluating types of information vary and some suggest that interventions such as misinformation labels might produce better media-sharing practices by interrupting cognitive biases.

In addition to Goffman's work in sociology and its related offshoots is long-standing work in social psychology and cognitive reasoning that suggests that people engage in *motivated information seeking* (Kleinhesselink and Edwards 1975; McPherson 1983), *motivated information processing* (Tabor and Lodge 2006; Lord, Ross, and Lepper 1979; Kunda 1990; Schaffner and Roche 2016), or *motivated information recall* (Eply and Gilovich 2016; Spinney 2017). All of these could promote or reduce user incentives to spread misinformation through slightly different mechanisms.

Under motivated information seeking, people are more attracted to messages supportive of their positions and to those that do not support their positions that are easy to refute (Kleinhesselink and Edwards 1975). Others identify existing psychological states, such as overall tolerance for ambiguity, as a trigger for seeking supportive information and discounting nonsupportive information (McPherson 1983). This perspective would suggest that online information is subject to strong existing motivations to seek information consistent with one's views.

Under motivated information processing, media users may take in information that is not in accordance with their views but evaluate this information differently depending on its accordance with those views. Charles Tabor and Milton Lodge (2006) find that users select information in accordance with their beliefs when they have options about what information to access (a kind of confirmation bias) and that they tend to counterargue contrary pieces of information when confronted with it (disconfirmation bias). Both Charles Lord, Lee Ross, and Mark Lepper (1979) and Brian Schaffner and Cameron Roche (2016) find that belief polarization increases when ambiguous information is introduced, and that nonconcordant information yields longer response times because users are attempting to construct counterarguments to ad-

dress information that does not line up with their views.

Finally, research focusing on motivated recall suggests that people selectively remember information and construct "collective recall narratives" even for contrary bits of information that is in opposition to group views (but see Epley and Gilovich 2016; Spinney 2017). This information becomes harder to dislodge over time no matter how implausible it really is because the dubious information becomes taken for granted.

In each of these perspectives the effect of misinformation labeling appears unclear at best. Our analysis takes advantage of the August 2020 shift on Facebook toward labeling COVID-19 misinformation. The critical question is whether and how posts that are labeled as misinformation are spread before and after the label is applied.

DATA, METHODOLOGY, AND RESULTS

We started our misinformation data collection by identifying websites that fact-check information about COVID-19, namely Healthfeedback.org (HF), Poynter.org, Snopes.com, and Politifact.com. Given the political nature of fact-checking, HF stood out for its science-focused approach. We therefore focused on HF for study 1, which was a comparison of misinformation sharing on Facebook versus Twitter. We found that of one hundred COVID-19 related misinformation fact-checks on HF, thirty-eight were shared on Twitter and Facebook.

A sample of HF's COVID-19 related misinformation is presented in table 1. We pulled social media data using Brandwatch's (previously Crimson Hexagon) historical Twitter database and CrowdTangle, a public insights tool owned and operated by Facebook (Fen 2019). Each of these databases only store publicly tagged posts and both databases have been used as Twitter and Facebook data sources in previous academic research studies (see, for example, Yun, Pamuksuz, and Duff 2019; Jernigan and Rushman 2014). The period on which we searched was January 1, 2020, to March 31, 2021.

For study 2, which focused on tracking engagement with misinformation on Facebook before and after Facebook labeled posts as misinformation, we used the Snopes COVID-19 misinformation data. We used Snopes data for study 2 because posts containing links that were evaluated as misinformation on Snopes.com were not labeled as misinformation on Facebook. We collected posts from Snopes for all of their fact-checked articles related to COVID-19, and then processed those posts through Amazon Mechanical Turk (Mturk) to get the original misinformation links and the ratings Snopes gave each link. At least two Mturk workers recorded information for each article and the resulting responses were harmonized.

The original misinformation links were screenshots of posts or memes, links to native Facebook, Twitter, or Reddit posts and links to articles/websites containing misinformation. We focused on a subset of the latter. These links were passed through CrowdTangle to verify that they were not labeled. This process gave us a dataset of posts of unlabeled misinformation links.

Study 1: Assessing Misinformation Sharing on Twitter Versus Facebook

We found 12,184 instances of HF's COVID-19 misinformation links being shared on Twitter versus 6,388 instances of the same links being shared on Facebook (see table 2). Interestingly, Facebook labeled all of these posts as misinformation whereas Twitter flagged fewer than 1 percent. We could not find a specific pattern given that the same underlying misinformation link is labeled in a few instances but not in others. This seems to be in direct contrast to how public perception views the two platforms in regard to their efforts against misinformation in general. Facebook is considered to do a poor job at fighting misinformation (Fung 2020). Twitter is garnering more praise (Morse 2020). Our results suggest that Facebook is doing a much better job of labeling COVID-19 related misinformation than Twitter, a point we return to in the discussion.

Investigating whether accuracy reminders about COVID-19 information affected participants' ability to discern truth and about sharing behavior of such information, Pennycook and his colleagues (2020) find that misinformation signaling reduced the likelihood that users would share information with others. Both

Table 2. Summary of COVID-19 Misinformation Activity on Twitter and Facebook

	Twitter	Facebook
Total posts/tweets	12,184	6,388
Percentage of posts labeled as misinformation by social media platform	Less than 1%	100%
Average engagement/posts	7.32	73.59

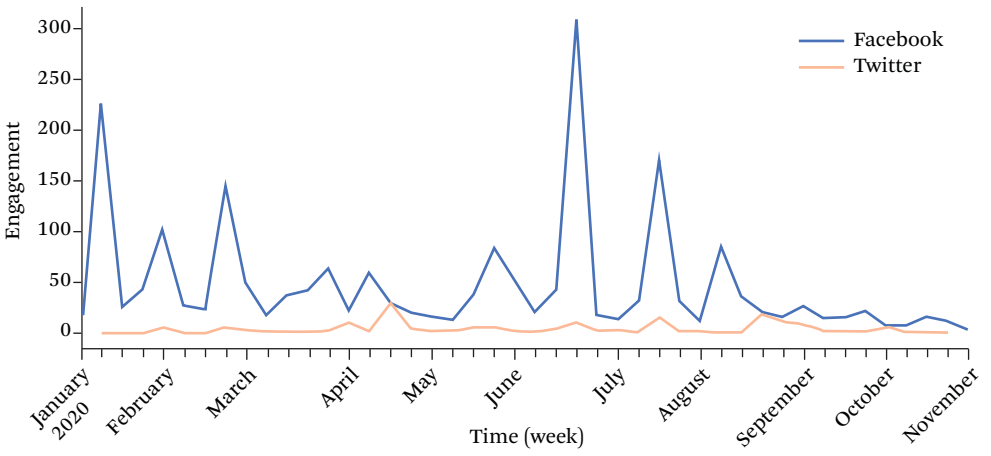
Source: Authors' tabulation.
Note: These analyses were conducted on thirty-eight links of misinformation from Healthfeedback.org.

Twitter and Facebook have stated publicly that they are actively engaged in labeling misinformation about COVID-19 on their platforms, thus this labeling should provide a real-world example of assessing the Pennycook results. We compared overall engagement with the HF COVID-19 misinformation posts on Twitter and Facebook, and find that users engaged with COVID-19 misinformation on Facebook approximately ten times as much as on Twitter, M = 73.59 vs. M = 7.32 (see table 1 and figure 1). This is in direct contrast to the Pennycook results, given that the Facebook misinformation posts were all labeled and most the Twitter misinformation posts were not.

To further understand what may be confounding our results, we investigated how many times any given user within each platform shared a misinformation link more than once. Our assumption was that a real human would do so only once, but automated bots or bad actors would multiple times. We find that, on average, users on Twitter shared unique links 1.14 times more than users on Facebook. We plot the distribution of posting behavior per user per platform in figure 2, and it is clear that users on Twitter have a longer right tail of multiple postings of unique misinformation links than users on Facebook. This difference in distribution of unique post sharing on Twitter versus Facebook (and the likelihood that multiple shares of the same post are not due to human intervention) could be confounding our analyses.

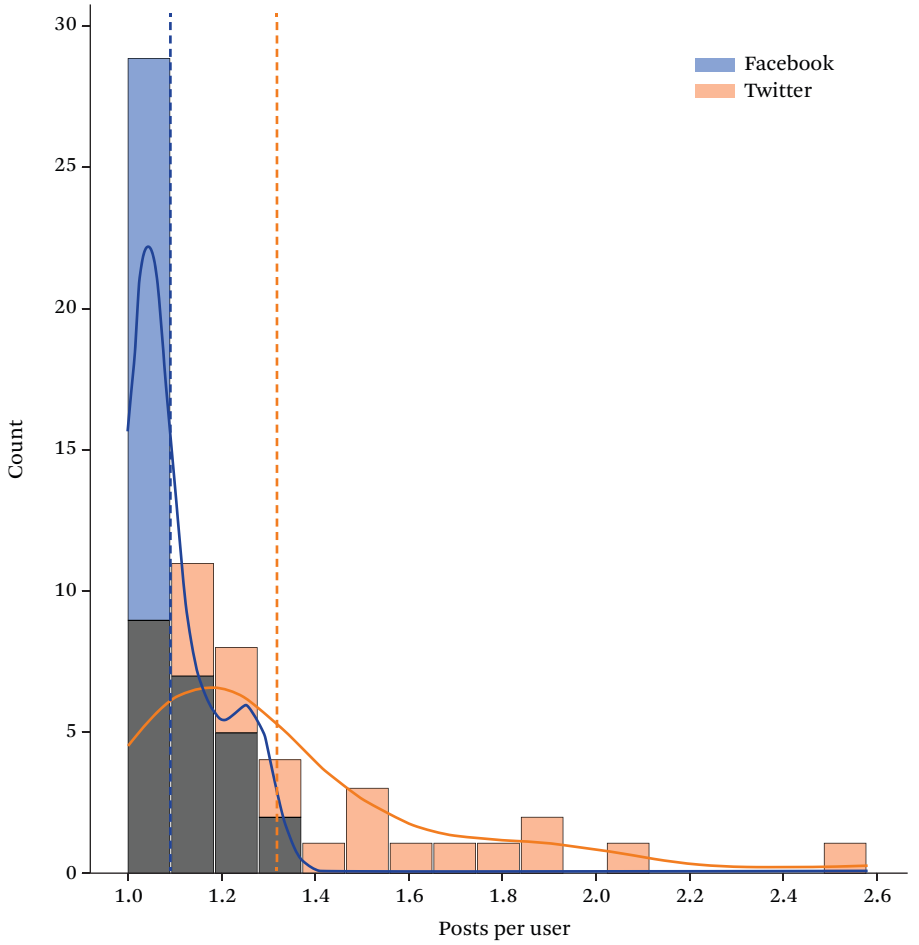
Initially, we were hoping to examine what the effects were of labeling Twitter and Facebook posts on subsequent sharing behavior by users. However, because Twitter labeled so few posts, we were left with assessing what the effect of labeling was on the sharing of COVID-19 misinformation on Facebook. This is the subject of study 2.

Figure 1. Average Engagement with COVID-19 Misinformation over Time



Source: Authors' tabulation.

Figure 2. Unique Misinformation Link Posting Behavior per Platform



Source: Authors' tabulation.

Study 2: Assessing Misinformation Engagement Before and After Facebook Labeling

Although both Facebook and Twitter claim to label COVID-19 misinformation on their platforms, only Facebook has published details on how it actually determines whether a post is misinformation. Facebook claims that it is working with more than "60 fact-checking organizations that review and rate content in more than 50 languages around the world" (Facebook 2019). Given this transparency, we found that we could analyze the effects of Facebook COVID-19 misinformation labeling on engagement rates because of the short lag time between the International Fact-Checking Network tagging of misinformation and Facebook's labeling as it would appear to users on the social media platform. This lag allows us to analyze numerous misinformation links and to track the effects of labeling on engagement.

Because Facebook posts garner different levels of engagement, we had to find a baseline measure that would allow us to understand how a post could have been (or could not have been) affected by labeling. Because its main source of revenue is advertising, Facebook is expert at predicting how much engagement a post should receive. We therefore used its measures of "expected engagement" for each post as the baseline expectation—deviations from that expectation would point to the effects of

misinformation labeling. Specifically, we were able to calculate each post's deviation from expected engagement before and after Facebook's misinformation labeling.

Figure 3 presents a visualization of our results.

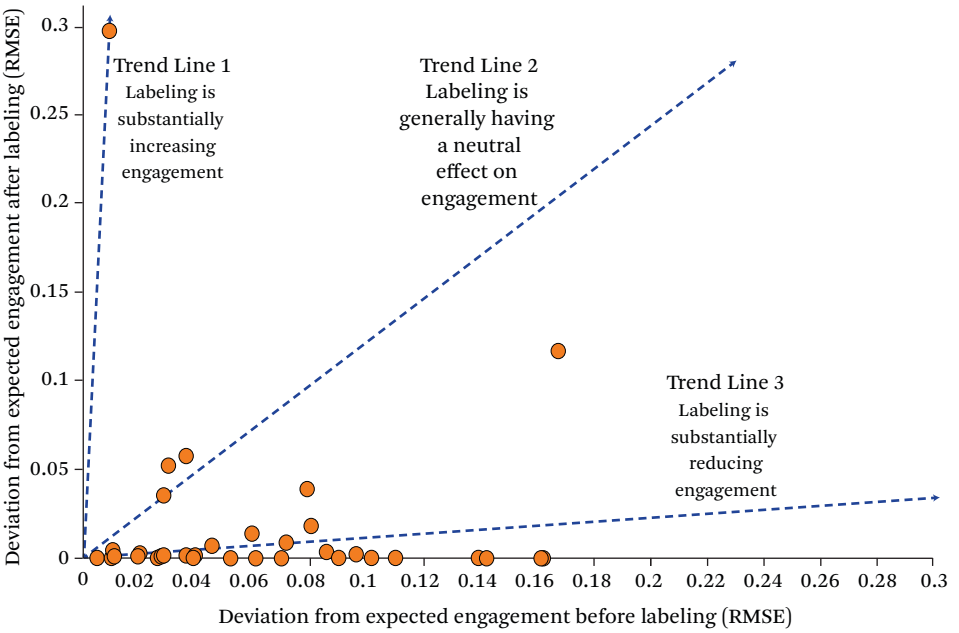
Each red circle in figure 3 represents numerous posts regarding the same misinformation link. Figure 3 also shows three trend lines that encapsulate three potential effects of Facebook labeling. Along trend line 1, circles that do (or could) appear suggest that Facebook labeling increases engagement in these posts. Along trend line 2, circles that do (or could) appear suggest that labeling has little to no effect. Along trend line 3, circles that do (or could) appear suggest that labeling decreases engagement. These results, given that most posts are clustered near line 4, suggest that labeling has a dampening effect on sharing misinformation.

As figure 3 shows, a major batch of posts are near line 1, indicating that the labeling of these posts substantially increased user engagement with them. When we examined these in detail, we found that our original link to a *New York Times* article carried a rating of "imprecise" and was subsequently labeled misinformation. However when we returned to the link to investigate why the post was receiving so much attention, we discovered that it had been relabeled and was no longer tagged as misinformation. We do not know when the labeling change occurred, but the removal of the misinformation label seems to have increased people's engagement with the post.

DISCUSSION

Our results support two conclusions. First, and contrary to popular belief, Facebook is doing a much more rigorous job of labeling misinformation than Twitter is. In fact, we could not detect how Twitter labels misinformation, but our use of a common corpus of COVID-19 misinformation sites suggests that Twitter does not challenge posts that Facebook does label, which is the major reason study 2 focused only on Facebook posts. This in itself is a significant finding and contrary to public perception. A recent Pew Research survey suggests that 59 percent of those surveyed distrust Facebook as a place to find reliable election and political news, in contrast to the 48 percent who distrust

Figure 3. Effects of Facebook Labeling on COVID-19 Misinformation Sharing



Source: Authors' tabulation.

Note: One circle represents numerous posts regarding the same misinformation.

in Twitter (Jurkowitz and Mitchell 2020). Pew's findings suggest an overall distrust of both Facebook and Twitter, but a greater distrust of Facebook. We cannot pinpoint why this is the case, but much of the distrust toward Facebook seems to stem from its history of data privacy decisions. Whether as a result of the fallout from the Facebook Cambridge Analytica scandal, when Facebook used its data to build psychological profiles of users without the user's consent (Confessore 2018), or that 74 percent of people surveyed did not know that Facebook stores user data for advertising profiling purposes, it seems reasonable that people distrust Facebook (Hitlin, Raine, and Olmstead 2019). As this spills over into perception of misinformation labeling responsibility, Twitter may be associated with fewer high-profile offenses in the past even if users do not completely trust the platform.

Second, we also find that Facebook's labeling COVID-19 misinformation changes the sharing trajectory of that information substantially and in the direction of less sharing. This result suggests that, at some level, labeling works as it is supposed to. The real question is why.

We cannot distinguish between mechanisms from social psychology and cognitive psychology that describe incentives for evaluating and processing information, but can say that some obstacles to changing how people process social media information that might be linked to motivated reasoning may be severed or at least interrupted by labeling. One of several processes may be operating either individually or in concert: first, per Goffman and his colleagues, people are concerned about their appearance as a competent social actor if they share social media posts that are labeled as misinformation; second, the labeling process interrupts normal bias in cognitive functioning that might otherwise lead to the unreflective or lazy sharing of social media misinformation. If motivated reasoning were dominating the social media environment in a time of cultural fragmentation and if that fragmentation were so total that people were functioning in different realities, social media labeling would not seem to work at all. Either no effect would be detectable (sharing patterns grouping along line 2 in figure 3) or misinformation labeling would actually increase content sharing (along line 3 in figure 3). This, as of now, is clearly not happening.

How do these results contribute to scholarly understanding of seeking, exchange, inequalities, and government responses to crises such as COVID-19? They, and many of the other results from other articles in this issue, expose fissures in American social life that the COVID-19 experience laid bare. The pandemic crisis exposed and exacerbated long-standing inequalities affecting the aged (Pezzia, Rogg, and Leonard 2022, this issue), underrepresented and disadvantaged people (Burns and Albrecht 2022, this issue; Cohen et al. 2022, this issue; Evans et al. 2022, this issue; Kamp-Dush et al. 2022, this issue). It also exposed serious fissures if not declines in trust and social solidarity (Suhay et al. 2022, this issue; Pears and Sydnor 2022, this issue) and widespread inconsistency in response to the pandemic crisis fueled by partisan fragmentation (James, Tervo, and Skocpol 2022, this issue; Evans et al. 2022, this issue).

The sum of these results presents a troubling landscape in which social cleavages and inequalities are exposed as weaknesses when crises erupt. The crises themselves do not alter the social landscape as much as they bring existing weaknesses to the fore—long-standing structural inequalities and cultural fragmentation becomes the basis for the spread of misinformation via social media. The spread of misinformation via social media then increases the barriers to the types of concentrated action that crises require. But social capital and trust cannot be ginned up overnight. Nor can a political system that rewards discord rather than consensus and enables people to simply construct an alternative set of facts and act on them.

Our analysis points to one possible way forward, and that is to interrupt the sequence of automatically ever-so-briefly and unreflectively sharing social media posts. The simple nudge of labeling a post as misinformation seems to reduce the sharing. This in itself may prove the basis for a more comprehensive set of interventions that might prevent the spread of misinformation even if (especially in the American context) stopping it in the first place is well

nigh impossible. Evidence is considerable in other contexts that simple, short, and not terribly intrusive interruptions prevent other social ills from perpetuating themselves (for sexual harassment, see Coker et al. 2016; for stemming racial discrimination and hate, see Robi 2018). Like misinformation labeling, these interventions do not address the long-standing cultural and structural inequalities responsible for poor responses in the first place.

In addition, the evaluation of any intervention in the spread of misinformation via social media must deal with the continually shifting media landscape and new developments that seem to defy rational calculation. On March 24, 2022, the Kansas legislature passed a bill to increase access to Ivermectin, an antiviral drug developed to deal with stomach viruses in horses and widely shown to have no demonstrable effect on COVID-19 (see Carpenter 2022). Any attempt to stop misinformation from spreading must be active and ongoing because those who generate it will change tactics as the process moves forward. In addition, an expanding universe of press organizations (such as Fox News, Brietbart News, OneAmerica News) seems committed to spreading mass-media based misinformation outside of social media websites. Much of this content ends up on Facebook, Twitter, Instagram, TikTok, and Reddit. That it can be stopped on those and other platforms (such as YouTube) does not reduce citizen exposure to it if media outlets are producing the content themselves. Ultimately, systematic inequalities in the United States have led to systematic inequalities in the ability to evaluate and process information. Although public policy can seek to address the sources of misinformation, reducing these inequalities will reduce the market for misinformation and its damaging effects.

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PART II

Inequalities

"We Keep Each Other Safe": San Francisco Bay Area Community-Based Organizations Respond to Enduring Crises in the COVID-19 Era

ALISON K. COHEN, RACHEL BRAHINSKY, KATHLEEN M. COLL, AND MIRANDA P. DOTSON

The COVID-19 pandemic revealed ways in which communities take care of themselves in deeply unequal times. Tracing a pandemic-year evolution of community-based organizations (CBOs) in the San Francisco Bay Area through twenty-seven semi-structured interviews with CBO staff, we argue that, through diverse approaches that we characterize as a politics of care*, Bay Area CBOs are reshaping their work in ways that could address social and structural determinants of health inequities in the long term. Their approaches call for rethinking the crisis framework around public health challenges such as pandemics. Our research confirms that, rather than an exceptional, short-term challenge, the pandemic crisis is a product of a longer trajectory of structurally produced inequities endemic to racial capitalism.*

Keywords: community-based organizations, COVID-19, health equity, politics of care, racial capitalism

With pressure on resources, resiliency, community connections, and, fundamentally, the health sector, the COVID-19 pandemic has shone a bright light on how communities take care of themselves amid crisis. As the pandemic unfolded, we began to track the experience of nongovernmental community-based organizations (CBOs) in the San Francisco Bay Area (Bay Area). CBOs quickly moved beyond bare survival in important ways. Indeed, in marshaling resources to address pandemic-related needs—often in the absence of full governmental support—Bay Area CBOs that focus on a broad array of concerns, from housing and homelessness

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to immigrant rights, from elder care to youth empowerment, engaged in a transformative politics of care.

Ultimately, this approach did far more than just support CBO and community resilience. Instead, as we argue here, through their work at this time, Bay Area CBOs have revealed the salience of health equity efforts in community work by CBOs not typically associated with health, through a heterogeneous set of approaches we characterize under the rubric of a politics of care. In doing so, Bay Area CBOs have offered a path toward reshaping health equity work in ways that could affirmatively address social and structural determinants of health in the long term. Our research also calls for a rethinking of the crisis framework around public health challenges like pandemics. Rather than an exceptional, short-term challenge, our research confirms the pandemic crisis as a product of a longer trajectory of structurally produced inequities endemic to racial capitalism.

The findings in this article took us by surprise. Although the Bay Area has a reputation as a progressive haven, leaders here have been consumed in recent decades by questions of how to address the region's extreme, and worsening, socioeconomic disparities and their differential impact. Whether in terms of affordable housing, access to education, environmental pollution, or policing, the discourse of the violent impacts of socioeconomic inequity, and debates around solutions, have literally been front-page news. Grassroots efforts have sought to address these complex issues at the organization, neighborhood, and policy levels. So, when confronted with the COVID-19 pandemic, CBO leaders drew on the knowledge they had built in their work on other challenges. This included both the knowledge that government is not going to meet community needs as well as the awareness that organizing to push for government support is necessary and effective. This also meant that these CBOs had long-built experience with struggle around what people understand to be questions of survival. After all, the Bay Area has been an epicenter for major crises, from HIV/AIDS to racialized worker exploitation to the housing and homelessness crisis, and more.

Our informants articulated this contradiction in a variety of ways, even finding some glimmers of hope within the scope of the most challenging year that many had experienced, in part because they took a long view of the role of the pandemic in their lives and work. For example, the leader of a group that advocates for unhoused people spoke about the incredibly difficult work of their organization, at a time when homelessness and housing insecurity are rising. Still, they told us[1]—while still reeling from the compounding traumas of the first pandemic year—that "When everything falls apart, and then you need to rebuild it, you have a space to rebuild something much more effective and much more beautiful." They held this hopeful view while articulating the entrenchment of historical injustices in the basic structures of everyday life. In this way they brought an analysis of endemic "race-class" (Brahinsky 2014) injustices within capitalism to the forefront, what Cedric Robinson (2000) defines as "racial capitalism."

PANDEMIC INEQUITIES

In the United States, the COVID-19 pandemic laid bare immediate needs and increased consciousness of the persistent structural inequities leading to uneven suffering (Ozkazanc-Pan and Pullen 2020). National political leadership abdicated responsibility for managing the public health and economic responses to the pandemic through the first nine months, putting extreme pressure on states, cities, and regions to develop their own modes of survival (Haffajee and Mello 2020; Akhmouch and Taylor 2020; Davis 2020; Dzigbede, Gehl, and Willoughby 2020). This brought health equity issues to the foreground of national, state, and local political debates, including access to care and the needs of those providing essential care to others. The nongovernmental sector has long been central in this field.

Our research builds on work on public health and on broader socioeconomic effects

1. We use the gender-neutral pronouns *they*, *their*, and *them* for all our informants to mask identities of participants.

of the pandemic and on decades of work in the health equity field. We draw from the World Health Organization's (2021) definitions of health ("complete physical, mental and social well-being") and health equity ("striving for the highest possible standard of health for all people [with] special attention to the needs of those at greatest risk of poor health, based on social conditions"). A health equity approach begins from an analysis of health as inequitably distributed (both unevenly and unjustly), such that people from more vulnerable backgrounds experience disproportionately worse health (Marmot et al. 2008). The health equity approach views these differences in health as preventable (Penman-Aguilar et al. 2016). This framework also identifies nonbiological social and structural forces—such as socioeconomic position (SEP), structural racism, or power imbalances—as root (or upstream) causes of these health differences, suggesting that it is necessary to address these social and structural determinants of health to achieve health equity (Laster Pirtle 2020; Williams et al. 2008).

In reckoning with the pandemic, scholars have renewed their attention to health equity and social and structural determinants of health as frameworks that can guide responses to it (Galea and Abdalla 2020; Krieger 2020). Recent research has documented the importance and impact of partnerships (for example, among CBOs and between CBOs and government) in robust public health interventions, noting a health equity lens as a critical framework to support already vulnerable communities (Michener et al. 2020).

Other researchers have shown links between the pandemic and other challenges, arguing that multiple and intersecting health crises of epidemic proportions collectively form a "syndemic" in which health crises such as the opioid epidemic are worsened as a direct result of COVID-19 (Burns and Albrecht 2022, this issue). In the Bay Area, for example, more people died in 2020 from accidental drug overdose than from COVID-19 (Nichols 2021). These connections point to the sociopolitical dynamics of health. Even before the pandemic, scholars and health-care practitioners alike aligned themselves with social justice activists in calling for a vision of "public health" that embraces social theory and learns "how to operate in the political realm" (Martinez 2018).

Through various stages of the pandemic, the inequalities of this moment have been made starker by the simultaneous emergence of nationwide uprisings for racial justice. The burden of disproportionate police violence, and the deeply uneven experiences of both the pandemic and economic inequities across racialized and marginalized communities, was laid bare (Tai et al. 2021; Clark et al. 2020). Indeed, the links between health equity and racism are unambiguous, particularly when viewed through the geographer Ruth Wilson Gilmore's definition of racism as "the state-sanctioned or extralegal production and exploitation of group-differentiated vulnerability to premature death" (2007, 28).

SAN FRANCISCO BAY AREA CONTEXT

Although the Bay Area is often perceived as idiosyncratic or exceptional, the region's activities are important to analyze, given its longstanding history of testing new ideas in local governance and public health policy that come to be adopted more widely, from environmental policy to LGBTQ+ rights to health-care delivery. Meanwhile, CBOs are an important force in the region's political culture, influencing policymakers, whether by advocating for specific policies and budget priorities, seeking public funding for service provision, or creating new programs that fill in gaps in government safety nets.

The early days of the pandemic seemed to reveal the San Francisco Bay Area as a place of enlightened, science-based policymaking. As the first U.S. metropolitan area to institute shelter-in-place orders, the region saw a relatively robust civic response, with early and strong government-led restrictions and widespread compliance, which limited the spread of the virus. But from the beginning, the region has also seen highly uneven experiences, with marginalized communities that were already vulnerable faring the worst, both in core cities such as San Francisco and Oakland, and across the region at large (Vazquez 2020; Whitacre et al. 2021).

The pandemic also highlighted a host of challenges in the region, exacerbating an af-

fordable housing crisis marked by a rapidly growing unsheltered population, an ongoing crisis of residential displacement, extreme socioeconomic inequities (PolicyLink 2017), and in particular, persistent racial inequality (Shange 2019). In addition, civic life—and the region's capacity to protect its people from the pandemic—was strained in new ways as the largest to date climate-change wildfires tore through California, bringing the worst air pollution in recorded history to the Bay Area, plus the economic and social disruption of rolling blackouts that persisted through the contentious national election season.

These enduring problems, and the ways they have been even more exposed by the COVID-19 pandemic, challenge the region's reputation as a progressive stronghold. To the extent that this reputation still holds, it may be due to the persistence and resilience of the Bay Area's broad network of CBOs, which have a grassroots politics of care that shapes their work as well as the everyday life of the region. It is in this context that we sought to understand the ways that CBOs here were handling their work through the pandemic.

METHODOLOGY

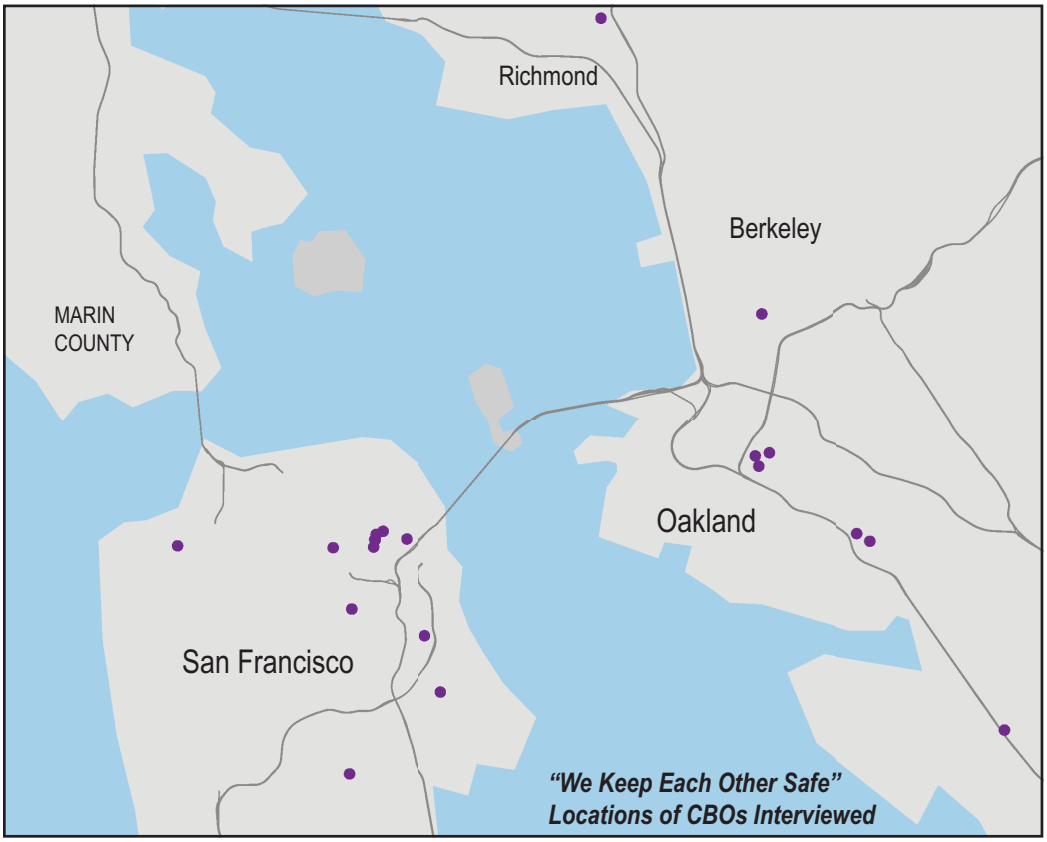
Our multidisciplinary research team includes a social epidemiologist, a human geographer, a political anthropologist, and a sociocultural anthropologist. Our research questions and analysis have thus benefited from rich debates about approaches and assumptions. Collectively, we were committed to a community-based approach to this work, to the extent possible. Within our fields of research and our decades of research with Bay Area CBOs, we brought expertise on different aspects of Bay Area studies, which strengthened our analysis.

Our data collection centered around a series of semi-structured interviews with CBO staff members we contacted through previous connections, snowball sampling, and cold-calls. Our interviews explored how our informants and their communities were responding to the COVID-19 pandemic. We wondered whether and how goals, priorities, and missions changed, and what future directions were emerging for their work. Our goal was to document the epistemological and political culture of CBOs in the Bay Area during the COVID-19 pandemic, understanding how they are thinking, understanding, and moving through this time. We interviewed twenty-seven people who worked at diverse nonprofit CBOs across San Francisco and the East Bay (figure 1). Each CBO chose their participant in this research. Interviews were conducted via phone and video call from May 2020 through July 2021 (most in the fall of 2020) and recorded and transcribed for coding. Each participant received a $100 gift certificate after completing the interview.

Most participants (78 percent) identified as women and two-thirds (67 percent) as people of color. Just over half of the CBOs (52 percent) had a focus on organizing and advocacy; the other half historically focused on direct service provision. The pandemic blurred this line, as advocacy organizations took on direct service projects and direct service providers participated in advocacy. Some CBOs were focused on housing and economic development ($n = 7$); others on immigrant and labor organizing ($n = 7$); and others on serving an age group (such as youth or seniors) in a particular neighborhood ($n = 7$). Other CBOs organized around racial justice, tackled environmental justice, and worked with people involved in the criminal-legal system.

We took a grounded theory approach (Glaser and Strauss 2017), using a targeted set of interviews to develop our analysis, followed by a content analysis of the interview data to drive our findings. We reviewed all transcripts, and did preliminary open-ended coding using an inductive approach. We held iterative, structured discussions as a team, drawing on the diversity of our disciplinary and research expertise, and continued inductive coding while also turning to the research literature to expand our contextual analysis. We re-reviewed the transcripts to conduct directed coding to capture any instances that we may have missed. Finally, following community-engaged research principles (Allen et al. 2019; Cashman et al. 2008), we shared a draft article with a subset of interviewees in the summer of 2021 to ground-truth our findings and generate dialogue, and used their engaging feedback and comments to thicken our analysis; these participants received an additional $100 gift certificate. Over-

Figure 1. Map of Organizations' Locations



Source: Authors' tabulation based on addresses listed on community-based organizations' websites. Map by Bruce Rinehart, using QGIS and OpenStreetMap (see openstreetmap.org/copyright).
Note: Organizations that requested complete anonymity are not mapped.

all, these informants reported that the manuscript resonated with and affirmed their experiences during the pandemic while offering important conceptual suggestions that we engaged with in our revisions.

FINDINGS

The political and social context evolved rapidly as we conducted research. This had an impact on the interviews, shaping both our questions and the framework for responses. We began this project soon after the implementation of sheltering in place, continued through weeks of mass street protests around racial justice, and then through weeks of wildfire-related air quality, all of which overlapped with an increasingly tense national election campaign that steeply affected our informants, their clients, and the dynamics of their work.

In addition to centering attention on the work of CBOs through changing times, the shifting context highlighted ways that our research raised larger questions about how the region's political culture has produced a rich web of community responses to the layered crises of our time. Health equity, for example, is perhaps an obvious framework in the time of a pandemic but was not an initial topic of focus—we thought we were looking more at organizational survival through the crisis—and the CBOs we included were not necessarily consciously centered around health equity. Nevertheless, it rose to the top in meaningful ways.

Ultimately, we found that CBOs' responses

to the COVID-19 pandemic highlighted pre-pandemic structural issues and pointed to the need for durable changes in policy and political culture going forward. In that context, we focus this article around three core findings. First, health equity has become a central lens for non-health-oriented CBOs in the region. This happened in a way that may support existing and future health-equity-oriented work because it makes more visible the large network of CBOs that could be involved in such work.

Next, we found that our heterogeneous set of groups moved forward and evolved in some parallel ways that point to a regional political culture that values and works within frameworks of a politics of care. Organizations that had a standing, longer-term engagement with care work were in a strong position to both care for staff and client immediate needs and advocate for policy in response to the crisis. We observed a politics of care grounded in feminist principles of mutuality and informed by critical disability justice as interdependence.

Finally, we observed an important conceptual framing, again across heterogeneous groups, which sustained their capacity through the pandemic. This was an understanding of the pandemic crisis as endemic to the larger and ongoing crises of racial capitalism. Some articulated this explicitly and others implied it. The recognition that the pandemic exposed the depth of existing racial and class inequalities and that the end of the pandemic would not end those problems, helped our informants take a longer view on the challenges they and their communities faced. The next three sections address each of these findings in depth.

Finding I: Health Equity as a Central Lens for Bay Area CBOs

In assessing the ways that the pandemic has pushed health equity to the fore, we draw from Paula Braveman and colleagues' (2011) conceptualization of health equity as a commitment to social justice in health, often operationalized as a fair and just opportunity to be healthy (Braveman et al. 2017). Health inequities are disparities in health that are preventable but have, unjustly, not been prevented (Marmot and Allen 2014). Braveman emphasizes the importance of addressing social determinants of health—that is, factors outside the health sector that can affect health—to promote health equity (Braveman et al. 2017). Such social determinants can include structural forces such as racism (Gilmore 2007) as well as resources such as housing (Swope and Hernández 2019). The nature of these determinants became clearer during the COVID-19 pandemic. For example, an informant who leads a worker center explained that the pandemic was "more validation of everything I know and understand from the economic system we live under . . . we understand and see capitalism and how it plays out in the lives of working-class and specifically immigrant communities."

One interviewee who came from a public health background remarked on the role of those same communities in providing essential public health services, noting, "I think [given the pandemic] that conventional and dominant public health systems are going to have to reckon a lot with how they have diminished the expertise of underresourced and oversurveilled community organizations that actually do public health." The organizations that are now framing their work as related to social determinants of health and health equity are important contributors to this reckoning. Ultimately, our interviews show that the region's CBOs, in stepping up to meet emergency needs, have revealed the salience of a wide range of community work to existing health equity efforts. The pandemic highlights how CBOs that tackle the full scope of social and economic conditions facing vulnerable communities are central to public health.

Some of the CBOs interviewed had been doing work grounded in health equity before the pandemic began, including an Indigenous land trust organization growing healthy food to share with community members, a public health organization focused on harm reduction to prevent opioid overdose, and a youth group focused on both political organization and healing. The youth-organizing group, for example, identifies as a "public health organization" and a "healing-centered organization [operating] from a theory of liberation."

Although they had not used the term *health equity* in their work, the staff person at the land trust explained that they "reclaim land and

make sure that it's available so people can have access to healthy and affordable food [and herbal] medicines," as part of their decolonizing efforts. When the pandemic began, they focused on food distribution to the communities they had already been serving, which they describe as "Black and Brown families and other communities of color who are also unemployed, and elders," while increasing their production of tinctures and hand sanitizers from the medicines that they were growing.

The harm reduction organization had already been working to address the opioid epidemic before the pandemic and was building infrastructure and capacity to sustain this work. They reflected that COVID-19 "absolutely magnified every challenge that our communities were experiencing and every harm that they experience. And the absolutely gross inadequacies of our city agencies and city systems to hold them in a way that is dignified." When the pandemic began, they were invited to join a local government effort to provide hotel rooms for people who were unstably housed (so they could have a safe location to shelter in place) and stop the overdose deaths spiking among people living in the hotels. Run by a team of two, the organization worked to ensure that Narcan and other harm-reduction resources were available to residents, which ultimately succeeded at curbing overdose deaths.

Others moved toward health equity organically, catalyzed by the demands of the pandemic. Increasingly, they recognized the health implications of their work, which tackled social determinants of health, such as housing and economic position, from beyond the health sector. As one staff person from an umbrella organization for community organizing groups explained, "the issues that came up during COVID were not new," providing examples such as homelessness, job security, low wages, and limited or no access to health care, and noting that "COVID just made it way, way worse." As they then emphasized, "our organizations and our communities have had to deal with these issues before and so they are the best ones to help respond."

Some of this was already beginning to happen but came into sharper focus with the pandemic. A staff member from a neighborhood development corporation that provides housing reflected that in 2019 they had begun "a strategic planning process, and really focused on a theory of change to get us to that ultimate goal and to get us to our mission, and we focused on Home, Health and Voice. Of course, we're a permanent supportive-housing provider. And so developing 'home' is sort of the bread and butter of what we do, but [during COVID-19], we really elevated health and [community voices as key] components of our strategy . . . what we have learned in the pandemic is really elevating that health piece." A resident services manager at another housing development corporation that had also started to make connections between housing and health before the pandemic talked about housing provision alone as not enough. They described their efforts to tackle wide-ranging needs, including free food and wireless internet.

The pandemic highlighted other issues as upstream determinants of health. As an advocate for the houseless noted, "what a health disaster it is to force . . . thousands of people to live outside," and to require sheltering in place with so many people unable to do so. The pandemic also highlighted the untenability and fragility of inadequate housing solutions for people who were unstably housed, such as shuttling between family or friends or both (as the homelessness advocate observed) or living in overcrowded homes (as a staff at an immigrant organizing group noted). A staff member at an affordable housing advocacy organization talked about shifting to working toward affordable housing providers "owning as much real estate and land as possible" to not only achieve community stabilization but also community health.

Finding II: Politics of Care

The Bay Area is home to strong racial justice, feminist, queer, and disability rights traditions. These political tendencies undergird community institutions that address issues of labor, housing, health care, immigrant rights, and direct services. Organizations we interviewed in these areas have different approaches but are collectively engaged in a variety of practices of mutuality in their responses to the pandemic, which we came to understand as a politics of

care. Specifically, our informants framed care work as a political act, often situated within broader social movements (but see also Pine 2013; Martinez 2018).

The politics of care framework has roots in feminist economics, ethics, and sociology of care. We observed it in our informants' use of intersectional analysis and praxis grounded in the experiences of women of color (Crenshaw 1989). Feminist economists have long highlighted the injustice of an economy dependent on the unremunerated reproductive labor of women (Federici 2012). Meanwhile, feminist ethicists have shown how the privatized, gendered division of care work marginalizes ethical commitments to care in debates over public policy and state priorities (Tronto 1987). In the United States, the history of care work, including domestic work, is rooted in both gendered and raced divisions of labor based in slavery and immigration (Glenn 1992, 2010; Nadasen 2016; Parreñas 2012). In recent years, service workers, care workers, and domestic workers have grounded political demands for fair pay and labor protections with demands for a broader social transformation in values to address legacies of racism, sexism, and xenophobia in law and culture (Poo 2016; Boris and Stein 2012). Principles of radical inclusivity, mutuality, and interdependence are legacies of the queer and disability justice organizing (Piepzna-Samarasinha 2018; Kittay 2011). During the pandemic, the proliferation of mutual-aid efforts drew on these diverse traditions and communities of interest as well (Spade 2020). Meanwhile, organizations rooted in working-class immigrant communities of color argued that the work these communities carried out, including historically devalued or invisibilized care work, was finally being recognized, though not compensated, as essential to the nation's social and economic infrastructure (Nicols 2021).

Beyond responding to the immediate needs of the crisis, and in light of the November 2020 elections, CBOs articulated their work as part of larger movements to demand the structural change necessary to advance health equity. CBOs have long offered blueprints for enacting care during crises that break from the reigning violent structures of capitalism, neoliberalism, and social hierarchies (such as racism, sexism, xenophobia). During the pandemic, they frequently combined responses to police violence against Black and Latinx people with attention to anti-Asian violence, and to the abandonment of the unhoused. The slogan "We Keep Each Other Safe" appeared in both public health messages about mask usage and activist communications including protests against racial violence. This belief in the power of community-based mutual care, along with state accountability and support, was a shared ethical perspective that permeated many of our interviews. Organizations with existing, longer-term engagement with care work grounded such work first in care for members of their community. They were in a strong position to both care for the immediate needs of their staff and clients while advocating for state funding for services and transformative policy change.

Among the foundations of this care-centered politics is an emphasis on supporting communities historically disenfranchised on the basis of gender, sex, race, class, or immigrant status. More generally, this political vision of care envisions the equitable distribution of life-sustaining resources and encourages community investment in resources and structures that ensure that everyone has what they need to "stay safe together and apart," from universal access to high-speed internet to universal access to health care (Emmer et al. 2020). In other words, a politics of care goes beyond helping and triage: it works to redirect and redistribute resources away from structures that favor hierarchical, concentrated wealth at the cost of universal well-being toward structures that permit all to live in dignity and health.

In addition to tending to their communities, many CBOs also centered care for their staff. CBOs considered recognition, remuneration, and protection for those engaged in "reproductive labor" (Federici 2012) both at home and at work as part of their pandemic response. This was especially relevant for staff who experienced precarity or were members of the communities served by their organizations; several such organizations noted that the basic work of keeping daily life and the economy of the region functioning has long been done by immigrant and low-SEP people of color. In addi-

tion to advocating for and serving as access points to public sources of care and support for care workers more broadly defined, many struggled over how, in times of scarcity, to correctly adjust their workplace practices to reflect these values. Some CBOs framed their work caring for their community and their staff as a way of modeling caring for the common good, aligning with the work of Bernice Fisher and Joan Tronto (1990) "in maintaining and repairing our world so that we can live in it as well as possible."

We found that politics of care as practiced by CBOs during the pandemic meant simultaneously caring about: their clients and communities (some were already doing direct service work before the pandemic; some were focused on policy work previously but shifted to include direct service); their staff (although some CBOs were doing this before, many were not, and many bolstered their efforts on this front); and the common good (such as advocating for policy changes, working to overcome the stigma experienced by members of some of these populations; some had already been engaged in advocacy work, others added advocacy to their portfolio).

External Politics of Care: Community

The Bay Area CBOs we spoke with exemplified a politics of care by engaging in health interventions during the pandemic that center *dignity* and *resource redistribution* to their community members. The work of two CBOs in particular personified this politics of care; one is an initiative that promotes harm reduction approaches to support people who use drugs; the other works with youth in a predominantly Black and working-class neighborhood. Both offer examples of enacting health interventions without surveillance, punishment, or control. They both prioritized community buy-in and navigated people's diverse needs.

One interviewee described how both caring for the unhoused population who were sheltering-in-place in hotels and working to prevent overdose deaths within these hotels was a "fraught" process. The CBO worked to equip hotel floors with biohazard containers and lifesaving Narcan, offering a more caring approach for drug users to help mitigate the overdose crisis in these settings. Yet this intervention was complicated: the installations may have been a radical act of care to protect drug users but could also be triggering and thus agitating (counteractive to caring) for some members of the community. This example hints at some of the real challenges and contradictions generally underresourced CBOs faced in implementing universal care strategies for people facing diverse and ongoing experiences of trauma and crisis.

A primary concern for our informants was addressing the "drastically unequal distribution of bodily vulnerabilities" (Ahmed 2014) that their communities face. Many CBOs mobilized to provide personal protective equipment (PPE), such as masks, and other related supplies, like hand sanitizer. One interviewee at the youth-oriented center, whose central approach to PPE distribution was community buy-in and leadership development, noted, "I brought my community, because we started taking care of ourselves when it came to community. They take that . . . initiative to look out for community, if they ever get the opportunity to."

Internal Politics of Care: CBO Staff

The pandemic also catalyzed an organizational focus on care internally. Working for these CBOs during the pandemic often required intense time, energy, and emotional labor and was sometimes traumatizing for staff. Additionally, as one informant in a mutual aid organization noted, care work also involves confronting the gender inequities of care work, in which women disproportionately shoulder the burden.

Although they were largely strapped for resources, many CBOs worked to protect the health and well-being of their staff. Some organizations provided stipends to outfit work-from-home arrangements, and one provided organic produce bags to their staff in addition to community members. The leaders of one worker rights organization had already been working to encourage their staff to use their paid sick leave (staff would often come into work while ill), and redoubled their efforts once the pandemic began, as part of an emphasis on the importance of sustainable work practices.

This was amplified by the fact that their work included advocacy for workers' right to paid leave.

Other CBOs struggled with getting staff to take advantage of their updated paid time off policy during the pandemic to encourage taking more time for self-care—staff generally appreciated the policy but felt like there was still so much to be done. In several cases, CBO leaders worked on encouraging staff to prioritize self-care and made adaptations to their initial policies to better align with how staff might use the time. Some CBOs revised productivity expectations for staff, especially in the early months of the pandemic, to encourage self-care and have freedom to address other pandemic-related challenges outside their job.

Some organizations created new limits to the formal working day to encourage working fewer hours and increase flexibility for staff. One organization noted that "this is a new way of being" and that it was important to be "supporting the folks that are supporting [the members] directly." This work was grounded in what staff members needed, and many organizations iterated their initial efforts to encourage staff to work less to reach the solution that best supported that goal. One organization created an internal team focused specifically on caring for fellow staff. Notably, among those we interviewed, the CBOs doing the most innovative work on this front were primarily led by women of color, had primarily women and people of color among their staff, and organized primarily with low-SEP Black, Indigenous, and people of color (BIPOC) populations. Thus this approach to caring for staff could also have implications for health equity.

In the decades before the COVID-19 pandemic, the public sector—including public health, health-care, and social service systems—experienced systematic defunding and devaluing. The pandemic starkly exposed the impact of this long disinvestment. Many CBOs, including those that had been focused on direct service provision, identified the importance of policy and advocacy work. In many cases, CBOs worked to change narratives about their communities that reproduced marginalization and accelerated health inequities. In public testimony, media statements, art and design, they framed child care providers and in-home caregivers, day laborers and domestic workers as essential and deserving of better pay and regard for their work. They humanized people from stigmatized groups (including incarcerated people, people experiencing homelessness, people who use drugs, and people living in public housing) argued for providing them access to social and health resources accordingly.

Politics of Care at the Intersection

Sarah Ahmed (2014) critiques neoliberal notions of self-care as individual responsibility that becomes "a technique of governance: the duty to care for one's self often written as a duty to care for one's own happiness, flourishing, well-being." Following Audre Lorde, she asserts that self-care is instead an act of self preservation and agency, warfare against systems designed to subordinate if not destroy oppressed communities. Many CBOs discussed how their care work operated at these intersecting levels, focusing on the complexity and importance of simultaneously doing interpersonal work and political work to support people through a pandemic. One interviewee explained: "our philosophy toward our work is sort of to organize people as whole people, as whole workers. So, we're fighting for rights at the workplace but we're also taking on issues that they face in their lives." Others talked about how affirming people's existence as individuals through relationships of support was a political act. One participant asserted that community leadership and decision-making was a necessary antidote to enduring colonial legacies in local government, public health, and academic medical institutions, both enabling and transforming more effective interventions and partnerships between communities of color and predominantly white institutions.

Finding III: Rethinking "Crisis"

A strong dynamic across the interviews was a sense that, for those served by Bay Area CBOs we interviewed, the pandemic crisis built on many enduring crises that communities have faced. As Arundhati Roy (2020) wrote early in the pandemic, "The tragedy is immediate, real, epic and unfolding before our eyes. But it isn't

new. It is the wreckage of a train that has been careening down the track for years." In rethinking the nature of the pandemic crisis, Roy and others suggest that viewing it as both an extension and product of prior crises helps clarify why the pandemic has played out so unequally, and how to rethink interventions for future challenges.

We asked about Roy's perspective in the interviews. Many informants had not read Roy's article, but their experiences and the way they understood their work cleaved closely to this vision: the pandemic was a tragedy in and of itself but was even more tragic in the ways it extended, exacerbated, and expanded existing crises. This was true across service categories and client base, and we began to see the pandemic as but one significant moment in the long crisis for marginalized communities. Although most had not planned for the contingency of a pandemic, they were experienced with crises more broadly and relatively quickly viewed the COVID-19 crisis on the whole as not unexpected. Additionally, they saw that it is not likely the last of its kind and that it is linked to a host of other major socioeconomic challenges. One informant put it this way, "The revealing and awakening and 'rethinking' that the COVID pandemic compelled exposes those underlying structural realities and, hopefully, motivates a more direct confrontation with the core problems, for example—policy advocacy that changes the conditions within which daily services work operates."

This stance on crisis calls up political-economic frameworks that emphasize long-term thinking about how to approach socioeconomic challenges like those accelerated by the pandemic. Here we draw insights from critical geographers who emphasize the longue durée of economic crises as inherent to capitalism and from racial capitalism scholars who reveal the embedded nature of racial inequities with other social stratifications (see, for example, Gilmore 2007; Robinson 2000). Jodi Melamed (2015) clarifies that racial capitalism is, centrally, capitalism itself, writing, "Capital . . . can only accumulate by producing and moving through relations of severe inequality among human groups. . . . [And] racism enshrines the inequalities that capitalism requires." As Stuart Hall (1980) wrote decades earlier, his investigations into race and class revealed that "race is a modality through which class is 'lived,' the medium through which class relations are experienced." Indeed, BIPOC communities have fared the worst through the COVID-19 pandemic. The reasons vary, but limited access to health care, lack of access to safe workplaces (remote work), and existing health conditions that stem from poverty are key factors (Azar et al. 2020; Mackey et al. 2021). These factors all have deep roots in economic inequality, also foundational to capitalism (Harvey 2006; Piketty 2014).

Beyond embeddedness, we also draw on intersectionality theory, pulling from Kimberlé Crenshaw's (1992) theorizations that highlight the impact of layered and interlocking challenges on particular groups. Her work shows us the ways that marginalized groups are not only multiply marginalized (through race, class, gender) but that the experience of living at the intersection of such marginalizations is uniquely challenging and creates a particular set of experiences.

We found a range of articulations of these theories in the everyday work of CBOs. For example, as a staff member at a youth-organizing group explained, "We know as a racial justice organization that when pandemics or, you know, large cataclysmic events occur, it's our folks that are going to continue to be the most harmed, because the conditions are already that way [and] we're going to continue to bear the burden." The organization sees part of its work as training its community in theorizing its position as vulnerable across the long term, which they view as an analytical position that could help lead to change: "We really try to make a place where things don't come as a surprise and shock because. . . young people are blindsided every day in our community, especially by the systems responsible for them. So we really try to be as predictable as we can [because] our communities are often the last to know. You know: first to be problematized, last to be supported or acknowledged—and so we really want to shift that."

In a different vein, a staff member at an organization that focuses on Black community resilience faced community disbelief about the

pandemic, which they understood as rooted in the community's enduring perpetual crises at every level. There were questions about the virus itself, but, more significantly, many believed that the Black community would be treated poorly by government or health-care institutions no matter the true nature of the virus. Clients felt that day-to-day life could not get much worse: "This is just everyday." This organization cited continued uncertainty about future planning and said that focusing on routine needs was primary: "We are meeting the moment, constantly." This posture of resilience at the intersection of multiple challenges was amped up during the summer of racial justice demonstrations. It was not that police violence was by any means new, but that the broader attention to it and the call to march, paint, yell, and theorize about it was louder than ever. This was motivating but also meant that the labor of explaining what life is like at the intersection of, for example, Black identity, poverty, and excessive policing, became an urgent burden as well.

In response to community fears, the CBO worked not only to educate but also to expand its community of care, to include more people in the immediate neighborhood and others across the city; some of this work shifted community perception of COVID-19 and of the potential for public institutions to support them. Still, other CBOs continued to feel the struggle around information flow and trust. For immigrant groups or some workers, the last-to-know phenomenon framed the experience of crisis. In some cases, janitorial staff or domestic workers were not always notified about any increased exposure risk at their workplace. When they were notified, the required isolation often pushed them into unsuitable living conditions—such as self-isolating in cars—without paid time off or other material support from employers.

As the pandemic wore on, another trust and information challenge loomed on the horizon: as vaccine approval began, a youth-services organization centered in the Black community found that clients believed they would be last in line for vaccines and so were not optimistic that vaccines might change their lives in a meaningful or immediate way. Echoing this concern, another CBO leader, who works on labor issues, explained, "A lot of our folks live through so much. . . . We've normalized crisis and trauma and survival."

Others expressed their pandemic response as almost seamlessly incorporated into their existing work, largely because of their well-articulated longer view of crisis. For example, when they began to strategize approaches to the emerging pandemic, a group that works toward Indigenous urban land and food sovereignty reflected on the many crises their community has prepared for, specifically in the Bay Area. As they explained, "We think of when people need to evacuate when the air quality is poor, and people need to find someplace to be safe. Or their water [or electricity] goes out because of an earthquake. . . . Where are they going to go? So we started to think about those things, because of the [PG&E-mandated] power outages that were already happening. And then all of our experiences of growing up in California, [such as living through] the Loma Prieta earthquake." Their view was that these were each distinct but deeply connected disasters, and that it was important to understand their interlocking nature. This constant need for readiness in California, the ongoing state of crisis, shaped their approach to the pandemic. At the same time, the pandemic pushed them to formalize some of their existing structures: "Our disaster preparedness, we named it *himmetka*, which means 'all together in one place.'" This approach guided the development of further preparedness planning, including water supplies, a tool shed, and other things that simultaneously support both ongoing work and disaster preparedness.

Other groups we spoke with echoed this in different ways, noting that the pandemic pushed them to reorient themselves around basic needs like creating food pantries, grocery delivery, and other essential service delivery. This was widespread across organizational types. In some cases, informants speculated that this work might continue beyond the pandemic. Organizations that were already working on the notion of "just transition" or "just recovery" told us that they found that these modes were relevant now again (for example, the Green New Deal).

For others, the pandemic highlighted and accentuated their existing tendencies to think jointly about social problems. For example, a labor-community alliance leader explained, "Our philosophy towards our work is sort of to organize people as whole people, as whole workers. So, we're fighting for rights at the workplace but we're also taking on issues that they face across their lives. Where they might be tenants or they're facing police violence, or they're struggling with underfunded schools. So, we really see that as all part of organizing together."

Significantly, many CBOs' long history of community organizing before the pandemic enabled their capacity to manage this crisis while looking ahead to long-term solutions that would play a role in any future pandemics or other major events. For example, a CBO that works on multiracial coalition building told us that, before 2020, "I would say we never explicitly had a conversation about pandemics or natural disasters, but I think the nature of our coalition [and] the relationships that we've built make it so that if something were to happen, we do have a rapid response, and the network is there and could serve that purpose. But it's not explicitly anywhere saying like . . . we're working together in case there is some natural disaster. . . . I don't think I've seen that in anything. But the infrastructure that we have facilitates that communication."

These infrastructures of organizing were also crucial in producing material support for affected communities. Several CBOs created new no-strings emergency funding pools on their own and in collaboration with others. Many engaged in food and PPE distribution. Some framed this as restitution for long-term marginalization: "This isn't financial assistance. This is a return of resources that already belong to our communities."

Along those lines, the economic shutdown produced by shelter-in-place policies created space to use the current crisis to creatively offer solutions to the longer-term crises. For example, when hotels emptied, and as it became clear that tourism could be affected indefinitely, advocates for deeply subsidized affordable housing developed a new dream: "I feel like doors are open. I mean, this idea of buying hotels, for example, is another one. That's a new one; we never really thought about that. Or we've not really thought that the SROs are that great, but hotels have these wide hallways and they have air systems and they have bathrooms and . . . oftentimes, they have enough space where you can turn them into studios. I mean, I don't know. I had never thought of buying a hotel and turning it into, you know, a hundred studio apartments."

Looking ahead, the long-crisis frame seems to help our informants stay level headed about what challenges may come, and what aspects of this year's triage work will serve them. As the leader of a labor-community coalition noted, "I think [the pandemic] accelerated some factors, right. [And] there's something in the idea that it was structurally flawed and weak already, and then you had like one tremor or something—like an earthquake or something—and the house collapses, right? That's kind of how I feel about it. Like I definitely feel like, yes, those flaws were already there, and those are the structural flaws that led to the pandemic."

Knowing this, several informants worked to balance the challenge of leveraging the possibilities of the crisis with enduring the longue durée. One described this as "a moment that will hopefully give us some greater political leverage to rethink or improve upon how our society's economic system and our political system are structured. But . . . that's going to be a heavy lift in many respects. . . . I wish it didn't take a pandemic and the economic fallout from that to happen."

CONCLUSION

In a year of extremes, the survival of communities in the Bay Area relied on a thick web of community-defined strategies, from the formal to the informal, from grassroots to in some cases government led. In the midst of a crisis that is an extension of prior crises and that has exacerbated inequalities and vulnerabilities, the strata of political and community workers that work through CBOs stepped forward and carried their communities in ways that should inform policy and community organizing going forward. In addition to research on health equity during the pandemic (for example, Fields et al. 2021), our project sits in conversation with

others investigating the ongoing effects of the pandemic, particularly in relation to political culture (James, Tervo, and Skocpol 2022, this issue), the complexities of intersecting dynamics between public health efforts with other community interventions (Burns and Albrecht 2022, this issue), and degrees of trust in government at multiple scales (Pears and Sydnor 2022, this issue).

Our twenty-seven interviews elucidated the political nature of work to promote health equity and care during the crisis of the COVID-19 pandemic. We posit that a more political framing of health equity is necessary. As the pandemic has illustrated, the health sector cannot singlehandedly address health inequities; we also need social and political solutions that are intersectoral (such as breaking down silos to work across health, housing, workforce development). The insights of these CBOs, most of which were outside the health sector, can support work to address the underlying fundamental causes of health inequities (Phelan, Link, and Tehranifar 2010).

Similarly, many CBOs we spoke with are, deliberately or not, striving to develop a collective politics of care. This was not a characteristic we sought in choosing participants but it became apparent as a dynamic. This broadly construed politics of care takes various forms, but includes being grounded in caring for clients and communities of CBOs, CBO staff, and the common good (such as policy and prevention work). CBOs did this work without bypassing the responsibility of state institutions for public health. At the same time, organizers' insistence that community keeps us safe tied public health to the autonomous capacity of local collectives and nongovernmental institutions to analyze and address their needs.

Finally, our informants, in finding ways to understand their working conditions, drew on an understanding of the long crises of racial capitalism. Significantly, this pushed them to take a long view on the pandemic and its relationship to other community challenges. It also moved them, albeit often implicitly, toward understanding the pandemic as endemic to capitalist structures that produce both class and race disparities. One stressed the importance of contextualizing CBO resilience within the linked systems of racial capitalism and white supremacy that create the need for such resilience in these communities. She explained: "We don't want our . . . resilience to be the measure of success. That is supremacy-maintaining."

Our study's strengths include a rich grounding in the Bay Area. The first three authors have each lived here for twenty-five or more years and have a history of doing community-based research in partnership with CBOs in the region, including some of those interviewed. At the same time, this study was conducted in one region only, one that weathered the pandemic comparatively better than other U.S. metropolitan areas. Our heterogeneous interviewees are a core strength of the study—they came from diverse CBOs working within diverse communities with diverse foci. It is possible that staff from particularly overstretched CBOs were less likely to participate in our study, limiting the generalizability of our claims—although, given our team's strong ties with many CBOs and the flexibility within which interviews could be conducted (such as during a commute, outside business hours, and at any point over a multiple-month span) made it more possible for a broad range of interviewees to participate. Finally, although we sought diversity of perspectives among our informants, for several reasons most identified as women, and this could affect the kinds of responses we logged. Because we did not include questions about gender in our protocol, we are not prepared to draw broad conclusions about how it shaped the perspective of our informants or the work that they do. We also encourage future researchers to interrogate gendered dynamics embedded within a politics of care.

All told, these findings point toward lessons for CBOs ongoing, and for funders and researchers working on the intersecting issues that face urban communities. Practitioners might consider framing their work as addressing social determinants of health inequities, and funders committed to health equity should look beyond the health sector for possible solutions with broad community impact. CBOs may also be interested in building more permanent networks to extend their politics of care work across multiple crises. Future research

should explore whether these trends persist as we emerge from the pandemic and whether these trends emerge in other regions as well. For example, nonprofit community organizations led by and serving people of color around the country may share both values and increased need for support as they respond to both racism and the need for structural changes to effectively address COVID-19 in their communities (Building Movement Project 2021) as was evident in Bay Area organizations we interviewed led by and serving women of color. In addition, our project did not investigate the specific legacy of the region's experience with HIV/AIDS on these organizations' advocacy and care work, but this would be a fruitful site for further research. Finally, understanding the relationships between funding, funders, and organizational capacity in a city or region was outside our scope. It would, however, likely offer key insights as to how such structural factors enabled or limited CBOs' effective responses to the pandemic.

In sum, the pandemic altered the social and political dynamics of Bay Area CBOs in ways that offer a model for sustained, long-term work toward health equity. Doing such work to strengthen community infrastructure that centers a politics of care and addresses social and structural health determinants could not just help us out of the long, wide reach of this pandemic, but also help mitigate the broader impacts of future crises (such as future pandemics) as well.

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Social, Resource, and Institution Disruptions and the Evolving Lives of Economically Vulnerable Older Adults: Implications for Policies and Programs in the New Normal

CARLA PEZZIA, MAGDA C. ROGG, AND TAMMY LEONARD

This article focuses on the impact of pandemic-related reorganization on the lived experiences of economically vulnerable older adults receiving food assistance. Thematic analysis of life narrative interviews from ninety older adults suggests three focal types of disruptions produced by policy, program, and system innovations: social, resource, and institutional. For the majority of study participants, modified or reduced social support, increased need for material resources, and changing institutions, programs, and policies have created significant disruptions in their lives at an age when capacity for adaptation is diminished. Understanding the impact of these disruptions is important to inform policies and programs that will emerge in the post-pandemic era. Efforts to protect vulnerable seniors have also decreased opportunities to access channels for communicating their needs.

Keywords: food insecurity, older adults, COVID-19, narrative gerontology

Older adults are at greater risk of COVID-19 related mortality and health complications (CDC 2021); and the economic consequences of the pandemic have disproportionately fallen on lower-income groups (Parker, Minkin, and Bennett 2020). These combine to create unique circumstances for older adults with few financial resources—both because of their vulnerability and the increased economic precariousness of younger family members. Even though 9 percent of older adults live below the federal poverty line and this number is poised to increase as the low-income older adult population continues to grow (Administration on Aging 2021),

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senior needs and their experience of policy changes are rarely addressed in political determinations designed with working-age adults in mind. Our work focuses on the impact of pandemic-related reorganization of economic, social, and education services on the experiences of economically vulnerable older adults receiving food assistance; and older adults' perceptions of the implications of program and policy innovations on their present and future well-being.

Since the start of the pandemic, older adults were noted to be the most at-risk for severe illness and for mortality from COVID-19 (CDC 2021). At least 84 percent of older adults, those over the age of sixty-five, have at least one chronic health condition (NCOA 2020), making them particularly vulnerable to COVID-19 complications. This vulnerability led to policies enacted to protect older adults but that also increased the isolation of older adults.

Initial policy responses designed to protect older adults included stay-at-home orders, private retail stores offering restricted times for senior shopping, and increased options for home deliveries of food and medications; these policies have produced mixed positive and negative results for seniors (Monahan et al. 2020). Considerable attention has been paid to social and psychological impacts of social isolation. Extant research from before the pandemic clearly demonstrates the profound impacts social isolation and loneliness can have on mental and physical outcomes, particularly among seniors (Kuiper et al. 2015; Leigh-Hunt et al. 2017; Ong, Uchino, and Wethington, 2016). Despite knowledge that increased social isolation was suboptimal for older adults, social isolation was often an accepted trade-off as measures to protect physical health were enacted. Since the pandemic began, older adults who were already distant from family previously have become much more likely to become increasingly isolated (Gauthier et al. 2021). Yet many of those who were already well connected have noted concerted intergenerational efforts to ensure and maintain some kind of contact (Morrow-Howell, Galucia, and Swinford 2020). Thus the impact of the trade-offs inherent in COVID-era policies are likely to vary within the older adult population.

Social isolation was also confounded by economic impacts. Older adults were not immune to the economic downturn that occurred during the COVID-19 pandemic, and many who had continued to work found themselves without employment and had difficulties finding a new job, similar to trends after the 2008 recession (Johnson and Butrica 2012). Adults over age sixty have historically been significantly less employed in telework positions than all other age groups (Lister and Harnish 2011). Low-income older adults, who are unlikely to have high educational attainment, are even less likely to have teleworked during the pandemic (Bureau of Labor Statistics 2021). Additionally, many low-income individuals are in low-skilled or service positions that do not regularly have telework options (Johnson and Wang 2017).

For many older adults, increased economic challenges resulted in increased likelihood of food insecurity. In response to the overall increase in food insecurity, Supplemental Nutrition Assistance Program (SNAP) benefits were expanded and the process for accessing the benefits was simplified. These changes helped ease the strain placed on the charitable food distribution sector, which had seen a sharp increase in demand. Charitable food distribution among pantries and food banks across the nation increased from 9.1 percent in 2019 to 13.5 percent in July 2020 in response (Ziliak 2021). At the start of the COVID-19 pandemic, the number of older adults receiving food assistance from charitable organizations decreased sharply due to sheltering in place and other social distancing restrictions; since then, however, the number has increased again (Ziliak 2021). The early decline most likely reflected a detrimental impact on senior mobility rather than a decrease in need. Even with the expansion and simplification of SNAP and the increased use of food pantries, food insufficiency among older adults increased from 2.8 percent in December 2019 to 4.9 percent in July 2020 (Ziliak 2021). When food insufficiency is taken into consideration with reduced variety in nutrient intake, there is a dramatic increase in the nutritional deficits among older adults. Seniors reported food insufficiency with reduced variety at a level of 14.5 percent in December 2019

and this figure jumped to 33 percent in July 2020 (Ziliak 2021).

In this article, we address how the COVID-19 pandemic has shaped social and political responses and highlight the disparate consequences of those responses, specifically within a highly vulnerable population due to their age and socioeconomic status. We examine ways in which the pandemic interrupted social, resource, and institutional systems that low-income older adults depended on to promote their own and their households' well-being. Understanding the impact of these disruptions is important to inform policies and programs that will emerge in the post-pandemic era and to ensure that they comprehensively address the inequalities vulnerable senior populations face. In many ways, efforts to protect vulnerable seniors have also decreased their opportunity to access channels for communicating their needs, making this work particularly important.

THEORETICAL FRAMEWORK

In our approach, we borrow from the field of narrative gerontology, whose theoretical focus on storytelling and collaboration we find uniquely valuable in recreating a more complete picture of the lived experiences of our interlocutors. A primary outcome of narrative gerontology is to redeem the value of individual lives (Moody 1992), and thus it can provide deeper insight into the challenges and inequalities faced by marginalized populations. This is particularly important during the pandemic, given that so much of the emphasis has been on disease prevention and clinical outcomes that the disparate consequences of public health policy and programming have not been fully examined.

Based on the psychologist Jerome Bruner's development of the "life as narrative" metaphor (1987), narrative gerontology points to "life-making" storytelling as a valuable insight into the inner workings of the process of aging (Kenyon and Randall 1999). We also intend that our work with older adults may provide a space for them to express their stories to help alleviate what social workers Clive Baldwin and Jennifer Estey (2015) call "narrative loss," which occurs when changes and developments during the aging process disrupt the ability of older adults to narrativize their lives. The social distancing and isolation during the pandemic may have also contributed to narrative loss, like that which can occur when an older adult moves to a centralized long-term care center (Blix 2016, 34), and thus may have further limited the stories told by older adults. The interview encounters for this project thus provided a space for isolated older adults to connect with another social being and to continue to construct the narrative of their life.

An important theme in narrative gerontology is that of the creation of wisdom environments, which are designed to acknowledge the lifelong process of self-storying and meaning-making in a collaborative and respectful way. In such an environment, "we continuously refine our ability to listen explicitly and deeply for stories, themes, genres, and plots in one another's lives and we strive to be present to each other's wisdom" (Randall and Kenyon 2004, 341). This type of engaged listening is particularly valuable to appreciate the wisdom and experience of marginalized lives. By creating wisdom environments, we as researchers can better recognize what pandemic-related events low-income older adults identify as important plot points in their lives, as well as how they situate their responses to the pandemic into the greater storyline of their lives. Their shared wisdom can then, in turn, help inform future policies and programming that directly affect older adults' lives, especially the most vulnerable among them.

METHODS

Data for this article come from a mixed-methods project examining food and economic security over the life course of older adults. We define older adults as anyone over sixty following funding guidelines that mirror age coverage in Feeding America's *The State of Senior Hunger in America.* We recruited 107 low-income adults over sixty selected from food assistance agencies throughout Dallas, Texas, of whom ninety provided complete data from life history interviews and bimonthly follow-up surveys asking them to elaborate on various experiences. The baseline life histories allowed for participants to delineate the degree to which they viewed the

pandemic as salient in their general personal narrative; the follow-up surveys trained the focus of their narratives more specifically onto the pandemic. Interviews and surveys were conducted from June 2020 to May 2021, either in person at recruitment sites or over the phone. By the start of the data collection period, the governor of Texas had lifted many of the pandemic-related restrictions; however, the food assistance organizations continued to follow their own public health protocols throughout the data collection period. Interview questions covered general positive and negative experiences during the pandemic, as well as access to food and resources. We assessed food security using the standard U.S. Department of Agriculture (USDA) household food security survey (Coleman-Jensen et al. 2019) and other material hardship with questions from the Adult Well-Being Topical Module of the Survey of Income and Program Participation. We recruited from four primary types of food assistance agencies: traditional food pantry, congregate meal program, community distribution partner site, and social services resource center. However, once the pandemic started, the congregate meal program transitioned into a drive-through food distribution center and the services provided at the resource center diminished greatly. The traditional food pantries in our sample had previously used a self-choice model and switched to prepackaged boxes during the pandemic. Sampling was opportunistic within strata designed to capture heterogeneity within the low-income older adult population (for a sample description, see table 1). Our recruitment focused on one urban center (Dallas), but because of the locations of our multiple recruitment sites, our sample does consist of people from throughout the county. Thus large urban centers with similar socioeconomic diversity as Dallas may find relatable experiences within their older adult population.

Table 1. Sample Description

Sample Description (n = 90)
Household structure
Single adult (50)
Multiple older adults (13)
Multigenerational (37)
Food assistance type
Food pantry (52)
Congregate meal program (17)
Community food distribution site (18)
Resource center (13)
Food security
High (31)
Marginal (31)
Low (25)
Very low (13)
SNAP participation
Receive benefits (44)
Race-ethnicity
Black/African American (57)
Hispanic/Latinx (31)
White (12)
Gender
Female (82)
Male (18)

Source: Authors' calculations.
Note: All numbers in percentages.

Data Analysis

We analyzed qualitative data using thematic and narrative analysis and quantitative data using descriptive statistics. Interview fieldnotes were reviewed for major themes of disruption due to the pandemic, and interview transcripts were coded for details based on identified themes. We assessed narrative flow in transcripts to identify key moments and characters of the pandemic in our participants' lives. We further examined heterogeneity in outcomes and perceptions of major themes in relation to household structure, food assistance type, and race-ethnicity. For each type of disruption, we include newly developed strategies low-income older adults have needed to cope with what is called the new normal.

RESULTS

The narrative of our participants' life stories demonstrates the variety of ways the pandemic affected older adults. It is evident that the pandemic has shaped how the majority of our participants respond to emergent situations and ongoing stressors. Several participants, however, focused on nonpandemic issues as the dominant feature of their life. For example,

many Black participants voiced greater concerns about increased violence toward people of color after the protests in response to the murder of George Floyd and apparent racist rhetoric from officials in the Donald Trump administration. The combination of the social unrest during the summer of 2020 and the disparate impact of the pandemic on communities of color was particularly troubling for participants, who highlighted previous experiences of racism throughout their lives. For most, though, fear of illness and not receiving adequate care or of a loved one dying were the primary concerns.

The narratives further demonstrated major shifts in the day-to-day needs and routines of participants. Our findings highlight the impact of pandemic-related reorganizations in federal SNAP policy, regional social service structures, and local education systems on their daily lives. Thematic analysis suggests three focal types of disruptions in the lives of older adults produced by these policy, program, and system innovations: social, resource, and institution disruptions (see table 2).

Social

Pandemic-related social disruptions for older adults have been widespread and are reshaping social networks. Of our respondents, the majority (67 percent, $n = 90$) commented that their social life and well-being had been disrupted in a negative way, 9 percent thought that the pandemic had caused positive change in their life, and 24 percent suggested that it was not a prominent feature in their life. People who lived by themselves and people who lived in multigenerational households were represented within each category. Ten of the twelve participants who lived with a spouse or partner or someone else similar in age all reported negative experiences and two reported neutral experiences; that is, no one reported positive changes. Negative changes included an increased state of worry and fear about catching the disease and possibly spreading it to loved ones, social isolation from stay-at-home orders, and decrease in social activity such that participants voiced concern that a physical toll was being taken on their bodies. One interlocutor in her eighties told of how the pandemic was negatively changing both her physical health and her mental understanding of her aging process: "I was very active before. I would go to [the senior center] and do all kinds of things. Everyone always told me I look younger than I am. Now, I just sit around all day. I'm feeling my age" [paraphrased]. Another, however, suggested the pandemic was a major and positive plot point in her life: "To some degree it's been an adjustment, but it's also allowed me to refocus. I've had to figure some things out, and it's made me stronger" [paraphrased].

Most participants (73 percent) reported a considerable decrease in seeing friends and family members in person. Some variability was evident in how challenging this was based on household composition. When it came to participants who lived alone, only 12 percent saw their friends and family as often as before the pandemic. In a handful of cases, the participants said that they never saw friends or family before the pandemic; thus the pandemic played a limited role in their social lives. One who felt that the pandemic was shaping her way of being said,

> My kids live so far away. I mean, I'm happy for those who have their kids around . . . but it just makes things harder. I still communicate with them a lot . . . and that helps. But I feel like I can't go anywhere, or can't do anything that I would like to. Not that I went out that much, it's just that opportunity to be able to get up and go. Now, I have to think about it. I have to make sure if I go to the grocery store, it's early in the morning when there's not a lot of people.

Many of these participants who lived in senior living facilities lamented the restrictions on resident gatherings. One said she thought her communication with her children and friends had improved because of more purposeful phone and video chat interactions, but the rest generally agreed that telecommunication was not the same quality as in person.

Of those in households with school-age children ($n = 26$), all older adults were assisting with the switch to virtual learning. As one said, "There is just so much changing now, ugh . . . y'know, I've got to homeschool now all day.

Table 2. Exemplar Quotes for Different Disruptions

Disruption Type	House	Food Assistance	Food Security	Race	Gender	Quote
Social	Single	Meal program	High	Hispanic	Female	My kids live so far away. I mean, I'm happy for those who have their kids around . . . but it just makes things harder. I still communicate with them a lot . . . and that helps. But I feel like I can't go anywhere, or can't do anything that I would like to. Not that I went out that much, it's just that opportunity to be able to get up and go. Now, I have to think about it. I have to make sure if I go to the grocery store, it's early in the morning when there's not a lot of people.
	Multigen	Food pantry	Low	Black	Female	[Daughter] refused to pay her part . . . She got out, but she left [grandkids] . . . this pandemic. We were having such a good time at church and graduation was coming up, and the boys . . . There is just so much changing now, ugh . . . Y'know, I've got to homeschool now all day. Busy all day until 3, ugh.
Resource	Multiple older adults	Food pantry	Low	White	Female	We used to buy the discounted Six Flags passes for an exercise class . . . Then we started getting the food pass . . . and you eventually learn the "tricks" to get certain foods, like fruit instead of fries. We used to save a lot of money, but with COVID, now we're spending more. To go to Six Flags now, you have to make a reservation online, and we're just not that type of people.
	Multigen	Meal program	Marginal	Hispanic	Female	My son and his family [spouse and four children] moved back in with us around the end of last year, before COVID. It was supposed to be until he got back on his feet. Now, it's impossible for him to find a job, and my disability check doesn't cover it all.
Institution	Multigen	Food pantry	Marginal	Black	Female	The [food pantry] tried to help me get SNAP back in September, but I was only going to get $16, and the paperwork just isn't worth the hassle.
	Multiple older adults	Communal food distribution	Very low	Black	Male	I tell you I'm trying my best. I need to go back to work. What little money I get a month it ain't buy crap. It helps but it ain't enough.

Source: Authors' calculations.

Busy all day until three, ugh." Several joked that helping with virtual learning was not how they envisioned spending their retirement years. They suggested a loss of control but most were willing to go along with it because their role as matriarch was of the utmost importance for them and their families.

One of the biggest areas of social disruption involved church attendance. Before the pandemic, 69 percent of the sample regularly attended church one or more times a week. For many, church activities were their primary source of social life, and they were looking forward to being able to get back to church in person: "I miss going to church. It is easier to do by phone, but I miss being there in person."

Similarly, the inability to gather in groups for important social events was a major source of lament for the vast majority of participants. Several mentioned that the "holidays just don't feel like the holidays anymore." Funerals, in particular, were a difficult time for many who had lost friends or family members, either from COVID-19 or something else: "We have had some but most gatherings just are not happening. Funerals and weddings have been modified and are strange. There is no physical touch. You can't hug someone to console them when a loved one dies. The only exception is my mother who is eighty-eight. I can't not hug my mother" [paraphrased].

In some cases, social disruptions intersected with resource changes. For example, several of the seniors began to receive their food assistance boxes through the mail (positive resource disruption). Although most appreciated the convenience of not having to go outside, several lamented not getting a chance to see the pantry volunteers, whom they regularly referred to as "friends" (negative social disruption). Many of these individuals expressed more reluctance or hesitation to reach out to pantry workers to ask for assistance at tasks such as SNAP application completion, a service the food pantry sites typically provide onsite. One interlocutor mentioned reaching out for transportation help and that the program manager had been rude to her. She acknowledged that they were probably overwhelmed, but she still needed the services and did not deserve to be treated poorly. Additionally, several complained that so many application services had switched to online only, and that they did not have a computer or internet access. For some, their phone was their primary internet connection; but they found it difficult to maneuver through complex application materials on such a small screen. Multiple people complained that the state's phone-based health and human services hotline (211) was never answered and that they did not receive calls back after leaving a message.

Strategies to address social disruptions had mixed results. As noted, many older adults attempted to speak on the phone or video chat more with friends and family members to address the isolation they felt. Several mentioned being excited about learning the new technology. Only one, however, clearly stated that this had been a positive experience. Most agreed it was not the same as in person. Some used the isolation time as an opportunity to change certain habits and become more self-reflective, as the following interlocutor suggests: "Any time I was down I used to go shopping. I'd go to the Dollar Store and pick up some small things. So I've saved a lot of money because I don't do that no more. Now I read instead, especially my Bible verses. I get to devote more time to reading my Bible" [paraphrased]. Although reading biblical passages does not replace the sense of community built through regular church attendance, it does allow for many older adults to continue to practice their faith in ways that are meaningful to them.

The limited ability to access social workers and program providers also provoked mixed coping responses. Many individuals went without requesting services because they were unsure where to turn, while others took pride in being able to advocate for themselves. For example, the woman who was treated poorly by a program manager laughed and said, "she's going to meet 'Mean Me.' No more, 'Nice Me'."

Resources

Resource disruptions have been widespread. Demand for food assistance has vastly increased during the pandemic, straining existing food assistance systems. Federal programming increased SNAP benefits and provided resources for the USDA to increase its distribu-

tion of food to community organizations. In addition, many private donors increased charitable giving to the food sector. The influx of resources for food assistance led to variable results for study participants. Given the sampling of older adults across food assistance sites, almost all participants received charitable food distribution or SNAP benefits, or both, before the pandemic. Five participants started receiving assistance as a direct result of the pandemic. Although new food assistance recipients were more negative about the trajectory of their life (such as "I don't know how I ended up here"), the small numbers did not allow for a more thorough comparison of individual responses to the pandemic between those who were new to food assistance and those who were not. Among those accustomed to food assistance, participants provided mixed responses regarding their experiences of charitable food distribution during and before the pandemic. A handful of participants felt as if they were receiving more food at their regular food pantry. Others (three participants) noted that more churches were providing food distribution services on a more regular basis to allow for participants to have their needs met throughout the month. Yet several who received food through a community distribution program and two food pantry clients reported closures of much-needed local programs, longer wait times to receive assistance due to an uptick in clients, and less assistance at each encounter.

Most notable was the change in delivery method from walk-in services to drive-through or delivery and from self-choice to prepackaged boxes at the food pantry sites. In general, most participants enjoyed not having to get out of their car. However, food pantry clients strongly preferred the previous system of being able to choose their foods, and those who were receiving delivery boxes missed receiving perishable items. All participants noted a general increase in canned goods; for many, the high sodium content of canned goods was a significant concern given dietary restrictions. Clients at the community food distribution sites noted the increase in demand also meant a longer wait in their car, without access to bathroom facilities and sometimes under difficult weather conditions if their car did not have properly functioning air conditioning and heating. Texas saw both extreme heat and extreme cold temperatures at various points during the data collection period. Additionally, one participant stated that once she started working part time in the mornings, she was no longer able to make the food pantry hours yet still needed the assistance.

Two respondents discussed how they used to rely on unconventional food resources, namely, the all-you-can-eat food program at a local amusement park. Although the upfront expense was costly on an annual basis, they figured they saved hundreds of dollars over any one year in food expenses. They had also learned various tricks to ensure that they received fruits, vegetables, and other healthy items instead of just the chips and French fries openly available. They had bought their annual pass the month before the pandemic hit and were then unable to use it, thus losing a substantial amount of money they needed to cover food expenses throughout the year.

Older adults have also experienced increased need for a variety of household resources as a result of the pandemics reorganization of education and work systems. Approximately 50 percent of our participants had difficulties paying at least one of their bills during the pandemic. Many noted an increase in their bills due to their being at home more, and a handful of the twenty-six households with school-age children had to add the cost of internet services for virtual schooling to their monthly bills. A majority struggled with their bills before the pandemic and were accustomed to receiving rent or utility assistance (or both) through county social service programs. A few noted that it was more difficult to get help because programs ran out of money given the higher demand for funds because of the pandemic, which added extra daily stress. Although most of the financial stress was not solely due to the pandemic, some did have difficulties in meeting their financial needs specifically because of the pandemic and related increases in unemployment. For example, one retiree noted the financial struggles she faced: "My son and his family [spouse and four children] moved back in with us around the end of last year, be-

fore COVID. It was supposed to be until he got back on his feet. Now, it's impossible for him to find a job, and my disability check doesn't cover it all."

Another participant's daughter moved back in with her and her husband, and they did not struggle financially. Instead, they appreciated the increased interaction with their daughter because it directly helped them alleviate their feelings of isolation during the early months of the pandemic. Those who did struggle financially found that finding employment was one of their biggest challenges. Several remarked that it seemed as if they were being discriminated against because of their age.

Nearly all participants had at least one major chronic health condition that put them at greater risk for severe illness, even after vaccination. The majority have relied on county health services to keep their medical expenses low. Almost all of the sample bypassed dental cleaning services during the pandemic for both public health and financial reasons. Even after dental clinics started to open again in the summer of 2020, more than half of the participants who needed dental work done were still not able to afford the care they need. Only a few participants had medical procedures that needed to be postponed because of the pandemic. By and large, those who received Medicare (approximately 80 percent) did not report any concerns about seeing their primary care providers. Yet those with home health care lamented the changes in care policies to maintain social distancing. Little is known about the degree to which pandemic restrictions on home health care may have an effect on morbidity and mortality of older adults (Sands, Albert, and Suitor 2020). Our participants suggest the changes have had at least a short-term negative impact on their physical and mental health needs.

Many participants discussed strategies to ensure that they were able to make the most out of the food they received. Several, for example, reported washing all the canned food items to remove any excess salt. This was a practice they did before the pandemic, for which all but one reminisced over how it was something they learned from watching their mothers, but it became more commonplace with the increased number of canned food items being distributed. A few also got into the practice of looking up new recipes on their smartphone when they were given food items they did not know how to use. In the past, these same people would have been likely to pass along the unknown food item to another neighbor in need.

Institution

Institutions have acted to lessen the stresses on older adults but many of these adjustments have not been well understood and themselves been sources of disruptions and stress. In our study location, SNAP benefits were increased to the maximum available by household size and automatically renewed; and the process for new applicants was streamlined. COVID policy changes indicate that all single household recipients should receive $234 (currently) in SNAP benefits. However, the older adults interviewed reported seeing only a minimal increase or none at all in their monthly SNAP benefits, even when they received less than the maximum allowed. Of the participants who receive SNAP benefits ($n = 46$), the vast majority stated that they noticed an increase in their monthly benefits, but several reported that the increase was minimal. For example, one participant reported that their benefits went from $16 to $23, which is inconsistent with pandemic-related SNAP policy changes mandating all recipients receive the maximum household amount.

Additionally, the reduced application burdens have not been effectively communicated. Many participants stated that they tried to apply for benefits but found the process to be too complicated, as one suggests: "I don't know why they make seniors jump through so many hoops. You need a college degree to fill out this paperwork, and even then you still don't know if you're doing it right" [paraphrase].

Even when able to complete the paperwork, several said that the hassle was not worth it for the low amount of benefits they received (typically reported as $16). In some of these cases, though, the experience was pre-pandemic and the respondents were not aware of the streamlined process or the increase in benefits included in the federal Coronavirus Food Assis-

tance Program. As mentioned, limitations to onsite encounters at food distribution sites also posed a barrier for some participants to seek assistance with completing SNAP paperwork. Disruptions in older adults' social support networks and increased stress brought on by heightened resource needs and disruptions in the social safety net have in many cases likely impaired participants' ability to seek help in understanding the institutional and policy changes put in place to better help them during the pandemic.

Access to COVID-19 vaccinations proved to be a challenge as well for many of the interviewed seniors. By May 2021, the majority of the participants had been fully vaccinated but many struggled to get an appointment or were discouraged by early reports of waiting up to eight hours in a car at some vaccination centers. As one interlocutor related, "I'm eighty-plus years old and have an incontinence problem. I can only go about twenty minutes before I need to use the restroom, and it's too hard for me to use one of those porta potty things. I need something closer to my house and where I can just go in get the shot and get out. I'll wait until I can get it at one of the pharmacies nearby" [paraphrase].

Even though the vaccination centers had become vastly more efficient by March 2021, participants like this one felt like they could not risk being stuck in line for an undetermined amount of time. Others mentioned difficulties with signing up online and being unaware of vaccination sites closer to their residence. Here, too, the limited contact with case workers who had information on vaccine drives posed yet another barrier to information seeking and information dissemination.

Institutional disruptions proved difficult for older adults to develop appropriate response strategies. Institutional disruptions were often haphazard and further disrupted social networks, which otherwise may have been helpful for developing response strategies. For example, several participants learned about a nearby vaccination site with available appointments only when a friend gave them a call. Thus social disruptions significantly impaired participants' ability to respond to institutional disruptions, which highlights the need for a more nuanced political response that takes into account the lived experience of older adults.

DISCUSSION

Using a narrative gerontology approach, we are better able to understand the lived experience of older adults and how the pandemic is affecting their understanding of their lives. This is particularly important for low-income older adults, who are at increased risk for severe illness and major socioeconomic stress. Those we interviewed clearly indicated the ways in which social, resource, and institutional disruptions were affecting them. In many cases, the social, resource, and institutional disruptions faced by older adults intersected, potentially exacerbating any resultant negative outcomes. Resources were harder to obtain and social connectivity was lost alongside these resources. Regaining social connectivity was hampered by pandemic constraints. The ability to adjust to institutional and resource changes was diminished by social disruptions because people were cut off from their face-to-face information flows. In this discussion, we situate these disruptions and the response strategies of the seniors in our sample within three defining dimensions of a narrative gerontology framework: temporal, poetical, and spiritual (Randall and Kenyon 2004).

Temporal

In our life narratives, the understanding of our past and anticipation for our future is mediated by the interpretation of our present (Randall and Kenyon 2004). The focus of our stories becomes particularly important for analysis as we select which moments are worthy of greater detail than others. Two key temporal elements are clear in the senior stories we collected: negative experiences of SNAP benefits projected present and future frustrations, and social disruptions affecting activity levels shifted senior understandings of their aging process.

Among our participants who applied for SNAP benefits at any time in their lives, narratives included considerable details regarding their experiences attempting to apply, successfully applying, and receiving benefits. Even those who currently receive benefits acknowledged some of the difficulties they faced in ac-

cessing benefits throughout their lifetime. The federal Coronavirus Food Assistance Program included funding for expanded SNAP benefits and mitigated the application process, yet experiences reinforced skepticism among seniors regarding these policy changes. Detailed and painful recollections of "jumping through hoops" and receiving minimal assistance led many to distrust any suggestion of a streamlined and financially supportive system. Those who received SNAP benefits also expressed distrust regarding the expansion of benefits during the pandemic. They recounted times that benefits either increased or decreased without their knowledge, making it difficult to plan and creating concerns about bureaucratic errors. The past and current experiences reflected in the senior life narratives clearly indicate the need for information dissemination that ensures greater awareness among those most in need.

Additionally, the seniors who were new to receiving food assistance because of the pandemic had to reorient their life narratives and the trajectory of their lives. Again, not enough were in our sample for a meaningful comparison with those who had received benefits previously, but those seniors who had just started expressed uncertainties about SNAP benefits in regard to their eligibility, how to apply, and where to go for more extensive assistance. The limited contact with social workers at the food distribution sites potentially exacerbated their needs going unmet in ways unique to the pandemic. Their experiences provide further support for more expansive awareness campaigns.

Many of the seniors interviewed also reoriented their life narratives as a response to the social disruptions related to public health measures aimed at preventing the spread of the virus. Initial measures related to social isolation favored physical over mental well-being, but physical well-being appeared to be narrowly defined to not contracting COVID-19. Research indicates that both can be diminished with social isolation (Kuiper et al. 2015; Leigh-Hunt et al. 2017; Ong, Uchino, and Wethington 2016), and peer group exercise activities, such as those often found in senior centers, have been found to promote both, such as by alleviating depression (Kanamori, Takamiya, and Inoue 2015). The seniors we interviewed shared how social isolation was affecting their mental states and taking a physical toll on their bodies. Stay-at-home orders and the closing of senior centers curtailed most opportunities for seniors to remain physically active, especially low-income seniors who live in areas with limited green spaces and sidewalks. The unintended physical consequences of social isolation had profound effects on senior life narratives and how they understood their aging. Comments on "feeling [their] age" and general feelings of losing control of their lives indicate how well-intended public health measures can produce considerable physical and psychic harm.

Poetical

The poetical dimension of narrative gerontology incorporates literary components to reflect on the ways in which older adults make meaning of their lives. The component of the "context of self-storying" (Randall and Kenyon 2004) is of greatest relevance here to understand the particular ways COVID-19 becomes part of our narrative environment (Bruner 1990; Randall and McKim 2008) and shapes our life stories. Interestingly, some apparent genre shifts in the life narratives of our interlocutors (such as positive changes resulting in a contemplative shift reminiscent of lyrical poetry) were evident, but not always clear enough to discuss in detail for this article.

The COVID-19 pandemic undeniably shaped the lives of seniors and nonseniors alike. Incorporating the pandemic into our narratives can provide insight into the social constructs that guide the complex ways in which we participate, individually or collectively, actively or passively, in our broader environment (Holstein and Gubrium 2000). Concerns about contracting the virus and spreading it to loved ones was the primary way the pandemic reflected the individual and collective connections our interlocutors had. However, social distancing measures created a mixture of active and passive engagement in senior lives; on the one hand, many perceived little choice in what they did or how they lived their life; on the other, they had to be much more intentional on the timing of

when they did mundane tasks, such as grocery shopping. They recognized the situation as one that everyone had to contend with while experiencing the shrinkage of their personal environment because of social isolation.

Potential narrative challenges are numerous at any age but particularly among seniors as their narrative environments start to shrink (Randall and Khurshid 2016). One of our primary concerns was the potential for "narrative loss" (Baldwin and Estey 2015) as the daily lives of our participants narrowed due to individual fears of susceptibility to the virus coupled with social isolation policies. The inability to share personal stories with others may lead to a lost sense of self and greater feelings of desolation among seniors. Narrative loss may also lead to narrative foreclosure, or the premature belief that one's life story has ended (Freeman 2000). Many of our participants reflected on new chapters starting in their life (such as changes in how they were spending retirement or caring for adult children again) that suggested further narrative development; however, the psychic harm of those who felt that they had profoundly lost control in their lives impeded their ability to narrate their present story. Ensuring ways to avoid (and reverse) narrative loss and narrative foreclosure are critical to maintaining mental well-being among older adults.

Spiritual

Finally, the spiritual dimension reflects on the ways in which meaning, identity, and wisdom inform each other. The creation of "wisdom environments" (Randall and Kenyon 2004) in the storytelling process can help us, as researchers, draw on senior insights to inform policy and practice. The senior life narratives suggest three important themes where their wisdom and experience could be particularly useful in guiding future policy and practice: social capital, employment, and early detection of inflation.

Senior life narratives illustrating social and resource disruptions indicated the relevance of social capital, which can have significant impacts on resource access, routine, adaptability, and even survival (Adler and Kwon 2002). Each level of social capital plays an important role in facilitating preventative behaviors for controlling the pandemic (Page-Tan, Marion, and Aldrich 2022, this issue). The importance of social capital in the study participants' daily routine and post-shock strategizing was evident in their life stories.

Social service agencies, church communities, and family relationships were key sources of support for study participants before the pandemic. Since March 2020, many local social service agencies have shut down and those that remained open switched to drive-through or virtual services, which remained the case for our recruitment sites throughout our data collection period. Policy and program reorganizations have principally ensured that material services such as food distribution remained available, but the social connectivity provided by previous service delivery has been largely lost, which has had a significant impact on older adults. The decrease in engagement with other church community members in response to church closings further isolated many older adults. Additionally, family connectivity has been reorganized in response to the pandemic and related education system changes. Some older adults have been isolated from younger family members because of their higher risk of COVID-19 complications, and other older adults have taken on new roles to support virtual schooling for grandchildren. Before the pandemic, approximately three-quarters of low-income older adults were without high-speed internet services (Anderson and Perrin 2017). Thus low-income older adults as a group had more significant adaptation challenges when trying to regain social connectivity through virtual settings. Future policy and programming should be mindful to protect social connections.

The pandemic brought considerable shifts in narratives for seniors who were still working (or looking for work). Many older adults who wanted or needed to continue working were unable to find a job. Not all our participants qualified for pandemic-related unemployment programs if they had only just lost their job, but the pandemic limited their opportunities for gainful employment in unequal ways to other age groups. It affected their economic and social well-being; employment is often a key way to expand one's social network. Ample research

demonstrates that age is regularly a discriminating factor in many hiring processes (Button 2020), and many of the seniors interviewed felt as if they were being discriminated against because of both their age and the labeling of their age group as high-risk for COVID-19. Narratives of seniors who struggled to find work further reflected loss of control. Protections against age discrimination in hiring practices need to be closely monitored during crises.

Last, the narratives of low-income seniors appeared to foreshadow general economic downturns. Despite suggestions early on that price increases due to agricultural supply breakdown have not been a driving force behind food insecurity during the pandemic in general (Gundersen et al. 2021), several of the seniors interviewed had noted price increases at their local stores, especially for meat, making it more difficult to maintain a balanced diet in the early days of the pandemic. The mixture of food quantity and food quality, between charitable food and foods bought at the store, reflects previous research indicating that being low income does not necessarily prevent food intake but does affect the foods one can afford and ultimately eats (Ziliak 2021). Yet these forced changes in individual diets are regularly missed when examining overall trends in pricing and food insecurity, even when accounting for food insufficiency. Small changes in food pricing are likely to be felt in significant and unequal ways by low-income populations and could serve as early warning signs of broader financial challenges to come, such as the national rise in food costs reported by the Bureau of Labor Statistics in early 2022.

LIMITATIONS

This study has a few limitations. First, the sample consists primarily of low-income older adults who were already receiving food assistance before the pandemic. More research should be conducted to examine any differences with older adults who only started to receive food assistance during the pandemic. Second, our sample also consists largely of women. Although the men in our sample echoed similar sentiments, it could be that more research is necessary to better understand gender dynamics, particularly in relation to employment, during the pandemic. Third, we did attempt to compare differences between food assistance types, but because our congregate meal center site transitioned into a food distribution site, we did not fully capture the experience of many older adults whose congregate meal center shuttered completely.

CONCLUSION

We examine older adult pandemic experiences through the lens of temporal, poetical, and spiritual dimensions as defined by a narrative gerontology framework (Randall and Kenyon 2004). The life narratives of older adults during the pandemic delineate important features and disparate conflicts experienced in response to the pandemic. Our analysis of the temporal element of narrative gerontology reflects how experiences informed the ways in which the pandemic featured in the life stories of our participants and the poetical dimension shaped many of the strategies older adults used to navigate pandemic-related challenges. For most study participants, modified or reduced social support, increased need for material resources, and changing institutions, programs, and policies have created significant disruptions in their lives at an age when capacity for adaptation is diminished. However, our analysis of the spiritual dimension of narrative gerontology captures the ways in which older adult wisdom and experience can help us better understand key coping strategies emerging in the older adult population. These strategies will affect how older adults flourish or fail to flourish in the new normal. Emerging strategies can inform policy and programs designed to serve the growing population of economically vulnerable senior adults.

Through the creation of wisdom environment as espoused by narrative gerontologists (Randall and Kenyon 2004), we drew on the collective wisdom of the older adults interviewed and determined several coping strategies. These strategies should be considered by policymakers and program developers. A key issue, particularly for institutional disruptions, was the lack of awareness many low-income older adults had in policy and programs, specifically

regarding SNAP benefits and vaccine distributions. Awareness campaigns should take into account multiple points of dissemination given that many online modalities will not reach the target audience. Moreover, the perspectives of older adults should be solicited to incorporate and shape future programming. It could be useful to work more closely with local service providers, like our recruitment sites, to ensure access to older adults most in need of assistance. Additionally, information dissemination through local service providers may further promote positive behavioral responses through the established social capital they have with their clients (Page-Tan, Marion, and Aldrich 2022, this issue). For example, food boxes delivered to seniors could include written information to help older adults navigate emerging changes, or tailored hotlines could be set up to help them navigate institutional disruptions. Our work highlights the important role that service providers, churches, and other institutions play in creating informal social networks that help older adults in developing adaptive strategies. Data indicating the difficulties some seniors face in navigating the SNAP application processes support current legislative pushes to reduce the renewal frequency for older adults on fixed incomes. Finally, increasing broadband affordability could improve access to information and also meet the needs of low-income older adults who have school-age children living with them. These recommendations stem from the experience of low-income older adults as captured by a narrative gerontology framework that can be an important tool for informing policy and programming designed to meet the needs of those most at-risk in future crises.

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Stress and Mental Health: A Focus on COVID-19 and Racial Trauma Stress

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*In the United States, COVID-19 unfolded alongside profound racial trauma. Drawing on a population-representative sample of twenty- to sixty-year-olds who were married or cohabiting, the National Couples' Health and Time Study (*N = *3,642), we examine two sources of stress: COVID-19 and racial trauma. We leverage the fully powered samples of respondents with racial-ethnic and sexual minority identities and find that COVID-19 and racial trauma stress were higher among individuals who were not White or heterosexual most likely due to racism, xenophobia, and cis-heterosexism at the individual and structural levels. Both COVID-19 and racial trauma stress were associated with poorer mental health outcomes even after a rich set of potential mechanistic indicators, including discrimination and social climate, were taken into account. We argue that the inclusion of assessments of stress are critical for understanding health and well-being among individuals affected by systemic and interpersonal discrimination.*

Keywords: COVID-19, racial trauma, stress, mental health

The COVID-19 pandemic upended American family life and drew inequities in the United States into stark relief. The closing of schools, the loss of jobs, conflicting public health messages and measures, and the general stress of life in a pandemic have led scholars to suggest that the pandemic has "alarming implications for individuals and collective health and emo-

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tional functioning" (Pfefferbaum and North 2020, 512). The effects of the pandemic were uneven with individuals racialized as non-White who already faced high levels of discrimination and structural racism experiencing a heavy toll (Hardeman and Karbeah 2020). COVID will reduce the life expectancy of Black and Latina/o/x populations by two and three years, respectively, which is three to four times the reduction for the White population (Andrasfay and Goldman 2021). Americans who are racialized as Black and Latina/o/x have an elevated, and diverse set of risk factors for COVID, including living in densely populated neighborhoods, inability to work from home, and elevated hypertension (Shah, Sachdeva, and Dodiuk-Gad 2020; Webb Hooper, Nápoles, and Pérez-Stable 2020; Alcendor 2020). Yet even as scholars consider the implications of the COVID-19 pandemic for human risk and resilience, a second major stressor of 2020 and 2021 has been lost in the shuffle—racial trauma.

COVID unfolded alongside profound racial trauma with clear visual accountings of police violence against Blacks, including George Floyd (Liu and Modir 2020; Brodie, Perdomo, and Silberholz 2021) and with more than 9,081 reports of hate incidents against Asians and Asian Americans between March 2020 and June 2021 (Yellow Horse et al. 2021). Much research examining the impact of the COVID-19 pandemic on American life has ignored the co-occurring racial trauma from police violence and anti-Asian hate. Following the murder of George Floyd, the percentage of Americans racialized as Black reporting that discrimination was a source of stress grew from 42 percent to 67 percent, and 78 percent agreed that it was difficult being Black in America during summer 2020 (APA 2020a, 2020b). Between 2013 and 2017, Black Americans who lived closer to acts of anti-Black violence reported poorer mental health than their White neighbors (Curtis et al. 2021). Further, Asian and Pacific Islander Americans also experienced profound racial trauma given that they are experiencing more discrimination than they did before the pandemic (Jeung et al. 2021; OCA-Asian Pacific American Advocates 2020; Ruiz, Menasce Horowitz, and Tamir 2020) and serious acts of violence against Asian Americans have been on the rise (Gover, Harper, and Langton 2020). Hence it may be unsurprising that Asians are reporting more mental health problems during the pandemic (Wu, Qian, and Wilkes 2021) and have also reported high rates of suicidal ideation and behaviors (Shih, Chang, and Chen 2019).

Sexual and gender minorities, who also face high levels of stress and discrimination (White, Sepúlveda, and Patterson 2020), have also been profoundly affected by the pandemic. Cross-sectional evidence indicates that individuals who do not identify as heterosexual experienced exacerbated mental health problems and stress than heterosexuals (Moore et al. 2021; Hoyt et al. 2021; Peterson, Vaughan, and Carver 2021; Manning and Kamp Dush 2022). Further, about half of sexual minorities reported that their stress increased, relative to 29 percent of heterosexual respondents (Manning and Kamp Dush 2022).

Thus, rather than rely on a general indicator, we focus on two particular domains of stress: the pandemic and the movement for racial equity. We examine the characteristics associated with more, or less, of each type of stress and identify the associations between pandemic and racial trauma stress and mental health. Based on a stress process framework (Pearlin et al. 1981), heightened levels of stress are expected to be associated with well-being. We test two hypotheses. First, consistent with the minority stress model (Meyer 1995), we expect that individuals who experience elevated structural discrimination at the macro and the interpersonal levels, including individuals racialized as non-White and those who do not identify as heterosexual, will report heightened stress. Individuals who are not White or heterosexual in the United States not only confront everyday stress due to discrimination (Berjot and Gillet 2011) but are expected to experience greater levels of stress as they bear more of the deleterious effects of the pandemic and the movement for racial equity due to structural discrimination. Second, we expect that elevated COVID and racial trauma stress will be associated with increased symptoms of depression and anxiety, as well as loneliness and stress overload even after accounting for demographic correlates. In addition, we include indicators (economic resources, discrimination, support from their

partner or spouse, social support, physical health) that may buffer the negative effects of structural discrimination that manifests in elevated pandemic and racial trauma stress and stress and well-being. This article advances our understanding of how specific sources of stress are associated with well-being.

RISK AND RESILIENCE IN WELL-BEING AND RACIAL TRAUMA

The risk and resilience in family well-being during the COVID-19 pandemic model (Prime, Wade, and Browne 2020) suggests that the COVID-19 pandemic led to social disruption, including financial insecurity and social distancing, which in turn increased psychological distress. We extend this model and argue that George Floyd's murder led to collective trauma (Barbot 2020), particularly for Black Americans, but also for all of U.S. society (Hirschberger 2018), which in turn led to social disruption and psychological distress. We also apply the concept of existing family vulnerabilities (Prime, Wade, and Browne 2020), such as economic hardship, racism and marginalization, physical health conditions, and couple relationship functioning to these crises. Yet we name the cause of these vulnerabilities—structural racism and cis-heterosexism are associated with increased economic hardship and poor physical health conditions (Hardeman et al. 2022; Pachankis et al. 2021). Heather Prime, Mark Wade, and Dillon Browne (2020) claim that family vulnerabilities, which we argue have their roots in structural racism and heterosexism, make families particularly susceptible to the stress of the pandemic and George Floyd's murder.

THE MINORITY STRESS MODEL

The minority stress model (Meyer 1995; Meyer and Frost 2013) suggests that because of marginalization and discrimination at the structural level, individuals who inhabit an identity that is not privileged, in particular a nonheterosexual identity, experience elevated stress, which results in poorer mental health. Clearly, the pandemic was particularly stressful for individuals who experienced discrimination on the basis of non-White or nonheterosexual identities at the structural and interpersonal levels. In regard to pandemic-related stress, Black and Latina/o/x populations were more likely to contract COVID-19, experience severe symptoms if they contracted COVID-19, and more likely to die from COVID-19 (Andrasfay and Goldman 2021). This elevated risk was at least partly due to the negative and long-reaching negative effects of racism and cis-heterosexism on educational and occupational outcomes for non-White, nonheterosexual individuals, exacerbating health disparities. Thus, some research has indicated that Black and Latina/o/x individuals in the United States are experiencing higher health-related stress than their White counterparts. Further, racist attacks against and murders of Asians and Asian Americans have increased during the pandemic, stemming from rhetoric racializing COVID-19 as the China virus, causing significant distress to Asian and Asian American communities. Steven Taylor and his colleagues (2020), whose measure of COVID stress included being infected by COVID, found that White respondents had the lowest COVID stress, Black and African American respondents had intermediate stress, and Asian and Latina/o/x respondents had the highest. Mark Czeisler and his colleagues (2020), using population-representative panel data, find that Whites and Asian Americans reported the lowest levels of COVID-specific trauma and stressor-related disorders, and that Latina/o/x and non-Latina/o/x Black respondents had the highest levels.

Minority stress theory posits that chronically experiencing discrimination and rejection due to a nonheterosexual identity can deplete coping resources and leave individuals more vulnerable to stressors (Meyer 1995; Meyer and Frost 2013). This elevated discrimination and rejection is rooted in structural heterosexism and associated with poor psychological health (Pachankis et al. 2021; Hatzenbuehler 2014). Thus sexual minorities may also experience additional stress due to COVID-19 because they may have depleted coping resources from coping with heterosexism and have fewer resources to call on (Operario et al. 2015; Meyer and Frost 2013). In a convenience sample, sexual minorities reported higher COVID stress, measured with a peritraumatic distress inventory modi-

fied for the pandemic, than their heterosexual counterparts (Peterson, Vaughan, and Carver 2021).

Gender identity may also be related to COVID stress. Women have taken on a greater share of the housework and parenting in many different-gender couples, even during the pandemic. Further, women's jobs were at greater risk of being eliminated across the globe (Alon et al. 2021). Scholars have called the hit to women's careers a "shecession" (Gupta 2020; Alon et al. 2021). Violence against women during the pandemic also escalated (Kaukinen 2020). Thus that women have reported elevated COVID stress than men is not surprising (Park et al. 2020).

Racial trauma has been defined as racially and ethnically marginalized individuals' "reactions to dangerous events and real or perceived experiences of racial discrimination" (Comas-Díaz, Hall, and Neville 2019, 1). On May 25, 2020, the murder of an unarmed, handcuffed George Floyd at the hands of the Minneapolis police was captured in a horrific video as officer Derek Chauvin knelt on Floyd's neck for eight minutes and forty-six seconds. The video reverberated around the world, sparking protests and reiterating that Black Lives Matter. The racial trauma of this death was real. After Floyd's death, the percentage of Black Americans who reported that discrimination was a source of stress grew from 42 percent to 67 percent, and 78 percent agreed that it was difficult being Black in America during summer 2020 (APA 2020a, 2020b). Indeed, research showed that Black Americans were more likely to report their mental health as "not good" and were more likely to visit the emergency department for depression when the police killed unarmed Black Americans (Bor et al. 2018; Curtis et al. 2021; Das et al. 2021). We anticipated that stress related to George Floyd's murder and the subsequent movement for racial justice would be greater among Black Americans but could also affect other groups (Hirschberger 2018).

DO MENTAL HEALTH ADVANTAGES AMONG RACIAL MINORITIES PERSIST DURING THE PANDEMIC?

Given that marginalized Americans are at greater risk for COVID-19 stress and Black Americans are at greater risk for racial trauma, it would follow that marginalized Americans would be at greater risk for mental health problems during the pandemic as posited by the both the risk and resilience in family well-being during the COVID-19 pandemic model (Prime, Wade, and Browne 2020) and minority stress model (Meyer 1995; Meyer and Frost 2013). Yet a well-documented finding often overlooked in research emerging during the pandemic is that individuals who were not racialized as White entered the pandemic with mental health advantages over their White counterparts (Brody et al. 2013; Brody et al. 2020; Dover, Major, and Glace 2020). Many models, such as the Prime, Wade, and Browne (2020) model, treat resilience as an outcome, yet as Chalandra Bryant, Leslie Anderson, and Maxine Notice's (2022) revisioning resilience model notes, resilience is a process that can lead to both positive and negative health outcomes. For example, Black Americans living under protracted impoverished conditions actually "bounced forward," demonstrating psychosocial competence but still showed significant physical wear and tear on their bodies, a concept known as skin-deep resilience (Bryant, Anderson, and Notice 2022; Brody et al. 2013). We expect individuals who are most influenced by structural racism and heterosexism—individuals who are not White or heterosexual—to report heightened pandemic and racial trauma stress. But we also expect that despite that stress rooted in structural discrimination, individuals not racialized as White may also have positive mental health. For example, Black (Thomas Tobin et al. 2020; Erving, Thomas, and Frazier 2018; Barnes and Bates 2017) and Latina/o/x individuals (Alegría et al. 2008; Calzada et al. 2020) have fewer mental health problems than Whites. Following what is called Black Advantage Vision (Pattillo 2021), framing these findings as a paradox introduces a racist lens (Doucet 2021) and diminishes key social and individual resources available to marginalized groups that shape responses to discrimination (Brown, Mitchell, and Ailshire 2020; Pamplin and Bates 2021). The question is whether these mental health advantages remain during the pandemic and despite racial trauma and COVID-19 stress. Some mixed evidence with Census Pulse data suggests ele-

vated levels of stress and anxiety among Latinos and African Americans that spike during the pandemic (Fowers and Wan 2020). In contrast, Meghan Reading Turchioe and her colleagues (2021) find that the mental health advantages continued during the pandemic despite the particular stress of the pandemic on Black, Asian, and Latina/o/x individuals as suggested by nonsignificant differences between White and non-White respondents in anxiety or depression. Further, Czeisler and his colleagues (2020) find no significant differences in symptoms of anxiety or depressive disorders between non-Latina/o/x Black and White respondents during the pandemic, but do find that Latina/o/x respondents reported significantly more symptoms of anxiety or depressive disorder. Given the particular stress of the pandemic for non-White individuals, we expected poorer mental health among those not racialized as White relative to their White counterparts.

Because the pandemic has also been particularly stressful for sexual minorities (Peterson, Vaughan, and Carver 2021; Manning and Kamp Dush 2022) and the well-documented disparities in mental health for sexual minorities relative to their counterparts before the pandemic (Plöderl and Tremblay 2015), we expected sexual minorities would report lower mental health during the pandemic. Further, because of the particular toll of the pandemic for women (Gupta 2020; Alon et al. 2021) and gender-based disparities in mental health problems such that women more often report internalizing mental health problems such as depression and anxiety (Rosenfield and Mouzon 2013), we expected women to report more mental health problems than men during the pandemic. We also expected both COVID-19 stress and racial trauma stress to be positively associated with poorer mental health during the pandemic given that stress and mental health are significantly associated (Pearlin 1999).

MEDIATORS

Returning to the risk and resilience in family well-being during the COVID-19 pandemic model (Prime, Wade, and Browne 2020), which suggests that existing family vulnerabilities and the social disruption of the pandemic increased psychological distress, we test potential mediators through which race-ethnicity, sexual identity, and gender identity might be associated with COVID-19 stress, racial trauma, and mental health, and through which COVID-19 stress and racial trauma are associated with mental health. Socioeconomic status may buffer the negative effects of the pandemic either through a safety net should job loss occur, or social connections, as discussed in detail in Courtney Page-Tan, Summer Marion, and Daniel Aldrich's article in this issue (2022), that could help secure a new job and buffer the negative impacts of a crisis. Similarly, losing one's job could exacerbate the negative effects of the pandemic. Microaggressions are detrimental to mental health, and could be a pathway through which marginalized identities are associated with stress and poorer mental health. Discrimination in the health-care context (Abramson, Hashemi, and Sánchez-Jankowski 2015) and whether a community supports Black or LGB individuals are individual-level indicators of structural racism and heterosexism that increase stress accordingly, and may be a pathway through which marginalized identities are associated with mental health problems (Hatzenbuehler et al. 2010; Bailey et al. 2017). Romantic relationships (Feinstein et al. 2016) and social support are a key buffers of stress (Wang et al. 2014), yet sexual minorities tend to have less access to social support (Tate and Patterson 2019; Gustafson, Manning, and Dush 2022). Further, some evidence indicates that social support reduced the risk of mental health problems during the pandemic (Grey et al. 2020). Sexual minorities (Institute of Medicine 2011) and Latina/o/x and Black individuals (Raifman and Raifman 2020; Macias Gil et al. 2020) are more likely to have comorbid conditions that put them at greater risk of death should they contract COVID-19 and hence may have increased stress. Thus we also include physical health conditions as a potential mediator. Finally, we also include an indicator of working from home more than before the pandemic. Workers in the United States scrambled to adapt to changes in their work while experiencing the social isolation of quarantine and social distancing recommendations (Goldberg, Mc-

Cormick, and Virginia 2021). Together we provide a broad set of indicators that may explain the role of stress on mental health.

METHOD

We draw on the National Couples' Health and Time Study (NCHAT), which was fielded from September 2020 to April 2021. NCHAT is a nationally representative sample of 3,642 respondents ages twenty to sixty who were married or cohabiting with oversamples of racial and ethnic minorities and sexual minorities. The respondents were primarily members of the Gallup Panel, a probability-based nationally representative panel of more than 110,000 individuals. Additional sexual minority respondents were recruited from other population-representative Gallup samples. Web-based surveys were completed in Spanish and English and respondents took on average forty minutes to complete them. The data are weighted to be population representative of twenty- to sixty-year-old married or cohabiting couples in the United States using targets from the 2019 National Health and Interview Survey and the 2019 American Community Survey.

Measures

Two indicators of stress are initially dependent variables and then key independent variables in analyses estimating levels of mental health. *COVID-19 Stress* was measured by the mean of three items ($\alpha = .89$), assessing stress about yourself getting coronavirus; your partner getting coronavirus; or your parents, siblings, or other family members getting coronavirus on a 5-point scale from not at all to very stressed. *Racial Trauma Stress* was measured by asking, "How has the recent movement for racial equity sparked by the killing of George Floyd influenced your stress?" on a 4-point scale from not at all to a great deal.

We used four mental health dependent variables. *Depression* was measured using the 10-item CES-D Short Form (Andresen et al. 1994). Respondents were asked how often they felt certain ways (for example, lonely, depressed) in the past seven days on a 3-point scale from rarely or none of the time (less than one day) to most or all of the time (five to seven days). The items were summed ($\alpha = .87$). *Anxiety* was measured using the 7-item generalized anxiety disorder measure (Tiirikainen et al. 2019; Spitzer et al. 2006). Respondents were asked how often they were bothered by seven problems in the past seven days (for example, not being able to stop or control your worrying) on a 4-point scale from not at all (1) to nearly every day (4). The items were summed ($\alpha = .92$). *Loneliness* was measured using a sum of the 3-item R-UCLA loneliness measure (Hughes et al. 2004). Respondents were asked how often they were bothered by three problems (for example, "How often did you feel that you lack companionship?") over the past seven days on a 5-point scale from never to very often ($\alpha = .84$). *Stress overload* was measured using a sum of the short stress overload scale (seven items; $\alpha = .85$; Amirkhan 2018). Respondents reported how often they felt seven ways (for example, overwhelmed by your responsibilities) on a scale from never (1) to very often (5) over the past seven days.

We used three key independent variables. Respondents reported their *race-ethnicity*, coded as non-Latina/o/x White, non-Latina/o/x Black, non-Latina/o/x Asian, non-Latina/o/x other race, non-Latina/o/x multirace, or Latina/o/x. Respondents answered the following question about their *sexual identity*: "What do you consider yourself to be? Select all that apply" with eleven responses including heterosexual or straight, gay or lesbian, bisexual, same-gender-loving, queer, pansexual, omnisexual, asexual, don't know, questioning, and "something else," with an option to specify. We coded respondents into four mutually exclusive categories heterosexual, gay-lesbian, bisexual (including queer, pan, and omni), and other or multiple sexual identities. Respondents reported their *gender identity* from five options, including woman, man, trans woman, trans man, and Other. For these analyses, women and trans women, and men and trans men, were grouped together.

Eight mediator variables came into play. *Working from home* was a dichotomous variable created to capture respondents who reported that they were working from home more than they usually do in the previous week because of the coronavirus pandemic (0 = no; 1 = yes). Respondents' *income to poverty ratio* was calcu-

lated by dividing total household income, which was top coded at the 95 percent level, by the 2020 federal poverty guidelines based on the number of individuals living in the respondent's house. *Microaggressions* were based on respondents' responses to "In your day-to-day life over the past month, how often did any of the following things happen to you?" and included nine domains, including "You were treated with less respect than other people" and "You were threatened or harassed" on a scale of never (1) to very often (5). (Williams et al. 1997; Meyer 2020) An average of the nine items was taken ($\alpha = .85$), a higher value indicating more frequent experiences of microaggressions. Respondents answered five questions about *Health-Care Discrimination* by indicating their agreement with items including "When seeking health care . . . I worry about being negatively judged, I worry that diagnoses of me/my health may be negative because of who I am" on a scale from strongly disagree to strongly agree ($\alpha = .85$) (Abdou and Fingerhut 2014). Responses were averaged with higher scores indicating more discrimination. *Community Support for Race and Ethnic Minorities* was measured by respondents reporting whether the city or area where they live was a good place (5) or not a good place (1) to live for racial and ethnic minorities (Gallup 2008; Meyer 2020). *Community Support for LGB* identifying individuals was measured by respondents reporting the city or area where they live is a good place (5) or not a good place (1) to live for those who are gay, lesbian, or bisexual (Gallup 2008; Meyer 2020). *Support from Partner or Spouse* was measured by asking respondents (Procidano and Heller 1983), "How much do you rely on each of the following people for emotional support . . . I rely on my spouse or partner for emotional support." Responses ranged from not at all (1) to a great deal (5). *Social Support* was measured by two questions (Procidano and Heller 1983), "How much do you rely on each of the following people for emotional support . . . I rely on my family for emotional support, I rely on my friends for emotional support." Responses ranged from not at all (1) to a great deal (5) ($r = .29$, $p < .001$). *Physical Health Condition.* Current physical health condition was based on an affirmative response to a series of questions about whether respondents had "been told by a doctor or health professional" that they currently had any one of twenty-two health conditions, including liver disease, cancer, and HIV.

We use ten sociodemographic variables. *Couple Type* was constructed using the respondent's gender identity and their reports of their partner's gender identity. Respondents were coded as being in a same-gender couple if their gender identity matched their partner's gender identity, for example, men with men (including trans men) and women with women (including trans women). Respondents reported if they were legally *Married* to their spouse or partner. *Age* was constructed using the respondent's birth month and year and the month and year they completed the survey. Respondents completed a household roster and reported the demographic characteristics of all members of their household. We created a code for the number of *Household Children* under the age of eighteen living in their household, including grandchildren, which ranged from 0 to 7. Categories were collapsed to be 0, 1, and 2 or more. A dichotomous indicator for *interracial couples* was constructed if the main respondent's race and ethnicity did or did not match their spouse or partner's race and ethnicity. A dichotomous indicator for *Foreign-born* was constructed if the main respondent was born outside the United States. *Education* was divided into four categories: less than high school, high school degree, some college or post–high school education, and a college degree. Respondents reported their current *employment status*, including full-time, part-time, and unemployed. *Cohabitation duration* was measured from the month and year couples moved in together and the month and year of the main respondent's survey. The *month of survey* spanned from September 2020 through March 2021 and was included as dummy variables, although these variables are not shown in the tables to save space.

Analytic Plan

We first present descriptive statistics for all study variables and then ordinary least squares regression results for models predicting COVID-19 and racial trauma stress from race-

ethnicity, sexual identity, gender identity, and demographic controls. Next are nested ordinary least squares models for each of four mental health outcomes: depression, anxiety, loneliness, and stress overload. The first model includes only race-ethnicity, sexual identity, gender identity, and demographic controls. COVID-19 stress is added to the second model. Model three adds racial trauma stress to the model. Finally, model four adds potential mediators including working from home, income to poverty ratio, microaggressions, health-care discrimination, community support in the context of race, community support in the context of sexual identity, partner-spouse support, social support, and physical health conditions. In results not shown, we also test the interaction of COVID-19 stress and racial trauma stress for our mental health outcomes to examine whether these sources of stress further exacerbate mental health problems. Finally, we stratify the sample by race and ethnicity to examine the association between COVID-19 and racial trauma stress separately for non-Latina/o/x White, non-Latina/o/x Black, non-Latina/o/x Asian, Latina/o/x, and non-Latina/o/x multirace respondents.

All analyses were weighted using the population subset command and were conducted in STATA 16.0. Unconditional subpopulations analyses are recommended instead of dropping cases that are not in the subpopulation, which can result in restricted estimates and variances (West, Berglund, and Heeringa 2008). Models were checked for multicollinearity prior to estimation. All variance inflation factors were below three, indicating low concern for multicollinearity.

RESULTS

Sample characteristics. The weighted distribution and unweighted *n*'s of the variables used in analyses are presented in table 1. COVID-19 and racial trauma stress were above the midpoint of their scales, which is unsurprising given that the data were collected from September 2020 to April 2021. One in eight (12 percent) of the sample reported experiencing high levels of racial trauma and one-quarter (23 percent) reported the very lowest levels. In regard to COVID-19 stress, one in ten (11 percent) of respondents reported high levels (one standard deviation above the mean). The mental health measures of depression, anxiety, loneliness, and stress overload were below their midpoints on average. After weighting, about 8 percent of the sample was non-Latina/o/x Black (n = 336), 7 percent non-Latina/o/x Asian (n = 209), 5 percent non-Latina/o/x multirace (n = 206), 22 percent Latina/o/x (n =585), and 1 percent as an other racial or ethnic identity (n = 57). After weighting, approximately 95 percent of the sample identified as heterosexual (n = 2021), 1 percent as gay or lesbian (n = 734), 1 percent as bisexual (n = 422), and 3 percent as an other sexual identity or multiple sexual identities (n = 465). The sample was about evenly split between men (49 percent; n = 1,787) and women (51 percent; n = 1,757), and less than 1 percent identified as an other gender identity (n = 98). After weighting, 2 percent of couples were same-gender couples (n = 994), and 1 percent were nonbinary couples (n = 141). About 81 percent were married (n = 2,682) and the average age was forty-three. After weighting, 54 percent of the sample had no children (n = 2,368). Thirty percent of the sample was in an interracial couple (n = 1,075). Ten percent were born outside the United States (n = 344). After weighting, approximately one-third (31 percent; n = 641) had a high school education or less, 29 percent (n = 949) had some college or technical training, and 40 percent (n = 2,051) had a bachelor's degree or more. Most respondents worked full time (64 percent; n = 2,473). Approximately one-third worked from home (31 percent; n = 1,380). The average income to poverty ratio was 5.48. Microaggressions and health-care discrimination were reported below the midpoint. Community support in terms of race and sexual identity, partner-spouse social support, and overall social support, were above the midpoint. About half (53 percent) reported at least one physical health care condition.

Disparities in COVID-19 Stress and Racial Trauma Stress

COVID-19 stress. Table 2 includes ordinary least squares regression results predicting COVID-19 and racial trauma stress. Overall, respondents who were Asian, Latina/o/x, or multirace reported higher COVID-19 stress than non-

Table 1. Descriptive Statistics for All Study Variables

	Weighted *M* or Proportion	SE	Unweighted *n*	Minimum	Maximum	% Missing
COVID-19 stress	8.10	0.10	—	3	15	1.15
Racial trauma stress	2.12	0.03	—	1	4	0.41
Depression	7.60	0.20	—	0	30	2.91
Anxiety	11.47	0.18	—	7	28	1.48
Loneliness	5.97	0.08	—	3	15	0.16
Stress overload	15.85	0.22	—	7	35	1.40
Race-ethnicity	—	—	—	—	—	0.05
Non-Latina/o/x White	0.59	—	2,247	—	—	—
Non-Latina/o/x Black	0.08	—	336	—	—	—
Non-Latina/o/x Asian	0.07	—	209	—	—	—
Latina/o/x	0.22	—	585	—	—	—
Non-Latina/o/x multirace	0.04	—	206	—	—	—
Other racial-ethnic identity	0.01	—	57	—	—	—
Sexual identity	—	—	—	—	—	0.00
Heterosexual	0.97	—	2,021	—	—	—
Gay or lesbian	0.01	—	734	—	—	—
Bisexual	0.01	—	422	—	—	—
Other or multiple identities	0.01	—	465	—	—	—
Gender	—	—	—	—	—	0.00
Man or trans man	0.49	—	1,787	—	—	—
Woman or trans woman	0.51	—	1,757	—	—	—
Other gender identity	0.002	—	98	—	—	—
Couple type	—	—	—	—	—	0.00
Different gender	0.98	—	2,507	—	—	—
Same gender	0.02	—	994	—	—	—
Nonbinary	0.01	—	141	—	—	—
Married (cohabiting)	0.81	—	2,682	—	—	0.11
Age	43.14	0.97	—	20	60	0.00
Household children <18	—	—	—	—	—	0.00
One	0.19	0.01	585	—	—	—
Two or more	0.27	0.02	689	—	—	—
Interracial couple (same race)	0.30	0.01	1,075	—	—	5.30
Foreign born (native born)	0.11	0.01	344	—	—	0.58
Education	—	—	—	—	—	0.03
High school or less	0.31	0.03	641	—	—	—
Some college	0.29	0.03	949	—	—	—
Bachelor's degree +	0.40	0.03	2,051	—	—	—
Employment	—	—	—	—	—	0.11
Full-time	0.65	0.02	2,473	—	—	—
Part-time	0.11	0.11	369	—	—	—
Unemployed	0.25	0.25	796	—	—	—
Cohabitation length	15.88	0.68		0	58.58	3.46
Work from home	0.31	0.02	1,380	—	—	0.00

Table 1. (*continued*)

	Weighted *M* or Proportion	SE	Unweighted *n*	Minimum	Maximum	% Missing
Income to poverty ratio	5.48	0.19	—	0.00	29.00	2.03
Microaggressions	1.47	0.02	—	1	4.55	0.14
Health-care discrimination	2.23	0.02	—	1	5	0.14
Community support race	3.86	0.03	—	1	5	0.14
Community support LGB	3.79	0.03	—	1	5	0.19
Support from partner or spouse	4.07	0.03	—	1	5	0.16
Social support	3.17	0.03	—	1	5	0.14
Physical health condition	0.53	—	—	—	—	0.38
Month of survey	—	—	—	—	—	0.00
September	0.22	—	1,233	—	—	—
October	0.04	—	180	—	—	—
November	0.14	—	366	—	—	—
December	0.07	—	352	—	—	—
January	0.30	—	769	—	—	—
February	0.04	—	178	—	—	—
March	0.18	—	452	—	—	—
April	0.03	—	112	—	—	—

Source: Authors' calculations based on Kamp Dush and Manning 2022.
Note: Reference category listed in parentheses.

Latina/o/x White respondents. Additional analyses indicate that among racial and ethnic minorities, there are no statistically significant differences in COVID-19 stress. Further, respondents with other sexual identity/multiple sexual identities reported more COVID-19 stress than heterosexual respondents. Supplemental analyses focusing on sexual minorities indicate that there are no statistically significant differences in COVID-19 stress. Women reported more COVID-19 stress than men. Married respondents reported less COVID-19 stress than cohabiting respondents. Respondents with two or more household children reported less COVID-19 stress than respondents with no household children. Foreign-born respondents reported higher COVID-19 stress. Respondents with some college or a bachelor's degree or more reported more COVID-19 stress than respondents with a high school diploma or less. Respondents who were employed part-time or unemployed reported more COVID-19 stress than respondents who were employed full time.

Racial trauma stress. Turning to racial trauma stress (see Table 2), Black and multirace respondents reported higher racial trauma stress than non-Latina/o/x White respondents. Supplemental analyses indicate that among racial and ethnic minorities, Asian, Latina/o/x, multiracial and other racial and ethnic identities reported less racial trauma stress than Black respondents. Multiracial respondents reported more racial trauma stress than Asian, Latina/o/x, and other racial and ethnic identity respondents. Bisexual and those who were other or multiple sexual identities also reported higher racial trauma stress than their heterosexual counterparts. Supplemental analyses among sexual minority respondents indicate no differences based on specific identities. Women and individuals with another gender identity reported more racial trauma stress than men. Respondents with some college or a bachelor's degree or more reported more COVID-19 stress than respondents with a high school diploma or less.

Table 2. Ordinary Least Squares Regression Results Estimating Stress

	COVID-19 Stress		Racial Trauma Stress	
	B	SE	B	SE
Race-ethnicity (Non-Latina/o/x White)				
Non-Latina/o/x Black	0.53	0.30	0.52***	0.08
Non-Latina/o/x Asian	1.05*	0.41	−0.03	0.10
Latina/o/x	0.75**	0.25	−0.10	0.06
Non-Latina/o/x multirace	0.98*	0.46	0.23*	0.11
Other racial-ethnic identity	−0.15	0.83	−0.06	0.13
Sexual identity (heterosexual)				
Gay or lesbian	0.35	0.68	0.45	0.26
Bisexual	0.93	0.53	0.48***	0.13
Other or multiple identities	1.13*	0.50	0.50***	0.11
Gender (man or trans man)				
Woman or trans woman	0.96***	0.19	0.27***	0.05
Other gender identity	−0.48	1.01	0.40*	0.19
Couple type (different gender)				
Same gender	0.24	0.66	−0.18	0.26
Nonbinary	1.67*	0.80	−0.09	0.13
Married (cohabiting)	−0.89***	0.24	−0.08	0.07
Age	0.00	0.01	0.00	0.00
Household children <18 (0)				
One	0.10	0.21	0.01	0.06
Two or more	−0.62**	0.21	−0.05	0.06
Interracial couple (same race)	−0.17	0.28	0.09	0.05
Foreign born (native born)	0.66*	0.33	−0.06	0.08
Education (high school or less)				
Some college	0.71**	0.25	0.20**	0.07
Bachelor's degree +	1.21***	0.23	0.35***	0.07
Employment (full-time)				
Part-time	0.66*	0.30	0.06	0.08
Unemployed	0.72***	0.24	0.04	0.06
Cohabitation length	−0.01	0.01	0.00	0.00
Constant	7.24	0.58	1.94	0.17
N	3,276		3,302	
F	8.69***		14.01***	
R^2	0.10		0.12	

Source: Authors' calculations based on Kamp Dush and Manning 2022.
Note: Reference category in parentheses. Month of survey included but not shown.
* $p < .05$; ** $p < .01$; *** $p < .001$

The Role of COVID-19 Stress and Racial Trauma Stress in Mental Health Outcomes

Race-ethnicity main effects. Nested ordinary least square regression results for depression, anxiety, loneliness, and stress overload are reported in tables 3, 4, 5, and 6. Black respondents reported significantly lower levels of anxiety and stress overload than White respondents. Latina/o/x respondents reported significantly lower depression levels and scores on

stress overload than White respondents. Among racial and ethnic minorities, Black and Latina/o/x respondents reported lower depression levels than Asian respondents.

Sexual identity and gender main effects. Bisexual and those with other or multiple sexual identities reported significantly more depressive and anxious symptoms than heterosexual individuals. Bisexuals reported significantly more stress overload and loneliness than heterosexual individuals. Among sexual minorities, gay and lesbian respondents reported lower levels of depression than bisexual respondents and those with other or multiple identities. Bisexual respondents reported more anxiety and loneliness than gay or lesbian respondents. Women reported significantly elevated depressive and anxious symptoms, loneliness, and stress overload than men. Individuals in nonbinary couples reported significantly more stress overload and loneliness than those in different-gender couples.

COVID-19 stress models. Next, we added COVID-19 stress to the models. Higher COVID-19 stress was associated with significantly higher depression and anxiety levels, more loneliness, and more stress overload even with controls for race-ethnicity, sexual identity, gender identity, and demographic characteristics.

Racial trauma stress models. In the third set of models, we added racial trauma stress to the models. Greater racial trauma was significantly associated with elevated depression, anxiety, loneliness, and stress overload net of COVID-19 stress, race-ethnicity, sexual identity, gender identity, and demographic characteristics. Although COVID-19 stress remained significantly associated with mental health in these models, notably, racial trauma stress accounted for 15 percent of the COVID-19 stress association for depression levels, 17 percent for anxiety levels, 12 percent for loneliness, and 19 percent for stress overload.

Mediator models. The final set of models included the mediating variables of working from home, income to poverty ratio, microaggressions, health-care discrimination, community support in the context of race, community support in the context of sexual identity, support from their partner or spouse, social support, and physical health conditions. Greater COVID-19 and racial trauma stress remained significantly associated with higher depression and anxiety levels and higher stress overload. Additionally, greater COVID-19 stress remained significantly associated with loneliness. However, the size of the associations decreased; the COVID-19 stress effects decreased between 16 percent and 33 percent, and the racial trauma stress effects decreased between 28 percent and 38 percent. Additionally, the association between racial trauma stress and loneliness became nonsignificant. Thus some evidence indicates that these mediators could be candidates for further study as we seek to alleviate the negative impact of the pandemic and racial trauma on mental health.

The inclusion of the rich set of indicators did not change the associations between sexual identity and mental health, in that bisexual respondents reported more depressive and anxious symptoms, loneliness, and stress overload than heterosexuals. Additionally, individuals with other or multiple sexual identities reported more depressive symptoms than heterosexuals. Turning to racial identity, in the model without mediators, Latina/o/x respondents reported significantly lower anxiety levels than White respondents, but this association was no longer statistically significant in the full model with the mediators. Thus, the mediators explained the differentials between White and Latina/o/x respondents and in analyses not shown, community support for race had a particular impact. Additionally, Latina/o/x respondents continued to indicate significantly lower levels of depression and stress overload, and non-Latina/o/x multirace respondents reported significantly lower levels of stress overload than non-Latina/o/x White respondents. In these models, Black respondents continued to indicate significantly lower levels of depression, anxiety, and stress overload than White respondents. In contrast, Black respondents reported significantly lower levels of loneliness in the full model and not in the model without the mediators, and partner support was the pri-

(*Text continues on p. 124.*)

Table 3. Ordinary Least Squares Regression Results for Depression

	Depression							
	B	SE	B	SE	B	SE	B	SE
COVID-19 stress	—	—	0.55***	(0.05)	0.47***	0.05	0.35***	0.04
Racial trauma stress	—	—	—	—	1.08***	0.17	0.67***	0.17
Race-ethnicity (Non- Latina/o/x White)								
Non-Latina/o/x Black	−0.43	0.43	−0.73	0.43	−1.30**	0.45	−2.69***	0.43
Non-Latina/o/x Asian	1.07	0.68	0.45	0.68	0.55	0.65	−0.02	0.61
Latina/o/x	−0.89*	0.38	−1.30**	0.38	−1.12***	0.38	−0.98**	0.37
Non-Latina/o/x multirace	0.13	0.74	−0.49	0.76	−0.64	0.74	−0.87	0.73
Other racial-ethnic identity	0.92	1.45	1.49	1.38	1.50	1.34	1.00	1.43
Sexual identity (heterosexual)								
Gay or lesbian	0.82	0.99	0.76	1.12	0.28	1.26	1.20	0.77
Bisexual	3.59***	0.80	3.23***	0.77	2.76***	0.71	2.63***	0.59
Other or multiple identities	2.57***	0.69	2.14**	0.65	1.69*	0.69	1.67**	0.55
Gender (man or trans man)								
Woman or trans woman	1.07**	0.36	0.53	0.32	0.35	0.32	0.42	0.29
Other gender identity	3.29	2.09	2.22	1.74	1.84	1.69	0.41	1.39
Couple type (different-gender)								
Same-gender	−0.27	0.91	−0.49	1.08	−0.28	1.23	−1.14	0.68
Nonbinary	0.71	1.52	−0.25	1.48	−0.02	1.41	−0.33	1.05
Married (cohabiting)	−1.31**	0.40	−0.76*	0.38	−0.77*	0.36	−0.06	0.34
Age	−0.07**	0.02	−0.07***	0.02	−0.07***	0.02	−0.06**	0.02
Household children <18 (0)								
One	0.13	0.39	0.14	0.36	0.14	0.36	0.10	0.34
Two or more	0.48	0.42	0.86*	0.39	0.82*	0.37	0.69	0.40

Interracial couple (same race)	0.81*	0.40	0.90*	0.36	0.80*	0.35	0.57	0.32
Foreign born (native born)	−0.90*	0.40	−1.26**	0.45	−1.11**	0.43	−0.93*	0.38
Education (high school or less)								
Some college	0.26	0.54	−0.23	0.48	−0.35	0.46	−0.20	0.47
Bachelor's degree +	0.09	0.45	−0.66	0.41	−0.91*	0.43	−0.17	0.49
Employment (full-time)								
Part-time	0.73	0.47	0.34	0.44	0.33	0.44	0.17	0.39
Unemployed	2.19***	0.54	1.76**	0.51	1.74***	0.49	1.67*	0.55
Cohabitation length	−0.02	0.02	−0.01	0.02	−0.01	0.02	−0.01	0.02
Work from home							0.71*	0.33
Income to poverty ratio							−0.04	0.04
Microaggressions							1.91***	0.31
Health-care discrimination							1.18***	0.20
Community support race							−0.47*	0.20
Community support LGB							−0.03	0.17
Support from partner or spouse							−0.74***	0.13
Social support							−0.26	0.16
Physical health condition							1.12***	0.28
Constant	10.21***	0.91	6.30***	0.98	4.80***	1.01	5.63	1.37
N	3,222		3,184		3,173		3,094	
F	10.98***		19.60***		21.64***		29.30***	
R^2	0.10		0.20		0.23		0.34	

Source: Authors' calculations based on Kamp Dush and Manning 2022.

Note: Reference category listed in parentheses. Nominal variables reference category proportion is also listed in parentheses. Month of survey included in all models but not shown.

* $p < .05$; ** $p < .01$; *** $p < .001$

Table 4. Ordinary Least Squares Regression Results for Anxiety

	Anxiety							
	B	SE	B	SE	B	SE	B	SE
COVID-19 stress	—	—	0.48***	(0.05)	0.40***	0.05	0.31***	0.04
Racial trauma stress	—	—	—	—	1.06***	0.15	0.77***	0.16
Race-ethnicity (Non- Latina/o/x White)								
Non-Latina/o/x Black	−1.17***	0.34	−1.44***	0.34	−1.95***	0.35	−2.86***	0.34
Non-Latina/o/x Asian	−0.21	0.54	−0.77	0.52	−0.63	0.50	−0.88	0.47
Latina/o/x	−0.50	0.33	−0.89**	0.32	−0.70*	0.32	−0.55	0.32
Non-Latina/o/x multirace	−0.53	0.58	−1.06	0.58	−1.20*	0.57	−1.30*	0.54
Other racial-ethnic identity	0.57	1.15	0.60	1.03	0.65	1.01	0.56	1.12
Sexual identity (heterosexual)								
Gay or lesbian	0.95	0.78	0.84	0.87	0.36	0.94	0.94	0.67
Bisexual	2.80***	0.77	2.42**	0.74	1.98**	0.68	2.04**	0.61
Other or multiple identities	1.62**	0.60	1.21*	0.59	0.77	0.60	0.82	0.54
Gender (man or trans man)								
Woman or trans woman	1.42***	0.30	0.93**	0.27	0.77**	0.26	0.97***	0.25
Other gender identity	2.25	1.63	1.52	1.45	1.16	1.39	0.66	1.36
Couple type (different-gender)								
Same-gender	−0.15	0.70	−0.32	0.81	−0.10	0.89	−0.55	0.58
Nonbinary	1.19	1.06	0.33	1.20	0.57	1.12	0.36	1.09
Married (cohabiting)	−0.73	0.41	−0.26	0.40	−0.28**	0.38	0.14	0.34
Age	−0.05**	0.02	−0.06**	0.02	−0.06	0.02	−0.04**	0.02
Household children <18 (0)								
One	0.11	0.29	0.10	0.26	0.09	0.26	0.06	0.25
Two or more	0.69	0.36	1.02**	0.34	0.97**	0.32	1.02**	0.34

Interracial couple (same race)	0.66	0.39	0.78*	0.33	0.67*	0.32	0.45	0.27
Foreign born (native born)	−0.37	0.33	−0.66	0.35	−0.55	0.34	−0.53	0.34
Education (high school or less)								
Some college	0.02	0.56	−0.37	0.50	−0.49	0.47	−0.38	0.47
Bachelor's degree +	−0.35	0.42	−0.98*	0.39	−1.22**	0.39	−0.60	0.45
Employment (full-time)								
Part-time	0.50	0.41	0.11	0.39	0.09	0.38	−0.02	0.37
Unemployed	0.98*	0.41	0.63	0.38	0.61	0.36	0.41	0.40
Cohabitation length	−1.17*	0.34	−0.03	0.02	−0.02	0.02	−0.02	0.01
Work from home							0.30	0.30
Income to poverty ratio							−0.01	0.03
Microaggressions							1.65***	0.27
Health-care discrimination							0.84***	0.16
Community support race							−0.13	0.16
Community support LGB							−0.31*	0.14
Support from partner/spouse							−0.06	0.11
Social support							−0.37*	0.16
Physical health condition							0.74**	0.24
Constant	13.76***	0.88	10.31***	0.83	8.82***	0.82	7.45***	1.20
N	3,268		3,233		3,222		3,142	
F	9.92***		16.59***		19.24***		22.31***	
R^2	0.10		0.21		0.24		0.32	

Source: Authors' calculations based on Kamp Dush and Manning 2022.

Note: Reference category listed in parentheses. Nominal variables reference category proportion is also listed in parentheses. Month of Survey included in all models but not shown.

* $p < .05$; ** $p < .01$; *** $p < .001$

Table 5. Ordinary Least Squares Regression Results for Loneliness

	Loneliness							
	B	SE	B	SE	B	SE	B	SE
COVID-19 stress	—	—	0.17***	0.02	0.15***	0.02	0.10***	0.02
Racial trauma stress	—	—	—	—	0.36***	0.08	0.15	0.08
Race-ethnicity (Non- Latina/o/x White)								
Non-Latina/o/x Black	0.07	0.21	−0.04	0.21	−0.25	0.22	−0.95***	0.21
Non-Latina/o/x Asian	0.25	0.32	0.06	0.32	0.09	0.31	−0.39	0.29
Latina/o/x	−0.29	0.19	−0.41*	0.18	−0.35	0.18	−0.28	0.18
Non-Latina/o/x multirace	0.31	0.32	0.02	0.32	−0.04	0.31	−0.15	0.31
Other racial-ethnic identity	−0.03	0.61	−0.01	0.67	0.00	0.65	−0.19	0.55
Sexual identity (heterosexual)								
Gay or lesbian	0.00	0.46	0.01	0.40	−0.15	0.40	0.37	0.46
Bisexual	1.41***	0.32	1.31***	0.31	1.16***	0.31	1.12***	0.28
Other or multiple identities	0.55	0.35	0.46	0.33	0.31	0.34	0.30	0.33
Gender (man or trans man)								
Woman or trans woman	0.48**	0.16	0.32*	0.15	0.25	0.15	0.29*	0.14
Other gender identity	−0.24	0.92	−0.78	0.66	−0.90	0.65	−1.34	0.73
Couple type (different gender)								
Same gender	0.18	0.43	0.09	0.37	0.16	0.37	−0.35	0.46
Nonbinary	1.25*	0.61	0.92	0.50	0.99	0.51	0.97	0.64
Married (cohabiting)	−0.56**	0.18	−0.40*	0.19	−0.41*	0.18	−0.02	0.16
Age	−0.02	0.01	−0.02	0.01	−0.02	0.01	−0.02*	0.01
Household children <18 (0)								
One	0.20	0.19	0.19	0.19	0.19	0.19	0.09	0.17
Two or more	0.34*	0.16	0.46**	0.15	0.44**	0.15	0.28	0.16

Interracial couple (same race)	0.36	0.19	0.40*	0.18	0.37*	0.18	0.34*	0.16
Foreign born (native born)	−0.10	0.23	−0.23	0.25	−0.18	0.24	−0.18	0.21
Education (high school or less)								
Some college	0.04	0.21	−0.12	0.21	−0.17	0.21	−0.07	0.20
Bachelor's degree +	0.37	0.21	0.15	0.21	0.07	0.22	0.34	0.23
Employment (full-time)								
Part-time	0.09	0.21	0.00	0.21	−0.02	0.21	−0.09	0.20
Unemployed	0.82**	0.27	0.71**	0.26	0.69**	0.26	0.71*	0.29
Cohabitation length	−0.01	0.01	−0.01	0.01	−0.01	0.01	0.00	0.01
Work from home							0.40*	0.16
Income to poverty ratio							−0.01	0.02
Microaggressions							0.90***	0.15
Health-care discrimination							0.55***	0.10
Community support race							−0.19*	0.09
Community support LGB							0.05	0.08
Support from partner or spouse							−0.72***	0.07
Social support							0.01	0.07
Physical health condition							0.26*	0.12
Constant	6.47***	0.41	5.20***	0.43	4.69***	0.43	6.03	0.62
N	3,309		3,271		3,260		3,178	
F	7.77***		11.13***		11.62***		24.52***	
R^2	0.07		0.12		0.13		0.28	

Source: Authors' calculations based on Kamp Dush and Manning 2022.

Note: Reference category listed in parentheses. Nominal variables reference category proportion is also listed in parentheses. Month of survey included in all models but not shown.

* $p < .05$; ** $p < .01$; *** $p < .001$

Table 6. Ordinary Least Squares Regression Results for Stress Overload

	Stress Overload							
	B	SE	B	SE	B	SE	B	SE
COVID-19 stress	—	—	0.53***	0.06	0.43***	0.06	0.30***	0.05
Racial trauma stress	—	—	—	—	1.32***	0.19	0.89***	0.20
Race-ethnicity (Non- Latina/o/x White)								
Non-Latina/o/x Black	−1.47***	0.50	−1.88***	0.50	−2.52***	0.51	−4.00***	0.47
Non-Latina/o/x Asian	−0.14	0.80	−0.72	0.76	−0.56	0.74	−1.26	0.69
Latina/o/x	−0.93*	0.44	−1.35**	0.46	−1.11*	0.45	−0.95*	0.44
Non-Latina/o/x multirace	−0.89	0.71	−1.40*	0.70	−1.59*	0.70	−1.79*	0.69
Other racial-ethnic identity	−0.33	1.42	−0.26	1.46	−0.18	1.39	−0.62	1.30
Sexual identity (heterosexual)								
Gay or lesbian	1.22	0.96	1.41	0.90	1.04	0.80	1.36	0.76
Bisexual	2.88**	0.87	2.55**	0.90	2.02*	0.81	1.90*	0.75
Other or multiple identities	1.68	0.87	1.43	0.87	0.96	0.87	0.76	0.83
Gender (man or trans man)								
Woman or trans woman	2.16***	0.37	1.65***	0.34	1.42***	0.33	1.65*	0.31
Other gender identity	−0.19	2.48	−1.43	2.02	−1.84	2.11	−2.71	2.31
Couple type (different gender)								
Same gender	−0.69	0.88	−1.18	0.83	−1.13	0.70	−1.19	0.66
Nonbinary	3.91*	1.61	2.89	1.64	3.15	1.71	3.17	1.99
Married (cohabiting)	−1.16*	0.54	−0.64***	0.52	−0.65	0.49	0.13	0.41
Age	−0.07***	0.02	−0.08	0.02	−0.08***	0.02	−0.07***	0.02
Household children <18 (0)								
One	0.69	0.39	0.71*	0.36	0.71	0.37	0.73*	0.35
Two or more	1.34	0.40	1.71***	0.38	1.67***	0.37	1.62***	0.37

Interracial couple (same race)	1.00	0.47	1.08**	0.42	0.95*	0.41	0.72*	0.34
Foreign born (native born)	−0.61	0.54	−0.99	0.60	−0.83	0.56	−0.83	0.50
Education (high school or less)								
Some college	0.72	0.62	0.30	0.55	0.14	0.50	0.44	0.55
Bachelor's degree +	0.22	0.47	−0.43	0.43	−0.75	0.43	0.26	0.51
Employment (full-time)								
Part-time	−0.40	0.49	−0.85	0.45	−0.87	0.46	−0.93*	0.42
Unemployed	0.09	0.48	−0.33	0.45	−0.34	0.42	−0.69	0.43
Cohabitation length	−0.03	0.02	−0.02	0.02	−0.02	0.02	−0.01	0.02
Work from home							−0.16	0.36
Income to poverty ratio							0.01	0.03
Microaggressions							2.77***	0.31
Health-care discrimination							1.21***	0.20
Community support race							−0.34	0.23
Community support LGB							−0.23	0.18
Support from partner or spouse							−0.56***	0.15
Social support							−0.23	0.22
Physical health condition							0.50	0.32
Constant	18.62***	1.13	14.73***	0.02	12.90***	1.01	11.69***	1.49
N	3,269		3,233		3,223		3,143	
F	9.83***		14.94***		17.55***		24.94***	
R^2	0.10		0.18		0.21		0.32	

Source: Authors' calculations based on Kamp Dush and Manning 2022.

Note: Reference category listed in parentheses. Nominal variables reference category proportion is also listed in parentheses. Month of survey included in all models but not shown.

* $p < .05$; ** $p < .01$; *** $p < .001$

mary mediator of this association. Thus important suppression appears to be operating. The mediators are important to consider in assessments of race-ethnicity and well-being.

Specifically, having a supportive partner or spouse was protective and associated with significantly lower levels of depression, less loneliness, and lower stress overload. Social support from friends and family was associated with lower levels of anxiety. As microaggressions increased, depression and anxiety levels, loneliness, and stress overload significantly increased. Health-care discrimination was significantly associated with higher depression and anxiety levels, greater loneliness, and elevated stress overload. Working from home was associated with higher depression levels and more loneliness. Community support for racial and ethnic minorities was protective and associated with lower depression levels and less loneliness. Community support for LGB individuals was associated with lower levels of anxiety. Having a physical health condition was associated with higher levels of depression and anxiety and more loneliness.

Testing the exacerbating effect of COVID-19 stress and comorbid racial trauma stress. In ordinary least squares results not shown, we test the interaction of COVID-19 stress and racial trauma stress to examine whether the cooccurrence of these dual sources of stress further exacerbates mental health problems. COVID-19 stress and racial trauma stress do not significantly interact and suggest that each source of stress has a unique association with mental health.

Stratified by race-ethnicity. To further explore the experiences of individuals based on how they are racialized, a series of ordinary least squares regressions were estimated separately according to racial and ethnic group predicting mental health based on COVID-19 stress, racial trauma stress, and demographic and mediator variables. Only the main effects of COVID-19 stress and racial trauma stress are reported in table 7. Overall, among both non-Latina/o/x White and Latina/o/x respondents, higher COVID-19 and racial trauma stress were significantly positively associated with levels of depression and anxiety and stress overload. For non-Latina/o/x White respondents, only COVID-19 stress was positively associated with greater loneliness. For Latina/o/x respondents, COVID-19 stress and racial trauma stress were significantly positively associated with greater loneliness. Among non-Latina/o/x Black respondents, COVID-19 stress was significantly positively associated with levels of depression, loneliness, and stress overload. Black respondents who reported more racial trauma stress reported less loneliness. Supplemental analyses indicate that racial trauma was linked to higher anxiety for Black respondents when only racial trauma and sociodemographic indicators were included in the model, but not with depressive symptoms or stress overload. The inclusion of COVID-19 stress explained the racial trauma association for anxiety among Black respondents. Among Asian Americans, COVID-19 stress was associated with significantly more loneliness, but no other associations between COVID-19 and racial trauma stress and mental health were evident. Among individuals who identified as non-Latina/o/x multirace higher racial trauma stress was associated with higher levels of anxiety. COVID-19 stress was only associated with more stress overload among non-Latina/o/x multirace respondents.

DISCUSSION

The stress of the pandemic has hit individuals in the United States hard, in particular, those most affected by structural discrimination. Respondents who identify as Latina/o/x, Asian, and multirace, and other or multiple nonheterosexual, and women had elevated COVID-19 related stress than their more privileged counterparts. Simultaneously, the racial trauma associated with the murder of George Floyd and other Black Americans at the hands of police was associated with higher stress for Black and non-Latina/o/x multirace respondents, bisexual, and other or multiple nonheterosexual respondents, and women and those having a nonbinary gender identity. The stress of these shared traumas has serious implications.

Even before the pandemic, Black Americans were more likely to experience the death of a loved one, including family members and friends, with serious life course implications including a loss of social support and detri-

Table 7. Race-Ethnic Specific Ordinary Least Squares Regression Models of Mental Health Outcomes

	Non-Latina/o/x White		Non-Latina/o/x Black		Non-Latina/o/x Asian		Latina/o/x		Non-Latina/o/x Multirace	
	B	SE	B	SE	B	SE	B	SE	B	SE
Depression										
COVID-19 stress	0.44***	(0.05)	0.27*	(0.10)	0.25	(0.15)	0.29***	(0.08)	0.01	(0.12)
Racial trauma stress	0.59**	(0.23)	0.10	(0.34)	0.61	(0.45)	1.29***	(0.36)	1.41	(0.74)
Anxiety										
COVID-19 stress	0.39***	(0.05)	0.13	(0.08)	0.16	(0.12)	0.25**	(0.08)	−0.13	(0.12)
Racial trauma stress	0.73***	(0.19)	0.46	(0.30)	0.15	(0.35)	1.26**	(0.38)	1.17*	(0.57)
Loneliness										
COVID-19 stress	0.10***	(0.03)	0.18**	(0.05)	0.13*	(0.06)	0.10**	(0.04)	0.003	(0.06)
Racial trauma stress	0.12	(0.11)	−0.39*	(0.18)	0.01	(0.25)	0.39*	(0.18)	0.51	(0.32)
Stress overload										
COVID-19 stress	0.38***	(0.06)	0.31*	(0.13)	0.15	(0.18)	0.18*	(0.09)	0.28*	(0.12)
Racial trauma stress	0.90***	(0.23)	0.07	(0.37)	1.04	(0.72)	0.99*	(0.47)	0.96	(0.60)
N	2,247		336		209		585		206	

Source: Authors' calculations based on Kamp Dush and Manning 2022.

Note: All models included sexual identity, gender, couple type, marital status, age, household children, interracial couple, foreign born, education, employment, month of survey, cohabitation length, working from home, income to poverty ratio, microaggressions, health-care discrimination, community support race, community support LGB, support from partner or spouse, social support, and physical health condition.

* $p < .05$; ** $p < .01$; *** $p < .001$

ments for health and well-being (Umberson 2017; Stroebe, Schut, and Stroebe 2007). This disparity has been exacerbated during the pandemic. In Connecticut, mortality increased by 74 percent for Black and 65 percent for Latina/o/x individuals versus 30 percent for non-Latina/o/x Whites (Laurencin et al. 2021). The bereavement of Black and Latina/o/x families occurred in the context of heightened risk of COVID-19 exposure and financial stress due to higher risk of unemployment (Bokun et al. 2020; Parolin and Wimer 2020; Golestaneh et al. 2020). It also occurred in the context of racial trauma, as our evidence shows.

The cascade of stress among Black and Latina/o/x respondents suggests their compromised mental health relative to that of White respondents, who had a lower risk of COVID-19 stress and racial trauma stress given popular theories such as the Risk and Resilience in Family Well-Being during the COVID-19 Pandemic Model (Prime, Wade, and Browne 2020) and Minority Stress Model (Meyer 1995; Meyer and Frost 2013). Yet, our analyses align with the Black Advantage Vision (Pattillo 2021) show a mental health advantage for respondents racialized as Black (for all mental health outcomes) and Latina/o/x (for depression and stress overload) that is consistent with research prior to the pandemic (Thomas Tobin et al. 2020; Erving, Thomas, and Frazier 2018; Barnes and Bates 2017; Calzada et al. 2020; Alegría et al. 2008), even with the inclusion of stress. COVID-19 and racial trauma stress were both associated with elevated levels of depression and anxiety, more loneliness, and more stress overload, net of demographic and mediator controls. But Black and Latina/o/x individuals reported significantly lower depression levels and less stress overload than White individuals, and Black individuals also reported significantly less anxiety and loneliness than White individuals. Multirace individuals also reported significantly less stress overload and anxiety than White individuals.

The ability to maintain mental health in the face of serious adversity, such as the stress of COVID-19 and racial trauma, is an indication of some form of elevated resilience (Keyes 2009) or even a Black advantage (Pattillo 2021). Yet Chalandra Bryant, Leslie Anderson, and Maxine Notice (2022, 19) argue that promoting "resilience" without acknowledging the chronic adversities and marginalizing contextual factors that result from structural racism and discrimination ignores the negative toll to the body of this "unwavering commitment to succeed." We included several significant covariates of COVID-19 stress, racial trauma stress, and mediators (such as microaggressions, discrimination, support from their partner ot spouse, and physical health conditions) in the model, and yet the magnitude of the advantage between Black, Latina/o/x, and multirace respondents and White respondents persisted. Our study includes only a narrow scope of potentially important indicators of resilience as a process for the Black, Latina/o/x, and multirace population. Corey Keyes (2009) suggests that religion, racial socialization, and group identification may be important factors underlying this advantage. In particular, racial socialization (Hughes et al. 2006) and identification with one's race (Neblett, Shelton, and Sellers 2004) grounded in the family of origin is a compelling mechanism for future research. Yet research on resilience needs to move beyond the dichotomy of resilience as a positive or negative and examine resilience as a process, particularly if the full implications of structural racism and cis-heterosexism are to be understood. As Chalandra Bryant, Leslie Anderson, and Maxine Notice (2022) highlight, resilience can be both a negative and a positive for health outcomes, and further research is needed to understand the full picture of the experience of individuals who were not racialized as White during the pandemic.

Respondents with other or multiple sexual identities reported significantly higher COVID-19 and racial trauma stress than heterosexual individuals, and bisexual respondents reported significantly more racial trauma stress than heterosexual individuals. Further, even after controlling for COVID-19 and racial trauma stress, demographic controls, and mediators, bisexual respondents reported elevated depression, anxiety, loneliness and stress overload. Respondents with other or multiple sexual identities reported more depressive symptoms. This is consistent with pre-pandemic work indicating that sexual minorities experience

greater stress and mental health problems due to discrimination and structural heterosexism (Meyer 2003; White, Sepúlveda, and Patterson 2020). Our results suggest that gay and lesbian respondents fared as well as heterosexual respondents during the pandemic but individuals with bisexual, multiple or other sexual minorities have suffered disproportionately during the pandemic relative to their heterosexual counterparts. No narrative relates sexual minority responses to the pandemic. Perhaps the lack of access to families of choice and a lack of support from religious institutions (White, Sepúlveda, and Patterson 2020), and the lack of sexual identity socialization from the family of origin (Bregman et al. 2013) are potential mechanisms underlying the mental health disparities we observed. Although LGBTQI+ acceptance has grown in the United States, microaggressions and discrimination are still rampant for sexual minorities, and structural heterosexism and monosexism—the privileging of attraction to a single gender—continues to undermine sexual minority health (White, Sepúlveda, and Patterson 2020; Roberts, Horne, and Hoyt 2015).

The COVID-19 pandemic "shecession" not only has resulted in a loss of jobs for women (Gupta 2020; Alon et al. 2021), but also is linked to higher COVID-19 and racial trauma stress, anxious symptoms, and increased loneliness and stress overload for women, even after accounting for a roster of potential explanatory factors relative to men. The crisis for women has been highlighted in the popular press—the New York Times even set up a Primal Scream line for mothers to vent their pandemic frustration (Grose 2021). Our results join a growing body of research that suggests women experience elevated mental health problems and stress during the pandemic relative to men (Reading Turchioe et al. 2021; Park et al. 2020; Almeida et al. 2020). An increased and gendered burden of care (Power 2020; Calarco et al. 2021; Calarco et al. 2020) combined with higher unemployment (Alon et al. 2021) has exposed women to psychological distress. The potential for long-term negative consequences of the pandemic for women's career and family responsibilities is alarming. That said, women exhibited elevated internalizing mental health symptoms such as depression and anxiety relative to men even before the pandemic (Rosenfield and Mouzon 2013). The continued gendered division of labor even as women's labor-force participation grew has led some to suggest that the gender revolution has stalled (England 2010); these results support that supposition.

In all mediator models, social support emerged as key buffers of poorer mental health. Individuals who reported more support from their partner or spouse reported less depression, less loneliness, and less stress overload. Individuals who reported more social support from friends and family reported less anxiety. When individuals perceived their community to be a good place to live for racial and ethnic minorities, they reported less depression and less loneliness. These findings highlight the importance of social relationships and connectedness for health and well-being, similar to the findings focusing on social ties and health behaviors in Courtney Page-Tan, Summer Marion, and Daniel Aldrich's article in this issue (2022). Of course, these models were cross-sectional, and it is also likely that individuals with elevated mental health problems were more likely to receive social support. Future longitudinal research is needed to disentangle the direction of causality in these associations.

Limitations. Although this study provides new understandings of how the experiences during the first year of the COVID-19 pandemic were associated with well-being, it has limitations. The most significant is the cross-sectional design that prevents us from causal analysis and determining whether racial-ethnic and sexual minority patterns and levels of mental health observed during the pandemic were present before the pandemic. We are unable to identify causal direction in our study, and cannot examine pre to post-pandemic change in mental health. Our study is also limited to individuals in couples. Single individuals tend to be even more stressed than coupled individuals (Ta et al. 2017). Additional research on the experience of being single during the pandemic is warranted. The measure of racial trauma in this study is based on a single item related to the murder of George Floyd. Future research

should capture racial trauma more broadly, particularly for Asian and Asian Americans who experienced profound increases in discrimination during the pandemic (Jeung et al. 2021). We also focused exclusively on stress stemming from a health risk perspective of becoming infected by COVID-19. There certainly are additional stressful domains related to COVID-19 that are worth examining in future research such as stress related to work during the pandemic (Manning and Kamp Dush 2022). Further, we accounted for multiple mediators in our analyses, but our indicators may be inadequate and require more refined measurement. Future work should examine a broader and richer set of measures that may tap into multiple sources of structural and systematic racism, sexism and heterosexism.

In conclusion, the social impact of the COVID-19 pandemic and the accompanying racial trauma could have implications years into the future. The toll of acute stress on the body is well documented (Brotman, Golden, and Wittstein 2007; Yaribeygi et al. 2017), and with regard to the length of the pandemic and the seemingly never-ending racial trauma, these stressors have been chronic. Indeed, the mental health disparities we identified are not new. Future research needs to identify the mechanisms through which individuals particularly affected by structural discrimination, including non-White, nonheterosexual, and women and gender nonbinary individuals, were susceptible to and victims of the pandemic. One place to start would be identifying policies, interventions, and prevention efforts that could reduce or exacerbate the effects of historically based and ongoing structural racism, heterosexism, monosexism, and sexism.

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Representative Voices: Native American Representation, Political Power, and COVID-19 in U.S. States

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We examine predictors of COVID-19 cases in Native nations during the early months of the pandemic. We find that where Native American representation and Native American political power in state politics were greater, COVID-19 cases on tribal lands were fewer. We expand the literatures on descriptive representation and on tribal-state relations by demonstrating consequences of powerful Native American voices in the state-house. We find that Native American voices on tribal lands are also vital. Tribal lands that had extensive networks of community-based health facilities and tribally controlled health facilities recorded fewer COVID-19 cases. The broader lesson here is that if Native nations are to protect their citizens, they need outside governments that support, not thwart. Our findings draw on unique, original quantitative analysis.

Keywords: inequality, representation, Native American, COVID-19

Native America was hit hard by the COVID-19 global pandemic. It exposed long-standing inequities in the U.S. political system, inequities that made Native communities particularly vulnerable to the virus. In previous research, we documented that federal neglect, including the inability of the federal government to live up to its trust responsibilities to Native nations, was

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a contributing factor in the spread of COVID-19 in Native American communities. Longstanding inequities, including a lack of critical infrastructure in Native communities, led to significant illness and death across Native America (Carroll et al. 2020; Foxworth, Evans, et al. 2021; Roybal 2020). This article builds on our earlier work and examines state political factors that help us explain rates of COVID-19 across Native America.

Although the federal government has trust and treaty responsibilities to Native nations, Native nations have increasingly become active and important constituents for state legislators. Native nations engage in lobbying, sponsor candidates, promote issues, encourage tribal citizen participation, and more. Additionally, as individuals, Native people have launched campaigns to run for state political office to represent Native American and other historically marginalized constituents. These participatory mechanisms are important tools as Native people and communities engage in the political process to hold politicians accountable and to make demands on the political system—demands that have historically been ignored and minimized.

Most research on Indigenous communities during the COVID-19 pandemic has documented Native American vulnerability as a consequence of poverty (Leggat-Barr, Uchikoshi, and Goldman 2021; Chakraborty 2021). However, those analyses remain rooted in deficit frames of Native nations as passive subjects of the COVID-19 pandemic rather than as active agents mobilizing to keep their communities and cultures safe. We challenge these limited and shallow portraits of Native nations and engage the literature on representation and Native sovereignty to better understand Native nations' political responses to the COVID-19 pandemic.

Given the history of Native American social exclusion and social inequities that fueled the COVID-19 pandemic in Native American communities, we argue and find that both Native American political power within states and Native American political representation in state legislatures matter in reducing COVID-19 cases in Native communities. Those two independent and distinct pathways of Native American representation in state politics matter in a number of ways in combating social inequity, especially in times of crisis. First, where Native nations increased their political power within states, we see fewer cases of COVID-19 because Native nations' political mobilization within states increased incentives for state politicians to collaborate with and respond to Native nations' demands. That political influence of Native nations provides tribal leaders with the ability to advance the needs of Native communities in state politics. Second, the presence of Native Americans in state legislatures also has a direct impact on COVID-19 outcomes. That finding connects to the broad body of research on descriptive representation, which notes that group interests and demands may be prioritized and elevated when public officials share group identification.

We do not suggest that tribal-state relations are the only avenue through which Native nations shape their fate, of course. Our findings demonstrate that tribal control over health systems is an important factor as well. We find fewer COVID-19 cases on tribal lands that had extensive networks of community-based and tribally controlled health facilities. Those results help situate our findings on tribal-state relations in a broader context, specifically that robust exercise of tribal sovereignty keeps tribal citizens safe. That finding is significant given the history of federal and state policy that has argued that tribal sovereignty "holds tribes back" from modern life.

We connect our findings with research that highlights the structural inequalities within Native communities. We show that Native American representation combined with active state- and federal-level collaboration may further reduce inequities. Moreover, we show that the sovereignty of Native nations matters, especially in the context of the COVID-19 pandemic.

NATIVE NATIONS, HISTORICAL NEGLECT, INEQUITIES, AND COVID-19

In 2020, the United States was home to one of the world's largest outbreaks of the SARS-CoV-2 virus, commonly referred to as coronavirus disease 2019 or COVID-19. The pandemic amplified long-standing inequalities, resulting in ra-

cial and class differences in COVID-19 transmission and death rates (CDC 2020a; Raifman and Raifman 2020; James, Tervo, and Skocpol 2022, this issue). That trend was especially true in Native American communities, given stark and long-standing health and economic inequities.

Vulnerability in Native communities from epidemics and pandemics is not new. Research documents that in the 1918–1919 influenza, roughly 25 percent of Native Americans caught the flu, the highest of any racial and ethnic group, resulting in a 2 percent population loss (Kakol, Upson, and Sood 2020). The first victims of the hantavirus outbreak in the southwestern United States in 1993 were in Navajo communities. During that outbreak, news media stoked fears among non-Native people, referring to the virus as the Navajo flu (CDC 2020c; Pressley 1993). During the H1N1 outbreak in 2009, death rates for American Indian and Alaska Natives were four times greater than all other racial and ethnic groups combined in states with high Native populations (CDC 2009; Galarce, Minsky, and Viswanath 2011).

Beyond these traditionally defined health epidemics, many Indigenous scholars argue that colonization has been the most significant health epidemic, leading to the greatest loss of Indigenous life across the Americas (Estes 2020; Roybal 2020). Ninety percent of Indigenous life was lost across the Americas during the first century of European contact. Death was incited by disease, starvation, poverty, and violence. These factors continue to ravage Native communities at disproportionate rates today (Jones 2006; Newson 1993).

The coronavirus pandemic is in many ways a repeat of prior disease outbreaks on tribal lands resulting from structural inequalities fueled by generations of colonization. Long-standing inequalities made Native Americans vulnerable to COVID-19 infection and spread. Research documents that the history of colonization and policy neglect by federal and state governments compound the effects of COVID-19 in Native nations (Foxworth, Evans, et al. 2021; Rodriguez-Lonebear et al. 2020). The perpetuation of structural inequities fuels poverty, unemployment, deficient infrastructure, food insecurity, a lack of internet access, trauma, ineffective health care, and much more (Fortuna et al. 2020; Graves et al. 2020).

The Navajo Nation became the epicenter for COVID-19 in the United States. By August 2020, Native Americans nationally had 3.5 times more COVID-19 cases and hospitalization rates, five times higher than that of White Americans (CDC 2020a; Raifman and Raifman 2020). Native American leaders highlighted the lack of coordinated and effective federal response to COVID-19 on tribal lands. In Indian Country, federal relief packages were trapped in bureaucratic limbo as citizens in Native nations remained in fear of mass death (Akee et al. 2020; Cancryn 2020; Rodriguez-Lonebear et al. 2020).

The Snyder Act of 1921 and the Indian Health Care Improvement Act of 1976 codify health care as a right for Native nations (Indian Health Service 2013; U.S. Commission on Civil Rights 2003).[1] In practice, access to quality health care has been a challenge for Native American communities. The Indian Health Service (IHS) has been perpetually underfunded, and political will to improve Native American health care has been minimal (Bergman et al. 1999; Warne and Frizzell 2014). Today, the IHS is funded at only about 60 percent of need (Trahant 2018), and per capita spending averages $3,943 (Morse 2020) relative to the U.S. average of more than $11,500 (Martin et al. 2021).

Moreover, research finds that partisanship had significant impacts on the spread of COVID-19 in Native communities. Our prior work showed that, for Native nations in Republican states, the lack of response by Republican leaders was associated with more cases of COVID-19 on tribal lands. Scholars outside Native America also document the partisan effects of COVID-19. They note that conservative Americans are less likely to believe the virus is real, more likely to believe that the pandemic is blown out of proportion, and as a result less likely to take preventive measures (Perez 2020; Peters and Grynbaum 2020; Santucci 2020). Scholars also find that self-identified Republi-

1. Snyder Act, Pub. L. 67-85, 25 U.S.C. 13 (1921); Indian Health Care Improvement Act, Pub. L. 94-437, 25 U.S.C 1601 (1976).

cans were less likely to wear a mask in public to address infection rates of COVID-19, as were Americans who lived in Republican-led states (Sanchez, Dominguez, and Vargus 2020). More recent scholarship found that state partisanship influenced reopening thresholds, mask mandates, and stay-at-home orders. For example, Sarah James, Caroline Tervo, and Theda Skocpol (2022, this issue) find that Republican governors were less likely to use their emergency powers to implement mitigation strategies and implemented them for shorter periods if they chose to do so.

To be clear, tribes simply were not on the receiving end of history, and we reject deficit models of tribal governments. Tribes actively shaped their fate during the pandemic through exercising their sovereignty. Responding to community vulnerability, Native nations used their inherent right to govern within their territories to pass a variety of laws to keep their communities safe, often receiving scrutiny from state and local governments. In many instances, such policies were stricter than state policies and showed extreme caution.

In addition, tribal governments led successful vaccination campaigns. In fact, Native Americans led all racial groups in the United States in COVID-19 vaccinations through the summer of 2021 (Foxworth, Redvers, et al. 2021). Tribal vaccination strategies included incentivizing vaccination and creating partnerships with community organizations, IHS, and state governments to hold vaccination events. Many tribes converted their facilities—tribal offices, schools, casinos, urban Indian centers—into vaccination clinics and sites for drive-by and outdoor mass-vaccination events. The success of tribes' vaccination efforts was at least partially a result of their ability to determine their priorities in vaccinating their community members. Many Native American communities chose to start the vaccination process with members who were vital to the tribe, including elders who are keepers of important cultural knowledge such as language. An example is the Cherokee Nation in Oklahoma, which put fluent Cherokee-language speakers at the front of the line for vaccination due to pandemic casualties among fluent language-speakers (Brown 2021). Tribes also strategically vaccinated influential leaders from their communiies to help encourage others to become vaccinated (Hellman 2021).

Consistent with more than a century of inequities, Native Americans experienced and continue to experience the spread of COVID-19 at disproportionate rates. Native communities have also shown resilience. All the same, we know that tribal-state relations played a key role in shaping the pandemic's course, and more. More specifically, we suspect that state politics have been consequential during the pandemic. In the sections that follow, we explore whether and how Native American representation and Native nation political power played a role in stopping the spread of COVID-19 in Native communities.

DESCRIPTIVE AND SUBSTANTIVE REPRESENTATION

Our theory that the presence of Native American legislators reduces COVID-19 cases in Native communities is based on literature focused on descriptive representation. According to Suzanne Dovi (2007, 27), "Descriptive representatives are those who look like, or at least have experiences and interests similar to, the people they represent." Descriptive representation is often applied to race, ethnicity, and gender when the elected official and their constituency match on those attributes. We apply descriptive representation theory to the case of Native Americans who we believe may benefit from the presence of Native Americans in their state legislatures during the pandemic.

Descriptive representation theory suggests that having member legislators from diverse communities in legislative bodies leads to public policies benefiting members of those communities, often because they understand the needs of those constituents (Bratton and Haynie 1999; Haynie 2001; Tate 2001). Scholars interested in descriptive representation often focus their research on the presence of minority representatives in the U.S. Congress (Cameron, Epstein, and O'Halloran 1996; Canon 1999; Welch and Hibbing 1984). Another body of work explores whether descriptive representation at state and local levels of government leads to positive substantive representation for minority communities (Eisinger 1982; Kerr and

Mladenka 1994). Work at the state level demonstrates that racial and ethnic diversity in legislatures not only motivates positive policy outcomes on behalf of minority interests but also leads to the blockage of proposals that harm those communities (Filindra and Pearson-Merkowitz 2013; Preuhs 2006).

We are also drawn to work that finds a relationship between descriptive representation and trust because increased trust in Native American representatives is one of the mechanisms we believe may reduce COVID-19 outcomes in Native communities. For example, Claudine Gay (2002) argues that descriptive representation can forge bonds of trust between legislators and their constituents. Such increased trust has the potential to enhance a feeling of inclusion among those groups, which makes the "polity more democratically legitimate" in the eyes of the disadvantaged (Mansbridge 1999, 651). Although somewhat limited, the literature on the relationship between descriptive representation and perceptions of government has generally supported those theoretical arguments. For example, Susan Howell and Deborah Fagan (1988) find that African Americans represented by a Black mayor are more trusting of government than those in other areas without descriptive representation. Similarly, Gabriel Sanchez and Jason Morin (2011) find that Latino respondents with a Latino mayor are more likely to believe they and people like them can influence political outcomes.

Our analysis of the impact of Native American representation within states on COVID-19 outcomes comes at a time of increased political representation of Native Americans in state legislatures. Between the mid-1990s and 2018, the number of Native Americans in state legislatures tripled from twenty-six to eighty-one. Although the high of eighty-one in 2018 amounted only to roughly 1 percent of all state legislators across the country, the sharp increase is notable. Concurrently, Native Americans are participating in politics at greater rates and are key constituents in deciding electoral outcomes (Evans et al. 2019; Foxworth and Sanchez 2020; Sanchez, Foxworth, and Evans 2020). The growing political influence of Native Americans, we argue, enabled elected officials from Native American communities to advocate more effectively for their constituents.

Most of the research on descriptive representation focuses on women, African Americans, and Latinos. The few studies on Native American descriptive representation also highlight similar, positive, substantive outcomes from increasing representation. Native American elected officials reported that they pushed for improved service delivery to Native Americans in their jurisdiction (McCool, Olson, and Robinson 2007). Scholars note that Native legislators also work to insulate their constituents from bad policies and educate their non-Native colleagues about the unique experiences of Native Americans in their state (Schroedel and Aslanian 2017). Native American state legislators can shift dynamics in state-tribal relations, and a critical mass of Native legislators is even more beneficial (Kessler-Mata 2017; Evans 2011).

Given that trust in government has been one of the most challenging barriers for communities of color, we expect that trust in Native American legislators lowers COVID-19 rates in Native communities. Scholars illustrate that trust in government shapes health behaviors (Suhay et al. 2022, this issue; Pears and Sydnor 2022, this issue). Perhaps this pattern may be most pronounced for Native American communities given the many injustices they have endured, as discussed earlier. As Representative Ken Luttrell (Cherokee), cochair of the Oklahoma Legislature's Native American Caucus, noted recently, "The tribes rely on us to be their voice down here. In many parts of the country and in many parts of the state, many tribes feel like they have been unrepresented, nonrepresented, or not represented enough. We certainly have given them a voice and an outreach for their concerns and their issues, which is what we're here for. Not only to serve our constituents in our home district, but our fellow tribal citizens, also" (Luttrell 2021).

Given this context, public health officials recommend the use of messengers who are members of the community themselves and have relationships with Native American community members for COVID-19 information, including vaccine outreach (Urban Indian Health Institute 2021). Consequently, we expect that Native American leaders will have an indi-

rect impact on COVID-19 outcomes as messengers in addition to the more direct role they may play through protective legislation. We now lay out our theoretical expectations.

REPRESENTATION, NATIVE NATION POLITICAL POWER, AND COVID-19 IN NATIVE NATIONS

We argue that representation is an important factor in ensuring that the needs of racial and ethnic minority communities are served. Two distinct kinds of representation mattered for Native American communities during the COVID-19 pandemic: descriptive representation and tribal political power within states. Each played an important role in reducing the spread of COVID-19 rates in Native American communities.

We know that representation remains core to the quality of any democracy, especially for historically marginalized groups. Citizens elect representatives, and the quality of citizen representation affects citizens' political efficacy, engagement, participation, knowledge, and overall confidence in government (Hayes and Hibbing 2017; Wolak and Juenke 2021). During the pandemic, Black and Latino representatives spoke out to bring additional attention and resources to their respective communities hard hit by COVID-19 (Alford 2020; Bevington 2020). The calls from Black political officials intensified when inequities were compounded by ongoing police violence that led to a wave of protests across the United States. Similarly, Latino calls for government action were even more pronounced when news spread about the eventual humanitarian crisis at the U.S.-Mexico border.

During the COVID-19 pandemic, descriptive representation was important because racial and ethnic minority groups neglected by the political system were looking for trustworthy information. In the early days of the pandemic, information was often slow, and significant contradictions between public health experts and the Trump White House were frequent. In this context, increasing legislator activism on behalf of local communities can overcome feelings of alienation—including distrust and cynicism (Pantoja and Segura 2003).

Native American legislators at all levels operated much as their Black and Latino colleagues did during the COVID-19 pandemic. Because Native communities have endured long histories of political neglect and experienced significant death and illness from the COVID-19 pandemic, Native leaders developed tactics both to communicate with their constituents and force urgent, coordinated responses from federal, state, and other governments. Native American representatives disseminated important public health and other information on the COVID-19 pandemic to their constituents and Native communities through social media, local media in Native communities, and more. They also took important steps to advocate for increased government relief and responses to their hard-hit communities (Armas 2020).

Native leaders, with the weight of their nations behind them, mobilized quickly to demand state policy responses to the COVID-19 pandemic. For example, in New Mexico, the Pueblo, Apache, and Navajo Nations coordinated early with states for testing, case tracking, tribal border closings, and demands for a federal response (Romancito 2020). In, for example, Montana and South Dakota, Native legislators emphasized publicly the importance of tribal border closings (Groves 2020).

Given the level of response from Native American legislators, we expect that COVID-19 cases will be lower in Native communities in states with more Native American legislators. We believe that descriptive representation of Native Americans within state legislatures is important in reducing COVID-19 rates in Native American communities because these legislators are both trusted sources of information and advocates in demanding response and aid for Native nations.

Native Nation Political Power Within States

Although we expect descriptive representation is associated with fewer cases of COVID-19 in Native communities, we do not believe this was the only representational pathway to ensuring the safety of Native communities. Leaders of Native nations also mobilized quickly during the pandemic to ensure that Native nations were not forgotten in COVID-19 response strategies at the federal, state, and local levels of

government (Acee 2020; Becenti 2020). For example, Pueblo, Apache, and Navajo Nations coordinated early with the state of New Mexico for testing, case tracking, tribal border closings and demands for federal response (Romancito 2020).

The political power of Native nations within states has grown over time. As Native nations increased their interactions with state governments in recent decades, they sought greater influence in state politics. Forced interaction between tribes and states in the modern era increased after the passage of the Indian Gaming Regulatory Act of 1988,[2] whereby the federal government devolved important powers over Indian gaming to states. At roughly the same time was a generalized movement to devolve federal power to states for social welfare programs such as Temporary Aid to Needy Families, foster care, and others. This movement also forced greater interaction between states and Native nation governments (Cornell and Taylor 2000; Corntassel and Witmer 2008).

Consequently, Native nations became increasingly involved in state politics to advance their interests. Native nations use traditional political strategies such as candidate endorsement, campaign donations, and lobbying to ensure that their voices are heard. Some research identifies lobbying as a tactic Native nations use to exert political influence in states (Boehmke and Witmer 2020; Foxworth, Liu, and Sokhey 2015; Witmer, Johnson, and Boehmke 2014). In sum, we believe that the political power of Native nations within states is associated with lower COVID-19 spread in Native communities. As Native nation power within state politics has grown, so have incentives for politicians—both Native and non-Native—to keep this important constituency in mind in designing and deploying policy responses.

Most often, the level of tribal financial contributions made to political candidates within states is a proxy for understanding Native nations' political power and mobilization within states. Consistent with this established empirical strategy, we expect less incidence of COVID-19 in Native communities in states where Native nations give larger financial political contributions. In states where Native nations give more, state leaders will have greater incentive to coordinate with or respond to Native nations' concerns during the COVID-19 pandemic. We discuss our research design and results in the sections that follow.

RESEARCH DESIGN

We build on earlier work that finds that both long-standing neglect and marginalization have a significant impact on COVID-19 rates in Native communities (Foxworth, Evans, et al. 2021; Rodriguez-Lonebear et al. 2020). We use these findings to understand how state legislators and Native nations' political power in state politics are associated with COVID-19 rates in Native communities.

Our dependent variable is a count of positive COVID-19 cases in Native nations gathered and confirmed by Indian Country Today. We use positive COVID-19 case counts through June 11, 2020. We use this as a cut-point because we are interested in examining how representation may have affected the spread of COVID-19 during the early days of the pandemic. Moreover, this cut-point aligns with the full distribution of Coronavirus Aid, Relief, and Economic Security Act (CARES) funding for federally recognized tribes. At this point, tribes had federal relief dollars to shift toward spending more time and money on tribal policymaking.

We believe this is a plausible cut-point for identifying the early phase of the COVID-19 pandemic on tribal lands. By June 11, the outbreak had been spreading in Native nations for three months. During that time, tribes struggled to secure federal assistance for their COVID-19 responses. In May, the Department of Treasury distributed only half of the CARES funding that Congress allocated to tribes.

We test state-level factors and control for community-level factors across 333 Native communities in the lower forty-eight United States. We include in our dataset all tribal governments with reservations or Tribal Statistical Areas designated in the Census Bureau's American Community Survey (ACS). Our sample

2. Indian Gaming Regulatory Act, Pub. L. No. 100-497, 102 Stat. 2467 (1988).

includes only tribes with residential housing on tribal lands. For some tribes with a very small land base, tribal lands are used for administrative offices and public facilities, and tribal members live off tribal lands. We exclude Indigenous communities in Alaska and Hawaii because data for these communities were not included in early iterations of the Indian Country Today dataset (Rodriguez-Lonebear et al. 2020).

We use a negative binomial regression, which is ideal given that we are working with count data. Our measure is a tribe-state dyad to account for tribes that cross state boundaries. This is an important nuance to our design because several tribes, including the Navajo Nation, have lands that span multiple states. If a tribe in our dataset crosses state boundaries, we code it as part of two dyads. In the average observation, sixty-one tribal members contracted COVID-19.

Case Counts: Data Erasure and Indigenous Data Sovereignty

We know that federal policy affects Native well-being in real and measurable ways, and the COVID-19 pandemic exacerbated that. Federal interactions with Native nations also affect the availability (or rather absence) of data on Native American communities. Critical scholarship is growing on Indigenous erasure—where Indigenous peoples are systematically overlooked, intentionally excluded, Othered as a footnote, or treated as an Asterisk Nation* (Hudson et al. 2020; National Congress of American Indians 2012). The lack of intentionality in collecting Indigenous data results in huge disparities in the availability of timely and accurate data on Indigenous peoples and communities, especially relative to other ethnic-racial groups. This lack of data is pervasive, and the data available for research have unfortunately often been weaponized (Walter and Andersen 2013), necessitating the need for Indigenous peoples to govern their own data (Rainie et al. 2017; Taylor and Kukutai 2016).

This context for understanding Indigenous data (or absence of) is important because in the face of such exclusion, Native nations have had to respond to data needs with innovative solutions, including during the COVID-19 health pandemic. During the early days of the pandemic, collecting data on all racial and ethnic groups was a challenge, including for Native American communities. Without data, tribes struggled with responding locally and advocating for federal and state action.

To address this gap, Indian Country Today, housed at Arizona State University, developed a website and Google form to gather crowdsourced tribal data of COVID-19 cases and deaths in Indian Country (Indian Country Today 2020). According to the website, data were "confirmed by tribes, tribal health clinics, urban Indian programs, the Indian Health Service, state public health agencies, or the Centers for Disease Control and Prevention," gathered from Native nations' public release of information, and supplemented and verified by news reports. These data represent an innovative and comprehensive grassroots effort to combat the absence of standardized Native American COVID-19 case data.[3]

Other peer-reviewed, scholarly publications use these data to understand the causes and effects of the pandemic in Native American communities (Carroll et al. 2020; Foxworth, Evans, et al. 2021; Rodriguez-Lonebear et al. 2020). Moreover, Indian Country Today's impressive data and methods were later used to create the Tribal Land COVID-19 Database, a joint project of Indian Country Today, the Coronavirus Resource Center, and the Center for American Indian Health, the second two at Johns Hopkins University (for more, see Weeks 2021).

Key State Covariates

Native American state legislators. To test whether descriptive representation affected COVID-19 rates in Native American communities, we use a count measure of total number of Native American state representatives and senators in 2020. This data was collected by Indian Country

3. Indian Country Today is one of the oldest, best-known Indigenous media outlets in the United States and beyond. It has taken the lead in collecting other data to combat erasure of Native Americans. Other studies using these data include Desi Rodriguez-Lonebear and colleagues (2020) and Laura Evans and colleagues (2019).

Today (Evans et al. 2019) and the voter mobilization organization Native Vote. In 2018, a record number of Native Americans ran for political office, which we believe was consequential in combating the spread of COVID-19 in Native America.

Native nations' campaign contributions in state politics. To understand whether Native nations' political power was a significant factor in facilitating greater collaboration and responses from state governments, we use Native nations' financial contributions in state politics in 2018 or 2019, whichever year is higher. We took this data from Followthemoney.org. We use financial contributions from Native nations themselves only, not from tribal businesses or enterprises, such as casinos. Contributions per state ranged widely. Tribes donated $0 in Alabama, Colorado, Connecticut, Delaware, Georgia, Iowa, Idaho, Louisiana, Massachusetts, Michigan, Mississippi, Nebraska, Nevada, Rhode Island, South Carolina, South Dakota, Texas, Virginia, and Wisconsin. At the top end of the distribution, tribes donated $17,457,682 in California and $8,569,016 in Florida.

Partisanship of state governor. President Trump consistently downplayed the dangers of COVID-19, disparaged public health policies that can reduce the spread of the disease, encouraged his supporters to defy health and safety regulations, and pressured Republican governors to avoid using their powers to protect public health. We expect that these behaviors endangered Native Americans. We identify whether a state's governor was a Republican. Governors have a great deal of discretion over powers they can use—or not use—to contain a pandemic. Across our dataset, 29 percent of observations are in states with a Republican governor.

State COVID-19 rates. We expect that nearby or adjacent states' COVID-19 rates will affect the tribes' COVID-19 rates. Accordingly, we include the number of cases per hundred thousand people by June 11 in each state (CDC 2020b). For the average observation, state cases were 469 per hundred thousand residents.

State population. We include two state population measures taken from the American Community Survey (ACS) 5-Year estimates (2014–2018): total state population and total American Indian–Alaska Native state population.

Tribal health systems. We use data from the Indian Health Service that identify all health facilities on tribal lands, the type of services they provide, and the management structure of the facility. We accessed the dataset in Spring 2020. In some cases, the name of a health facility indicates its location. In all cases, IHS provides the physical address for facilities. We mapped facility location when the name was ambiguous. We exclude from our analysis specialized facilities such as dental clinics and substance abuse treatment centers.

Most health facilities on tribal lands are relatively small sites for primary care and community engagement. Such facilities may be important locations for health education. Does it make a difference for COVID cases if a wider network for community interaction is in place? We include a calculation of the density of health facilities on tribal lands: the number of facilities divided by the tribe's land base. We expect that more locations for health system contact can improve health outcomes.

Tribal health system control. We consider control over the health system on tribal lands. Some health facilities are fully under IHS control, but the majority are not. Tribes exercise control over health facilities in three main ways and may blend the strategies. They may provide health services fully independently. They may receive grants from IHS and forgo IHS direct delivery of care using either self-government compacts or Pub. L. 93-638 contracts. Tribes do not need to be fully in or out of IHS operations. If they choose, they may have some facilities run by IHS and some facilities that they manage.

Do tribes have fewer COVID cases if they run their health-care systems? We expect that they do, because tribally controlled facilities may be able to more swiftly adapt to community needs. We calculate tribes' degree of control over their health systems by tallying the number of health facilities that a tribe operates fully independently or via IHS' compacts and contracts and dividing that by the total number of facilities on tribal lands. For this analysis, our sample is limited to tribes that have health facilities on their lands.

Community Control Variables

Water and language. Desi Rodriguez-Lonebear and colleagues (2020) note that COVID-19 cases were more likely in areas with a higher proportion of homes lacking indoor plumbing, and COVID-19 cases were less likely in communities with higher rates of English-only language. The association between these two factors and COVID-19 outcomes motivates inclusion of these measures in our model. We use the percentage of Native American households in Native nations with complete plumbing and the percentage of households that speak only English. For the average observation in our dataset, 95 percent of households have plumbing. For the average observation, 77 percent of households speak only English at home. These data come from the ACS 5-Year estimates (2014–2018).

Non–Native American visitors. Research identifies that when non-Native visitors from nearby populations sidestep tribal sovereignty, ignoring tribal mandates restricting travel to their communities, increases in COVID-19 rates occur (Florey 2020). Building on this work, we expect that visitors from nearby populations will increase tribes' COVID-19 rates. As one indicator of nontribal members visiting tribal lands, we include the size of tribal casinos. We think casino size is a sound proxy for one reason that individuals visit tribal lands. We know that the presence of Native casinos is usually combined with other draws for non-Native tourists. Casino revenues are proprietary information and not available publicly, but other indicators on the scale of casino operations are accessible. Laura Evans and her colleagues (2020) compiled the square footage of all tribally owned casinos; we include their compilation in this article with their permission.[4] For the average observation, tribal casinos covered 66,891 square feet.

For the average observation, 55 percent of people living within the tribe's lands are American Indian or Alaska Native. Many tribal lands are what are known as *checkerboarded*, meaning private parcels of land owned by non–Native Americans within the outer boundaries of a reservation. In large part, tribal governments do not have authority over these parcels. Checkerboarding is a product of federal assimilation policy: "a mighty pulverizing engine to break up the tribal mass," to use Theodore Roosevelt's words. Today, checkerboarding results in an array of jurisdictional complexities (Wilkins and Stark 2017). Given that checkerboarded lands are harder to govern overall, we expect poorer health outcomes where more non–Native Americans live on tribal lands.

Community demographic controls. Native nations are not a monolith; their social and economic circumstances vary greatly. We include a variety of indicators of social and economic conditions on tribal land, drawn from the ACS. Specifically, we control for Native American population, age, and income by reservation.

Additional Controls

Measurement controls. We include two measures to account for possible underreporting of cases on some tribal lands. One indicator is whether the tribe is part of a health policy network more closely attached to Indian Country Today. Perhaps tribes near Indian Country Today are more likely to know about this crowdsourced dataset and spread word in their professional networks. Indian Country Today is headquartered in Phoenix, and therefore we control for whether a tribe is a member of the Phoenix Indian Health Board. The Phoenix Indian Health Board is a key organization connecting tribal health professionals in the Southwest. Twelve percent of observations are from members of the Phoenix Indian Health Board.

Another indicator is whether a tribal government is recognized by a state government, but not the federal government. State-recognized tribes have less access to national networks of tribal health professionals facilitated by federal agencies. Because state-recognized tribes are less networked, they may be less aware of the crowdsourced dataset. ACS notes whether a tribe is state or federally recognized. Ten percent of observations are of state-recognized tribes.

RESULTS

We test our expectations with a negative binomial regression and present the results in table

4. See National Indian Gaming Association, http://indiangaming.com/home/ (accessed July 11, 2022).

1 and model A. The coefficient on Republican governors is significant and positive, indicating that in states with Republican governors, COVID-19 cases in Native communities were higher. This finding is consistent with our research highlighting the partisan effects of COVID-19 spread in Native communities (Foxworth, Evans, et al. 2021). Turning attention to the representational linkages to COVID-19 spread in Native communities, both the number of Native American state legislators and the size of tribal campaign contributions are negatively associated with COVID-19 cases in Native communities, and both effects are statistically significant. In general, as the number of Native American legislators increases, COVID-19 cases decline. Similarly, the greater the size of tribal campaign contributions in states, the lower the number of COVID-19 cases during the early days of the pandemic.

In addition to representation, tribal health facilities in Native communities also affect COVID-19 cases. We find that the density of tribal health facilities is statistically significant and associated with COVID cases on tribal lands. As the density of tribal health facilities increases, the number of COVID-19 cases in Native communities during the early days of the pandemic decreases. In table 2, we include a measure capturing the extent to which tribes control health facilities in their communities. We include this measure in model B because it is highly correlated with the density of tribal health facilities. In sum, tribal control over health facilities has a negative, statistically significant association with COVID cases on tribal lands. Generally, the density of tribal health-care facilities and greater tribal control of local health-care systems are associated with better health outcomes for Native American people in reservation communities.

Consistent with previous studies (Foxworth, Evans, et al. 2021; Rodriguez-Lonebear et al. 2020), the greater the number of primary English speakers is negatively associated with COVID-19 cases in Native communities, and larger reservation population size is associated with increased COVID-19 cases. Finally, tribal casinos, which are our proxy for the likelihood of having non-Native travel on tribal lands (such as tourism), are associated with increased COVID-19 cases. These findings are consistent across both our models. In model B, more state contextual factors including size of Native American population and state COVID-19 cases are positively associated with greater COVID cases in Native communities. Our two measures for connections to data collectors are associated with greater COVID-19 cases in Native communities.

As we suspected, both Native American representation and political power, as well as the presence and tribal control of tribal health facilities, led to fewer COVID-19 cases. We considered a variety of robustness checks and found the results were stable. We included in the analysis the number of seats in the state legislature. We included data on state-level errors in racial classification of medical patients. We replaced the party identification of governors with the majority party in the state legislature. This approach required us to drop observations from two states from our analysis: Nebraska, where state legislators do not declare a party affiliation, and Minnesota, where party control of the legislature was split in this time period. In this robustness check, although the effect of Republican-controlled legislatures is statistically insignificant, the effects are stable from tribal campaign contributions, Native legislators, and health-care systems on tribal lands. We stick with the party of governors as the measure of state party politics in our main model because it allows a larger sample size and many of the immediate responses to the pandemic were in the hands of chief executives. Because the party of governor and of the majority in the legislature are highly correlated, we do not include both measures in the main model.

Substantive Effects

In table 2, we translate regression coefficients into substantive effects for our key significant independent variables to illustrate the importance of our findings. We note the percentage decrease in COVID-19 cases if the condition existed holding all other variables at their means. All variables in table 2 note significant changes in COVID-19 cases in Native communities attributed to our key independent variables. As noted in table 2, having a Democratic governor

Table 1. Native American Representation, Political Power, and COVID-19 Cases Across Native Nations by June 11, 2020

	Model A (Health-Care Facility Density)	Model B (Tribal Control of Health Facilities)
Republican governor in state	1.27**	1.46**
	(0.60)	(0.66)
Number of Native American state legislators	−0.23**	−0.26**
	(0.10)	(0.12)
Tribal government campaign contributions in state elections (in thousands)	−.00030***	−.00037***
	(0.00011)	(0.00014)
Density of health-care facilities on tribal lands	−0.20***	−0.18**
	(0.077)	(0.070)
Tribal control of health-care systems (if at least one health-care facility on tribal lands)		−1.26**
		(0.60)
Population in state (in hundred thousands)	−0.00061	−0.0016
	(0.0054)	(0.0057)
Native American population in state (in hundred thousands)	0.54	0.49**
	(0.51)	(0.54)
Cases per hundred thousand in state by June 11	−0.0012	−0.0019**
	(0.00067)	(0.00073)
Percent of households on tribe's lands with plumbing	−4.16	−4.17
	(4.05)	(3.86)
Percent of households on tribe's lands that speak English only	−5.87***	−5.96***
	(0.97)	(1.01)
Total population on tribe's lands (in thousands)	0.017***	0.013**
	(0.0055)	(0.0056)
Median age on tribe's lands	−0.044	0.0059
	(0.036)	(0.039)
Median household income on tribe's lands (in thousands)	0.013	0.0050
	(0.023)	(0.023)
Percent American Indian or Alaska Native on tribe's lands	−1.81*	−2.08
	(1.28)	(1.32)
Tribal casinos: indicator of non-Native travel on tribal lands. ln(1+casino ft^2)	0.24***	0.24***
	(0.042)	(0.047)
Tribe in Phoenix Indian Health Board: stronger connections to data collectors	−1.10	−1.76*
	(0.87)	(0.92)
State-recognized tribe: weaker network connections to data collectors	2.96***	(a)
	(1.02)	
Constant	10.44**	10.90**
	(4.98)	(4.74)
Number of observations	*N*=331	*N*=263

Source: Authors' tabulation.

Notes: Negative binomial regression. Robust standard errors in parentheses.

(a) Omitted because of collinearity.

* $p < .10$; ** $p < .05$; *** $p < .01$

Table 2. Estimated Change in Number of COVID-19 Cases by June 11, 2020, for a Native Nation

Democratic governor in state, rather than Republican	decreases by 77 percent
Number of Native American state legislators increases by 1 standard deviation	decreases by 77 percent
Tribal government campaign contributions in state elections increase by 1 standard deviation	decreases by 79 percent
Density of health-care facilities on tribal lands increases by 1 standard deviation	decreases by 89 percent
Tribal control of health-care systems increases by 1 standard deviation	decreases by 39 percent
Number of observations	263

Source: Authors' tabulation.

decreased cases by 77 percent across Native nations in our sample. A one standard deviation increase in the number of Native American state legislators decreased COVID-19 cases by 63 percent. Similarly, a standard deviation increase in tribal government campaign contributions (our proxy for Native nation political power) decreased COVID-19 cases by 79 percent. We see similar high decreases in COVID-19 cases in Native communities by density of health-care facilities on tribal lands and if tribal lands have a tribally controlled health-care facility. One standard deviation increase in health-care facility density on tribal lands decreased COVID-19 cases by 89 percent. A single standard deviation increase in tribal control of health-care systems decreased COVID-19 cases by 39 percent.

These substantive changes highlight the significance of Native American representation, political power, and health-care system access and control on the health and well-being of Native Americans in Native communities. Native American representation, gaming contributions (our proxy for Native American political power), and Native community health-care facility control all decreased COVID-19 cases significantly during the early days of the pandemic.

DISCUSSION

Most existing studies of Native nations during the COVID-19 pandemic highlight their vulnerability and the extreme inequities present in Native communities. Although important, these discussions do not examine the diverse response strategies and tools Native people and nations deployed. Our analysis connects COVID-19 infection rates to social science theories of representation and finds that Native American representational linkages affected rates of COVID-19 spread across Native communities.

During the early days of the pandemic, when the federal response was slow and uncoordinated, Native nations and representatives mobilized to ensure that Native people were not forgotten in the development of response strategies. These findings highlight that the political power of Native people, both state representative and Native nation political power, were important in protecting the health and safety of Native people and bringing much-needed relief to Native nations in response to COVID-19. The effects of state-level Native American political power are an important scholarly consideration for how the voices, concerns, and demands of Native people are represented within states and how Native representatives push for substantive change for their constituents. After all, as Kouslaa Kessler-Mata (2017, 59) writes, "What counts as a reasonable justification for taking a particular course of action may look quite different from the perspectives of Native and non-Native communities." Further, we illustrate that the pathways through which Native political influence occurs are multifaceted, and our work affirms prior findings on descriptive representation.

We also identify unique features of Native politics. Native nations follow dual mechanisms to shape health outcomes—representation and sovereign action—and the two complement each other. We find fewer COVID-19

cases when tribal health systems have a dense network of community-based health centers and when Native nations exercise more control over health-care facilities. These findings bring context and nuance to our analysis of tribal-state relations. Native nations are not well served by an either-or framework under which they somehow choose between managing their own affairs or engaging with state governments. Instead, Native nations can benefit if they exercise sovereignty over their health systems and also have mechanisms to ensure that states support, not thwart, their inherent rights to sovereignty and self-determination.

In 1928, Lewis Meriam presumed that Native peoples were a threat to the health of non-Native communities when he wrote, "the advent of white civilization has forced on the Indians new problems of health and sanitation that they, unaided, can no more solve than can a few city individuals solve municipal problems. The presence of their villages in close proximity to white settlements make the health and sanitary conditions in those villages public questions of concern to the entire section" (88). We are well past the moment when we should flip the script. As we write, Native nations are exemplars for the administration of COVID-19 vaccines: multiple Native nations achieved vaccination rates over 90 percent. We encourage further exploration of how Native leaders cope with the reality that the health and sanitary practices of state governments are their concern as well.

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PART III

Government Response and Public Perception

Institutional Capacities, Partisan Divisions, and Federal Tensions in U.S. Responses to the COVID-19 Pandemic

SARAH JAMES, CAROLINE TERVO, AND THEDA SKOCPOL

The COVID-19 pandemic struck during a period of extreme polarization in American politics. Unsurprisingly, responses to it quickly became politicized despite increasingly clear findings from scientific and public health communities about the most effective approaches for limiting its spread. We ask how the politicization affected pandemic response at the state level. We document and explain several kinds of state-level actions, beginning with 2020 variations in collecting and publishing COVID-related data and early mitigation strategies. We find that state capacity explains the former and partisanship the latter. We show that divisions within the Republican Party also meaningfully affected state responses. Inter- and intraparty divisions—rather than geography or severity of COVID—in fact continue to influence state policy following the inauguration of President Joe Biden, the availability of vaccines, and the rise of the Delta variant. These findings document that U.S. federalism often created obstacles to effective governmental responses.

Keywords: federalism, state capacity, partisanship, state politics, local politics

The COVID-19 pandemic hit the United States in waves. As the life-threatening virus spread around the world starting in early 2020, American communities, states, and regions experienced the dire consequences in uneven phases and from different standpoints. Citizens and leaders dealt with health and economic effects at different moments and leaders often disagreed about what mattered most. Nevertheless, as most experts and observers realized soon enough, only a nimble coordinated response could have saved the United States from the outsized COVID-19 death trends that unfolded over the course of 2020 and into 2021. National coordination informed by honest data was needed to ensure rapid testing, deploy and

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shift health resources, and implement mitigation efforts while limiting damage to the economy and schools. Later, when new COVID-19 vaccines were approved at the end of 2020, further rounds of coordinated effort were required to get them into American arms as quickly as possible.

To be sure, the United States has a federal system of government, in which responsibilities for policymaking and implementation are divided among at least three levels of government: national, state, and local. Responses to big crises such as the COVID-19 pandemic can involve national authorities claiming emergency powers to force uniform actions at lower levels. More often, U.S. federal government authorities orchestrate cooperation that includes allowances for varied policies or processes of implementation by state and local authorities serving diverse sets of citizens and institutional stakeholders. However, even a cursory overview of what actually happened in the United States during 2020 and 2021 underlines that neither type of theoretically possible national response occurred.

The global pandemic spread into the United States during 2020—at a politically fraught juncture. Controversial incumbent President Donald J. Trump, ever distrustful of expert advice on any matter, including public health, soon became obsessed with the impact of the unfolding crisis on his reelection prospects. After a brief effort to act nationally, he and his closest advisors took over messaging from the Centers for Disease Control and Prevention (CDC) and other federal health authorities. By April, the administration decided to downshift responsibility for economically disruptive public health measures to the states. This was an abdication of federal responsibility to force uniform national responses or orchestrate smooth federal cooperation––especially because the Trump White House did not just step back. Instead of leaving state authorities, especially governors, entirely on their own, the Trump administration both dumped policymaking responsibilities on them and simultaneously began attacking the decisions made by Democratic governors and mayors (Shear and Mervosh 2020). Nor were many Republican governors allowed space to devise their own consistent strategies, because Trump himself often intervened to play one branch of state government against the other or encourage localities or businesses to strike out on their own (Olorunnipa, Witte, and Bernstein 2020). From 2020 forward through 2021, disagreements grew and intensified across the multiple tiers of the U.S. governmental system inflected by clashing understandings and priorities of the pandemic response. No sustained federal takeover imposed a disciplined response; no coherent federal policy orchestrated cooperative state and local actions. Instead, state authorities, governors, and legislatures and sometimes state courts were forced to jump in where federal authorities faltered or displaced responsibilities.

How to make sense of America's subnational COVID-19 responses undertaken by the fifty states is the focus of this article. In the following sections, we document and seek to explain several kinds of state-level actions during successive phases of responses to COVID-19.

THEORETICAL INSIGHTS FROM POLITICAL SCIENCE LITERATURES ON FEDERALISM

Policymaking for the COVID-19 pandemic is not, of course, the only time U.S. federal divisions of public authority have shaped decisions and results. Under the Constitution, many aspects of public policy have always been up to the fifty states and sometimes to localities within them. Scholars have long analyzed federal divisions of labor and dynamics of cooperation or disjuncture. Further, political scientists have long studied the dynamics by which new laws or regulations diffuse––that is spread (or do not spread)––from state to state (for an overview, see Karch 2007). Especially in the early twentieth century, many nationwide policy innovations happened through just such a process––as one state copied another until all or most had adopted a given measure, such as early state laws to increase high school graduation rates (Goldin 1998), early workmen's compensation laws (Guyton 1999), and early welfare benefits (Skocpol et al. 1993). Even after the New Deal and the later Great Society, when the federal government became more actively involved

in funding, coordinating, and uniformly legislating major interventions into the industrial economy and social welfare provision, states have continued to play major roles in implementing and co-funding critical public programs, as can be seen in the diffusion of auto safety laws (Wagenaar, Maybee, and Sullivan 1988) or preschool (Karch 2013).

Scholars who recognize these realities of U.S. public policymaking and implementation have studied many explanatory factors to make sense of variations in the timing and content of state choices in adopting new programs––either programs adopted in parallel by states learning from others, or programs that the federal government helps fund while leaving key decisions about adoption or administration to the states. Researchers studying state to state diffusions of innovations or federally encouraged state policy adoptions or refusals have identified key causal variables. We might expect governments to act sooner and citizens to respond more collaboratively if a given problem––such as COVID-19 cases or deaths––is more acute in their jurisdiction (Elcheroth and Drury 2020). Scholars have also shown that state actions can be influenced by economic factors or fiscal resources or by existing institutional governmental capacities (Capano et al. 2020). That could mean that wealthy states, or states with solid public finances, or states with strong data-collection or public health capabilities would have responded differently than others to the pandemic. Additional lines of argument in classic literatures probe for regional effects: perhaps nearby states influence one another in adopting a policy response (Berry and Berry 1990; Glick and Rose 1999). More recent literature suggests that it is not proximity but instead shared ideology and culture among states that encourages policy diffusion (Butler et al. 2017; Karch et al. 2016).

All of these ideas consider factors inherent to each state's particular internal situation or neighborhood ties. Other theories in the literature consider whether individual states' relationships to the federal government, including ties to agencies or copartisan ties to the presidential or congressional authorities, might be more important than severity of difficulties or comparative adequacy of state-level resources. The COVID-19 pandemic presented a host of unprecedented conditions for American politics: a global pandemic during a period of intense political polarization, vitriol, and stalemating under the direction of a president with authoritarian tendencies. Given this context, we began this research with few favored explanations and instead sought to test the validity of these existing theories from the literatures on federalism and state politics. Although all of the previous approaches for examining policy responses across states and within U.S. federalism suggest factors we can use to characterize and explain America's state-varied responses to the COVID-19 pandemic, we show that traditional perspectives are insufficient because they pay too little attention to extreme party polarization in the current era, and because they say next to nothing about factional struggles and clashes of ambition among politicians using state-level platforms to define national profiles.

We have defined and tested a range of possible explanatory variables that might explain differences in early state-level data collection and dissemination of plans, initial pandemic mitigation measures, and eventual stances after vaccination becomes possible amid a new surge of Delta variant infections. In each successive analysis, we introduce our dependent variable definitions and measures along with the sets of possibly relevant explanatory factors we examine for each outcome. When we held clear expectations for a particular outcome, we state as much within each section. In all of our explanatory models and accounts, we probe relevant political or institutional factors across the states in the context of appropriate economic and demographic controls (for a full list of variables, see table A.1).[1] We describe more specifics as we introduce each model, but our guiding principle was to use a cumulative

1. Our main controls include median income, 2016 Republican vote share, and population density. Our median income and population density measures come from the ACS 2018 5-year estimates. Population density is calculated as population per square mile.

COVID-19 case rate per ten thousand residents measured the month before the collection of the outcome variable.[2] In other words, if our outcome was measured as of July 2020, then we use case rate data as of June 1, 2020. Although our results are robust to multiple specifications of the COVID-19 case rate, we use this approach because it makes the most intuitive sense that public officials consider recent trends in the virus's spread when making policy decisions. Depending on the nature of the dependent variable, we run either ordinary least squares regression or logistic regression models. Full results are included in the appendix. For the binary outcome variables, we report the regression results in the appendix and discuss the average marginal effects in the text.[3]

We now move on to flesh out our successive sets of dependent variables and explore relevant explanatory factors for successive phases of U.S. state-level responses to the COVID-19 pandemic. We examine state response in three phases. First, we study state approaches to collecting and publicizing data early in the pandemic (March–July 2020), when public health experts and elected officials alike were scrambling to understand the virus and its impact. We turn to the second phase (March–December 2020), when the consensus on effective mitigation strategies was clear, to understand which states were more likely to implement research-backed public health policies.[4] In this phase, we also examine legislative responses to gubernatorial powers. In the third phase (January–December 2021), we examine initial mitigation strategies and conclude with a discussion of state actions during 2021, after vaccines became available and partisan control of the federal government changed. In the discussions to come, we report many null findings, patterns that do not fit inherited social science expectations about U.S. federal responses to crisis. Basically, we find that the severity of the COVID-19 crisis is not associated with the speed or intensity of policy response in either 2020 or 2021. Existing institutional capacities appear to have had a modest influence on early state-level tracking of the epidemic.

Partisan divides and shifting partisan dynamics through presidential regimes have been especially decisive. The role of party confirms existing findings from the state politics and federalism literatures on the filtering power of ideology in policy adoption. However, we refine the existing emphasis on party—it is not just party label but alignment with Donald Trump that best predicts state-level response during both the Trump (March–December 2020) and early Biden presidencies (January–December 2021). Those dynamics, moreover, turn out to be more than just Democrats versus Republicans, because on the Republican side intraparty factional differences have also influenced state-level responses, especially in 2021. These conclusions broadly echo findings elsewhere in this issue that the composition of state government at the outset of the pandemic influenced subsequent political and policy outcomes (Evans et al. 2022, this issue).

HOW STATES GATHERED AND PUBLICIZED DATA (MARCH–JULY 2020)

Public health officials in America's fifty states initially had limited knowledge of COVID-19 and thus scrambled to understand and communicate its contagiousness and modes of spread and devise reasonable mitigation strategies and effective therapies. Federal experts in the CDC did offer guidance, but their messages

2. We use the CDC's cumulative case count on the first day of the month and population estimates from the ACS 2018 5-year estimate divided by ten thousand to get the cumulative case rate per ten thousand residents.

3. We calculated the average marginal effects using the margins package in R. We set all continuous variables at their mean. When we present results, we specify how we defined the binary variables for partisan control of the legislature and the governorship when calculating each respective average marginal effect.

4. Note that this phase does overlap with Phase I in order to capture policy actions taken by states early in the pandemic. We believe having some overlap in the phases is important given the variation in when the pandemic hit each state most severely.

were often disrupted or muted by the Trump administration (Olorunnipa, Witte, and Bernstein 2020), leaving state governments to meld general federal guidance with their local context and preferences to determine appropriate responses to the pandemic.

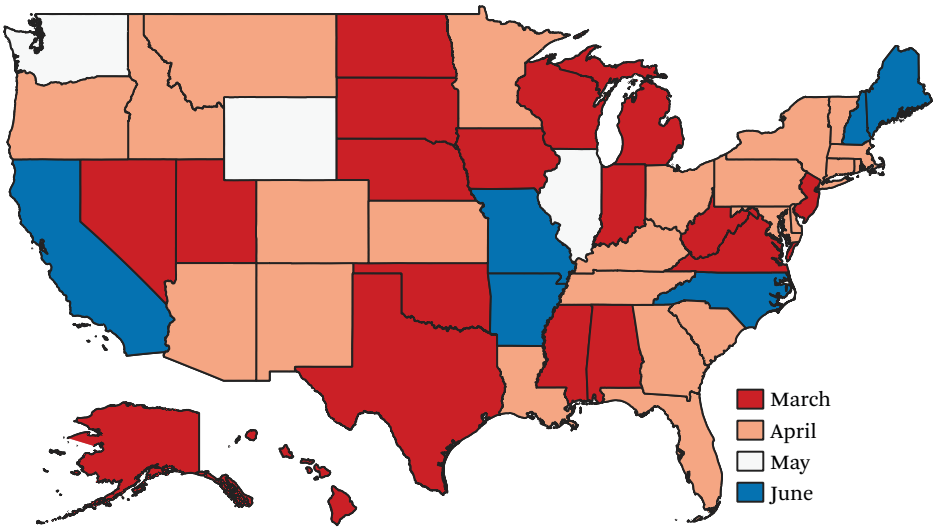
Although states vary in their capacities to collect data (Brambor et al. 2020; James 2022), state-level officials had no choice but to collect and disseminate information on COVID-19 from early on in the crisis. Proving real-time information useful to citizens, institutions, and local authorities became an essential function of state government. We expected that some existing capacity for data collection would facilitate rapid response to the COVID crisis. Even so, given the antiscience stances many Republicans trumpeted in the Trump era, it is reasonable to consider whether the nature and timing of data collection and dissemination depended on a state's ideological and partisan leanings. Fortunately, we can track information on such state activities using an internet archive, The Wayback Machine, and archives of gubernatorial press releases. Using these sources, we developed three measures, the first about the publication of a statewide county-level dashboards tracking of cases and deaths, the second about the publication of long-term reopening plans, and the third about the commitment to contingent economic reopening plans with clear, health-related thresholds for moving from one phase of reopening to the next.

County-Level Dashboards

By the six-month anniversary of virus's arrival in the United States, all fifty states had a regularly updated and publicly available dashboard documenting trends in COVID-19 cases and deaths, but the speed with which these dashboards became available varied. We documented the publication date for each state's COVID dashboard using The Wayback Machine (Internet Archive, n.d.). This gave us the date and time that each dashboard's URL became public (see figure 1).

Four states—Alaska, Mississippi, South Dakota, and Virginia—published the first dashboards on March 6, 2020, forty-four days after the first documented case in the United States. Most states published their dashboards in April and the last ones, from California and Maine, in late June 2020. The average state published about 2.5 months (eighty days) after the country's first documented COVID-19 case.

Figure 1. Month of URL Publication for Public COVID Dashboard



Source: Authors' calculations based on data from The Wayback Machine (Internet Archive, n.d.).

Long-Term Reopening Plans

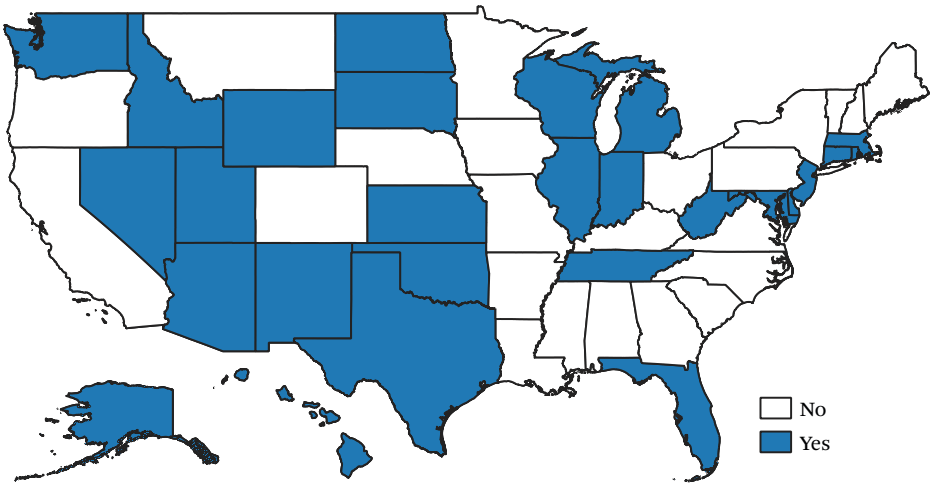
Comparing state data collection and publication early in the pandemic offers some insight into the type and quality of information available to officials making decisions. We also wondered about the extent to which public officials systematically incorporated this information into a coherent pandemic response plan. The publication of long-term reopening plans offers some evidence of whether public officials anticipated using data to respond to the pandemic.

Many governors outlined long-term reopening plans within the first six months of the pandemic. These plans outlined phases of reopening state economies, guidance for businesses, and suggestions for guiding the public, industry, and government through the uncertainty of the pandemic. We counted a state as having a long-term plan if the state website linked to a standalone document outlining reopening (and in some cases, reclosing) phases, along with guidance on how to partake safely in public life during each phase. Twenty-six states had published a long-term plan by July 2020 (see figure 2). Interestingly, many of the plans reflected state motifs, themes, and traditions in their title, text, and graphic design (see table B.1).

Contingent Reopening Thresholds

Some governors committed to progressing only through reopening phases when key measures—such as testing positivity rate, hospital capacity, ICU bed availability, and number of new cases per day—reflected a lower risk of contracting the virus and a high probability that the health system could handle any new cases. We call these contingent reopening thresholds or contingent thresholds. For example, in June 2020, Rhode Island committed to moving to the next phase only in the event of a "14-day downward trend in the number of cases OR a 14-day stable trend in declining hospitalizations" (Rhode Island 2020, 11). The Rhode Island plan, like other states with thresholds, also insisted on having at least 30 percent of ICU hospital bed space available before progressing to the next phase. Theoretically, committing to specific thresholds for making substantial public policy decisions (such as opening certain businesses or allowing interstate travel without quarantines) without the knowledge of when the state will reach them offers an unusual example of public officials constraining their future selves to data-driven decision-making. Advertising the objective thresholds to induce compliance with pandemic measures creates an agreement (albeit

Figure 2. States with Advertised Long-Term Reopening Plans, July 2020



Source: Authors' calculations based on state websites.

informally) between the public and public officials regarding the prioritization of economic and health outcomes.

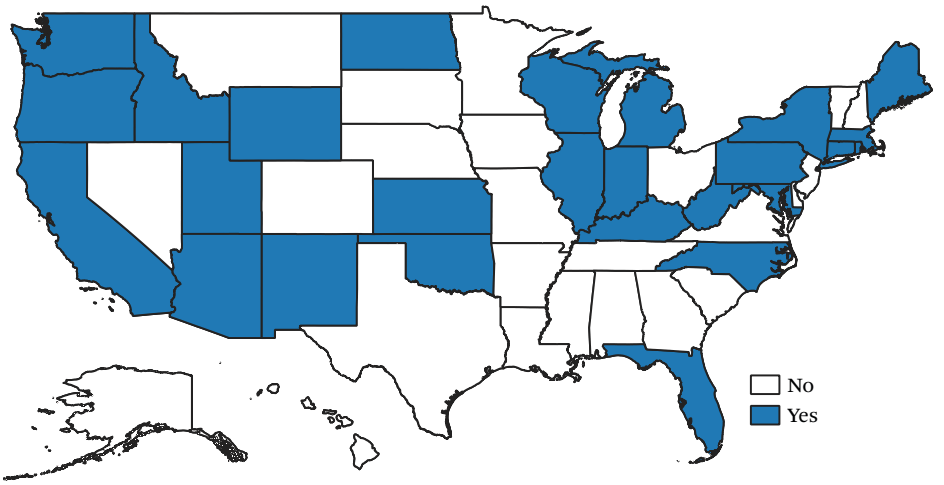
Twenty-six states advertised contingent thresholds for at least some portion of their reopening phases (see figure 3). Although this is the exact same number of states that published long-term plans, the two lists are not perfectly aligned (see table B.1). Some states, such as Texas, published detailed reports outlining the guidance for reopening businesses and government but did not commit ex ante to metrics that would trigger progression or regression through the opening phases. Others, such as California, did not publish a long-term plan but did put reopening thresholds on its website indicating when the governor would consider moving the state to the next phase of reopening.

Explanations of Dashboards, Plan Publication, and Thresholds

What explains these state-level variations in data tracking and publication of reopening plans? Our mapping and multivariate models controlling for region do not suggest any consistent or coherent regional clustering with publication of data. Partisan leanings and divides could, of course, have played a role. Beyond politics, however, the states' existing capacities for data collection and analysis may have influenced responses (James 2022). Specifically, the collection and publication of data could be the result of state-level infrastructures and public health system resources before COVID-19. We test both sets of possible explanations and find that partisanship does not account for variations in data collection and publication of data and plans (for the full results and models, see tables D.1–D.10).

To measure variations in dashboard publication, we count the time to publication as the number of days from the first documented case in the country—January 22, 2020—to the first date the URL existed according to the Wayback Machine. For each additional health agency, it took an additional three days to publish the COVID dashboard, controlling for COVID case rates as of April 1, 2020, though this variable only reaches statistical significance at the 0.1 level. No relationship is apparent between party control of the executive or legislative branches and the time to dashboard publication. These results may suggest that coordinating the data collection and the technology to regularly update a county-level dashboard was facilitated by more centralized health agencies. Larger numbers of health agencies may have

Figure 3. States with Advertised Contingent Reopening Thresholds, July 2020



Source: Authors' calculations based on state websites.

slowed responses. The null results for partisanship (either of the governor or the legislature) may reflect the insulated nature of those charged with collecting and maintaining public health dashboards; alternatively, they could reflect the fact that dashboards were created early in the pandemic, too early for the associated data collection to have been radically politicized.

Next, we turn to explaining reopening plans as published by July 2020 and include case rates as of June 2020, just before publication. Contrary to expectation, we do not find any partisan or bureaucratic explanation for which states published long-term reopening plans. Given the relatively low political cost and potential political benefit of publishing a reopening plan, both Republican and Democratic governors may have viewed published plans as a valuable signal that their administrations had roadmaps for emerging from the pandemic. Of course, the detailed content of the long-term plans from governors of different party affiliations diverge in ways our overall variable coding does not capture. In this study, we did not systematically evaluate plan contents, but doing so in the future may be worthwhile to better understand how governors of different partisan stripes described the pandemic and explained their approaches to addressing the many economic and social challenges it created.

Finally, we turn to findings about state advertisements of specific economic reopening thresholds during 2020. Beyond simply posting a general economic reopening plan, governors could choose to invoke and publicize data-based, contingent reopening thresholds. However, choosing to make such specific commitments posed political risk for state leaders. Governors' responses to future pandemic developments could be constrained by specific data markers that supposedly had to be met before businesses could expand their operations, and specific commitments would also expose governors to political controversy. Although such actions can signal that the executive is observing public health guidance and using data as the primary indicator for evaluating conditions safe for reopening (potentially useful political signals), these commitments also narrow future options and gamble with shifting political pressures.

As it turns out, our statistical exploration shows that the number of health agencies in states, but not the governor's party, was positively associated with the publication of contingent thresholds as of July 2020, controlling for case rates as of June 2020. Each additional health agency in a state is associated with a 6 percent increase in the probability that the governor published contingent thresholds.[5] We cannot be sure what to make of this finding, but it could be that more agencies created greater pressures on governors of many political stripes to leverage public health data in announced choices for regulating economic activity during such an obvious public health crisis. Interviews with state-level officials could illuminate the mechanisms behind this finding.

STATE MITIGATION RESPONSES (MARCH–DECEMBER 2020)

Next, we turn to major efforts state authorities made to mitigate viral spread and illnesses during 2020, when vaccinations were not yet available and mitigation measures were paramount. State executive branches were responsible for implementing any emergency measures deemed necessary to contain the spread of COVID-19. All U.S. governors have some capacity to invoke additional powers during declared emergencies, and all fifty of them had in fact declared a state emergency by May 2020 (FEMA 2021). Many of these emergency measures directly impacted lives and livelihoods of state residents. We examine how, in the absence of federal action, governors varied the implementation of the two main strategies to limit the spread of COVID-19––specifically, mask mandates to require people to wear masks in public and stay-at-home orders to limit travel, congregation, and public activities for all except those performed by designated essential workers.

Mask Mandates

As the pandemic began raging, medical professionals and national public health officials were sending mixed signals about civilian mask

5. This result holds regardless of the partisan control of the governorship or the legislature.

wearing. Although scientists knew airborne particles were at least one method of spread, Dr. Anthony Fauci and others were concerned about the supply of personal protective equipment for medical professionals, and thus were not originally encouraging mask wearing among the public. By April 3, 2020, however, the CDC clarified its position and recommended cloth masks for civilian use (see Brewster 2020). Shortly thereafter, mask wearing became politicized, as President Trump refused to wear one (Victor, Serviss, and Paybarah 2020) and other conservative nonexperts asserted that requiring people to do so was an unnecessary infringement on personal liberty and an inappropriate response to an overblown threat of a virus no more dangerous than the flu (Chiu 2020).

By July 2020, mask wearing was an encouraged mitigation strategy, and the CDC and a plethora of other public health officials repeatedly argued that masking was one of the simplest and most effective strategies for preventing the spread of the virus. Yet despite this consensus, fewer than half of governors chose to implement statewide mask mandates (see figure 4). Coastal states with high-density cities, like New York City, Boston, Seattle, and several places in California, were among the first to experience crippling rises in cases that far surpassed the availability of medical equipment and hospital capacity. The initial clustering of mask mandates along the coasts largely aligns with these patterns of early case counts.

However, by the fall and winter of 2020, the crisis had seeped into the middle of the country, and Midwestern states began experiencing substantial increases in cases and deaths. One year into the pandemic, many more states had implemented mask mandates. However, more than ten states never implemented a statewide mandate in 2020, including Florida (Weber 2021) and Oklahoma (Jones 2021), which have had substantial spikes in COVID case counts and deaths.

Stay-at-Home Orders

Facing mixed compliance with mask wearing and, again, uncertainty about the mechanisms for the virus's transmission, local and state officials saw keeping people in their homes as an effective strategy for limiting its spread. Many governors also implemented stay-at-home orders, imposing curfews, business closures, and limits on public gatherings. As of December 2020, all but seven governors had implemented a statewide stay-at-home order at some point as part of their emergency response (see figure 5).[6] On average, the statewide stay-at-home orders lasted sixty days. Mississippi, at twenty-four days, had the shortest, and California holds the record for the longest, at 259 days, closely followed by New Mexico at 251 days.

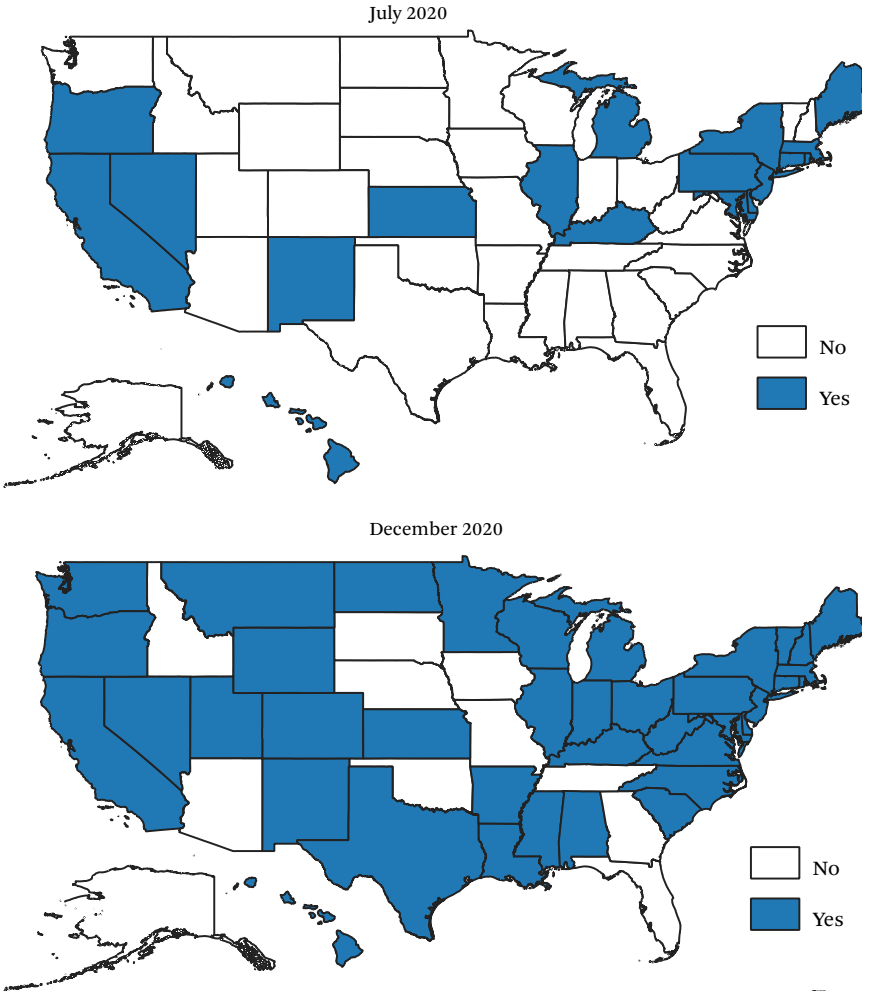
What Explains Cross-State Mitigation Efforts

Mask mandates and stay-at-home orders imposed noticeable changes and costs to state residents' daily routines, economic opportunities, and even mental health. We might therefore expect such measures to be salient and garner more reaction from the public, making such moves more politically risky and controversial along partisan lines than simply posting dashboard data or advertising reopening plans or contingent thresholds. Thus we expected to find more clear partisan patterns to the implementation of mitigation strategies relative to those of data collection and publication.

We use various measures of partisanship and party loyalties in this article. Obviously, we code the partisan identity of the governor and the make-up of state legislatures. Beyond that, however, we account for a core reality of the present juncture––that the Republican Party, especially, is riven by growing internal divides about loyalties to the person and ever-changing public pronouncements of Donald Trump, the president during 2020 and early 2021 and then a highly politically visible former president active in shaping GOP politics for the future. The Trump ascendancy during the COVID crisis intensified and highlighted divides within the Republican Party, including those involving various Republican governors. To categorize governors based on their alignment with Trump's approach to the pandemic, we conducted Google searches for each governor's

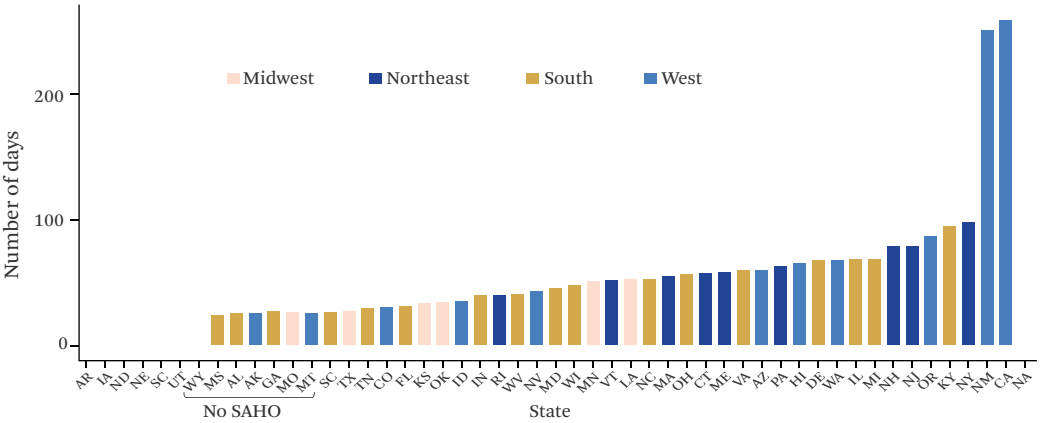
6. Based on data from the National Governor's Association, which has been tracking state-level response.

Figure 4. Statewide Mask Mandates



Source: Authors' calculations based on *NYT* Reopening Tracker (*New York Times* 2020).

Figure 5. Length of Stay-at-Home Orders, 2020



Source: Authors' calculations based on *NYT* Reopening Tracker (*New York Times* 2020).

name and the terms "Trump" and "COVID." We examined the top fifty news results for each governor to identify if and how each governor had publicly commented on the president's handling of the pandemic. Some in the party, such as Doug Ducey of Arizona and Ron DeSantis of Florida, quickly became Trump supporters and have followed Trump's lead on COVID policy, actively praising him for his handling of the crisis and invoking conspiracy theories and false statements to undermine public health guidelines for mitigating the virus. We call these governors the pro-Trump Republicans (represented by the R1 variable in our models). Other Republican governors, however, such as Charlie Baker of Massachusetts and Mike DeWine of Ohio, publicly denounced Trump's handling of the pandemic. We call these the Trump skeptics (represented by R3 in our models). Last are those who have been careful to neither openly criticize nor laud Trump's approach. Given that these governors avoided commenting on the public health response of their party's leader during an unprecedented global pandemic, or sticking their head in the metaphorical sand, we refer to them as the Ostrich Republicans (for a full list of governors and categories, see table C.1).

Turning to our explanatory findings about partisanship and mitigation strategies, we find that the governor's partisanship did in fact influence the implementation and length of mask mandates and stay-at-home orders. These findings echo our existing understanding of state policy response in a federal system. However, we provide evidence for additional nuance of the role of party and ideology, showing that internal divisions within the GOP also affect the *length* of the mandates. Notably, we do not find any significant relationship between the severity of COVID within a state and the type or length of mitigation strategies implemented. This finding undermines the traditional justification for federalism that, given the opportunity, states will respond to local conditions when developing and implementing policies.

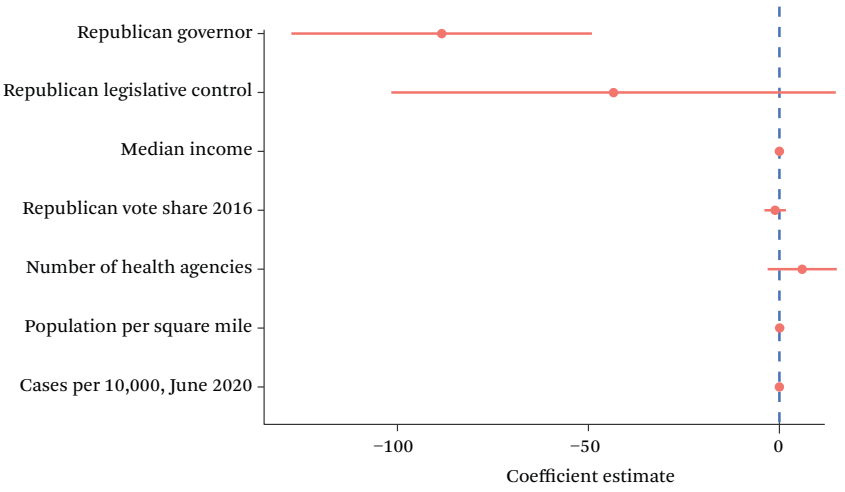
For variations in the implementation of mask mandates by July 2020, we find a statistically significant relationship between the governor's party and whether this step was taken, controlling for COVID rates in the state in the month prior. Compared with Democratic governors, Republican governors facing Republican-dominated legislatures were 38 percent less likely to implement a statewide mask mandate during the first seven months of the pandemic controlling for the severity of the COVID cases in their state as of June. Charlie Baker of Massachusetts and Larry Hogan of Maryland were the only Republican governors to implement a mask mandate by July 2020. However, by December 2020, 21 more states had implemented mask mandates, and at this point the relationship between the governor's party and mask mandates disappears. It may be that outbreaks during the fall and winter months forced governors' hands and led early resisters to adopt a new policy. An alternative explanation is that the new presidential administration represented a turning point toward depoliticizing masks, at least temporarily.

Republican-led states not only were less likely to have a mask mandate, when they did have one it was also significantly shorter than those in Democratically led states. On average, Republican governors imposed mandates nearly three months (eighty-eight days) shorter than those of their Democratic counterparts (see figure 6). The number of days a state remained under a statewide mask mandate in 2020 also highlights differences in approaches among Republican governors.[7] As shown in figure 7, compared with Democratic governors, states led by pro-Trump and Ostrich governors had mandates on average four months shorter (121 and 119 days shorter respectively). Trump skeptics on average enforced mandates that were forty-two days shorter than their Democratic counterparts, but this difference is only significant at the 0.1 level.

A clear distinction between Trump skeptic governors and pro-Trump and Ostrich Republicans remains when we compare the length of

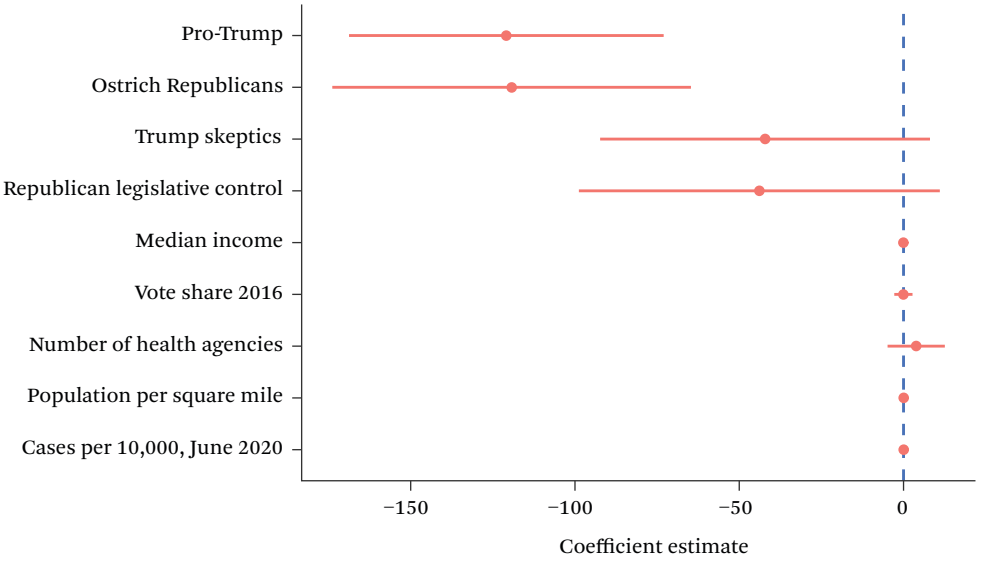
7. Mississippi was the only state that started a mandate in 2020 to end it before the end of the year. Thus, to calculate the length of time a state was under a mandate in 2020, we counted the number of days between the start of each mandate and January 2, 2021.

Figure 6. Length of Mask Mandates in Days (OLS)



Source: Authors' calculations.
Note: Democratic governors are the reference category for governor partisanship.

Figure 7. Length of Mask Mandates in Days with Detailed Republican Categorization (OLS)

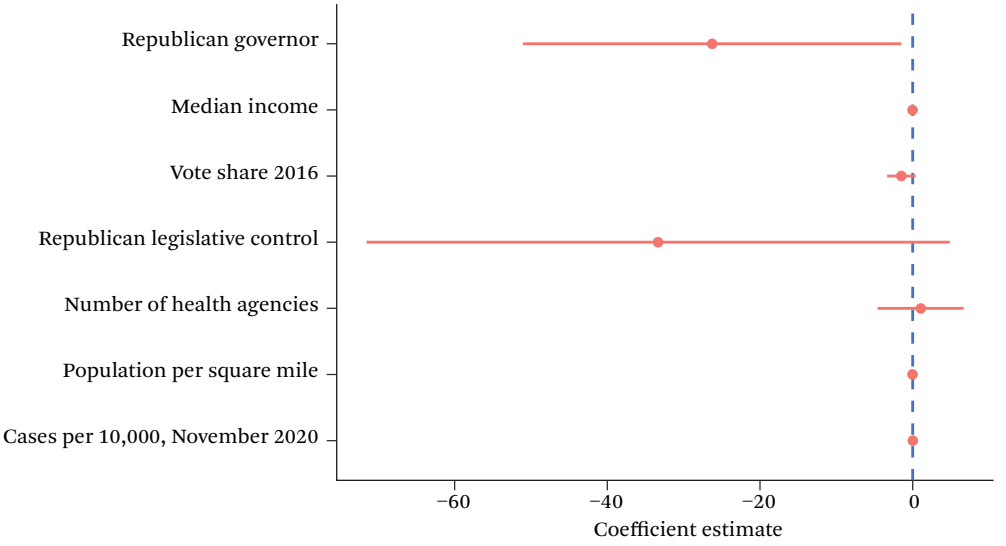


Source: Authors' calculations.
Note: Democratic governors are the reference category for governor partisanship.

mask mandates using our detailed Republican party categorization. The difference between Trump skeptics and Democratic governors is not statistically significant, but Pro-Trump and Ostrich Republican governors implemented mandates four months shorter (120 and 119 days, respectively) on average than their Democratic counterparts' (see figure 7).

More states implemented stay-at-home orders than implemented mask mandates in the first year of the pandemic, but partisan patterns remain. All twenty-four Democratic gov-

Figure 8. Length of Stay-at-Home Orders in 2020 in Days (OLS)



Source: Authors' calculations.
Note: Democratic governors are the reference category for governor partisanship.

ernors implemented home orders, and all seven of the states that did not were led by Republicans.[8] Furthermore, orders in Republican-led states were nearly a month shorter than those in Democratic-led states, controlling for legislative control and COVID case rates as of November 2020 (see figure 8).[9]

We also find significant differences in the length of stay-at-home orders among the three types of Republicans. Compared with Democratic governors, pro-Trump governors implemented stay-at-home orders more than thirty-seven days shorter, on average (see figure 9). Ostrich Republicans are also associated with stay-at-home orders that were a month shorter than those of Democratic governors, though this is statistically significant only at the .1 level, and we find no meaningful distinction between Democrats and Trump skeptics.

INTERBRANCH BATTLES

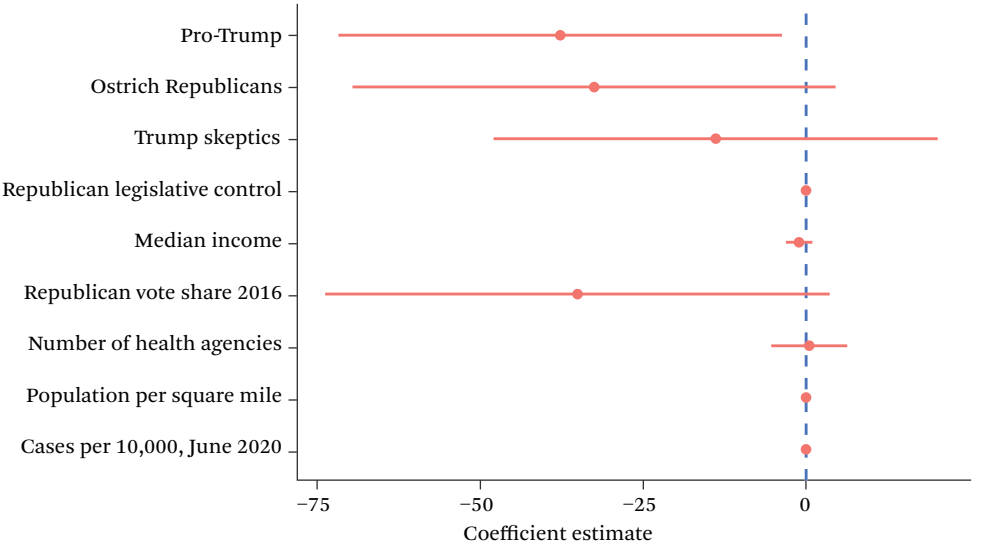
In the ideal expression of federalist response to a pandemic, the branches of state government would cooperate to assess and respond to the particulars of the crises at the local level. Although this may have occurred in some states, in others the legislative branch prioritized limiting the emergency powers of the executive even while cases and deaths in the state rose rapidly. The National Council for State Legislatures has systematically tracked the introduction of state-level legislation aimed at curtailing executive power.[10] We find clear partisan patterns to these occurrences. This sug-

8. Collinearity between the independent and dependent variables of interest precludes the use of multivariate logistic regression in modeling this relationship.

9. Interestingly, the length of stay-at-home orders is the only model in which cumulative COVID case rate is correlated with our outcome of interest. This said, the substantive impact of COVID case rate is extremely small, a coefficient of 0.005 per ten thousand residents, meaning that a state would see a single day increase in its mandate length only after an additional two million cases.

10. See NCSL, "Legislative Oversight of Emergency Executive Powers," July 14, 2022, https://www.ncsl.org/research/about-state-legislatures/legislative-oversight-of-executive-orders.aspx (accessed July 22, 2022). The NCSL also tracks the fate of each piece of legislation. We focus on the introduction of legislation in this article, given that some of the attempts are still pending at the time of writing.

Figure 9. Length of Stay-at-Home Orders in 2020 in Days with Detailed Republican Categorization (OLS)



Source: Authors' calculations.
Note: Democratic governors are the reference category for governor partisanship.

gests that partisan divides across branches of state government can hinder the idealized process of responsive state policymaking on which federalism relies. Legislative attempts at curbing gubernatorial power during 2020 also highlight the inter-Republican divisions we observed in the implementation of mitigation strategies.

State legislatures facing Republican governors were overall less likely to introduce legislation to curb executive power than legislatures paired with Democratic governors. This is perhaps unsurprising given that Republican governors were less likely to use their executive powers to impose onerous COVID mandates. Specifically, Republican-led legislatures paired with a Republican governor were 46 percent less likely to have introduced executive power curbing legislation than when paired with a Democratic governor. Majority Democratic legislatures were 52 percent less likely to introduce curbing legislation for Republican governors versus Democratic governors.

Patterns within the Republican Party further show intra-Republican conflict. Legislatures were about half as likely to have attempted curbing the powers of pro-Trump governors than of Democratic governors. The difference between curb attempts for Ostrich and Trump skeptic Republican governors and Democratic governors is not statistically significant, suggesting that legislatures in general may have had more tolerance for formal gubernatorial emergency powers as long as the governor was openly hostile to mitigation strategies (see table D.10 in the appendix for more details).

We can now assemble our findings about initial 2020 state responses to the COVID-19 pandemic. Table 1 summarizes the relationships between our key variables of interest—partisan control of state government and agency structure—and our outcomes of interest—data collection and publication, mitigation strategies, and legislative attempts to curb executive power. Our data show that by and large, partisan control of state government is associated with the implementation of different mitigation strategies and legislative power grabs, but not with the collection and publication of data. Existing state capacity instead plays a role in some state-level data collection and publication. The number of health agencies may be negatively associated with time to dashboard publication but have no impact on the publication of long-

Table 1. Summary of Findings for 2020 Outcomes

Outcome	Republican Governor	Alignment with Trump	Republican-Controlled Legislature	Number of Health Agencies
Data collection and publication				
Time to dashboard publication				–[a]
Publication of long-term plans				
Contingent thresholds				+
Mitigation strategies				
Mask mandates	–	–[b]		
Length of mask mandates	–	–		
Stay-at-home orders	–[b]	–		
Length of stay-at-home orders	–	–		
Interbranch dynamics				
Legislature attempt to curb executive power	–	–		

Source: Authors' calculations.

Note: Each model also controlled for population density, partisan control of legislature, 2016 Republican vote share, median income, and COVID case rates per ten thousand residents.

[a] Although this result only reaches statistical significance at the 0.1 level, we think it is substantively meaningful, and worth further investigation thus we include it in the summary table.

[b] Collinearity between the independent and dependent variables of interest precluded using multivariate modeling for this relationship. This result relies on comparisons of counts between Democrat and Republican governors who implemented mandates.

term plans. The number of agencies, however, is positively correlated with the use of contingent reopening thresholds. More public health agencies may have translated into more internal pressure in the executive branch to use data-driven decision rules. Our models also suggest that the governor's partisan affiliation is associated with the use of mitigation strategies, but we find no effect of the legislature's partisan make up. Confirming variation in COVID response within the Republican Party, we also find that among Republican governors, alignment with Trump is associated with shorter restrictive mandates.

LATE RESPONSE: THE BIDEN, VACCINE, AND DELTA ERA (JANUARY–SEPTEMBER 2021)

In the second year of the pandemic, the context of decision-making changed substantially. In late January 2021, President Joe Biden took office in the White House and brought science and urgency to bear on the challenges of COVID-19. Although state-level offices were also on the ballot in 2021, there were only two changes in partisan control: Republican Greg Gianforte took over the governorship from Democrat Steve Bullock in Montana and Republicans gained control of the New Hampshire statehouse. States were following CDC guidelines and rapidly expanding vaccine eligibility. The developments combined with the impending summer weather suggested that Americans might be able to return to some semblance of normal life by the fall. However, by July 2021, the emergence of the highly contagious Delta variant and plateauing vaccination rates called this progress into question.

In addition to a changing public health context, state elected officials faced a new approach to the pandemic from the federal government. Just as Democrats lauded the more proactive and fact-based approach Biden and his team brought to the pandemic, many Republicans previewed their aversion to any national attempts to impose COVID restrictions on their states. Yet, as Delta surged and the start of the school year loomed, some governors sought to

Table 2. Governors Who Banned Mask Mandates as of September 2021

State	Governor	Republican Type
Arizona	Doug Ducey	Pro-Trump
Florida	Ron DeSantis	Pro-Trump
Georgia	Brian Kemp	Pro-Trump
Iowa	Kim Reynolds	Ostrich
Montana	Greg Gianforte	Ostrich
South Carolina	Henry McMaster	Pro-Trump
Tennessee	Bill Lee	Ostrich
Texas	Greg Abbott	Pro-Trump
Utah	Spencer Cox	Trump skeptic

Source: Authors' calculations.

tie the hands of local officials in backtracking to more restrictive COVID policies.

As of July 9, 2021, the CDC changed its recommendation on masking in schools, stating that vaccinated teachers and students did not need to mask indoors (Stobee and Binkley 2021). However, just over two weeks later, on July 27, the agency reversed its recommendations, citing the rise in cases and the contagiousness of Delta, and recommended masking indoors for all vaccinated individuals in schools (Sparks 2021).

Reinstating mask mandates, particularly in schools, was especially politicized. School board meetings leading into the 2021 school year reflected vitriolic debates between public health advocates and those arguing that mask mandates infringed on student and parent liberties (West, Johnson, and Linnane 2021). Some states committed to allowing local school districts to make decisions about masking based on local conditions; governors of other states proactively banned local or school mandates, against CDC recommendations (Durkee 2021). As of September 15, 2021, nine states had active bans on localities or school districts implementing mask mandates (see table 2). Republican governors lead all nine of these states.[11] Eight are pro-Trump and Ostrich governors; all but one Trump skeptic governor have refrained from tying the hands of local officials. The exception is Spencer Cox of Utah, who in late August 2021 deliberated signing an executive order to roll back the state law that banned local or school mask mandates, which he had signed in May before Delta became widespread.

On September 9, 2021, President Biden announced a sweeping vaccination and testing mandate that affected all federal workers, federal contractors, and private businesses with more than one hundred employees. Federal workers and contractors are required to be vaccinated, and employees of private businesses must be vaccinated or submit to weekly COVID testing. Twenty-one of the twenty-seven Republican governors denounced the mandates within days and in some cases within hours of Biden's announcement (Jackson 2021). Reflecting their continual opposition to the use of science-backed mitigation strategies, 100 percent of pro-Trump and 88 percent of Ostrich Republicans spoke against Biden's plan. Only 28 percent of Trump skeptics did so. All but one of six Republican governors who refrained from commenting were Trump skeptics; the exception was Bill Lee of Tennessee, whom we coded as an Ostrich Republican (see table 3 for full categorizations).

In 2021, state legislatures continued to defy the logic of federalism and limit the powers of the executive branch, adding local public health officials as targets. As shown in table 4, twenty-six state legislatures passed restrictions on the powers of public health officials (Weber and Barry-Jester 2021). Twenty-two of the twenty-six legislatures have Republican major-

11. Perfect collinearity between the independent and dependent variables of interest precludes the use of multivariate logistic regression in modeling this relationship. This limitation applies to all models for the 2021 outcome variables, thus we present tables showing partisanship and policy choices instead of regression results.

Table 3. Governors Denouncing September 2021 Vaccine Mandate

State	Governor	Republican Type
Alaska	Mike Dunleavy	Pro-Trump
Alabama	Kay Ivey	Pro-Trump
Arkansas	Asa Hutchinson	Ostrich
Arizona	Doug Ducey	Pro-Trump
Florida	Ron DeSantis	Pro-Trump
Georgia	Brian Kemp	Pro-Trump
Iowa	Kim Reynolds	Ostrich
Idaho	Brad Little	Ostrich
Indiana	Eric Holcomb	Ostrich
Missouri	Mike Parson	Ostrich
Mississippi	Tate Reeves	Ostrich
Montana	Greg Gianforte	Ostrich
North Dakota	Doug Burgum	Pro-Trump
Nebraska	Pete Ricketts	Pro-Trump
Ohio	Mike DeWine	Trump skeptic
Oklahoma	Kevin Stitt	Pro-Trump
South Carolina	Henry McMaster	Pro-Trump
South Dakota	Kristi Noem	Pro-Trump
Texas	Greg Abbott	Pro-Trump
West Virginia	Jim Justice	Trump skeptic
Wyoming	Mark Gordon	Ostrich

Source: Authors' calculations.

ities, and legislatures in fourteen of the twenty-six states have also introduced legislation to curb the governor's emergency powers during the pandemic. Well into 2021, partisan patterns persisted.

Republican governors were far more likely to tie the hands of local lawmakers and experts than their Democratic counterparts were, both when it came to restricting schools or localities from mandating masks and when it came to passing restrictions on public health officials. Despite decentralization being a long-standing tenet of the GOP platform, many Republican governors acted proactively to restrict the ability of local entities to respond to the pandemic in their jurisdiction in the way they best saw fit. Most Republican governors supported Trump's "locally executed, state managed, and federally supported" approach to handling the pandemic––yet many also instituted bans on local governments or school districts mandating masks. This indicates that the principle of federalism, or decentralization in the case of the Republican Party, is often implemented selectively in accordance with partisan priorities.

CONCLUSION

In this article, we have taken account of the centrality of state governments in shaping the overall U.S. response to the COVID-19 pandemic in 2020 and 2021. We have sought to describe important variations in state-level responses at various stages, from early efforts to track the growing pandemic county by county to early deployments of state authority to limit the spread of a deadly virus, to ongoing state responses to new surges of COVID spread even after effective vaccines were available for statewide and nationwide use by all adult Americans. To make sense of the timing and variety of state responses, we have paid careful attention to partisan compositions of state governments as well as to the divisions between Republicans who either publicly identify with their party's controversial head or signal some distance from him. Along with variables referring to partisanship and factional loyalties––

Table 4. States That Have Attempted to Curb Power of Public Health Officials

State	Governor	Party	Legislative Control
Alabama	Kay Ivey	Pro-Trump	Split
Alaska	Mike Dunleavy	Pro-Trump	Republican
Arizona	Doug Ducey	Pro-Trump	Republican
Arkansas	Asa Hutchinson	Ostrich	Republican
Florida	Ron DeSantis	Pro-Trump	Republican
Idaho	Brad Little	Ostrich	Republican
Indiana	Eric Holcomb	Ostrich	Republican
Iowa	Kim Reynolds	Ostrich	Republican
Kansas	Laura Kelly	Democrat	Republican
Kentucky	Andy Beshear	Democrat	Republican
Louisiana	John Bel Edwards	Democrat	Republican
Michigan	Gretchen Whitmer	Democrat	Republican
Missouri	Mike Parson	Ostrich	Republican
Montana	Greg Gianforte	Ostrich	Republican
Nevada	Steve Sisolak	Democrat	Democrat
New Hampshire	Chris Sununu	Trump skeptic	Democrat
New York	Andrew Cuomo	Democrat	Democrat
North Dakota	Doug Burgum	Pro-Trump	Republican
Ohio	Mike DeWine	Trump skeptic	Republican
Oklahoma	Kevin Stitt	Pro-Trump	Republican
South Carolina	Henry McMaster	Pro-Trump	Republican
South Dakota	Kristi Noem	Pro-Trump	Republican
Tennessee	Bill Lee	Ostrich	Republican
Texas	Greg Abbott	Pro-Trump	Republican
Utah	Spencer Cox	Trump skeptic	Republican
Wyoming	Mark Gordon	Ostrich	Republican

Source: Authors' calculations.

especially for state governors—we have also heeded classic political science literatures about the diffusion of policy innovations and theories about cross-level cooperation within U.S. federalism.

We first examined how states collected and published data in the midst of an unprecedented public health emergency caused by a new and therefore, at least initially, poorly understood virus. We find that existing state capacities, not partisanship, offer modest explanations for how quickly states gathered and publicized data in this first phase. Our findings also suggest a more nuanced relationship between state capacity and data collection than exists in the current literature. Decentralized public health agencies may hinder initial data-collection efforts, but more people and agencies in public health may provide additional pressure for the executive to leverage specific data in her decision-making.

COVID-19 policymaking in the United States—most of it through the fifty states and their dealings with local governments in their jurisdictions—turns out not to fit traditional theoretical expectations about divisions of authority, cooperative dynamics, and imitation of best practices across states in U.S. federalism. Across the fifty states, governors and legislatures all devised policy responses on the fly, largely in response to party-centered partisan and factional dynamics. The Democratic versus Republican affiliations of presidents and governors turn out to be the main drivers of government responses at each phase. On the Republican side, even the partisan label as such is not enough to make sense of state-level responses that have shifted with little scientific

or principled ideological rationale. Fifty state governors have been the key players in America's unfolding and uneven responses to the COVID-19 pandemic, and what each has been willing to do, when, depends on the party of the governor, on which party controls Washington, D.C., and on factional struggles within the Republican Party.

Further, complicating the expectations of traditional federalism are interbranch battles for control over state policy. Effectively shut out of decision-making about COVID response, legislatures have sought to claw back authority from the governors and their public health officials who used emergency powers most liberally. These efforts further reflect the inter- and intraparty dynamics we documented with the implementation of mitigation policies.

When a public health emergency occurred in America, the Republican Party was not only in charge of most executive offices in Washington, D.C., and state capitols. It was—and continues to be—a party very much in the throes of rapid shifts in outlooks and leadership at all levels, and the GOP's internal struggles during these shifts have had an outsized influence on state and local governments' willingness and capacity to counter the COVID-19 pandemic.

APPENDIX

Table A.1. Data Description and Sources

Variable	Description	Values	Source
State	State Abbreviation	Text	N/A
Governor.2020	Did the governor in January 2020 identify as a Republican?	0,1	Ballotpedia
Governor.2021	Did the governor in January 2021 identify as a Republican?	0,1	Ballotpedia
Party_Detailed_2020	Detailed party categorization using three categories of Republicans in 2020	D, R1, R2, R3	Ballotpedia & author coding
Party_Detailed_2021	Detailed party categorization using three categories of Republicans in 2021	D, R1, R2, R3	Ballotpedia & author coding
LegControl_R_2020	Did Republicans control both houses of the legislature in January 2020? Split legislatures coded as 0	0,1	Ballotpedia
LegControl_R_2021	Did Republicans control both houses of the legislature in January 2021? Split legislatures coded as 0	0,1	Ballotpedia
Voteshare_R_2016	Voteshare for Donald Trump in the 2016 presidential election in percentage points	30-68	*New York Times* election results
Pop_Sq_Mi	Population per square mile	1.3-1207.7	ACS 2018 5-year estimates
CasesPer10K_June20	Cumulative cases per 10,000 residents per state, calculated as of June 1, 2020	6.3-202.9	Case count from CDC; population count from ACS 2018 5-year estimates
CasesPer10K_Feb21	Cumulative cases per 10,000 residents per state, calculated as of February 1, 2021	194.1-1310.2	Case count from CDC; population count from ACS 2018 5-year estimates

Table A.1. (*continued*)

Variable	Description	Values	Source
State	State Abbreviation	Text	N/A
Median_Income	State-level median income	54933-99403	ACS 2018 5-year estimates
Creation_date	First date the state's dashboard URL was publicly available according to the Wayback Machine	3/6/20-6/12/20	The Wayback Machine
Days_to_Dashboard	Number of days from first detected case in the U.S. (1/22/20) to the publication date	44-142	Authors' calculation based on Wayback Machine dates
LTP	Did the state's website have a standalone document that outlined different phases of re-opening and principles guiding the state's response to the pandemic?	0,1	State websites
Thresholds	In either the state's long-term plan or on the state's website, did the state advertise specific thresholds for moving from one re-opening phase to another	0,1	State websites
Mask_720	Had the state implemented a statewide mask mandate as of July 2020?	0,1	*New York Times* state COVID info pages
Length_Mandate_2020	Number of days the mandate lasted, calculated by taking the difference between the end and start dates	0-336	Authors' calculation based on *New York Times* state COVID info pages
Health_Agencies	The number of independently listed agencies on a state's website that contain the word "health"	1-9	State agency directories
SAHO	Binary indicator for whether the state ever had a statewide stay-at-home order	0,1	National Governors' Association
SAHO_Length	How many days did the stay-at-home order last	0-255	Authors' calculation based on dates from National Governors' Association
CurbAttempted2020	Did the state legislature introduce legislation to curb executive power in 2020?	0,1	National Council for State Legislatures
LocalMaskBan_Sept21	Did the state have a ban on local or school district mask mandates as of September 15, 2021	0,1	Authors' calculations based on media archives
RestrictPublicHealth	Did the legislature restrict the power of public health officials as of September 15, 2021?	0,1	Kaiser Health News

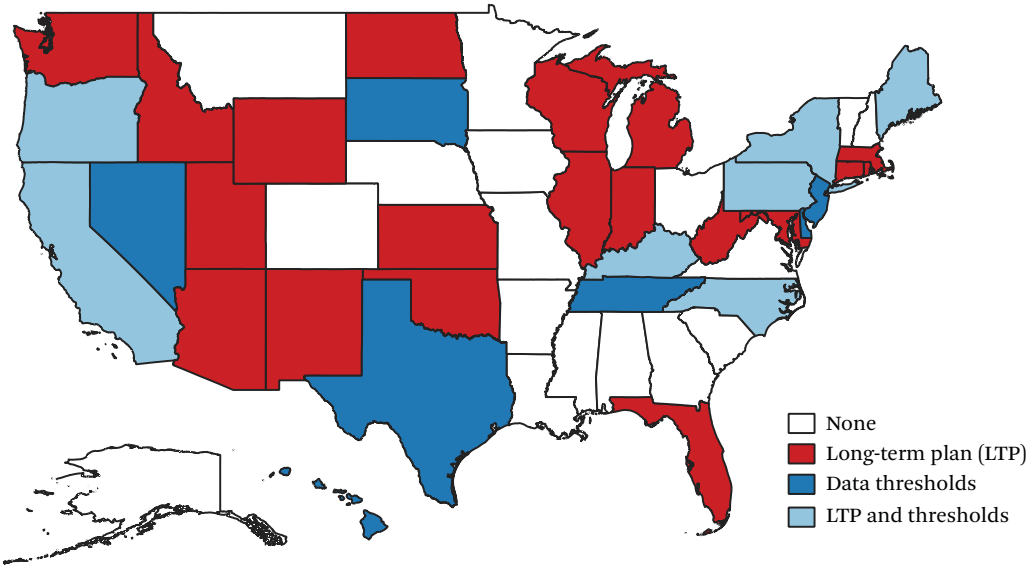
Source: Authors' calculations.

Table B.1. State Reopening Plan Titles

State	Campaign Name	State	Campaign Name
AK	Reopen Alaska	NJ	The road back
AL	Altogether	NB	Nebraska: Road to Recovery
CO	Can Do Colorado	NY	New York Forward
FL	Safe. Smart. Step by step.	OH	Responsible Restart Ohio
HI	Beyond Recovery: Reopening Hawai'i	OK	Open Up and Recover Safely
ID	Idaho Reobunds: Path to prosperity	RI	Reopening RI: Testing the Water
IL	Restore Illinois	SC	Accelerate SC
IN	Back on Track	SD	Back to Normal Plan
KS	AD Astra: A Plan to Reopen Kansas	TN	The Tennessee Pledge: A Plan to Reopen TN responsibly
KY	Healthy at work	TX	Texans helping Texans
MN	Stay safe	UT	Utah Leads together
MO	Show me strong recovery plan	WA	Safe Start Washington
MT	Reopening the Big Sky	WI	Badger Bounce Back
ND	ND smart restart	WV	West Virginia Strong—The Comeback

Source: Authors' calculations.

Figure B.1. Long-Term Plans and Reopening Thresholds by State



Source: Authors' calculations.

Table C.1. Subcategorization of Republican Governors 2021

State	Name 2021	Detailed Party Label
Alabama	Kay Ivey	Pro-Trump
Alaska	Mike Dunleavy	Pro-Trump
Arizona	Doug Ducey	Pro-Trump
Arkansas	Asa Hutchinson	Ostrich
Florida	Ron DeSantis	Pro-Trump
Idaho	Brad Little	Ostrich
Indiana	Eric Holcomb	Ostrich
Iowa	Kim Reynolds	Ostrich
Kansas	Laura Kelly	D
Kentucky	Andy Beshear	D
Louisiana	John Bel Edwards	D
Michigan	Gretchen Whitmer	D
Missouri	Mike Parson	Ostrich
Montana	Greg Gianforte	Ostrich
Nevada	Steve Sisolak	D
New Hampshire	Chris Sununu	Trump skeptic
New York	Andrew Cuomo	D
North Dakota	Doug Burgum	Pro-Trump
Ohio	Mike DeWine	Trump skeptic
Oklahoma	Kevin Stitt	Pro-Trump
South Carolina	Henry McMaster	Pro-Trump
South Dakota	Kristi Noem	Pro-Trump
Tennessee	Bill Lee	Ostrich
Texas	Greg Abbott	Pro-Trump
Utah	Spencer Cox	Trump skeptic
Wyoming	Mark Gordon	Ostrich

Source: Authors' calculations.

Table D.1. OLS Regression Results for Days to Dashboard Publication from January 22, 2020

	Estimate	Std. Error	*t* value	Pr(>|*t*|)
(Intercept)	122.4	52.66	2.324	0.02489
Governor.2020R	−4.853	8.832	−0.5494	0.5856
Median_Income	−0.0003016	0.0004913	−0.6137	0.5426
LegControl_R_2020	−8.041	13.08	−0.6147	0.542
Voteshare_R_2016	−0.3694	0.6184	−0.5974	0.5534
HealthAgencies	3.038	2.012	1.51	0.1383
Pop_Sq_Mi	−0.01212	0.01771	−0.6845	0.4973

Source: Authors' calculations.
Note: Democratic governors are the reference category unless otherwise noted.

Table D.2. Logistic Regression Results for the Publication of a Long–Term Reopening Plan in 2020

	Estimate	Std. Error	*z* value	Pr(>|*z*|)
(Intercept)	−1.916	4.398	−0.4356	0.6631
Governor.2020R	0.03567	0.7224	0.04938	0.9606
LegControl_R_2020	0.5795	1.033	0.5608	0.5749
Median_Income	1.757e−05	3.96e−05	0.4436	0.6573
Voteshare_R_2016	0.003436	0.05141	0.06684	0.9467
HealthAgencies	−0.09768	0.1756	−0.5564	0.578
Pop_Sq_Mi	0.004157	0.002261	1.839	0.06592
CasesPer10K_June20	−0.0007463	0.0007622	−0.9792	0.3275

Source: Authors' calculations.
Note: Democratic governors are the reference category unless otherwise noted.

Table D.3. Logistic Regression Results for Advertisement of Contingent Reopening Thresholds in 2020

	Estimate	Std. Error	*z* value	Pr(>|*z*|)
(Intercept)	−0.6075	4.59	−0.1324	0.8947
Governor.2020R	−1.112	0.7716	−1.441	0.1497
Median_Income	1.407e−05	4.187e−05	0.3361	0.7368
LegControl_R_2020	1.912	1.262	1.515	0.1298
Voteshare_R_2016	−0.04462	0.05615	−0.7947	0.4268
HealthAgencies	0.396	0.1986	1.994	0.04618
Pop_Sq_Mi	−0.0002704	0.0018	−0.1502	0.8806
CasesPer10K_June20	0.0007403	0.0007922	0.9344	0.3501

Source: Authors' calculations.
Note: Democratic governors are the reference category unless otherwise noted.

Table D.4. Logistic Regression Results for Statewide Mask Mandate, July 2020

	Estimate	Std. Error	*z* value	Pr(>|*z*|)
(Intercept)	9.328	8.854	1.054	0.2921
Governor.2020R	−5.006	2.256	−2.219	0.02646
LegControl_R_2020	−1.368	2.108	−0.6491	0.5162
Median_Income	−0.0001079	8.324e−05	−1.297	0.1947
Voteshare_R_2016	−0.06424	0.116	−0.5537	0.5798
HealthAgencies	0.4125	0.4016	1.027	0.3043
Pop_Sq_Mi	0.01311	0.007367	1.779	0.07519
CasesPer10K_June20	8.841e−05	0.001406	0.06287	0.9499

Source: Authors' calculations.
Note: Democratic governors are the reference category unless otherwise noted.

Table D.5. OLS Regression Results for Length of Mask Mandates in Days in 2020

	Estimate	Std. Error	*t* value	Pr(>|*t*|)
(Intercept)	317	121.8	2.603	0.0127
Governor.2020R	−88.42	20.07	−4.405	7.155e−05
LegControl_R_2020	−43.42	29.69	−1.463	0.151
Median_Income	−0.001188	0.001107	−1.073	0.2893
Voteshare_R_2016	−1.116	1.435	−0.7778	0.441
HealthAgencies	5.968	4.622	1.291	0.2037
Pop_Sq_Mi	0.05641	0.04495	1.255	0.2164
CasesPer10K_June20	0.02086	0.01918	1.088	0.2828

Source: Authors' calculations.
Note: Democratic governors are the reference category unless otherwise noted.

Table D.6. OLS regression Results for Length of Mask Mandates During 2020 in Days with Detailed Republican Party Labels

	Estimate	Std. Error	*t* value	Pr(>|*t*|)
(Intercept)	298.6	115.4	2.587	0.01343
Party_Detailed_2020R1	−120.9	24.43	−4.948	1.396e−05
Party_Detailed_2020R2	−119.3	27.85	−4.283	0.0001123
Party_Detailed_2020R3	−42.15	25.61	−1.646	0.1076
LegControl_R_2020	−43.89	28.03	−1.566	0.1253
Median_Income	−0.00151	0.001062	−1.422	0.1627
Voteshare_R_2016	−0.04676	1.413	−0.03309	0.9738
HealthAgencies	3.857	4.448	0.8671	0.3911
Pop_Sq_Mi	0.05173	0.04262	1.214	0.2319
CasesPer10K_June20	0.02594	0.0182	1.425	0.1619

Source: Authors' calculations.
Note: Democratic governors are the reference category unless otherwise noted.

Table D.7. OLS Regression Results for Length of Stay–at–Home Orders During 2020 in Days

	Estimate	Std. Error	*t* value	Pr(>|*t*|)
(Intercept)	253.7	80.79	3.141	0.003082
Governor.2020R	−26.27	12.65	−2.076	0.04401
Median_Income	−0.001466	0.0007169	−2.045	0.04714
Voteshare_R_2016	−1.472	0.9536	−1.544	0.1302
LegControl_R_2020	−33.34	19.49	−1.71	0.09457
HealthAgencies	1.043	2.879	0.3622	0.719
Pop_Sq_Mi	−0.00549	0.02563	−0.2142	0.8314
CasesPer10K_Nov20	0.004452	0.002063	2.158	0.03673

Source: Authors' calculations.
Note: Democratic governors are the reference category unless otherwise noted.

Table D.8. OLS Regression Results for Length of Stay-at-Home Orders During 2020 in Days with Detailed Republican Party Labels

	Estimate	Std. Error	*t* value	Pr(>|*t*|)
(Intercept)	237.5	83.51	2.844	0.006981
Party_Detailed_2020R1	−37.73	17.36	−2.173	0.03578
Party_Detailed_2020R2	−32.54	18.91	−1.721	0.09305
Party_Detailed_2020R3	−13.88	17.39	−0.7985	0.4293
Median_Income	−0.001479	0.0007376	−2.005	0.05181
Voteshare_R_2016	−1.07	1.033	−1.036	0.3063
LegControl_R_2020	−35.09	19.75	−1.777	0.08325
HealthAgencies	0.48	2.977	0.1612	0.8727
Pop_Sq_Mi	−0.007365	0.02609	−0.2823	0.7791
CasesPer10K_Nov20	0.005275	0.002242	2.352	0.02367

Source: Authors' calculations.
Note: Democratic governors are the reference category unless otherwise noted.

Table D.9. Logistic Regression Results for Legislative Attempts at Curbing Executive Power in 2020

	Estimate	Std. Error	*z* value	Pr(>|*z*|)
(Intercept)	6.727	5.611	1.199	0.2305
Governor.2020R	−2.833	1.149	−2.466	0.01365
Median_Income	−7.445e−05	5.27e−05	−1.413	0.1577
LegControl_R_2020	1.609	1.529	1.053	0.2925
Voteshare_R_2016	−0.02138	0.05946	−0.3596	0.7191
HealthAgencies	−0.1563	0.2018	−0.7749	0.4384
Pop_Sq_Mi	0.001098	0.002442	0.4498	0.6529
Cases_PerTenThousand_June20	0.01355	0.01308	1.036	0.3002

Source: Authors' calculations.
Note: Democratic governors are the reference category unless otherwise noted.

Table D.10. Logistic Regression Results for Legislative Attempts at Curbing Executive Power in 2020 with Detailed Republican Party Categories

	Estimate	Std. Error	*z* value	Pr(>|*z*|)
(Intercept)	7.324	5.859	1.25	0.2112
GovRepub_R1_20	−3.657	1.407	−2.6	0.009331
GovRepub_R2_20	−2.21	1.455	−1.519	0.1288
GovRepub_R3_20	−2.132	1.335	−1.597	0.1102
Median_Income	−9.027e−05	5.836e−05	−1.547	0.1219
LegControl_R_2020	1.117	1.728	0.6461	0.5182
Voteshare_R_2016	0.005255	0.06765	0.07767	0.9381
HealthAgencies	−0.2471	0.2324	−1.063	0.2877
Pop_Sq_Mi	0.002028	0.002007	1.01	0.3123
CasesPer10K_June20	0.001391	0.001071	1.299	0.1939

Source: Authors' calculations.
Note: Democratic governors are the reference category unless otherwise noted.

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COVID-19 and the Culture of American Federalism

EMILY PEARS AND EMILY SYDNOR

COVID-19 highlighted America's federalist structure as the dissemination of pandemic information was frequently left to states and localities. For some citizens, this was a welcome relief from national-level policymaking and political narratives, though others argued that the federal government was failing to live up to its obligations. We identify three reasons for variation in Americans' trust in information from different levels of government: partisanship, ideology, and state identity. Using data from a representative online survey of more than one thousand people, we demonstrate that each individual characteristic shaped respondents' trust in leaders to provide pandemic information. Partisanship and ideology played major roles in information trust at both the national and state level, but individuals' psychological attachment to their state and to the nation also shaped their trust in the federated information environment.

Keywords: place-based identity, federalism, COVID-19, partisanship, political information

COVID-19 created an information crisis for Americans unlike any other in the twenty-first century. Across the country, citizens became desperate for information about the pandemic, including scientific and medical information about how the virus spread, technological information about the prospect of vaccines, and policy information to better understand local, state, and national responses. Most citizens have a set group of sources they rely on for political information and health-related advice. But in the context of the pandemic, many required new and different kinds of information, urgently. Citizens who generally relied on their family doctor or the advice of local school nurses for health-care-related information were left scrambling to sort through the new-to-them world of infectious disease experts, epidemiologists, and national health agencies. Savvy followers of American politics are used to consuming specific policy information through the lens of the news media, but the pandemic put press conferences front and center and led many more citizens to consume information directly from the president, their governor, or local officials. Many of us not only

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learned that such things as county public health departments exist, but also learned the names of the directors of those agencies. American citizens, particularly early on in the COVID-19 pandemic, were desperate for information and overwhelmed by choices of whom to trust for that information. That highly salient information environment was also far more federated and decentralized than we have come to expect in modern American politics. Americans could choose to get pandemic-related information from President Donald Trump, the Centers for Disease Control and Prevention (CDC), Dr. Anthony Fauci, their state government officials, their local government officials or national, state or local media sources. Whom citizens chose to trust for pandemic information was, we argue, shaped by their partisanship, their ideological views of federalism, and their own place-based identities.

Whom you trust to provide pandemic-related information matters a great deal. As political scientists Courtney Page-Tan, Summer Marion, and Daniel P. Aldrich (2022) show elsewhere in this issue, citizens' adoption of behaviors designed to curb the spread of COVID-19 was fundamentally shaped by the civic networks and information sources they chose to rely on. The political scientist Elizabeth Suhay and her colleagues (2022, this issue) also show that citizens' trust in government was associated with either higher or lower likelihood of engaging in protective behaviors based on the information being provided by leaders of those governments. If citizens with greater trust in their state governments are more likely to support increased state responsibility for policymaking, as the political scientists Marc Hetherington and John Nugent (2001) argue, trust in state governments, and the information they provide, should matter a great deal for citizens' ultimate assessments of the pandemic response and, in some cases, their likelihood of engaging in potentially life-saving behaviors.

We argue that citizens' existing attitudes fundamentally shaped their assessment of whom to trust in the pandemic crisis environment. As research elsewhere in this issue demonstrates, who citizens chose to trust for information, in turn, influenced their health-related decision-making (Page-Tan, Marion, and Aldrich 2022, this issue; Suhey et al. 2022, this issue). We identify three individual-level variables that, based on existing literature, we might expect to influence citizens' assessments of a federated pandemic information environment: partisanship, ideology, and state identity. We examine the effect of each characteristic on Americans' trust in a range of national and state-level politicians and agencies to provide pandemic-related information, drawing on survey data from a representative sample of U.S. adults. We find some measure of support for each theory; partisanship, ideology, and state identity all affect Americans' trust in federal and state officials to provide pandemic information in an environment where federalism is highly salient.

To many scholars of political behavior, these findings will not come as a surprise; researchers have found for decades that partisanship plays a significant role in individuals' political beliefs, including their media habits and trust in government institutions and information (see, for example, Campbell et al. 1960; Green, Palmquist, and Schickler 2002). Existing political science frameworks would predict that Americans' pandemic information-seeking behavior is driven by their partisan identity and by national political narratives. America's pandemic response relied heavily on its federal structure and devolved both policymaking and information dissemination to the state level. Even in that environment of heightened salience for state politics and issues of federalism, we find that existing frameworks still hold—partisanship still drives citizens' trust in national leaders, particularly copartisans, for pandemic information.

However, our findings also extend the existing literature in two ways. First, we find evidence that, at the state level, virus-mitigation policies broke down the relationship between partisanship and trust in information. In July 2022, as long as the state had mask mandates and stay-at-home orders in effect, Democrats had more trust in their state to provide them with reliable information about the pandemic regardless of the governor's political party. At the state level, the power of partisan identity

could be overcome by policies that addressed the threat posed by the pandemic.

Second, we find that state identity matters in citizens' choices of whom to trust for COVID-19 information, highlighting the need for consideration of national and state-level identities and attitudes in conjunction with one another. Most political-psychological frameworks that emphasize place-based identity focus on the role of national identity or the distinct experiences of rural citizens relative to urban ones. But in a political moment when federalism is highly salient, Americans rely on their attachment to their state to guide their assessment of information sources. State-level variables matter for and should be included in analyses of national political attitudes, particularly when federalism is highly salient.

LITERATURE REVIEW

Although the COVID-19 pandemic certainly changed day-to-day life and politics, it is reasonable to start with the assumption that Americans' information habits in the face of this novel threat nonetheless can be understood through the lens of existing frameworks and theories in American political behavior. Four broad categories of literature can provide some guidance in answering the question of what drives citizens' trust in their state and national officials to provide relevant pandemic information. First, a large existing literature identifies the features that tend to shape citizens' trust in government and officeholders. As we try to better understand whom citizens turned to for information in a crisis, we begin by investigating the factors that shape citizens' trust in their state and national officeholders generally. Second, literature on information-seeking behavior informs our understanding of whom citizens are most likely to turn to in moments of crisis, particularly when that crisis has been politicized. Third, we know that America's pandemic response made significant use of the country's federal structure and that citizens faced a federated information environment. Therefore, literature on citizens' views of federalism and their preferences for policy decentralization is useful in understanding citizens' relative trust in state and national leaders. That literature highlights the role of partisanship and ideology in those individual-level preferences—partisanship and ideology frequently shape the frames through which citizens analyze information from local, state, and national leaders. Finally, in a pandemic environment where geography and physical space matter a great deal, real differences in state and place-based identities and citizens' attachments to their states may impact who they trust to provide pandemic-related information.

Trust is a foundational component to democratic theory, as scholars in both American politics and political theory have observed. Trust is an individual-level evaluative or affective orientation that varies based on citizens' understanding of the purposes of government (Miller 1974; Stokes 1962; Hetherington 2004). In a democratic society in particular, political trust is closely associated with political legitimacy and the rule of law and is needed to secure citizen compliance with the law (Barber 1983; Levi 1997, 1998; Scholz and Lubell 1998). When citizens trust their government and its officeholders, politicians are accorded greater political capital and institutional legitimacy (Easton 1967; Gamson 1968). In short, trust matters, perhaps especially in a life-and-death crisis situation such as the one the pandemic posed.

Trust, particularly in a federal system where citizens are presented with choices of who to rely on for information and policy, is shaped by partisanship. Time and again, scholars have found that citizens prefer policymaking to be done by whichever level of government most closely aligns with their partisan affiliation (Wolak 2016; Dinan and Heckelman 2020; Riker 1964). The legal scholar Jessica Bulman-Pozen writes that "individuals' beliefs about whether the state or federal government is the proper government to 'run . . . things' depend on which party is in control at both levels" (2014, 1120). Citizens have similarly shown a tendency to trust the national government more when it is controlled by copartisans (Morisi, Jost, and Singh 2019), and in general, people infer trustworthiness from partisan stereotypes, trusting copartisans over rival partisans (Carlin and Love 2013).

Generally, states and state officials have enjoyed higher levels of political trust than the national government in recent years (Gallup

2020). Although national political trust has steadily declined since World War II, faith in state government has remained flat, and high (McCarthy 2018; Pew Research Center 2019). The scholarship on predictors of state trust falls into two camps. The first group of studies finds that citizens' trust in their states generally follows from their trust in the national government or from their feelings about national conditions (Hetherington and Nugent 2001; Uslaner 2001). Others, however, argue that trust in specific institutions or leaders at the state level is driven by state economic performance or legislative professionalism (Kelleher and Wolak 2007; Richardson, Konisky, and Milyo 2012). In a more recent study, the political scientist Jennifer Wolak finds that citizens trust their state government more when it is controlled by copartisans, that trust in state governments does reflect state economic conditions, and that more homogeneous states engender more trust (Wolak 2020).

The political scientists Bethany Albertson and Shana Kushner Gadarian's (2015) research into information-seeking and trust in an anxious political environment provides additional insight into how Americans decide who to trust in a pandemic. They demonstrate that, in a public health emergency, people selectively trust specific experts (including the CDC, doctors, and friends in the medical field) over political figures, celebrities, and other government agencies (Albertson and Gadarian 2015). Anxiety also generates increased information-seeking behavior, and more biased patterns of information searching. Politicized threats will exacerbate those patterns (Albertson and Gadarian 2015).

FEDERALISM MATTERS

Given the decentralized nature of the pandemic response in the United States and the resulting salience of federalism, it would be reasonable to assume that citizens' trust in their state leaders for pandemic information would be grounded in their personal ideological commitments and their views of federalism. If citizens hold strong beliefs about which level of government should engage in policy administration, they are likely to express trust in the officeholders at that level to provide pertinent information related to that policymaking. We might particularly expect this to be true in an environment when policy dispersion is a prominent topic. Generally, studies of public opinion and federalism have concluded that support for decentralized policymaking is highly correlated with partisanship and ideology (Schneider and Jacoby 2003; Konisky 2011; Thompson and Elling 1999). Particularly given that the COVID-19 pandemic highlighted American federalism, and at times direct competition between states over case rates and regulations, we can expect citizens' ideological commitments in favor of or against decentralization to inform their information-seeking behavior.

One aspect of the existing literature on attitudes toward state government that demands reevaluation in the context of the COVID-19 pandemic is the sense that issues of federalism and state authority are low salience and out of the public view. In the past, scholars argued that citizens face significant hurdles in collecting information on state government and state policymaking, and do not generally find state political action to be interesting or important (Delli Carpini and Keeter 1996; Jennings and Zeigler 1970). The extraordinarily heightened salience of state policy during the pandemic has almost certainly changed the landscape in terms of federalism and public opinion. Although recent literature has claimed that "intuitive federalism" allows citizens to make reasonable decisions about the allocation of policymaking authority, COVID policymaking almost certainly commands highly salient, explicit attitudes (Schneider and Jacoby 2003; Schneider, Jacoby, and Lewis 2011).

Scholars of federalism have long wrestled with the question of whether American states reflect truly distinct identities. Myriad scholarship argues that federalism is only justified if states command loyalty from their citizens (Feeley and Rubin 2008; Riker 1964; Choudhry 2001). Most famously, political scientist Daniel Elazar (1966) argued that states did have unique cultures. More recently, scholars have asserted that state identity simply does not exist for most states (Feeley and Rubin 2008; Levy 2007). Place-based identity has been the subject of a surge in political psychology research in the past decade, but much of this work has focused

on national identity or rural identity (see Cramer 2016; Jacobs and Munis 2019). Daniel Hopkins (2018), a political scientist, argues that state identities are also less political in nature; he finds that people report greater pride in their state's landscapes, natural resources, or size than they do its political culture or values. Bulman-Pozen posits a partisan formulation of state identity that might be particularly helpful in understanding citizens' relative trust in state and federal leaders to provide pandemic information. She argues that "our contemporary federal system generates a check on the federal government and fosters divided citizen loyalties . . . because it provides durable and robust scaffolding for partisan conflict" (2014, 1080–81). From this perspective, state-based identity exists, but it is fluid, partial, and based on the state's ability to provide a competing vision of the national will when compared with the national government. If Bulman-Pozen is right, the pandemic should have provided a unique opportunity for states to offer alternative policy responses and alternative information environments to contrast with the national narrative.

In the section that follows, we identify specific hypotheses about citizens' trust in state and national leaders to provide pandemic information based on this literature.

HYPOTHESES

Hypotheses on citizen trust in leaders fall into three broad categories. First is the theory that trust in state leaders and institutions to provide reliable information is driven by partisanship. Second is whether ideology and ideological commitments to federalism drive higher trust in state leaders to provide pandemic-related information given the federated nature of the COVID-19 information environment. Third is that state identity matters and significantly influences how citizens seek out state-centered pandemic information at a moment of heightened salience for federalism.

Partisanship

The cited literature makes it clear that both citizens' trust in officials and their information-seeking behavior is political. People tend to get their news and information from copartisan sources, and their trust in both state and national governments is often shaped by partisanship. As pandemic federalism took center stage in 2020, partisanship became the guiding narrative to explain state policy decision-making and citizens' responses to those choices; poll after poll in 2020 demonstrated that regardless of state residency, relative to Democrats, Republicans were less likely to support policies such as mask mandates, stay-at-home orders and social distancing protocols, and were more hesitant to get a vaccine (Newport 2020a, 2020b, 2020c; Tyson 2020). The pandemic also took place during a highly contested, close, national election—a situation in which we might expect even normally nonpartisan events to become highly politicized. Even basic information was quickly subjected to politicization as Democrats and Republicans diverged in their understanding and analysis of how COVID-19 spread and its severity relative to other viruses. Previous work suggests that pandemic public health information would not be particularly politicized (Albertson and Gadarian 2015). the specifics of this pandemic, however, point in another direction.

Elsewhere in this issue, the political scientist Sarah James and her colleagues discuss the highly polarized political environment that shaped responses to the pandemic. They point in particular to the ways in which partisan battles and an increasingly polarized political environment interfered with governors' efforts to respond to the pandemic threat (James, Tervo, and Skocpol 2022, this issue). Given that we might ordinarily expect citizens' trust and information preferences to be driven by partisanship, and that a looming presidential election and clashes between the president and governors over pandemic response measures were depicted in a highly partisan light, we expect that

> H1a: Republicans will be more trusting in President Trump to provide pandemic information than Democrats.

Although participants' trust in Trump's information will fall along partisan lines, we expect a different relationship between partisanship and trust in information coming from the CDC and Dr. Fauci, the leading U.S. infectious

disease expert. A 2019 poll by the Pew Research Center finds that Democrats are more likely to support scientists playing an active role in policy debates, 54 percent (relative to 34 percent of Republicans) expressing a belief that scientific experts are better at making decisions about scientific issues than other people are (Funk et al. 2019). Studies that focus explicitly on Fauci's expertise in the context of the COVID-19 pandemic suggest that his approval of policies such as vaccination can improve all partisan groups' confidence and uptake of the policy—but that these effects are strongest for Democrats (Bokemper et al. 2021; Evans and Hargittai 2020). Given both the general findings about Democrats' trust in experts and specific research about Fauci's role in relaying pandemic information, we hypothesize that

> H1b: Democrats will be more trusting than Republicans of the CDC and Dr. Fauci to provide pandemic information.

National politics set the stage for a relationship between partisanship and trust in national leaders to provide pandemic-related information, but the president's devolved policy approach also means that partisanship should affect trust in state leaders as information sources. In nearly every case, it was America's governors who assumed leadership of the pandemic response (as opposed to state courts or legislatures) and thus gubernatorial partisanship likely became more prominent and salient for citizens who may have previously paid little attention to state-level partisan politics. The effects of partisanship on trust in information provided by state-level officials should mirror that at the national level—copartisans will produce more trustworthy information than members of the other party.

However, public opinion research suggests not only that mass opinion is shaped by elite cues (Lenz 2012; Zaller 1992), but also that it can be particularly influenced by cues that appear to go against the party position (Chiang and Knight 2011). For example, the political scientist Guy Grossman and his colleagues (2020) find that, in the context of the COVID-19 response, state government leaders' stay-at-home recommendations were more effective at reducing mobility in Democratic counties than Republican counties—what we would expect, given that Democrats were more anxious about the pandemic. Furthermore, the effect on Democrats' mobility increased when stay-at-home recommendations were coming from Republican governors, because Republican governors who instituted strict COVID-19 policy were going against their national party's stated preferences. In this case, seeing Republican governors act against their party's position made Democrats even more likely to comply than when the policy was implemented by Democratic governors. Combined with the literature that suggests Americans are more likely to trust copartisans, we are left with two competing hypotheses:

> H1c: Partisanship shapes trust in information from state officials, on the basis of the Governor's party.

> H1d: Democrats are more likely to trust state officials to provide pandemic information if their state is governed by a Republican who supports more restrictive COVID-19 policy.

Ideology

Pandemic policymaking was highly devolved with regulations and policies coming from state, county, and sometimes even city officials, and citizens faced a highly federated set of information sources. We know that attitudes toward highly salient policy issues that evoke questions of federalism may be driven by citizens' long-standing beliefs about political structure and the proper distribution of power in the American system (Green and Guth 1989). Many studies (such as Dinan and Heckelman 2020; Wolak 2016; Konisky 2011) find that attitudes toward issues of federalism are shaped by core ideological preferences for devolution and for decentralized policymaking. American conservatism has long embraced federalism and decentralized governance as a core belief. We therefore expect that

> H2a: Conservatives' trust in state officials is not shaped by the governor's party.

Although we expect conservatives to maintain a theoretical and ideological commitment

to decentralized policymaking and information across the board, liberalism generally councils a preference for centralization and authority at the national level. The political scientist John Dinan and the economist Jae Heckelman (2020) find, as expected, that liberals are generally less supportive of decentralization. Essentially, this implies that federalism is salient for conservatives and not for liberals. Given that liberals have a general preference for centralization, but that partisanship is likely the stronger force in driving liberals' attitudes toward state policymaking, we expect that

> H2b: Liberals are more trusting of information from Dr. Fauci and the CDC than they are of state officials, even when state officials are copartisans.

Identity

If Elazar (1966) was correct that states have unique political cultures, and if those cultures remain clearly defined today, then they must have become extraordinarily salient during the COVID-19 pandemic. Time and again the news media highlighted distinct state demographics, geography, cultures, and politics as explanations for highly differentiated COVID case counts and lockdown policies.

Partisanship and ideology are guiding explanations for Americans' political attitudes, but a focus solely on these characteristics fails to capture the importance of place-based identity during the pandemic. We argue that the decentralized government handling of the pandemic also increased the salience of another identity—individuals' attachment to their state and to the nation writ large. Research on national identity suggests that attachment to Americans as a group has a profound impact on political behavior from voting to one's willingness to donate to charity (Huddy and Khatib 2007; Theiss-Morse 2009). Thus it seems equally plausible that those who feel most strongly connected to Americans as a group will also view federal-level information as particularly trustworthy in response to the pandemic. A shared sense of nationwide community and that we must protect all Americans would lead individuals to place their trust in the president, Congress, and other officials in Washington to provide pandemic-related guidance that would help the group.

> H3a: Stronger national identity will increase trust in federal officials to provide pandemic information.

Although the primacy of national over state identity might be the status quo in contemporary American politics, the COVID-19 pandemic and the subsequent response create a context in which attachment to home state and the sense of being a member of the state "group" influenced Americans' attitudes toward government. Suddenly, state citizenship became a matter of life and death. State identity should therefore shape individuals' relative trust in various leaders' pandemic information. At the start of the lockdowns (or lack thereof) citizens who found themselves living in states to which they were closely attached were comforted, knowing that the pandemic response would be handled by trusted entities. Citizens who considered themselves strangers in a strange land, in contrast, were wary of state-based policymaking that might reflect precisely the political culture and distinct identity that they did not share.

> H3b: Stronger state identity leads to greater trust in state officials to provide pandemic information.

In summary, our hypotheses suggest that Americans' trust in various government entities to provide reliable and accurate information is, to some extent, politics as usual. Partisanship and ideology will guide people's feelings about the information they receive, with favorable attention to copartisans. Conservative commitments to devolution will lead them to be more trusting of information from lower levels of government. We recognize that neither of these expectations is novel in the context of American political behavior but find the possibility of evidentiary support for each to be reassuring—the discipline does not need to dismantle its frameworks for understanding behavioral phenomena in the face of a novel stimulus.

However, we do see our final set of hypoth-

eses, particularly H3b with its focus on state identity, as highlighting the disruptive potential of COVID-19. Given wide disparities in state pandemic response policies, and the high salience of state-based pandemic statistics such as case counts and death rates, it seems more likely that citizens' trust in their state officials to handle COVID is related to their attachment to the state and sense of state-level community rather than a by-product of their trust in national leaders. If the pandemic heightened Americans' awareness and understanding of federated policymaking and slowed the march toward a nationalized politics, political-psychological frameworks centered on national identities will need to focus more on individuals' identification with their state and with state copartisans, as we do here.

METHODOLOGY

The survey used for this study drew on a representative sample of 1,048[1] English-speaking Americans who were registered on the online participant-pool site Prolific (Palan and Schitter 2018) and was completed between July 24 and August 1, 2020 (for more information about how they collect representative samples, see Prolific Team 2019). Prolific users have been found to be reliable, honest participants in academic research who produce data quality comparable to MTurk and better than some other online research platforms (Peer et al. 2017), and their representative sampling schemes have been used for other research on COVID-19 attitudes (Oreffice and Quintana-Domeque 2020). Although we should be cautious about assuming generalizability from any nonprobability sample, this approach lets us consider the attitudes of a wide range of Americans at a financially affordable price.

Even though Prolific's representative sample stratifies across age, sex, and ethnicity to draw subgroups with the same proportions as the national population, it nonetheless is susceptible to the educational and partisan skew common to online samples in which participants are not drawn randomly from the population (see Berinsky, Huber, and Lenz 2012; Levay, Freese, and Druckman 2016). Thus, although our survey is representative of the United States on age, sex, and ethnicity,[2] it oversamples the more highly educated at the expense of those without high school degrees and Democrats relative to Republicans and Independents (for a full demographic breakdown and comparison with census data, see table 1). To compensate for this sampling bias, we run our models in three ways: unweighted, with a correction for education, and with a correction for partisanship. Across the board, weighting on these single variables does not substantially alter the results of our analyses, reducing our concerns about the nonprobabilistic nature of our sample. We also considered running additional analyses with weights across multiple variables simultaneously. However, in some cases a very small number of observations (for example, seven participants who did not graduate from high school) are counting for a substantial amount of the weighted sample, blowing up the variance in the model and raising concerns about the introduction of additional bias (for concerns about bias introduced by weighting nonprobability surveys, see Kennedy et al. 2016). Because our goal is to reduce bias rather than introduce new ones, we see the single-variable weights as an effective methodological compromise. We include the models using the unweighted sample in the discussion and present the models with weights in appendix B; that our findings do not dramatically change when these weights are used increases our confidence in our findings.

To further reduce concerns about the quality of findings from our nonprobability sample at a single point in time, we ran additional analyses on publicly available data from the Axios-Ipsos Coronavirus Index, a series of probability-based surveys capturing Americans' attitudes on COVID-19 and government

1. An a priori power analysis for logistic regressions with an odds ratio of 1.3 and alpha equal to 0.05 calculates the required sample size at 988, calculated using G*Power (Faul et al. 2009).

2. The categories used on Prolific to prescreen for ethnicity are White, Mixed, Asian, Black, and Other, so although our sample is representative of the national population when it comes to white and black participants, it underrepresents Hispanic identification.

Table 1. Characteristics of Sample Relative to the National Population

	Prolific Sample	National Population
Median income	$30,000–$45,000	$62,843
Median age	45	38
Education		
< High school diploma	1	12
High school graduate or some college	31	56
College graduate +	68	32
Race-ethnicity		
White	72	76
Black	13	13
Hispanic	5	18
Sex		
Female	51	51
Partisanship		
Democrat	45	30
Republican	22	25
Independent	25	44
Ideology		
Liberal	50	25
Moderate	29	36
Conservative	21	35
N	1,048	—

Source: Authors' calculations for sample data; national data from U.S. Census 2021; party and ideology data based on quarterly average data from Gallup for the first quarter of 2021 and late 2020 (Jones 2021; Saad 2002).
Note: Excepting age and population, numbers in percentages. Participants in survey could check only one race or ethnicity, including Hispanic identification.

handling of the pandemic. Although the questions in these surveys do not allow us to test all of our hypotheses, they give us insight into the first set of hypotheses (1a–1d) at two moments in time: July and October 2020. These analyses, included in appendix C, show similar relationships to those we find in our sample, increasing our confidence that the findings discussed are not unique to the individuals who chose to participate in our study; nor are they limited to the moment in time captured in our data.

Participants who consented to participate in the survey were first asked what state they lived in and how long they had lived there, then answered a series of questions designed to measure their state and national identities. Both the national and state identity indices have been used in previous political science research (Huddy and Khatib 2007; Hopkins 2018) and reflect a larger set of psychological measures that tap subjective group identity (Huddy, Mason, and Aarøe 2015; Schildkraut 2011; Theiss-Morse 2009). Each index consists of four questions: "How important is being an [American/state demonym] to you?" "To what extent do you see yourself as a typical [American/state demonym]?" "How well does the term [American/state demonym] describe you?" and "When talking about [Americans/state demonym], how often do you say *we* instead of *they*?" Both sets of items have high internal consistency as measured by Cronbach's alpha (state identity items' alpha = 0.91, national identity items; alpha = 0.88) and were thus added together and standardized to create indices that run from

zero (no identity with the state or nation) to one (highest possible identification with the state or nation). Although the distribution of national identity is slightly left-skewed (M = 0.63, median = 0.625, SD = 0.26), indicating that the average person identifies reasonably strongly as American, state identity is flatter and normally distributed (M = 0.5, median = 0.5, SD = 0.29). The average participant felt reasonably attached to their state identity, but some felt little identification with their state and others felt very strongly connected.

Once they had completed the American and state identity scales, participants were asked a series of questions about their perceptions of the government's handling of the pandemic. First was whether they saw the federal or state government as leading the response to the coronavirus outbreak in their area. The vast majority (79 percent) saw their state as the leader of the COVID-19 response; the remainder (21 percent) attributed the bulk of the response to the national government. They were then asked about their level of trust (using a 4-point scale that runs from not at all to a great deal) in various individuals and organizations to provide reliable information on coronavirus. This question explicitly operationalizes our primary outcome of interest—trust in information from government entities: how much do you trust the individuals and organizations below to provide reliable information on coronavirus? Participants evaluated a list of entities as part of this question, including President Trump and state government officials as well as the CDC, Dr. Anthony Fauci, and the World Health Organization (WHO). Table 2 displays the average trust in each entity across the entire sample; in general, participants placed the most trust in expert bureaucrats—Fauci, the CDC, and WHO—to provide reliable information, followed by state governments. Trump received the least trust across the full sample. Participants were also asked about their level of concern about coronavirus spread, and their general trust in the president, their state's governor, and the federal and state governments.

Respondents finished the survey by answering a series of demographic questions, including partisanship and ideology. Both partisanship and ideology were measured using the typical questions deployed by the American National Election Studies. Participants were first asked whether they usually thought of themselves as a Democrat, Republican, Independent, or something else, and then offered a follow-up question that allowed them to indicate the strength of their party identity or to note whether they lean more toward one major party or the other. To capture ideology, they were asked "which of the following best describes you?" and to choose a position on a 5-point scale from very liberal to very conservative. As mentioned and seen in table 1, the sample included more Democrats and liberals than the general population but still had a substantial number of Republicans and conservatives—more 20 percent.

FINDINGS

Although our hypotheses are broken down by partisanship, ideology, and identity, we start our discussion of findings in the context of at-

Table 2. Average Trust in Information from Government Entities, Full Sample

	Average Trust (SD)	*N*
President Trump	0.80 (1.08)	1,013
Centers for Disease Control and Prevention	2.07 (0.85)	1,013
Anthony Fauci	2.17 (0.96)	1,012
World Health Organization	1.83 (1.02)	1,011
State government	1.78 (0.96)	1,012

Source: Authors' calculations.

Note: Trust measured on a 4-point scale from 0 (no trust) to 3 (trust a great deal).

titudes toward the federal government versus those toward the state government. Hypotheses 1a, 1b, and 3a speak to trust in federal government entities and individuals to provide COVID-19 information, predicting that Republicans will be more trusting of information from Trump, Democrats of information from bureaucrats, and those who more strongly identify as Americans will be more trusting of federal entities' information as a whole. Hypotheses 1c, 1d, 2a, 2b, and 3b all predict relationships between our three key variables of interest and trust in the state government to provide pandemic information.

To examine the relationships between partisanship, national identity, and the federal response to COVID-19, we focus primarily on our three variables that capture trust in information from specific national-level individuals or agencies: President Trump, the CDC and Anthony Fauci. Each is included in a separate ordinary least squares (OLS) regression with the independent variables of interest, including partisanship, ideology, national and state identity, as well as control variables for the individual's concern about the virus and demographic characteristics such as gender, education, race, and income.

Table 3 presents results from the three OLS models. At first glance, we see support for hypotheses 1a and 1b and mixed support for 3a. Partisanship is one of the strongest predictors for trust in President Trump to provide information—and in the expected direction—with a move from the strongest partisans to partisan leaners equating to about half a point shift in trust. In other words, strong Republicans have almost a full point greater trust in Trump to provide pandemic information than strong Democrats. Partisanship is a statistically significant but substantively weaker explanation for trust in the federal bureaucracy's information, producing at most a half-point shift in trust in information from Fauci between strong Democrats and Republicans and an even smaller change for trust in the CDC to provide information on COVID. As expected, we see that the directionality of the relationship between partisanship and trust flips; whereas Republicans are more trusting of Trump to provide pandemic information, Democrats are more trusting of Fauci and the CDC. National identity plays a statistically significant but weaker role in shaping trust toward both Trump and the CDC and has a nonsignificant effect on trust in Fauci for pandemic information. Moving from one end of the national identity scale—those who do not identify at all as Americans—to the other—those whose American identity is central to their self-conception, only increases trust in Trump and the CDC by 0.03 to 0.05 on a 4-point scale. Although we predicted that national identity would shape trust in Trump, the CDC and Fauci to provide information on the crisis, it is possible that participants were making a distinction between the president and a bureaucratic agency as national decisionmakers relative to Fauci as an individual expert.

The most powerful predictor of trust in each federal entity to provide information was individual concern about the coronavirus; those who were more concerned were less likely to trust the president and more likely to trust Fauci and the CDC. The effect of coronavirus concern on trust in the pre+sident was equivalent to the effect of partisanship, but played a much stronger role in shaping trust in the CDC and Fauci to guide individuals' understanding of the pandemic—those who were not at all concerned about the virus were a full point less trusting in all three entities than their very concerned peers.

Turning to trust in the state government's provision of information, our hypotheses depend on the partisan affiliation of each state's governor and their policy response to the virus. We added three variables to the survey data to capture this variability. First, we included a dummy variable that took on a value of one if the participant lived in a state with a Republican governor. Sixty percent of our sample lived in states with Democratic governors. Second, we included a measure of whether a participant's state had a mask mandate as of July 24, 2020 (CDC 2021). Seventy-five percent of participants lived in states with mask mandates as of late July 2020. Finally, we created a combined measure that took on a value of zero if the state had no mask policy, one if a Democratic gover-

Table 3. Effects of Key Variables on Trust in Information from Federal COVID-19 Responders

	President Trump	Centers for Disease Control and Prevention	Anthony Fauci
Partisanship	0.20**	−0.036*	−0.10**
	(0.0175)	(0.0189)	(0.019)
Ideology	0.11**	−0.042	−0.13**
	(0.035)	(0.037)	(0.038)
National identity	0.059**	0.031**	−0.01
	(0.0081)	(0.0086)	(0.0086)
State identity	0.023**	0.0094	0.013
	(0.0065)	(0.0069)	(0.0069)
Concern about COVID-19	−0.24**	0.25**	0.38**
	(0.034)	(0.036)	(0.036)
Income	−0.011	0.0078	0.007
	(0.0082)	(0.0086)	(0.0087)
Own home	−0.12*	-0.078	0.052
	(0.054)	(0.057)	(0.057)
Sexual orientation: straight	0.048	-0.13	0.14
	(0.080)	(0.087)	(0.089)
Any military connection	−0.071	−0.014	0.19**
	(0.051)	(0.054)	(0.055)
Race: White	0.095	0.023	−0.0024
	(0.058)	(0.061)	(0.062)
Education	0.0035	0.006	0.061**
	(0.020)	(0.021)	(0.021)
Gender: female	−0.034	−0.11*	−0.089
	(0.051)	(0.054)	(0.054)
Gender: nonbinary	−0.19	−0.30	−0.26
	(0.273)	(0.288)	(0.290)
Constant	−0.29	1.45**	1.44**
	(0.312)	(0.174)	(0.176)
R^2	0.50	0.11	0.30
N	951	950	949

Source: Authors' calculations.

Note: Cell entries are OLS regression coefficients with standard errors in parentheses. Lower values on the partisan/ideology variables indicate greater identification with Democrats or liberals.

* $p < .05$; ** $p < .01$

nor had implemented the mask policy, and two if a Republican governor had instated a mask mandate.[3] These variables help us assess hypotheses 1c, 1d, 2a, and 2b.

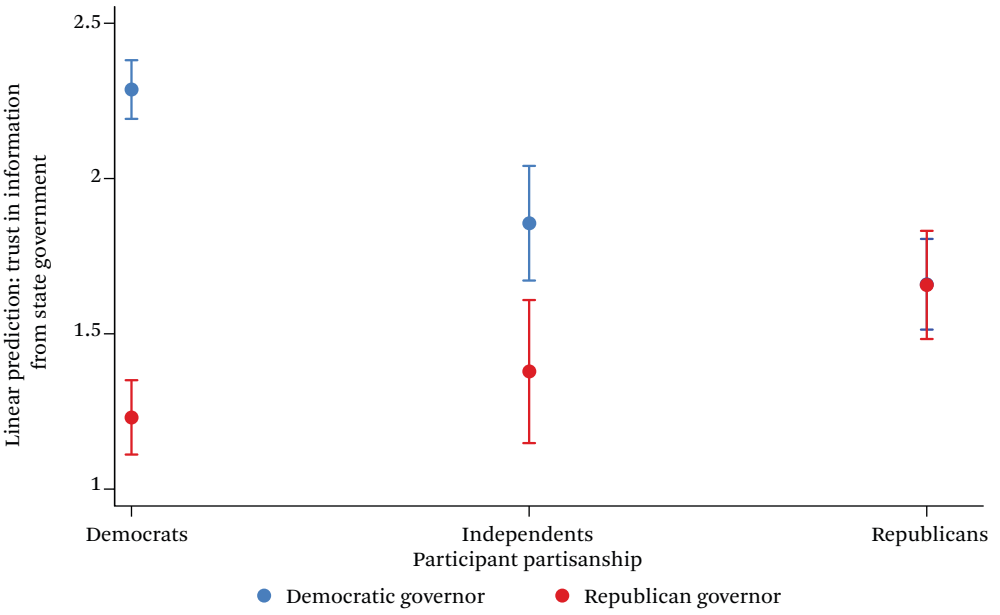
Hypotheses 1b and 1c present slightly different takes on the relationship between participant partisanship and the party affiliation of their state's governor. Hypothesis 1b suggests that partisans trust copartisans—Democrats will express greater trust in their state to pro-

3. Eight states had Republican governors who instituted mask mandates by the end of July: Alabama, Arkansas, Indiana, Maryland, Massachusetts, Ohio, Texas, and West Virginia. Only one state with a Democratic governor—Wisconsin—had not implemented a mask mandate. We also ran these tests using stay-at-home orders and see the same patterns for stay-at-home orders that we do mask mandates. For length purposes, our results relating to stay-at-home orders are included in appendix B, table B.7.

vide pandemic information when they live in states with Democratic governors at the helm, and Republicans will feel the same when a Republican leads their state. Hypothesis 1c argues that a Republican governor breaking with the national narrative on partisan attitudes toward masking can actually receive even greater trust from Democrats than copartisan governors. Using OLS regression models, we once again find partial evidence for both hypotheses (see models in the appendix). Figure 1 displays the linear prediction of trust in the state government to provide pandemic information for Democrats, Republicans, and true Independents (leaners were categorized with partisans), broken down by whether they are represented by a Democratic or Republican governor. Although we see no significant differences in Republicans' trust in the state government across gubernatorial partisan affiliation, we do see a half-point increase in Independents' trust when they are governed by a Democrat, and a full point increase in Democrats' trust under copartisans, both of which are statistically significant. In more substantive terms, this suggests that Democrats trust their state governments to provide information "not much" when they have a Republican at the helm, and Democrat-led states "a fair amount." Meanwhile, Republicans trust their state government somewhere between "not much" and "a fair amount" regardless of the partisan affiliation of the state executive.

Figure 2 shows us that when assessing hypothesis 1c we see a similar pattern for Republicans. Their trust in the state government's information does not depend on the partisan affiliation of the governor or the implementation of a mask mandate in their state. However, in states where Republican governors have acted contrary to national partisan narratives about support for masking, we do see increased trust in state government information among Independents and Democrats. These differences are not statistically different from one another for Independents but are for Democrats. Although trust in information from the state government under mask-mandating Re-

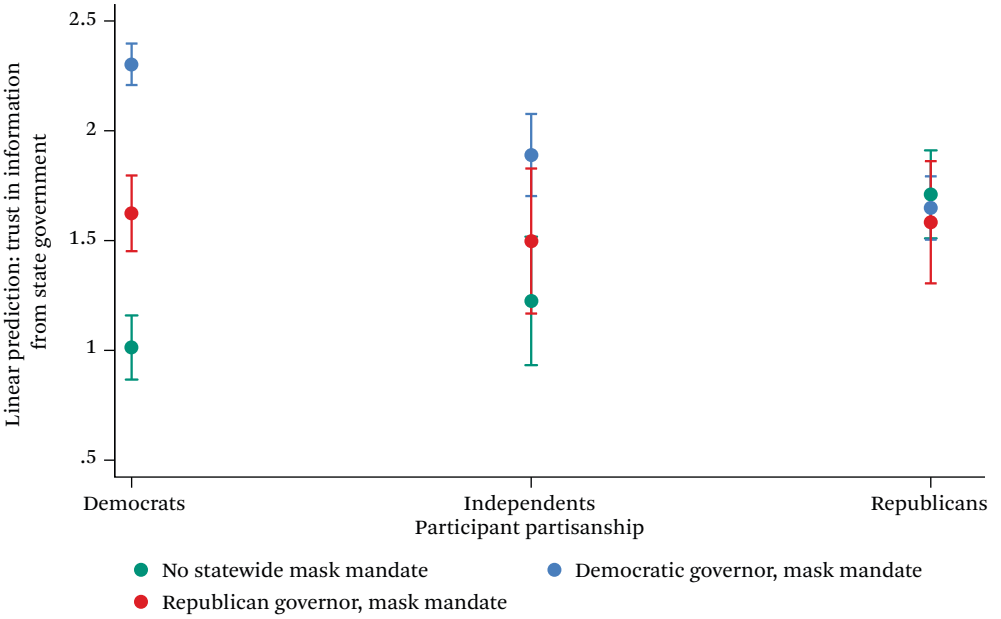
Figure 1. Partisan Trust in Information from State Governments



Source: Authors' calculations.

Notes: Predictions based on an OLS regression (full model available in appendix). Trust in state government is measured on a 4-point scale, 0 indicating no trust and 3 indicating a great deal of trust. Participants who identified as independents who lean toward a party were categorized as partisans.

Figure 2. Democrats' Trust in Information from State Governments Based in Gubernatorial Party and Policy



Source: Authors' calculations.

Notes: Predictions based on an OLS regression (full model available in appendix). Trust in state government measured on a 4-point scale, zero indicating no trust and three indicating a great deal of trust. Participants who identified as independents who lean toward a party were categorized as partisans.

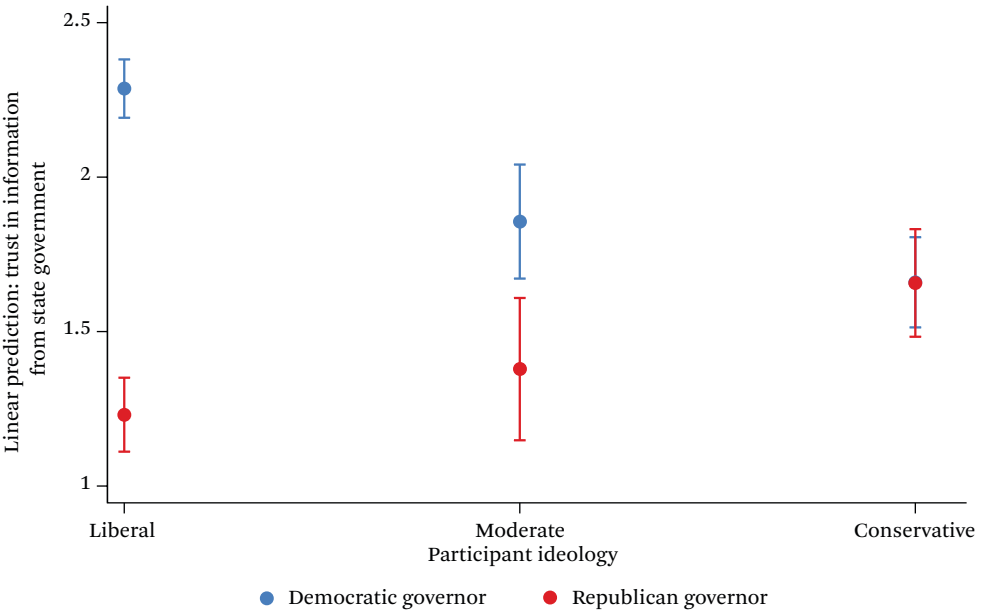
publican governors does not surpass that under a copartisan Democratic governor, thereby failing to support our hypothesis, the improved trust in states where these governors have instituted mask mandates offers some support for the argument that contra-party positional cues can be particularly important for members of the opposite party.

The consistent pattern in the relationship between respondents' party identity and their governor's party affiliation also plays out when we shift to looking at ideology, per hypotheses 2a and 2b. In support of these two hypotheses, figure 3 displays results from an OLS regression that includes the interactive effect of participant ideology and gubernatorial partisanship on trust in the state government to provide pandemic guidance. From the figure, it is easy to see that conservatives' trust in the state government is not shaped by state party control, whereas liberals, much like Democrats, see a full point increase in their trust in state government information when the state is run by a Democrat.[4]

We can also take a more descriptive approach to assessing hypotheses 2a and 2b. Although our measures do not allow for a direct comparison of individuals' trust in national government information relative to state government information (the ideal for assessing liberals' commitment to centralized policy response), we can nonetheless assess the average trust each group has in the information from federal and state officials and compare those values. Because we ask about specific government officials at the national level, but about

4. Although participants' identification on the ideology and partisan scales are highly correlated (r = 0.72 when using the 5- and 7-point scales that assess strength of identification), approximately 35 percent of participants hold ideological positions that are different from those associated with the contemporary Democratic and Republican Parties.

Figure 3. Liberals Trust Information from State Governments More Under Democratic Governors



Source: Authors' calculations.

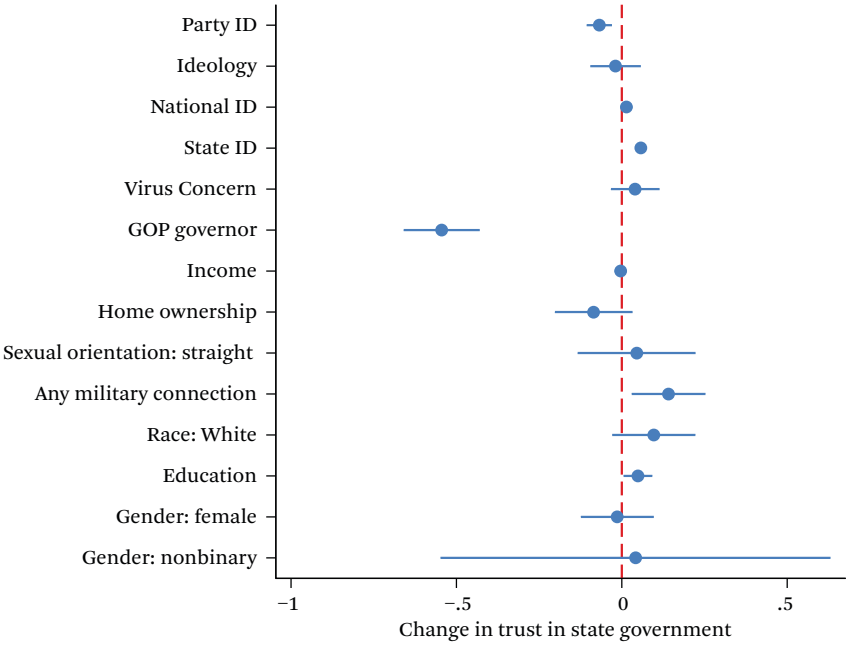
Notes: Predictions based on an OLS regression (full model in appendix A). Trust in state government is measured on a 4-point scale, 0 indicating no trust and 3 indicating a great deal of trust.

the more generic state government, we collapse participants' trust in Trump, Fauci, and the CDC into a general trust in information from the federal government measure, and create a second trust in information from federal bureaucrats measure that does not include Trump. As expected, the two indices look very similar for conservatives (trust in bureaucrats = 1.69, trust in federal government = 1.69), but less so for liberals (trust in bureaucrats = 2.33, trust in government = 1.65).

Finally, our last hypothesis (3b) speaks to the role of state identity—attachment to state community and culture—in participants' trust in the state to provide pandemic information. To assess the role of state identity, we return to a simpler OLS model of the relationship between trust in state government and our list of key independent variables and controls without any interactive effects, similar to those used in table 1 to explain trust in federal entities. The results depicted in figure 4 to facilitate comparisons of the variables' substantive effects. We see support for our hypothesis: as state identity increases, the increase in trust in state government information is small but significant. Substantively, this translates to a shift of about 0.06 on the trust scale when moving from someone who feels no connection to their state to someone who expresses extreme state identity. Although state identity has nowhere near the explanatory power of gubernatorial party affiliation, it nonetheless plays an important role in shaping state trust, as it remains statistically significant across the range of interactive models as well (see appendix).

In summary, we find some measure of support for each theory—partisanship, ideology, and state and national identity all affect Americans' trust in different levels of government to provide pandemic information. Republicans were more likely to trust the president, a copartisan, to effectively provide information, and Democrats to trust federal bureaucrats and their state governments, especially when those states were run by Democratic governors. Although Republican governors' implementation of mask mandates increased Democrats' trust

Figure 4. Relative Change in Trust in Information from the State Government Across Key Variables



Source: Authors' calculations.

Note: Points represent coefficients from an OLS regression (full model available in appendix A), with 95 percent confidence intervals. Variables in bold have a statistically significant effect on trust in state government to handle the COVID-19 pandemic.

in their state governments relative to governors who did not implement similar policies, it was not enough to overcome the copartisan preference. In contrast, Republican and conservative trust in their state governments held fast across gubernatorial party affiliation and pandemic policy implementation, potentially reflecting an underlying commitment to devolution and decentralization, or, as the political scientist Deborah Schildkraut and her colleagues argue, that "at this point in time, the central philosophical difference between liberals and conservatives over the scope of government seems to have given way to partisanship" (2020). Finally, our results show that place-based identities also play a role in shaping individuals' trust in various levels of government to provide pandemic information. Whereas those who more strongly identify as Americans were more trusting of both Trump and the CDC to guide their understanding of the pandemic, strong state identifiers were more likely to trust their state government.

DISCUSSION

In the highly salient and highly federated information environment created by the COVID-19 pandemic, partisanship, ideology, and place-based identity all affected whom citizens chose to trust for crucial pandemic-related information. Elsewhere in this issue, scholars show that trust in government and in officeholders became, during the pandemic, a life and death issue. As Page-Tan and her colleagues demonstrate, communities with access to information through horizontal and vertical linkages were more likely to engage in behaviors designed to slow the spread of the coronavirus (Page-Tan, Marion, and Aldrich 2022, this issue). Suhay and her colleagues show that individuals' trust in government was similarly correlated with engaging in protective health behaviors (Suhay et al. 2022, this issue). In each case, who citizens chose to trust for pandemic-related information ultimately led either to behavior associated with better health outcomes or greater risk for those individuals and their communities

The story of political trust during the COVID-19 pandemic is obviously a partisan one. Across many of the articles in this issue, research shows just how much polarization impacted policy decisions and individual behavioral choices. Our research adds to that narrative by demonstrating that individual-level partisanship was associated with greater trust in copartisans to provide pandemic-related information. In this sense, the COVID-19 pandemic was, perhaps surprisingly, a kind of politics as usual. Existing, dominant frameworks in political science that point to partisanship as the driving force behind political information-seeking behavior held true, even in the context of a public health emergency when we might have expected politics to fade into the background. Early in the pandemic, it seemed as though the highly federated nature of pandemic policymaking and information dissemination might prove to be a critical juncture, turning Americans' attention away from the national politics, narratives, and information that had come to dominate their lives. COVID-19 did, perhaps, prove to be a disruptive point in the general trend toward nationalized policymaking—pandemic policies varied remarkably from one state to the next. But citizens still turned to national copartisans for trustworthy information.

Our results also show, however, that other individual-level identities, including place-based and ideological attachments, influenced citizens information-seeking behavior in a time of heightened information salience, and a particularly federated information environment. What is more, policies designed to counter the threats posed by the pandemic dramatically reduced the power of partisanship at the state level. Democrats in our study did not care whether their governor was a Republican—if he or she had overseen the implementation of mask mandates and stay-at-home orders, they trusted the state government to provide them with reliable information. These findings suggest that existing political science frameworks focused on national partisan narratives might be helpfully augmented by more focus on state-level partisanship and state identities.

Our research is limited in important and significant ways. We do not, for instance, hypothesize about other potentially important individual-level factors that likely influence pandemic trust behavior including, for example, a citizen's relative concern about the coronavirus. Nor do we demonstrate a link between trust in information from different sources and behavioral changes that could promote or prevent community transmission. However, an increasing body of research suggests that we should expect a link between individuals' trust in governments to provide information and their willingness to adhere to certain types of behavior, both generally and in the specific context of the COVID-19 pandemic (Marien and Hooghe 2011; Pagliaro et al. 2021; Suhay et al. 2022, this issue; Zhao et al. 2020). As Page-Tan and her colleagues (2022, this issue) suggest, vertical ties—government officials, mayors, and other elected representatives—are important guides in adopting health practices.

Our survey also reflects a particular moment in time. The summer of 2020 presented citizens with a set of federated information choices that were different than those available at other points in the pandemic. Suhay and colleagues find that between March and November 2020, trust in officials at every level of government declined, but that the decline was uneven (Suhay et al. 2022, this issue). We have no reason to believe that the factors we point to (partisanship, ideology, and place-based identity) became unimportant over that period, and our supplemental analyses of Axios-Ipsos poll data from July and October 2020 suggest that, at least for a short time, the patterns we have identified hold. We are cautious to say anything about how citizens' relative weighing of their various identities may have changed over the extended course of the pandemic as their need for information and the available sources of that information also shifted.

Finally, our findings are limited by the nonprobabilistic nature of our sampling process. Although we have run a variety of robustness checks to feel confident about the validity of the analyses above, we nonetheless acknowledge that our methodological approach biases our findings. For example, although our sample distribution of Democrats and Republicans mirrors the national numbers as reported by

Gallup, almost 40 percent of our sample are strong partisan identifiers. We might expect strong identifiers to be guided by partisanship more than the average American, thus overestimating the actual effect of partisanship on our dependent variables of interest. We also have a much higher proportion of highly educated participants than is present in the national population. These individuals are more knowledgeable about the pandemic and more worried about the effects of COVID-19 (Rattay et al. 2021). Thus they might be more responsive to policy implementation, leading to the overestimation of the power of mask mandates to overcome shared partisan identity as a motivator for trust in information from the state government. In spite of these concerns, our auxiliary analyses lend credence to our findings and we appreciate the flexibility offered when fielding an original survey, particularly the ability to ask participants about their state identity and more fully integrate questions about federal and state-level attitudes.

The political scientists Malcom Feeley and Edward Rubin (2008) argue that federalist structures should only be used when citizens' identities are truly divided and that federalism is only truly justified by the existence of varied and divided place-based identities among the citizenry. In other words, America's devolution of pandemic policymaking to the states should have been justified by its citizens' state attachments. As we broadly assess the lasting impact of COVID-19 on America's federal system, it will be crucial to understand how citizens' identities—whether partisan, ideological, or place-based—shaped their views of state and national responses. In states where citizens already identified strongly with their state governments, either because they shared the partisan identity of the state leaders or they felt a strong sense of belonging to their state community, the pandemic afforded an opportunity to reinforce the necessity of the federalist system. In places where people only weakly identified with their states or disagreed with the partisan policy preferences of their leaders, the nation's decentralized pandemic response may well bolster calls for reform.

James, Tervo, and Skocpol (2022, this issue) argue that, from a policy response perspective, federalism failed to provide Americans with the policymaking tools required to manage the COVID-19 pandemic. In fact, they argue, our reliance on federalism for the pandemic response left Americans vulnerable to policymaking failures. Given the obvious centrality of federalism in the story of the COVID-19 pandemic, future research will need to account for both the ways that our federated response may have failed in the execution of acute public health policies, and the ways that a federated information system and opportunities for local, state, and federal leadership may have engendered the trust of citizens where a unitary state would have failed.

APPENDIX A: OLS MODELS UNDERLYING FIGURES 1–4

Table A.1. Effect of Partisanship, Gubernatorial Party Affiliation, and Gubernatorial Mask Mandates on Trust in Information from State Government

Variables	(1) Trust in State Government: Copartisan Governors	(2) Trust in State Government: Governors + Mask Mandates
Independents	−0.495***	0.234
	(0.187)	(0.228)
Republicans	−0.416***	0.578***
	(0.0808)	(0.120)
Ideology	−0.0731**	−0.0648*
	(0.0341)	(0.0338)
National identity	0.0122	0.0147*
	(0.00883)	(0.00877)
State identity	0.0558***	0.0530***
	(0.00725)	(0.00721)
Concern about coronavirus	0.0603	0.0642*
	(0.0367)	(0.0364)
GOP governor	−0.955***	−0.508**
	(0.0831)	(0.222)
Independent x GOP governor	0.683**	—
	(0.273)	
Republican x GOP governor	0.763***	—
	(0.114)	
Democratic governor mask mandate	—	0.722***
		(0.228)
Republican governor mask mandate	—	0.616***
		(0.127)
Independent x Democratic governor mask mandate	—	−0.696**
		(0.297)
Independent x GOP governor mask mandate	—	−0.0825
		(0.416)
Republican x Democratic governor mask mandate	—	−1.010***
		(0.133)
Republican x GOP governor mask mandate	—	−0.597***
		(0.178)
Income	−0.00421	−0.00545
	(0.00890)	(0.00882)
Owns home	−0.0812	−0.0651
	(0.0588)	(0.0583)
Sexual orientation: straight	0.0611	0.0452
	(0.0893)	(0.0886)
Any military connection	0.145***	0.147***
	(0.0558)	(0.0553)
Race: white	0.0606	0.0605
	(0.0630)	(0.0625)

(*continued*)

Table A.1. (*continued*)

Variables	(1) Trust in State Government: Copartisan Governors	(2) Trust in State Government: Governors + Mask Mandates
Education	0.0508**	0.0549**
	(0.0219)	(0.0217)
Gender: female	0.00200	0.0127
	(0.0553)	(0.0548)
Gender: nonbinary	−0.0241	−0.0143
	(0.297)	(0.296)
Constant	1.393***	0.640**
	(0.181)	(0.287)
Observations	944	944
R^2	0.270	0.289

Source: Authors' calculations.

Note: Cell entries are OLS regression coefficients with standard errors in parentheses.

* $p < .1$; ** $p < .05$; *** $p < .01$

Table A.2. Effect of Ideology and Gubernatorial Party Affiliation on Trust in State Government Information

Variables	(1) Trust in State Government
Party identification	−0.0765***
	(0.0194)
Moderate	−0.187**
	(0.0889)
Conservative	−0.417***
	(0.115)
National Identity	0.0146*
	(0.00861)
State Identity	0.0554***
	(0.00716)
Concern about coronavirus	0.0661*
	(0.0363)
Republican governor	−0.949***
	(0.0803)
Moderate x GOP governor	0.532***
	(0.128)
Conservative x GOP governor	1.139***
	(0.142)
Income	−0.000631
	(0.00877)
Owns home	−0.0888
	(0.0579)
Sexual orientation: straight	0.0225
	(0.0880)
Any military connection	0.142**
	(0.0552)
Race: White	0.0691
	(0.0621)
Education	0.0582***
	(0.0216)
Gender: female	−0.0220
	(0.0545)
Gender: nonbinary	0.0919
	(0.289)
Constant	1.322***
	(0.170)
Observations	944
R^2	0.290

Source: Authors' calculations.
Note: Cell entries are OLS regression coefficients with standard errors in parentheses. Lower values on the partisan variables indicate greater identification with Democrats.
* $p < .1$; ** $p < .05$; *** $p < .01$

Table A.3. Effects of Key Variables on Trust in Information from State COVID-19 Responders

	State Government
Partisanship	−0.068**
	(0.019)
Ideology	−0.019
	(0.039)
National identity	0.014
	(0.0090)
State identity	0.058**
	(0.0074)
Concern about COVID-19	0.041
	(0.037)
GOP governor	−0.54
	(0.059)
Income	−0.0037
	(0.0090)
Own home	−0.085
	(0.060)
Sexual orientation: straight	0.045
	(0.091)
Any military connection	0.14*
	(0.057)
Race: White	0.097
	(0.064)
Education	0.049*
	(0.022)
Gender: female	−0.014
	(0.056)
Gender: nonbinary	0.041
	(0.300)
Constant	1.27**
	(0.184)
R^2	0.24
N	944

Source: Authors' calculations.
Note: Cell entries are OLS regression coefficients with standard errors in parentheses. Lower values on the partisan-ideology variables indicate greater identification with Democrats and liberals.
* $p < .05$; ** $p < .01$

APPENDIX B: OLS MODELS USING CORRECTIVE PARTISAN WEIGHTS

We ran each of our models three ways: unweighted, weighted by the census distribution of the U.S. population on education, and weighted on Gallup's distribution of the U.S. population's partisan identity. We used single weights rather than any sort of combination of factors to avoid introducing greater bias into our results; with so few people in certain demographic and political categories, we were concerned about increasing the variance in certain categories. This appendix displays the unweighted and weighted models for each test next to one another for ease of comparison.

The vast majority of key relationships stay the same regardless of the weighting choices. Differences that do exist do not substantially affect the specific hypotheses. They do highlight one pattern that impacts our conclusions: the relationship between party identification and national identity. Several models suggest that national identity plays a statistically significant role in relevant measures of trust in information when we weight on party identification but is statistically insignificant in the unweighted and education-weight models. In each of those cases, national identity positively affects trust in information from state officials. Thus this article could underestimate the impact of national identity on trust in information from state officials because our survey undersamples independents and Republicans relative to the national population.

Research based on the Grinnell College National Poll has found a positive relationship between national identity and support for Donald Trump (Rawhouser-Mylet and Hanson 2020); our data also suggest that this is the case. We find that national identity and partisanship (measured on the 7-point scale that combines identity and strength) are correlated at 0.36, such that strong Republicans are more likely to also score highly on the national identity scale. The correlation is stronger (0.48) if we look at approval of President Trump. However, these moderate correlations should not be taken to suggest that national identity and partisanship are the same underlying concept. Instead, they highlight the importance of controlling for partisanship when making claims about the effects of national identity, and for the possibility that national identity operates differently for Democrats and Republicans.

Table B.1. Trust in Information from President Trump Across Weighting Schemes

Variables	(1) Unweighted	(2) Weighted by Party ID	(3) Weighted by Education
Party ID (7 pt)	0.202***	0.213***	0.206***
	(0.0177)	(0.0199)	(0.0229)
Ideology	0.108***	0.0905**	0.123**
	(0.0354)	(0.0400)	(0.0500)
National identity	0.0585***	0.0664***	0.0518***
	(0.00812)	(0.00862)	(0.0101)
State identity	0.0234***	0.0198**	0.0135
	(0.00653)	(0.00768)	(0.00981)
Concern about COVID-19	−0.238***	−0.270***	−0.280***
	(0.0340)	(0.0405)	(0.0451)
Income	−0.0105	−0.0158*	-0.0117
	(0.00816)	(0.00908)	(0.00976)
Owns home	−0.122**	−0.135**	-0.113
	(0.0539)	(0.0591)	(0.0775)
Heterosexual	0.0408	0.0466	0.0112
	(0.0823)	(0.0770)	(0.109)
Connection to military	−0.0714	−0.0917	−0.0263
	(0.0515)	(0.0567)	(0.0772)
White	0.0948	0.106	0.189**
	(0.0579)	(0.0655)	(0.0848)
Education	0.00357	−0.00446	0.0125
	(0.0202)	(0.0221)	(0.0280)
Gender: female	−0.0342	−0.0306	−0.0630
	(0.0509)	(0.0563)	(0.0798)
Gender: nonbinary	−0.189	−0.206	−0.0249
	(0.273)	(0.156)	(0.184)
Constant	−0.292*	−0.218	−0.172
	(0.165)	(0.181)	(0.212)
Observations	951	951	951
R^2	0.495	0.490	0.489

Source: Authors' calculations.

Note: Cell entries are OLS regression coefficients with standard errors in parentheses.

* $p < .1$; ** $p < .05$; *** $p < .01$

Table B.2. Trust in Information from the CDC Across Weighting Schemes

Variables	(2) Unweighted	(2) Weighted by Party ID	(3) Weighted by Education
Party ID (7 pt)	−0.0367**	−0.0340*	−0.00746
	(0.0186)	(0.0191)	(0.0224)
Ideology	−0.0429	−0.0367	−0.130***
	(0.0373)	(0.0392)	(0.0442)
National identity	0.0312***	0.0288***	0.0342***
	(0.00856)	(0.00980)	(0.0104)
State identity	0.00938	0.0131*	0.00987
	(0.00690)	(0.00772)	(0.00843)
Concern about COVID-19	0.248***	0.276***	0.222***
	(0.0360)	(0.0422)	(0.0506)
Income	0.00783	0.00694	0.00799
	(0.00861)	(0.00908)	(0.00957)
Owns home	−0.0777	−0.0423	−0.109
	(0.0569)	(0.0596)	(0.0694)
Heterosexual	−0.132	−0.164*	−0.202**
	(0.0869)	(0.0942)	(0.0984)
Connection to military	−0.0137	−0.0228	0.0679
	(0.0544)	(0.0587)	(0.0698)
White	0.0233	0.0194	−0.0165
	(0.0611)	(0.0663)	(0.0798)
Education	0.00607	0.00707	−0.00809
	(0.0213)	(0.0221)	(0.0223)
Gender: female	−0.114**	−0.101*	−0.0931
	(0.0537)	(0.0560)	(0.0663)
Gender: nonbinary	−0.296	−0.269	−1.014***
	(0.288)	(0.292)	(0.259)
Constant	1.454***	1.356***	1.751***
	(0.174)	(0.195)	(0.232)
Observations	950	950	950
R^2	0.110	0.121	0.150

Source: Authors' calculations.

Note: Cell entries are OLS regression coefficients with standard errors in parentheses.

* $p < .1$; ** $p < .05$; *** $p < .01$

Table B.3. Trust in Information from Dr. Fauci Across Weighting Schemes

Variables	(1) Unweighted	(2) Weighted by Party ID	(3) Weighted by Education
Party ID (7 pt)	−0.102***	−0.107***	−0.0802***
	(0.0188)	(0.0202)	(0.0248)
Ideology	−0.130***	−0.118***	−0.209***
	(0.0377)	(0.0410)	(0.0547)
National identity	−0.0104	−0.0105	−0.00139
	(0.00864)	(0.00975)	(0.0119)
State identity	0.0129*	0.0173**	0.00773
	(0.00695)	(0.00777)	(0.00860)
Concern about COVID-19	0.383***	0.410***	0.380***
	(0.0361)	(0.0409)	(0.0552)
Income	0.00701	0.00950	0.0113
	(0.00867)	(0.00976)	(0.0114)
Owns home	0.0525	0.0680	0.0475
	(0.0573)	(0.0616)	(0.0872)
Heterosexual	0.139	0.153	0.00551
	(0.0874)	(0.100)	(0.106)
Connection to military	0.192***	0.212***	0.229***
	(0.0547)	(0.0595)	(0.0763)
White	−0.00240	−0.0335	0.0623
	(0.0616)	(0.0673)	(0.0904)
Education	0.0612***	0.0571**	0.0589**
	(0.0214)	(0.0233)	(0.0272)
Gender: female	−0.0884	−0.0843	−0.177**
	(0.0541)	(0.0603)	(0.0839)
Gender: nonbinary	−0.259	-0.287	−0.394*
	(0.290)	(0.255)	(0.208)
Constant	1.436***	1.316***	1.615***
	(0.176)	(0.196)	(0.262)
Observations	949	949	949
R^2	0.302	0.301	0.312

Source: Authors' calculations.

Note: Cell entries are OLS regression coefficients with standard errors in parentheses.

* $p < .1$; ** $p < .05$; *** $p < .01$

Table B.4. Trust in Information from State Officials Across Weighting Schemes

Variables	(1) Unweighted	(2) Weighted by Party ID	(3) Weighted by Education
Party ID (7 pt)	−0.0680***	−0.0726***	−0.0490*
	(0.0195)	(0.0195)	(0.0258)
Ideology	−0.0189	-0.0186	−0.00699
	(0.0390)	(0.0410)	(0.0487)
National identity	0.0141	0.0204**	0.00209
	(0.00901)	(0.00974)	(0.0117)
State identity	0.0579***	0.0597***	0.0628***
	(0.00738)	(0.00798)	(0.0111)
Concern about COVID-19	0.0407	0.0509	0.0783
	(0.0375)	(0.0443)	(0.0534)
Republic governor	−0.544***	−0.457***	−0.407***
	(0.0586)	(0.0638)	(0.102)
Income	−0.00371	−0.00687	0.00168
	(0.00904)	(0.00971)	(0.0111)
Owns home	−0.0848	−0.0570	−0.0652
	(0.0598)	(0.0628)	(0.0869)
Heterosexual	0.0447	0.00911	-0.111
	(0.0908)	(0.0937)	(0.138)
Connection to military	0.141**	0.139**	0.205**
	(0.0568)	(0.0597)	(0.0988)
White	0.0967	0.0845	0.0964
	(0.0641)	(0.0673)	(0.108)
Education	0.0487**	0.0487**	0.0160
	(0.0222)	(0.0229)	(0.0322)
Gender: female	−0.0135	−0.00863	0.0735
	(0.0562)	(0.0584)	(0.0858)
Gender: nonbinary	0.0414	−0.0704	−0.109
	(0.300)	(0.245)	(0.299)
Constant	1.266***	1.193***	1.292***
	(0.184)	(0.203)	(0.224)
Observations	944	944	944
R^2	0.240	0.223	0.219

Source: Authors' calculations.
Note: Cell entries are OLS regression coefficients with standard errors in parentheses.
* p < .1; ** $p < .05$; *** $p < .01$

Table B.5. Effect of Partisanship and Gubernatorial Party Affiliation on Trust in State Government Information Across Weighting Schemes

Variables	(1) Unweighted	(2) Weighted by Party ID	(3) Weighted by Education
Independents	−0.495***	−0.432***	−0.290**
	(0.187)	(0.104)	(0.121)
Republicans	−0.416***	−0.646***	−0.437***
	(0.0808)	(0.0921)	(0.130)
Ideology	−0.0731**	−0.0598	−0.0683
	(0.0341)	(0.0378)	(0.0490)
National identity	0.0122	0.0247***	0.00300
	(0.00883)	(0.00944)	(0.0113)
State identity	0.0558***	0.0567***	0.0570***
	(0.00725)	(0.00775)	(0.0100)
Concern about coronavirus	0.0603	0.0691	0.102*
	(0.0367)	(0.0434)	(0.0527)
GOP Governor	−0.955***	−0.923***	−0.849***
	(0.0831)	(0.0805)	(0.0919)
Independent x GOP governor	0.683**	0.574***	0.543**
	(0.273)	(0.170)	(0.274)
Republican x GOP governor	0.763***	1.046***	1.142***
	(0.114)	(0.138)	(0.175)
Income	−0.00421	−0.00384	0.00535
	(0.00890)	(0.00930)	(0.0107)
Owns home	−0.0812	−0.0809	−0.0653
	(0.0588)	(0.0612)	(0.0791)
Sexual orientation: straight	0.0611	0.0141	−0.0872
	(0.0893)	(0.0920)	(0.132)
Any military connection	0.145***	0.138**	0.179**
	(0.0558)	(0.0580)	(0.0797)
Race: White	0.0606	0.0506	0.0916
	(0.0630)	(0.0665)	(0.0956)
Education	0.0508**	0.0555**	0.0341
	(0.0219)	(0.0220)	(0.0267)
Gender: female	0.00200	−0.0108	0.0857
	(0.0553)	(0.0565)	(0.0737)
Gender: nonbinary	−0.0241	−0.0841	−0.171
	(0.297)	(0.257)	(0.337)
Constant	1.393***	1.259***	1.331***
	(0.181)	(0.196)	(0.224)
Observations	944	944	944
R^2	0.270	0.278	0.281

Source: Authors' calculations.

Note: Cell entries are OLS regression coefficients with standard errors in parentheses.

* $p < .1$; ** $p < .05$; *** $p < .01$

Table B.6. Effect of Partisanship, Gubernatorial Party Affiliation, and Mask Mandates Across Weighting Schemes

Variables	(1) Unweighted	(2) Weighted by Party ID	(3) Weighted by Education
Independents	0.234	0.183	0.833***
	(0.228)	(0.190)	(0.268)
Republicans	0.578***	0.637***	0.989***
	(0.120)	(0.153)	(0.204)
Ideology	−0.0648*	−0.0508	−0.0682
	(0.0338)	(0.0373)	(0.0472)
National identity	0.0147*	0.0264***	0.00839
	(0.00877)	(0.00933)	(0.0104)
State identity	0.0530***	0.0540***	0.0591***
	(0.00721)	(0.00772)	(0.00849)
Concern about coronavirus	0.0642*	0.0792*	0.0991**
	(0.0364)	(0.0435)	(0.0502)
GOP governor	−0.508**	−0.488**	−0.475*
	(0.222)	(0.238)	(0.252)
Democratic governor mask mandate	0.722***	0.649***	0.629**
	(0.228)	(0.237)	(0.248)
Republican governor mask mandate	0.616***	0.523***	0.610***
	(0.127)	(0.133)	(0.124)
Independent x Democratic governor mask mandate	−0.696**	−0.597***	−1.115***
	(0.297)	(0.215)	(0.284)
Independent x GOP governor mask mandate	−0.0825	-0.287	−1.395***
	(0.416)	(0.255)	(0.355)
Republican x Democratic governor mask mandate	−1.010***	−1.303***	−1.464***
	(0.133)	(0.157)	(0.196)
Republican x GOP governor w/mask mandate	−0.597***	−0.669***	−0.842***
	(0.178)	(0.240)	(0.257)
Income	−0.00545	−0.00520	0.00397
	(0.00882)	(0.00932)	(0.0102)
Owns home	−0.0651	−0.0651	−0.0949
	(0.0583)	(0.0608)	(0.0698)
Sexual orientation: straight	0.0452	−0.00111	−0.0456
	(0.0886)	(0.0897)	(0.101)
Any military connection	0.147***	0.135**	0.174**
	(0.0553)	(0.0576)	(0.0726)
Race: White	0.0605	0.0411	0.0981
	(0.0625)	(0.0657)	(0.0867)
Education	0.0549**	0.0525**	0.0382
	(0.0217)	(0.0218)	(0.0241)
Gender: female	0.0127	−0.0173	0.0838
	(0.0548)	(0.0563)	(0.0671)
Gender: nonbinary	−0.0143	−0.0776	−0.367
	(0.296)	(0.243)	(0.320)
Constant	0.640**	0.618**	0.624**
	(0.287)	(0.290)	(0.305)
Observations	944	944	944
R^2	0.289	0.294	0.317

Source: Authors' calculations.

Note: Cell entries are OLS regression coefficients with standard errors in parentheses.

* $p < .1$; ** $p < .05$; *** $p < .01$

Table B.7. Effect of Partisanship, Gubernatorial Party Affiliation, and Stay-at-Home Orders on Trust in Information from State Officials Across Weighting Schemes

Variables	(1) Unweighted	(2) Weighted by Party ID	(3) Weighted by Education
Independents	0.735**	0.785*	1.394**
	(0.346)	(0.414)	(0.591)
Republicans	0.766**	0.829***	0.920***
	(0.328)	(0.313)	(0.320)
Ideology	−0.0542	−0.0559	−0.0701
	(0.0384)	(0.0406)	(0.0513)
National identity	0.0183**	0.0240**	0.00516
	(0.00924)	(0.00989)	(0.0117)
State identity	0.0572***	0.0595***	0.0562***
	(0.00754)	(0.00825)	(0.0105)
Coronavirus concern	0.0619	0.0697	0.123**
	(0.0387)	(0.0457)	(0.0534)
GOP governor	−1.644***	−1.701***	−1.589***
	(0.196)	(0.145)	(0.158)
Democratic governor x mandatory order	—	—	—
Republican governor x mandatory order	0.790***	0.863***	0.840***
	(0.198)	(0.154)	(0.157)
Independents x governor with mandatory order	−1.178***	−1.224***	−1.620***
	(0.361)	(0.425)	(0.597)
Independents x Democratic governor with mandatory order	−0.641*	−0.699	−1.297**
	(0.372)	(0.435)	(0.643)
Republicans x GOP governor with mandatory order	−1.462***	−1.527***	−1.338***
	(0.332)	(0.317)	(0.330)
Republicans x Dem. governor with mandatory order	−0.388	−0.480	−0.267
	(0.336)	(0.328)	(0.339)
Income	−0.00315	−0.00584	0.00397
	(0.00917)	(0.00977)	(0.0109)
Owns home	−0.0923	−0.0638	−0.0594
	(0.0622)	(0.0655)	(0.0841)
Sexual orientation: straight	0.0511	0.00973	−0.145
	(0.0927)	(0.0942)	(0.150)
Any military connection	0.194***	0.186***	0.224***
	(0.0586)	(0.0613)	(0.0755)
Race: White	0.0136	0.00378	0.0796
	(0.0676)	(0.0709)	(0.0971)
Education	0.0490**	0.0462**	0.0199
	(0.0226)	(0.0226)	(0.0274)
Gender: female	−0.00401	−0.00775	0.0897
	(0.0580)	(0.0599)	(0.0740)
Gender: nonbinary	0.00661	−0.102	−0.187
	(0.294)	(0.261)	(0.361)
Constant	1.309***	1.283***	1.343***
	(0.195)	(0.212)	(0.252)
Observations	845	845	845
R^2	0.301	0.286	0.300

Source: Authors' calculations.

Note: Cell entries are OLS regression coefficients with standard errors in parentheses. By late July, all states had some form of stay-at-home order; 15 percent of participants lived in states where those orders were recommendations or advisories rather than mandates for some or all of the population.

* $p < .1$; ** $p < .05$; *** $p < .01$

Table B.8. Effect of Ideology and Gubernatorial Party Affiliation on Trust in State Government Information

Variables	(1) Unweighted	(2) Weighted by Party ID	(3) Weighted by Education
Party identification	−0.0765***	−0.0812***	−0.0624**
	(0.0194)	(0.0194)	(0.0254)
Moderate	−0.187**	−0.175**	−0.255**
	(0.0889)	(0.0842)	(0.114)
Conservative	−0.417***	−0.426***	−0.343**
	(0.115)	(0.117)	(0.142)
National identity	0.0146*	0.0206**	0.00258
	(0.00861)	(0.00911)	(0.0106)
State identity	0.0554***	0.0572***	0.0554***
	(0.00716)	(0.00771)	(0.0106)
Concern about coronavirus	0.0661*	0.0780*	0.0994**
	(0.0363)	(0.0431)	(0.0499)
Republican governor	−0.949***	−0.928***	−0.959***
	(0.0803)	(0.0895)	(0.0925)
Moderate x GOP governor	0.532***	0.530***	0.815***
	(0.128)	(0.138)	(0.205)
Conservative x GOP governor	1.139***	1.159***	1.140***
	(0.142)	(0.152)	(0.167)
Income	−0.000631	−0.00293	0.00591
	(0.00877)	(0.00927)	(0.0104)
Owns home	−0.0888	−0.0609	−0.0880
	(0.0579)	(0.0601)	(0.0829)
Sexual orientation: straight	0.0225	−0.0193	−0.0871
	(0.0880)	(0.0913)	(0.126)
Any military connection	0.142**	0.137**	0.211**
	(0.0552)	(0.0582)	(0.0951)
Race: White	0.0691	0.0591	0.0700
	(0.0621)	(0.0657)	(0.0997)
Education	0.0582***	0.0566***	0.0348
	(0.0216)	(0.0218)	(0.0273)
Gender: female	−0.0220	−0.0171	0.0547
	(0.0545)	(0.0564)	(0.0752)
Gender: nonbinary	0.0919	0.0110	0.227
	(0.289)	(0.229)	(0.282)
Constant	1.322***	1.277***	1.389***
	(0.170)	(0.183)	(0.219)
Observations	944	944	944
R^2	0.290	0.276	0.277

Source: Authors' calculations.

Note: Cell entries are OLS regression coefficients with standard errors in parentheses. Lower values on the partisan variables indicate greater identification with Democrats.

* $p < .1$; ** $p < .05$; *** $p < .01$

APPENDIX C: FINDINGS USING ALTERNATIVE DATA SOURCES

Our data are from an online sample of participants who self-selected into the study, but the findings parallel those from other studies in the summer of 2020. Axios-Ipsos, a national polling collaboration, conducted a series of surveys about Americans' attitudes toward the coronavirus and the government handling of the pandemic, beginning in March 2020. The seventeeth wave of the survey was fielded at the time nearest to our own data collection, running from July 17 through 20, 2020, and collecting responses from 1,037 individuals through the web-enabled KnowledgePanel, the oldest and largest probability-based online panel in the United States (Ipsos 2022). To examine whether our results are unique to July 2020, we also run the same analyses on an additional wave of the survey conducted in October 2020 (sample size 1,079).

The Axios-Ipsos surveys do not allow us to exactly duplicate our analyses because they do not include all the measures we incorporated into our survey. Most notably, they ask participants about their ideology or their state identity, which means we are unable to evaluate hypotheses 2a, 2b, 3a, and 3b using these datasets. Their value, however, comes from their measure of partisan identity and of trust in government information, which is phrased similarly to that used in our survey. In both the July and October waves, participants were asked "How much trust do you have in each of the following to provide you with accurate information about coronavirus or COVID-19?" In July, they were asked to consider five entities: the federal government, their state government, the Centers for Disease Control and Prevention (CDC), national public health officials, and the White House. In October, participants were asked about their trust in the federal government, their state government, the CDC, national public health officials, Donald Trump, and Joe Biden. Thus we can effectively assess the effect of partisan identity on trust in information from President Trump (H1a), information from the CDC (H1b), and state officials (H1c and H1d).

Hypothesis 1a argues that Republicans would be more trusting in President Trump to provide pandemic information than Democrats would. The October 2020 survey also allows us to examine the converse of this relationship: the expectation that Democrats will be more trusting of information from (at the time) Democratic presidential candidate Joe Biden. Table C.1 demonstrates that this is the case and that, if anything, the role of partisanship in predicting trust in information from national-level elected officials (or candidates) only increased as we approached the November 2020 presidential election. As is clear from column 1, Republican trust in information from the White House was a full point higher than that of Democrats in July. By October, Republican trust in information from Trump was 1.4 points higher that of Democrats, but trust in Democratic presidential candidate Joe Biden was 1.3 points lower. Thus the data from the Axios-Ipsos polls offers further support for hypothesis 1a and highlights the way in which partisan identification shaped partisan trust in information not only from President Trump but also from Democratic candidate Joe Biden.

We also see support for our hypothesis that Democrats will be more trusting federal bureaucrats (H1b), particularly the CDC and national public health officials. Across both waves of the Axios-Ipsos poll, Republicans are about 0.14 to 0.3 points less trusting in information from the CDC and national public officials than their Democratic counterparts (see table C.2). This partisan effect is substantially smaller in size than that on trust in Trump and Biden to provide reliable information but nonetheless suggests that individuals were assessing information from nonpartisan bureaucrats differently than they were elected officials and candidates for federal office. What is more, the effect sizes for the relationship between partisanship and trust in both partisan elected officials and nonpartisan public health officials in the Axios-Ipsos poll waves are similar to those found in our sample.

Although the results for hypotheses 1a and 1b reflect those found in our Prolific sample, those for hypotheses 1c retain the same pattern of findings but with weaker effect sizes. Hypothesis 1c focuses on the interaction between participants' partisan identification and the

Table C.1. Trust in Information from Federal Elected Officials, July and October 2020

Variables	(1) July 2020: White House	(2) October 2020: Trump	(3) October 2020: Biden
Party identification			
Independent	0.274***	0.411***	−0.731***
	(0.0698)	(0.0570)	(0.0720)
Republican	1.034***	1.358***	−1.266***
	(0.0810)	(0.0843)	(0.0766)
Concern about COVID	−0.227***	−0.285***	0.344***
	(0.0327)	(0.0321)	(0.0267)
Income	−0.0226***	−0.0209***	0.0294***
	(0.00737)	(0.00623)	(0.00715)
Home ownership			
Renter	−0.103	-0.0913	0.0147
	(0.0786)	(0.0659)	(0.0668)
Occupied without payment	0.470*	0.0689	0.0481
	(0.250)	(0.277)	(0.169)
White	0.00209	0.0735	0.0124
	(0.0691)	(0.0652)	(0.0640)
Female	0.0860	0.0307	−0.169***
	(0.0592)	(0.0584)	(0.0562)
Constant	1.435***	1.344***	0.802***
	(0.172)	(0.160)	(0.157)
Observations	1,011	1,049	1,050
R^2	0.292	0.454	0.459

Source: Authors' calculations based on data from Axios-Ipsos Coronavirus Index, waves 17 and 29.
Note: Cell entries are OLS regression coefficients with standard errors in parentheses.
* $p < .1$; ** $p < .05$; *** $p < .01$

party affiliation of their state's governor, whereas 1d expects trust in information from the state government to depend on the interaction between participants' partisanship and the state's decision to implement strict COVID-19 containment policies. Figure C.1 depicts the relationship between participant partisanship, gubernatorial party affiliation, and trust in information from the state government, replicating the analysis of our own data shown in figure 3 (full regression models in table C.3). Whereas Democrats in our study were a full point more trusting of information from the state government if it was led by a copartisan, the Axios-Ipsos participants' trust in information from the state government during the same period shows no statistically significant difference. In the October data, we see the expected effect, Democrats trusting information from state governments run by a copartisan about half a point more than those run by Republicans. Turning to Republican participants, we see little difference in our data in Republican trust in information under Republican or Democratic governors; in contrast, in both July and October, the Republicans in the Axios-Ipsos poll trust information from state governments more when the governor is a copartisan. In short, although the effects are weaker in some contexts, the Axios-Ipsos data still reinforces our finding that partisanship shapes trust in information from the state government and gives us added leverage in understanding Republican attitudes.

Table C.2. Trust in Information from Federal Bureaucrats

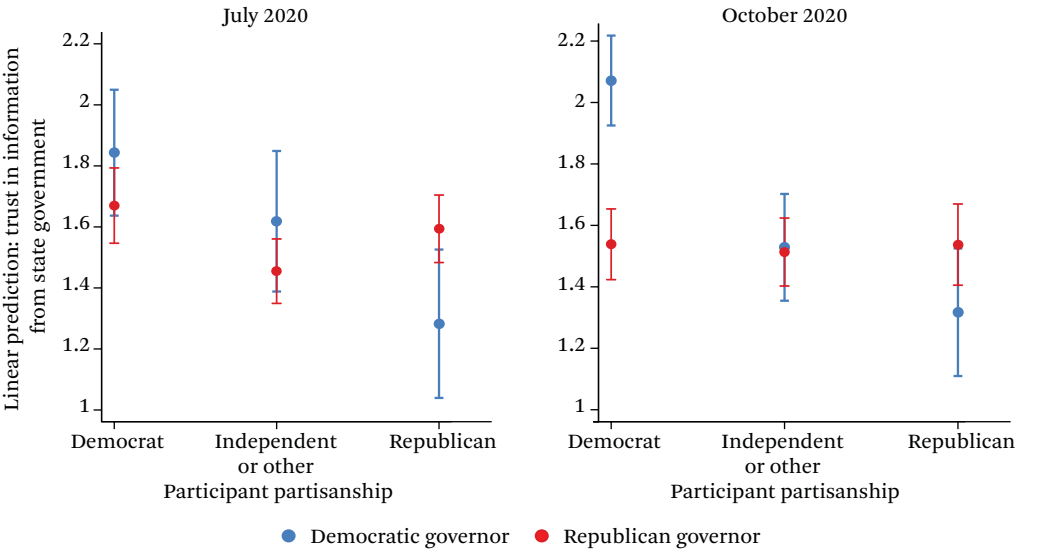
Variables	(1) July 2020: CDC	(2) July 2020: National Public Health Officials	(3) October 2020: CDC	(4) October 2020: National Public Health Officials
Party identification				
Independent	−0.179**	−0.187***	−0.125*	−0.167**
	(0.0726)	(0.0716)	(0.0697)	(0.0699)
Republican	−0.306***	−0.261***	−0.162**	−0.144*
	(0.0834)	(0.0798)	(0.0764)	(0.0742)
COVID concern	0.296***	0.246***	0.205***	0.181***
	(0.0309)	(0.0299)	(0.0282)	(0.0278)
Income	0.0173**	0.0117*	0.0240***	0.0219***
	(0.00697)	(0.00662)	(0.00683)	(0.00685)
Home ownership				
Rent	0.0928	0.0673	−0.0843	−0.0687
	(0.0741)	(0.0741)	(0.0741)	(0.0773)
Occupy without payment	0.322	0.465	0.270	0.205
	(0.310)	(0.290)	(0.205)	(0.207)
White	0.0354	0.0758	−0.0206	0.0322
	(0.0682)	(0.0663)	(0.0650)	(0.0670)
Female	−0.0259	−0.0714	0.0224	0.0316
	(0.0608)	(0.0593)	(0.0569)	(0.0564)
Constant	1.027***	1.067***	1.056***	1.099***
	(0.159)	(0.157)	(0.153)	(0.158)
Observations	1,012	1,010	1,052	1,051
R^2	0.176	0.133	0.125	0.104

Source: Authors' calculations based on data from Axios-Ipsos Coronavirus Index, waves 17 and 29.
Note: Cell entries are OLS regression coefficients with standard errors in parentheses.
* $p < .1$; ** $p < .05$; *** $p < 0.01$

Finally, the Axios-Ipsos data reinforce our argument that policy implementation designed to address the threat posed by the pandemic reduced the impact of partisanship on trust in information from the state government, particularly for Democrats. In July 2020, Democrats trust in information from state governments run by Republican or Democratic governors are statistically indistinguishable, as long as they have implemented a mask policy. In October, partisanship has regained some of its power—Democrats have higher trust in information from governments run by copartisans who have implemented mask mandates than they do if their state is run by the outparty—but the presence of a mask mandate still strongly affects trust in information from the state. We also see in this data that Republicans are not making a distinction across gubernatorial party or policy; if anything, they are more trusting of information from the state government when that state has not implemented a mask mandate.

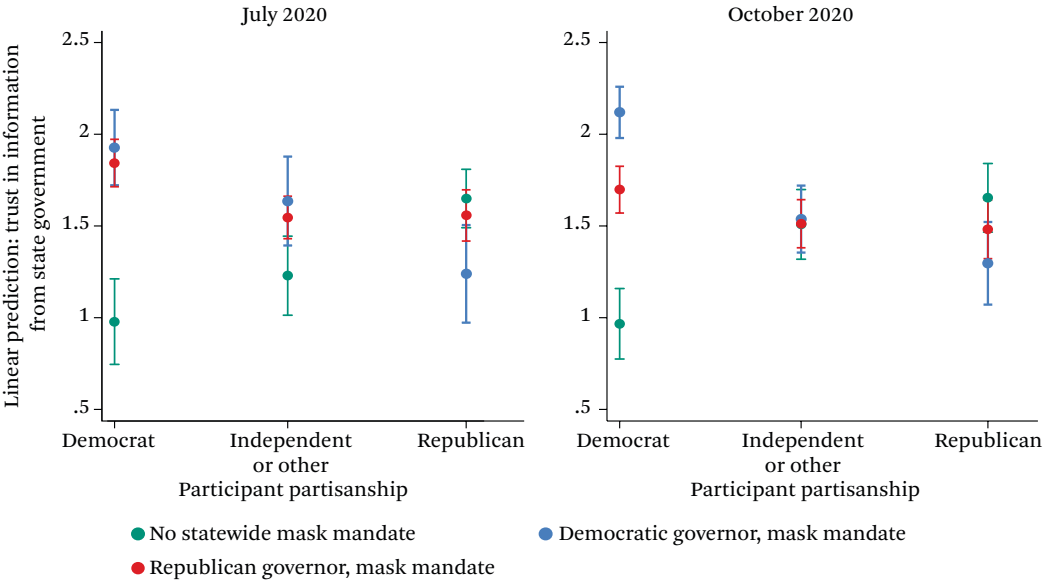
Ultimately, the data from the two Axios-Ipsos waves reinforce our findings about the role of partisanship in shaping responses to COVID-19, particularly the trust Americans had in information from state and federal leaders. By examining this data at two different time points, we can feel more confident that the relationships we identify in our original survey are not an artifact of the sample or the period at which the data is collected, but an enduring pattern of behavior.

Figure C.1. Trust in Information from the State Government, by Partisanship and Governor's Partisan Identification



Source: Authors' calculations based on data from Axios-Ipsos Coronavirus Index, waves 17 and 29.
Notes: Predictions based on an OLS regression (full model in table C.3). Trust in state government is measured on a 4-point scale, 0 indicating no trust and 3 indicating a great deal of trust.

Figure C.2. Trust in Information from State Government, by Partisanship, Governor's Partisan Affiliation, and Policy Implementation



Source: Authors' calculations based on data from Axios-Ipsos Coronavirus Index, waves 17 and 29.
Notes: Predictions based on an OLS regression (full model in table C.3). Trust in state government is measured on a 4-point scale, 0 indicating no trust and 3 indicating a great deal of trust.

Table C.3. Trust in Information from State Government, Considering Elite Partisanship and Policy

Variables	(1) Government Party July	(2) Governors + Mask Mandates July	(3) Government Party October	(4) Governors + Mask Mandates October
Party identification				
Independent	−0.225	0.250	−0.543***	0.542***
	(0.159)	(0.162)	(0.115)	(0.140)
Republican	−0.561***	0.671***	−0.754***	0.687***
	(0.165)	(0.146)	(0.132)	(0.144)
Republican governor	−0.160	−0.0441	−0.520***	0.117
	(0.120)	(0.226)	(0.0907)	(0.187)
Democratic governor w/mask mandate		0.882***		1.203***
		(0.259)		(0.215)
Republican governor w/mask mandate		0.860***		0.690***
		(0.135)		(0.113)
Partisanship x gubernatorial party				
Independent x GOP governor	0.00976		0.518***	
	(0.175)		(0.140)	
Republican x GOP governor	0.485***		0.753***	
	(0.181)		(0.151)	
Partisanship x mask mandate				
Independent x Democratic governor w/mask mandate		−0.542**		−1.123***
		(0.228)		(0.180)
Independent x Republican governor w/mask mandate		−0.547***		−0.727***
		(0.183)		(0.164)
Republican x Democratic governor w/mask mandate		−1.359***		−1.509***
		(0.223)		(0.190)
Republican x Republican governor w/mask mandate		−0.957***		−0.903***
		(0.170)		(0.163)
COVID-19 concern	0.186***	0.195***	0.181***	0.188***
	(0.0299)	(0.0296)	(0.0292)	(0.0288)
Income	0.00416	0.00331	0.0250***	0.0250***
	(0.00670)	(0.00658)	(0.00677)	(0.00686)
Home Ownership				
Rent	0.0382	0.0567	0.0769	0.0837
	(0.0754)	(0.0748)	(0.0756)	(0.0757)
Occupy without payment	0.638**	0.637***	−0.0646	0.0453
	(0.263)	(0.244)	(0.297)	(0.263)
White	−0.0364	−0.00402	0.135**	0.128*
	(0.0684)	(0.0668)	(0.0663)	(0.0654)
Female	0.0422	0.0665	−0.0537	−0.0430
	(0.0620)	(0.0609)	(0.0571)	(0.0568)
Constant	1.268***	0.413	1.171***	−0.0224
	(0.189)	(0.275)	(0.166)	(0.255)
Observations	1,007	1,007	1,049	1,049
R^2	0.100	0.148	0.115	0.147

Source: Authors' calculations based on data from Axios-Ipsos Coronavirus Index, waves 17 and 29.
Note: Cell entries are OLS regression coefficients with standard errors in parentheses.
* $p < .1$; ** $p < .05$; *** $p < .01$

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Americans' Trust in Government and Health Behaviors During the COVID-19 Pandemic

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The importance of trust in government amid health emergencies has become apparent, especially given its impact on health behavior. Yet scholars often treat trust simplistically, measuring it at one point in time and in a unidimensional way. We use a unique series of surveys carried out during the first year of the pandemic to examine changing trust in different government actors over time and then link relative trust to compliance with expert-recommended health behaviors. We find that trust in government declined during this period, with especially large declines for federal and state relative to local government. We find somewhat steeper declines among women, Black Americans, the less educated, and Republicans. Finally, we find that trust in state governments and local health officials was positively associated with protective health behaviors, especially among Republicans, and that trust in the federal government was associated with a lower likelihood of such behaviors.

Keywords: trust in government, COVID-19 pandemic, health behavior, party polarization

Beginning in early spring 2020, the SARS-COV-2 coronavirus disease 2019 (COVID-19) spread throughout the United States at an alarming rate, eventually leaving a large death toll in its wake. Low rates of compliance with expert health recommendations to contain the spread of the virus have played a role in the persistence of the pandemic (Devine, Gaskell, and Jennings 2020). In this article, we examine a potentially important factor shaping citizens' decisions to adhere to public health advisories and adopt healthy behaviors: trust in government.

Governments play an outsized role in communicating expert health advice to the public and, at times, mandating that the public follow certain behavioral guidelines. Thus, whether

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people trust the government is likely critical to their willingness to comply with such advice and mandates. Unfortunately, Americans' trust in government tends to be low and may have decreased further during the pandemic. This suggests a possible vicious cycle in the United States: low trust, failure to comply with recommended health behaviors, a worsening pandemic, diminishing trust in government, and so on. This said, we argue that this conventional wisdom oversimplifies matters, as government advice is not always conducive to public health. In the United States, then President Donald Trump and some high-ranking Republican officials provided problematic advice to the public and undermined health experts. This raises the possibility that, in some instances, a high level of trust in government actors is in fact harmful to public health.

Despite a rapidly growing literature on societal responses to the COVID-19 pandemic, we know of no longitudinal studies of government trust during the pandemic focused on the United States. And those studies focused on other nations—with respect to COVID-19 as well as prior pandemics—have come to mixed conclusions as to whether trust is likely to rise or fall during a public health crisis (Bangerter et al. 2012; Bol et al. 2020; Schraff 2021). Studies linking trust with health behavior during pandemics have been more plentiful and have come to firmer conclusions: trust in government appears to increase positive health behaviors (Brodeur, Grigoryeva, and Kattan 2021; Freimuth et al. 2014; Robinson et al. 2021; Siegrist and Zingg 2014). However, we know of no studies—in the United States or elsewhere—that have explicitly examined whether trust in government entities conveying advice of varying quality yields different behavioral effects.

Here we contribute to these literatures by asking two sets of research questions about COVID-19 and trust in government, with a focus on the U.S. context. First, did trust in government decline during the COVID-19 pandemic? If so, are there important differences among government institutions and actors? Were any declines in trust in government during the COVID pandemic similar across social groups? Second, is trust in government positively associated with Americans' health behaviors? Can trust in government backfire in certain circumstances?

We answer these questions by analyzing data from a unique survey, the Axios/Ipsos Coronavirus Poll, which surveyed a cross-section of the American public nearly every week of the pandemic, beginning March 13, 2020. The survey includes measures of trust in a variety of government entities (federal, state, and local, as well as local health officials), whether respondents engaged in protective health behaviors, and standard political and demographic characteristics.

Focusing on the first year of the pandemic, our results indicate that public trust in government indeed declined as the pandemic progressed during 2020. Trust fell most sharply with respect to the federal government, a finding that might be expected given the federal government's especially poor initial response to the pandemic. However, state governments also experienced a substantial decline in trust. Trust in local health officials fell the least. Trust among several groups declined more than others, including women, Black Americans, those with less education, and Republicans. Turning to the association between trust in government and health behavior, trust in state governments and local health officials was associated with a greater likelihood of engaging in expert-recommended health behaviors, especially among Republicans; trust in the federal government, however, was associated with a lower likelihood.

In short, we find evidence consistent with a vicious pandemic-era cycle of low trust, noncompliance, worsening health outcomes, and then even lower trust. In the United States, trust declined over time, which may have led some people to ignore the advice and directives of government authorities, worsening the pandemic. At the same time, our findings also suggest a counterintuitive conclusion: low trust in the federal government specifically appears to have mitigated these negative effects to some degree, as it was those with greater trust in the branch of government headed by President Trump who complied less with expert-recommended health behaviors.

In the next section, we provide a review of relevant literatures on trust in government and

behavioral responses to the COVID-19 pandemic and clarify our research questions and tentative expectations.

THEORETICAL FRAMEWORK

In recent decades, the study of trust in government has become central to efforts to understand a variety of public behaviors, from voting to how people respond during national emergencies. In this article, three key ideas inform our conceptualization of trust in government. First, trust in government combines evaluations of both the competence of a government entity and whether its primary motive is to protect citizens' interests (Bangerter et al. 2012). Second, trust in government involves evaluations of actual government performance as well as subjective expectations of how well government ought to perform, such that any given individual's trust level reflects a rough ratio of their evaluation to their expectation (Hetherington and Husser 2012). Third, low trust—at least in the U.S. context—is better thought of as skepticism rather than "active distrust." Trust suggests people give another the benefit of the doubt, and thus low trust in government indicates a refusal to "presume that political authorities should be given the benefit of the doubt" (Cook and Gronke 2004, 785).

Trust in government is also multidimensional in that it can be both general (considered with respect to a nation's governmental system as a whole) and specific (considered with respect to a particular government institution or even person) (Levi and Stoker 2000). Theoretically, the number of specific variants is as large as is the number of government actors in a nation. Most commonly, scholars of U.S. politics distinguish among institutions within the U.S. government (the president, Congress, and so on) or, increasingly, among the levels of government that make up its federal system (the federal government, state governments, local governments) (see Wolak 2020). One can also distinguish among types of government officials, such as elected representatives, judges, or health officials. In this article, we investigate trust in multiple levels of government as well as the government actors most relevant to a pandemic: health officials.

Why People Trust, or Don't

Arguably the most salient fact about trust in U.S. government is that it decreased dramatically in the 1960s and 1970s and has remained at a relatively low level since (Chanley, Rudolph, and Rahn 2000; Levi and Stoker 2000). Scholarly discussion and debate as to why this decline occurred—and stuck—offers a window into the reasons why people do, and do not, trust the government.

Trust in government has many antecedents (Chanley, Rudolph, and Rahn 2000) but appears to be linked more to people's perceptions of politics and politically relevant experiences than to their personalities or social characteristics (Levi and Stoker 2000). The initial decline in trust in government in the United States has been widely attributed to unrest related to civil rights, the Vietnam War, and the Watergate scandal. Reasons for the continuation of depressed trust are more varied and include growing expectations for government as its resources declined (Mansbridge 1997), unemployment and other economic stresses (Stevenson and Wolfers 2011), and partisan polarization (Hetherington and Rudolph 2015).

Although the specific reasons for Americans' low trust in government varies, they have one thing in common: trust declines when people perceive that government entities are either unable or unwilling to protect their interests. With this in mind, when government does not prevent or adequately manage major crises, declines in trust are likely to follow. For example, research provides evidence for the negative impact on trust of economic downturns (Stevenson and Wolfers 2011), natural disasters, such as Hurricane Katrina (Nicholls and Picou 2012), and earlier pandemics (outside the United States), such as the 2009 H1N1 pandemic (Bangerter et al. 2012). That, early in the pandemic, the United States found itself among the top ten countries in the world for per capita COVID deaths (Craig 2020) suggests that declines in trust were likely.

All of this said, one caveat to the idea that trust in government is likely to fall when crises harm a population is important. If a government is perceived as providing some protection for the public from an external threat, trust in government may increase. In foreign affairs,

this is called the "rally 'round the flag" effect (see Hetherington and Husser 2012). At least two recent studies have found evidence of increased trust in government in Europe during the COVID-19 pandemic (Bol et al. 2020; Schraff 2021).

Shifting from aggregates to the subgroup level, we would also expect lower trust among people who feel as though government is not serving their specific interests. It is well established that this includes those whose political party is out of power (Hetherington and Rudolph 2015; Levi and Stoker 2000; Pears and Sydnor 2022, this issue). It might also include low-income people and other vulnerable groups, such as Black Americans, who have reason to suspect authorities engage in racial discrimination (Kennedy, Mathis, and Woods 2007). These individual-level characteristics may interact with crises to shape people's perceptions of government performance. For example, researchers have established that partisanship plays an important role in people's willingness to blame government for failing to adequately manage crises, with blame concentrated among citizens belonging to the outparty (Lyons and Jaeger 2014; Malhotra and Kuo 2008). With respect to public health crises specifically, Barry Eichengreen, Orkun Saka, and Cevat Giray Aksoy (2020) find that confidence in political leaders and governments fell most among young people, those with less education, and women. This may be due to greater psychological stress during the COVID pandemic among marginalized groups (Fancourt, Steptoe, and Bu 2020; Xiong et al. 2020; on racial trauma stress specifically, see Kamp Dush et al. 2022, this issue).

Finally, the nature of trust in government varies between levels of government and types of actors. Generally, trust in the federal government tends to be lower than trust in state and especially local governments, perhaps because the latter benefit from a combination of lower expectations and having easier tasks to perform (Jennings 1998). Determinants of trust can sometimes differ as well. For example, although economic performance and partisanship shape trust in lower levels of government as they do trust in the federal government, additional factors can loom relatively large, such as the perceived accessibility and responsiveness of government officials (Jennings 1998; Wolak 2000).

As the COVID-19 pandemic unfolded, differences in performance among various government entities became more salient than usual. Experts tend to agree that the United States' unusually poor health outcomes could be traced in large part to then President Trump's consistent efforts to downplay the pandemic and undermine experienced personnel within the executive branch (Rutledge 2020). However, in an effort to avoid responsibility and deflect blame from the federal government, Trump placed much of the burden of responding to COVID-19 onto states and localities (see James, Tervo, and Skocpol 2022, this issue). Devolution to states is usually an inadequate response to a pandemic, as individual state governments cannot control virus spread into their jurisdiction and coordination across states is extremely difficult (Haffajee and Mello 2020). This said, many states and localities earned relatively high marks for their performance under the circumstances. States and localities innovated and shared information through formal collaborations (Mallinson 2020). Following the ideological leans of their electorates, states diverged from one another in many ways too, with conservative states imposing fewer restrictions on their residents (Kettle 2020; James, Tervo, and Skocpol 2022, this issue). On the one hand, this more competent and ideologically congruent response to the pandemic by lower levels of government may have led to greater trust by citizens relative to the federal government. On the other, as the actors responsible for grappling with the pandemic, states and localities may also have been the focal point of public frustration.

Why Trust Matters

Trust in government is beneficial to society in a number of ways. It increases the likelihood that people will obey the law (Scholz and Lubell 1998), and citizens who trust the government are more likely to vote and otherwise participate in government (Lee and Schachter 2018). Low trust in government can also lead to dysfunctional policy outcomes, with people opposing popular programs for fear that the gov-

ernment cannot competently carry them out (Hetherington 2004).

Trust in government is relevant to public health as well. Most people are not public health experts and thus must turn to experts and other authorities they trust. Normally, this leads to positive health outcomes. For example, Vicki Freimuth and her colleagues (2014) find that trust in government in the early stages of the H1N1 pandemic was associated with vaccine acceptance among non-Hispanic White Americans. With respect to the COVID-19 pandemic specifically, Abel Brodeur, Idaliya Grigoryeva, and Lamis Kattan (2021) find that people in high-trust U.S. counties traveled less after stay-at-home orders were put in place than those in low-trust counties. After a thorough review of research articles on trust in authorities in the context of pandemics globally, Michael Siegrist and Alexandra Zingg (2014, 25) conclude that "studies conducted in various countries and using various trust measures produced similar findings, suggesting that trust had a positive impact on adopting precautionary behavior during a pandemic."

This said, the link between trust in government and positive health behaviors crucially depends on the quality of the government's health communications. Then President Trump seemed to publicly undermine health experts' advice more often than he shared it. He often refused to wear a mask, encouraged the public to ignore their states' stay-at-home orders, and repeatedly recommended unproven, and possibly dangerous, COVID treatments (Yamey and Gonsalves 2020). By way of contrast, messages from state governors, especially Democratic ones, were more in line with expert guidance. Although Republican governors were far less likely than Democratic to enact mask mandates and other formal restrictions (James, Tervo, and Skocpol 2022, this issue), most justified this by appealing to the importance of personal choice rather than by directly contradicting health experts (see Goldberg, Roubein, and Ollstein 2020). In short, whereas scholars typically observe a positive association between trust in government and protective health behaviors, the U.S. case during COVID-19 may be different. This positive association is less likely with respect to trust in the federal government under then President Trump. We may also observe variation according to whether state governments are headed by Democratic or Republican governors, with trust in the former more strongly associated with healthy behaviors than trust in the latter.

DATA AND EMPIRICAL METHODS

Data Sources

Our primary data source is the Axios/Ipsos Coronavirus Poll, a survey with Ipsos' Knowledge Panel conducted nearly every week of the pandemic (Ipsos 2020). We analyze survey data collected between March 20, when the survey began, and October 26, 2020.[1] The survey provides information on respondents' trust in public institutions, including federal, state, and local government and health agencies. We also observe respondents' socioeconomic characteristics (such as age, race-ethnicity, income), partisanship, and state of residence. Each week's survey is based on a nationally representative probability sample of approximately one thousand adults. Table A.1 lists the exact interview dates and sample sizes for each survey. Our compiled data set is a repeated cross-section based on twenty-eight surveys of the Axios/Ipsos data (surveys 2 through 29 in table A.1), and our total sample size across all surveys is 29,671.[2]

We supplement the Axios/Ipsos data with data on state-level pandemic severity and policy interventions. To measure pandemic severity, we use data on daily COVID-19 cases and deaths by state from the Centers for Disease Control and Prevention (CDC Case Task Force 2021). We obtain data on state policy interventions—including mask mandates, stay-at-home orders, and business reopenings—from the COVID-19 US State Policy (CUSP) database

1. Additional data are available for subsequent months, but we restrict our analytical sample to those interviewed before the 2020 general election to prevent election results from confounding our estimates of the relationship between the pandemic and trust.

2. Appendix tables are available online only (see https://www.rsfjournal.org/content/8/8/221/tab-supplemental).

compiled by researchers at Boston University School of Public Health (Raifman et al. 2020).

Variables and Measures

Our first set of outcome variables measures people's trust in various public institutions. Respondents were asked, "How much trust do you have in each of the following to look out for the best interests of you and your family?: The federal government, your state government, your local government, local health officials and health-care workers." They could select either "a great deal," "a fair amount," "not very much," or "none at all." Data on trust in the federal government, state government, and local government are available for our entire study period. Data on trust in local health officials and health-care workers are available only for surveys 5 through 23, which covers respondents interviewed from April 10 through August 23, 2020. For our main analysis, we measure each of these trust variables on a continuous scale from 0 to 1, with 0 representing "none at all," 0.33 representing "not very much," 0.67 representing "a fair amount," and 1 representing "a great deal." In robustness checks, we use dichotomous measures of trust, with 0 representing "none at all" or "not very much," and 1 representing "a fair amount" or "a great deal."

Our second set of outcomes is related to respondents' compliance with health behaviors intended to reduce the spread of the coronavirus (CDC 2021). Respondents were asked how often they wear a mask and maintain a distance of at least six feet from other people when they leave their homes. They could select either "at all times," "sometimes but not all the time," "occasionally but not often," or "never." Data on health behaviors are available from surveys 5 through 29, which cover respondents interviewed from April 10 through October 26, 2020. In our main analysis, we measure each of these behavioral variables on a continuous scale from 0 to 1, with 0 representing "never," 0.33 representing "occasionally but not often," 0.67 representing "sometimes but not all the time," and 1 representing "at all times." In robustness checks, we use dichotomous measures of behaviors, with 0 representing "never" or "occasionally but not often," and 1 representing "sometimes but not all the time" or "at all times." Our final outcome is a dichotomous measure of whether the respondent social-distanced in the last week. Respondents were asked, "In the last week, have you social-distanced, that is, stayed at home and avoided others as much as possible," and they could select either "yes" or "no."

Our analyses control for respondents' partisanship and sociodemographic characteristics. For partisanship, we use the survey's Party ID variable to construct three dichotomous variables: Democrat, Republican, and Independent (which includes Independents and Others).[3] Education is measured with a vector of four dichotomous variables indicating whether the respondent's educational attainment is less than high school, high school or equivalent, some college, or college and beyond. Axios/Ipsos provides respondents' income in six categories: under $25,000, $25,000–$49,999, $50,000–$74,999, $75,000–$99,999, $100,000–$149,999, and $150,000+. We recode respondents' reported income as the upper bound of the reported income range and use their state and household size and U.S. federal poverty guidelines to calculate respondents' income as a percentage of the federal poverty line, or FPL (ASPE 2021).[4] In our analysis, we measure income with a vector of four dichotomous variables indicating whether the respondent's income is less than 200 percent FPL, 200–400 percent FPL, 400–800 percent FPL, or greater than 800 percent FPL. Race and ethnicity are measured using a set of four indicator variables: non-Hispanic White, non-Hispanic Black, non-Hispanic other race, and Hispanic. We measure age using three dichotomous variables: eighteen to thirty-nine years, forty to sixty-four, and sixty-five and older.[5] We use in-

3. Axios-Ipsos does not provide information on whether respondents "lean" Democrat or Republican; respondents can choose from Democrat, Republican, Independent, or Other.

4. For example, the FPL for a single person in 2020 was $12,760 and for a family of 4 was $26,200.

5. We do not assume that the relationships between age and trust or between income and trust are strictly linear, and therefore use dichotomous versions of these variables rather than continuous versions.

formation on sex and marital status to construct an indicator variable for female respondents and married respondents, respectively. Finally, we use a continuous measure of household size scaled from 0 to 1.

The severity of, and policy responses to, COVID-19 varied widely by state and likely affect trust and engagement in protective health behaviors, so we control for state-level pandemic severity and policy responses. To measure pandemic severity, we use the logged daily average new COVID cases per hundred thousand residents in the respondent's state during their interview week and the logged daily average new COVID deaths per hundred thousand residents in the respondent's state during their interview week. In specification checks, we use one-period lagged versions of these severity variables. To account for differences in states' policy responses to the COVID-19 pandemic, our main analyses control for whether the state had a mask mandate in effect during the interview week, whether the state had a stay-at-home order in effect during the interview week, and whether the state reopened businesses during the interview week.

Empirical Methods

We begin with a visual assessment of unadjusted trends in the mean level of trust in federal government, state government, local government, and local health officials and health-care workers over time. We formalize this descriptive analysis by using a linear regression model to estimate the association between individuals' trust in each of these institutions and time, controlling for individuals' partisanship and sociodemographic characteristics, time-varying state characteristics such as COVID severity and policy responses, and individuals' state of residence.[6]

One possible concern is that the change in trust over the course of the pandemic was not linear. In fact, our visual assessment of unadjusted trends reveals three distinct phases of the pandemic in 2020. Spring marked the beginning and the rapid rise in COVID cases; during the summer, the number of new daily cases stabilized and many thought the pandemic might abate; autumn saw unprecedented growth in case rates (CDC Case Task Force 2021) as well as electioneering by the political parties and 2020 election candidates. To assess potential nonlinearities in the evolution of trust over the course of the pandemic, we use a second regression model to assess the relationship between trust and time separately for individuals interviewed in spring (March through May), summer (June through August), and fall (September through October). As in our first analysis, we control for individuals' partisanship and sociodemographic characteristics, time-varying state characteristics such as COVID severity and policy responses, and individuals' state of residence.[7]

Next, we investigate how the deepening pandemic differentially affected trust among partisan and demographic groups of interest. We

6. Specifically, we estimate equation 1, in which Y_{ist} represents a series of measures of trust for individual i in state s, in time period t. $Survey_t$ is a continuous measure of survey timing. For ease of interpretation, we scale the survey variable from 0 to 1 so that 0 represents our first week's survey and 1 represents our final week's survey. $\boldsymbol{X}_{ist}$ is a vector of sociodemographic control variables, including partisanship, educational attainment, income, race-ethnicity, age, sex, marital status, and household size. $\boldsymbol{Z}_{st}$ is a vector of time-varying state characteristics including the logged daily average of new COVID cases per hundred thousand residents, the logged daily average of new COVID deaths per hundred thousand residents, whether the state had a mask mandate in effect, whether the state had a stay-at-home order in effect, and whether the state reopened business. δ_s is a vector of state fixed effects. The inclusion of state fixed effects removes omitted variable bias by controlling for time-invariant, unobserved differences across states. ε_{ist} is an error term. All analyses use Axios-Ipsos survey weights.

$$Y_{ist} = \alpha + \beta\, Survey_t + \gamma \boldsymbol{X}_{ist} + \rho \boldsymbol{Z}_{st} + \delta_s + \varepsilon_{ist} \quad (1)$$

7. Specifically, we estimate equation 2, in which $SpringSurvey_t$ is a continuous measure of surveys conducted from March through May (surveys 2–11), $SummerSurvey_t$ measures surveys conducted from June through August (surveys 12–23), and $FallSurvey_t$ measures surveys conducted from September through October (surveys 24–29).

assess changes in trust over time for Democrats versus Republicans versus Independents and by educational attainment, income group, age group, race-ethnicity, sex, marital status, and household size.[8]

We conduct the described analyses for four outcomes: trust in federal government, trust in state government, trust in local government, and trust in local health officials or workers. Finally, we examine the relationship between trust and compliance with CDC-recommended health behaviors. We do this by estimating linear regression models to show the association between respondents' engagement in a recommended health behavior and their level of trust in the federal government, their state government, their local government, and their local health officials. All analyses control for partisanship and sociodemographic characteristics, time-varying state characteristics such as COVID severity and policy responses, respondents' state of residence, and week of interview.[9] We estimate this regression separately for three health behaviors: wearing a mask when leaving home, maintaining a six-foot distance from other people when leaving home, and whether the respondent social-distanced in the past week. We conduct this analysis both for the overall sample and separately by partisanship.

Our preferred models use continuous measures of trust, mask-wearing, and maintaining a six-foot distance. However, in robustness checks we use dichotomous measure of these outcomes, and the pattern of results is similar. In additional models, we exclude state-level pandemic severity and policy responses and do not control for respondents' state of residence to test whether our estimates are sensitive to the inclusion of these measures.

RESULTS

Table 1 presents descriptive statistics and means of outcomes for the study sample. Across all surveys, the level of trust was highest for local health officials or workers (0.68), second highest for local governments (0.54) and state governments (0.53), and lowest for the federal government (0.39). This result suggests that individuals concentrate their trust more among local authorities during public health emergencies. Table A.2 reports means of outcomes for the different sociodemographic subgroups we assess in our regression analyses. Nearly every subgroup had higher levels of trust in their state and local governments than in the federal government. The only exception was Republicans, whose average level of trust in the federal government was slightly higher than in their state government and the same as their local government.

For ease of interpretation, we scale each seasonal survey variable from 0 to 1. All other variables are as described in equation 1. All analyses use Axios/Ipsos survey weights.

$$Y_{ist} = \alpha + \beta_1 SpringSurvey_t + \beta_2 SummerSurvey_t + \beta_3 FallSurvey_t + \gamma \boldsymbol{X}_{ist} + \rho \boldsymbol{Z}_{st} + \delta_s + \varepsilon_{ist} \quad (2)$$

8. Specifically, we estimate equation 3, in which all variables are as described in equation 1. The θ coefficients represent the differential change in trust over time for the political-demographic group indicated by $\boldsymbol{X}_{ist}$. All analyses use Axios/Ipsos survey weights.

$$Y_{ist} = \alpha + \beta Wave_t + \gamma \boldsymbol{X}_{ist} + \theta \boldsymbol{X}_{ist} X Wave_t + \rho \boldsymbol{Z}_{st} + \delta_s + \varepsilon_{ist} \quad (3)$$

9. Specifically, we estimate equation 4 in which $TrustFedGovt_{ist}$ measures respondents' trust in the federal government, $TrustStateGovt_{ist}$ measures respondents' trust in their state government, $TrustLocalGovt_{ist}$ measures respondents' trust in their local government, and $TrustLocalHealth_{ist}$ measures respondents' trust in their local health officials and workers. τ_t is a vector of survey fixed effects. Survey fixed effects remove omitted variable bias by controlling for state-invariant, unobserved differences in health behaviors over time. Other variables are as described in equation 1. We estimate equation 4 for three outcomes Y_{ist}: wear mask when leaving home, maintain a six-foot distance from other people when leaving home, and social-distanced in the past week. All analyses use Axios/Ipsos survey weights.

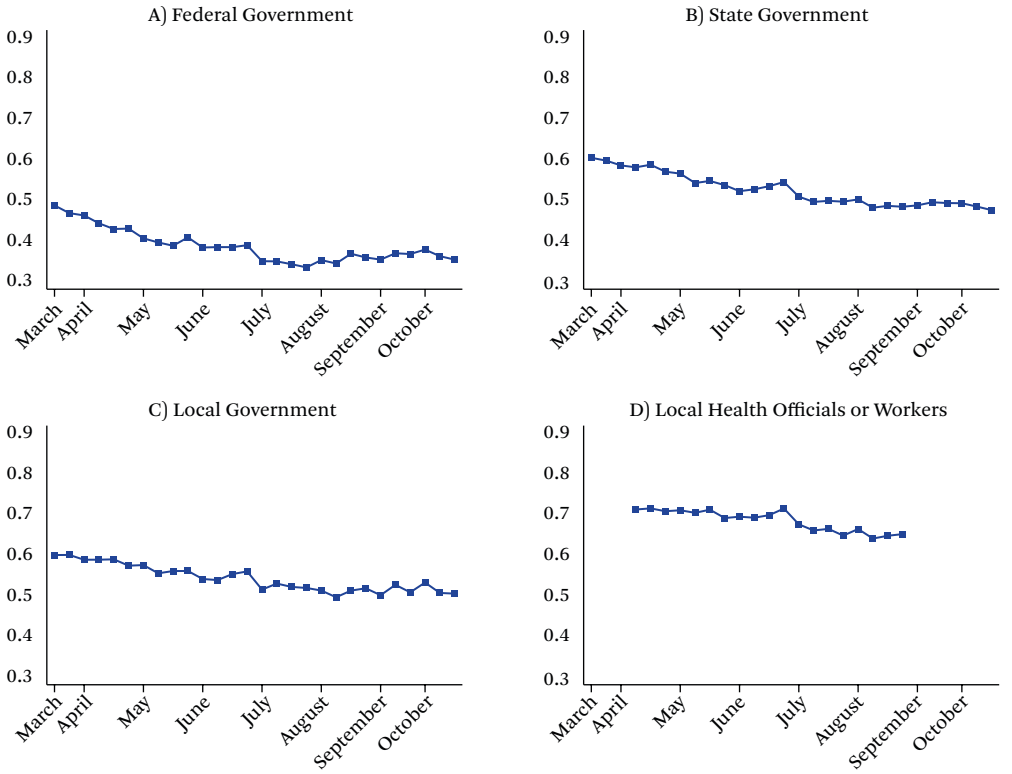
$$\begin{aligned} Y_{ist} = \alpha + \beta_1 TrustFedGovt_{ist} + \beta_2 TrustStateGovt_{ist} + \beta_3 TrustLocalGovt_{ist} \\ + \beta_4 TrustLocalHealth_{ist} + \gamma \boldsymbol{X}_{ist} + \rho \boldsymbol{Z}_{st} + \delta_s + \tau_t + \varepsilon_{ist} \end{aligned} \quad (4)$$

Table 1. Sociodemographic Characteristics of Study Sample

	Mean (1)	Standard Deviation (2)	Minimum (3)	Maximum (4)
Panel A. Individual sociodemographics				
Political affiliation				
Democrat	0.34	0.47	0.00	1.00
Republican	0.27	0.44	0.00	1.00
Independent	0.39	0.49	0.00	1.00
Educational attainment				
Less than high school	0.11	0.31	0.00	1.00
High school	0.28	0.45	0.00	1.00
Some college	0.28	0.45	0.00	1.00
College or more	0.33	0.47	0.00	1.00
Household income				
<200% poverty level	0.22	0.41	0.00	1.00
200–400% poverty level	0.25	0.44	0.00	1.00
400–800% poverty level	0.31	0.46	0.00	1.00
>800% poverty level	0.21	0.41	0.00	1.00
Race-ethnicity				
White, non-Hispanic	0.63	0.48	0.00	1.00
Black, non-Hispanic	0.12	0.32	0.00	1.00
Other, non-Hispanic	0.09	0.28	0.00	1.00
Hispanic	0.17	0.37	0.00	1.00
Age				
18–39	0.37	0.48	0.00	1.00
40–64	0.42	0.49	0.00	1.00
65+	0.21	0.41	0.00	1.00
Female	0.52	0.50	0.00	1.00
Married	0.56	0.50	0.00	1.00
Household size	0.23	0.13	0.00	1.00
Panel B: State severity and policy responses				
Logged death rate	0.24	0.28	−0.05	2.34
Logged case rate	2.78	0.92	−1.75	5.35
Mask mandate in effect	0.46	0.50	0.00	1.00
Business reopening in effect	0.57	0.50	0.00	1.00
Stay at home order in effect	0.32	0.47	0.00	1.00
Panel C: Outcome variables				
Trust federal government	0.39	0.30	0.00	1.00
Trust state government	0.53	0.30	0.00	1.00
Trust local government	0.54	0.28	0.00	1.00
Trust local health officials-workers	0.68	0.27	0.00	1.00
Wear mask	0.77	0.31	0.00	1.00
Maintain six-foot distance	0.81	0.24	0.00	1.00
Social distanced in past week	0.80	0.40	0.00	1.00
Observations	29,671			

Source: Authors' calculations based on surveys 2 through 29 of the 2020 Axios/Ipsos Coronavirus Poll, administered March 20 to October 26, 2020 (Ipsos 2020).
Note: All analyses use Axios/Ipsos survey weights.

Figure 1. Trends in Trust over Time



Source: Authors' calculations based on surveys 2 through 29 of the 2020 Axios/Ipsos Coronavirus Poll, administered March 20 to October 26, 2020 (Ipsos 2020).
Note: N = 29,671. Trust is measured on a continuous scale from 0 to 1, 0 representing no trust in the institution to look out for you and your family and 1 representing a great deal of trust. Vertical axis measures the weighted mean; *x*-axis displays week of interview. All analyses use Axios/Ipsos survey weights.

Unadjusted Trends in Trust Over Time

In figure 1, we present time series graphs of trends in trust over time. At the beginning of the pandemic, people started off with higher levels of trust in local authorities than in the federal government. Moreover, March through the end of October saw a substantial decline in trust in the federal government (–29 percent), a moderate decline in trust in state (–20 percent) and local governments (–15 percent), and a smaller decline for local health officials or workers (–8 percent).[10] That is, the trust gap between local and federal authorities widened over the course of the pandemic. In figure A.2, we examine unadjusted trends in trust over time by race, income, age, and political party. These figures suggest similar trends for these groups; however, we examine this question formally and expand our analyses to other groups in the next section.

10. Note that our data for trust in local health officials and workers is only available from April through August. Figure A.1 presents results from an analysis in which we used the dichotomous measures of trust. The patterns are similar: we find large declines in the proportion of adults who have a high level of trust in the federal (44 percent decline from March to October) and state governments (27 percent decrease), and relatively small decreases for local government (21 percent decline) and local health officials and workers (8 percent fall from April to August).

Association Between Sociodemographics and Trust over Time

Figure 2 presents regression coefficients and 95 percent confidence intervals for how trust changes over time, as well as how sociodemographic characteristics are associated with trust.[11] In these analyses and those that follow, all variables have been recoded to range from 0 to 1 to ease interpretation. The full regression results are presented in table A.3.

The analyses reveal statistically significant reductions in trust for all four institutions, particularly for federal and state governments. After adjusting for sociodemographic characteristics, state-level pandemic severity and policy responses, and state of residence, we find a 17 percent decline in trust in the federal government,[12] a 17 percent decline for state government, a 13 percent decline for local government, and a 12 percent decline for local health officials and health-care workers. Figure 2 also shows that partisanship is a strong predictor of trust in all levels of government, with Republicans having significantly higher levels of trust in the federal government than Democrats and significantly lower levels of trust in the other three institutions than Democrats. Socioeconomic status showed a strong negative relationship with trust in federal government and a positive association with trust in state and local governments and local health officials and workers. For example, college-educated adults had lower levels of trust in the federal government but higher trust in the other three institutions relative to others. The lowest income group had higher levels of trust in the federal government and lower levels of trust in other institutions. In addition, older adults and women had higher levels of trust in all institutions. Non-Whites had greater trust than Whites in the federal government but lower trust in local health officials and workers; trust in health officials was particularly low among Black Americans. In terms of pandemic severity, higher case rates were associated with lower levels of trust in federal and state governments, which suggests that people who witnessed worse COVID outbreaks in their areas lost trust in both federal and state authorities. Interestingly, both mask mandates and business reopenings were associated with lower levels of trust in federal, state, and local government, despite these policies being implemented at the state level (see table A.3).

Tables A.4 through A.6 present several sensitivity analyses.[13] Table A.4 shows that when we omit our state-level pandemic severity and policy controls, reductions in trust over time appear to be larger. This suggests that variations in pandemic severity and policy responses across states and over time account for some of the aggregate decreases in trust in our sample. Similarly, excluding state fixed effects yields coefficients of larger magnitudes on the *Survey* variable, implying that unobserved, time-invariant differences across states affect trust in the aggregate as well (table A.5). Finally, table A.6 shows that our key takeaways are similar when we use dichotomous rather than continuous measures of trust.

Table 2 presents regression results for the nonlinear model in which we examined whether declines in trust varied at different stages of the early pandemic.[14] The declines in trust in the federal and state governments were largest in spring (March through May) and slowed down considerably by fall (September and October). Differences between the spring

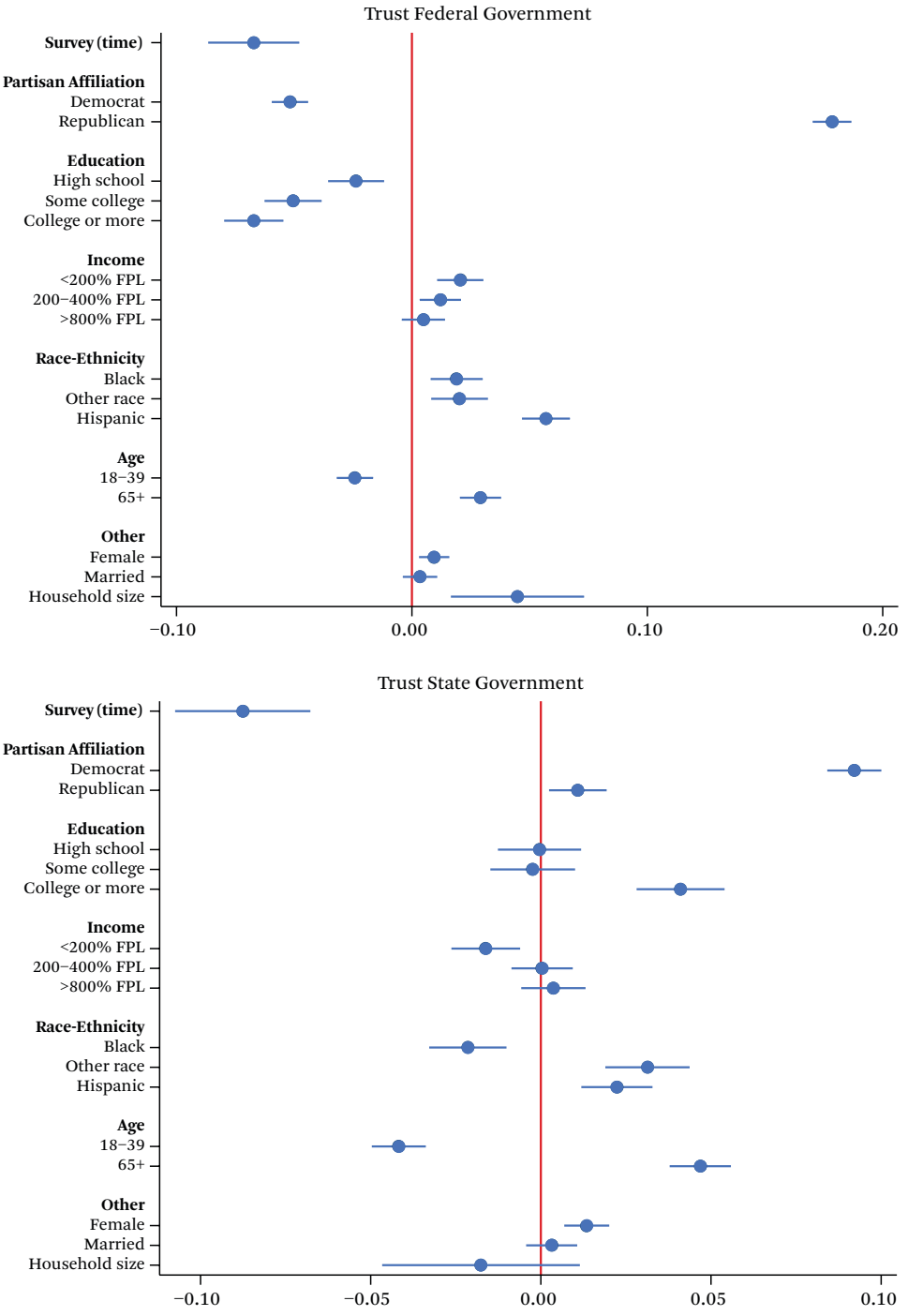
11. These are the regression results for equation 1.

12. We calculate relative decline by dividing the coefficient by the mean of the outcome. For example, here, the regression coefficient 0.067 is divided by the mean of the outcome 0.39.

13. We also estimate a version of equation 1 that uses a one-period lagged version of the pandemic severity variables. Our first survey is automatically dropped from analysis because we lack lagged severity data for that time period. As expected, coefficients on the *Survey* variable are still negative but smaller in magnitude than those presented in figure 2. This is because the largest drops in trust occurred between the first and second surveys. The coefficients on the sociodemographic and policy variables are nearly identical in the lagged and nonlagged models. Results are available on request.

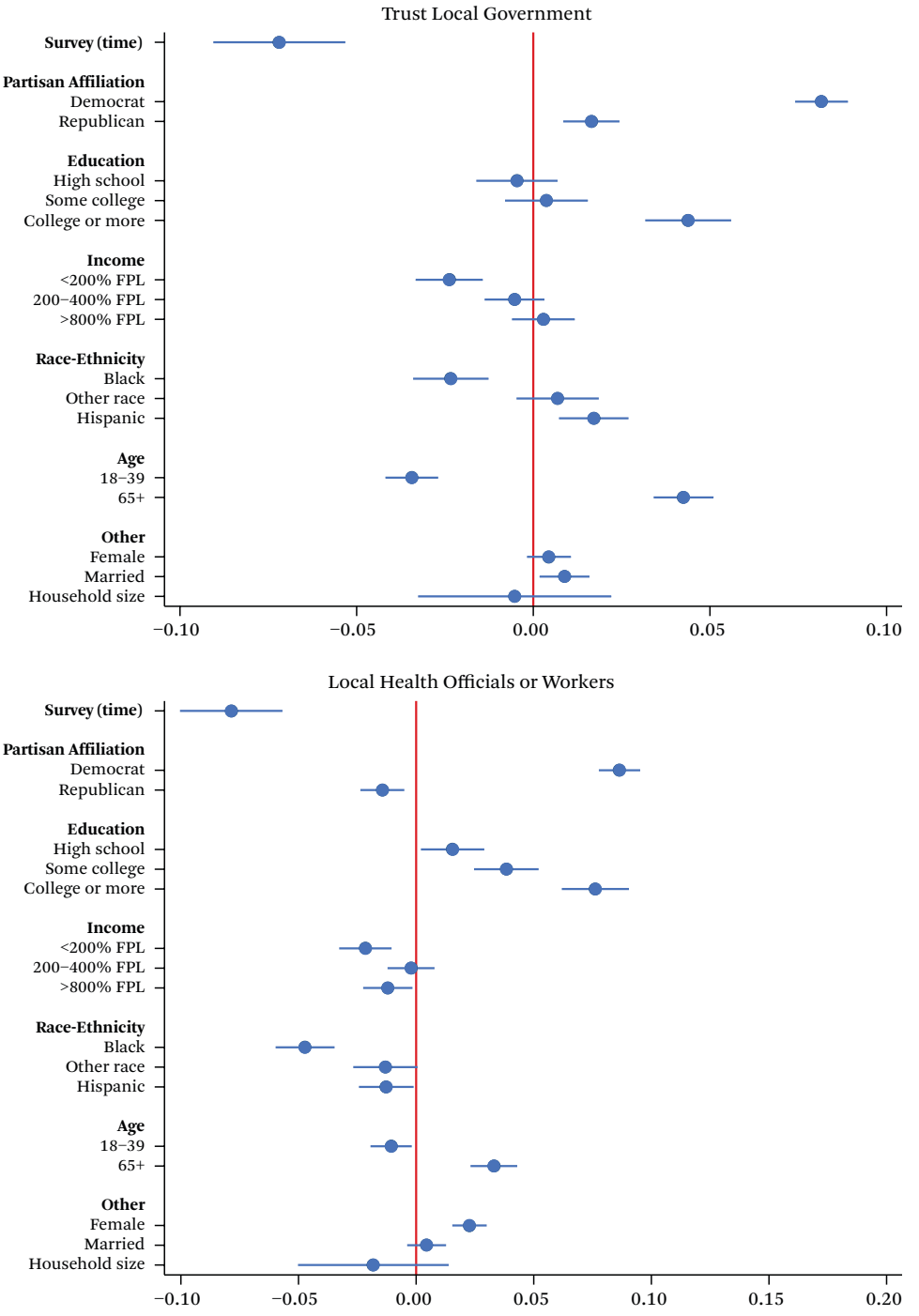
14. These are the regression results for equation 2.

Figure 2. Association Between Time, Sociodemographic Characteristics, and Trust (Coefficient Plots)



Source: Authors' calculations based on surveys 2 through 29 of the 2020 Axios/Ipsos Coronavirus Poll, administered March 20 to October 26, 2020 (Ipsos 2020).
Note: Each figure presents point estimates and 95 percent confidence intervals from a different regression. Trust is measured on a continuous scale from 0 to 1, 0 representing no trust in the institution to look out for you and your family, and 1 representing a great deal of trust. All regressions also include

Figure 2. (*continued*)



state-level pandemic severity and policy responses and state fixed effects and use Axios/Ipsos survey weights. "Survey" is a continuous variable ranging from 0 (first survey) to 1 (final survey), indicating change over time. The variables "Independent" *party ID*, "Less than high school" *educational attainment*, "Income 400-800% FPL," "White, non-Hispanic" *race*, and *age* "40–64" are omitted as base categories. For full regression results, see table A.3.

Table 2. Regression Results for How Trust Changes over Time

	Federal Government	State Government	Local Government	Local Health Officials-Workers
Spring survey	−0.100***	−0.052***	−0.038***	−0.013
	(0.011)	(0.011)	(0.010)	(0.011)
Summer survey	−0.027***,+	−0.044***	−0.039***	−0.062***,+
	(0.009)	(0.009)	(0.009)	(0.009)
Fall survey	0.002+	−0.008+	0.001+	—
	(0.010)	(0.011)	(0.010)	
Democrat	−0.052***	0.092***	0.082***	0.086***
	(0.004)	(0.004)	(0.004)	(0.004)
Republican	0.178***,a	0.011**,a	0.016***,a	−0.014***,a
	(0.004)	(0.004)	(0.004)	(0.005)
High school	−0.024***	−0.001	−0.005	0.016**
	(0.006)	(0.006)	(0.006)	(0.007)
Some college	−0.050***	−0.002	0.004	0.038***
	(0.006)	(0.006)	(0.006)	(0.007)
College or more	−0.067***	0.041***	0.044***	0.076***
	(0.006)	(0.007)	(0.006)	(0.007)
Income <200% FPL	0.021***	−0.016***	−0.024***	−0.022***
	(0.005)	(0.005)	(0.005)	(0.006)
Income 200–400% FPL	0.013***	0.001	−0.005	−0.002
	(0.004)	(0.005)	(0.004)	(0.005)
Income >800% FPL	0.005	0.004	0.003	−0.012**
	(0.005)	(0.005)	(0.005)	(0.005)
Black, non-Hispanic	0.019***	−0.022***	−0.023***	−0.047***
	(0.006)	(0.006)	(0.005)	(0.006)
Other race, non-Hispanic	0.021***	0.031***	0.007	−0.013*
	(0.006)	(0.006)	(0.006)	(0.007)
Hispanic	0.057***	0.022***	0.017***	−0.013**
	(0.005)	(0.005)	(0.005)	(0.006)
Age 18–39	−0.025***	−0.042***	−0.035***	−0.011**
	(0.004)	(0.004)	(0.004)	(0.004)
Age 65+	0.029***	0.047***	0.043***	0.033***
	(0.004)	(0.005)	(0.004)	(0.005)

and fall were statistically significant at the .01 level. For local health officials-workers, trust fell more during the summer months than spring. Even after excluding controls for pandemic severity and policies (table A.7) and excluding state fixed effects (table A.8), declines in trust were significantly larger in spring than fall for federal, state, and local governments. Table A.9 shows that these trends are similar when we use dichotomous rather than continuous measures of trust. In sum, these results show that people lost trust in government institutions rapidly over the early months of the pandemic and continued losing trust as the pandemic progressed, but at slower rates.

Finally, table A.10 presents results for how the pandemic differentially affected trust among partisan and demographic groups of interest.[15] Relative to both Independents and Democrats, Republicans had a higher level of

15. These are the regression results for equation 3.

Table 2. (*continued*)

	Federal Government	State Government	Local Government	Local Health Officials-Workers
Female	0.009***	0.013***	0.004	0.023***
	(0.003)	(0.003)	(0.003)	(0.004)
Married	0.003	0.003	0.009**	0.005
	(0.004)	(0.004)	(0.004)	(0.004)
Household size	0.045***	−0.017	−0.005	−0.017
	(0.014)	(0.015)	(0.014)	(0.016)
Logged death rate	0.008	−0.011	−0.011	−0.004
	(0.009)	(0.009)	(0.009)	(0.011)
Logged case rate	−0.008**	−0.006**	−0.002	−0.002
	(0.003)	(0.003)	(0.003)	(0.004)
Mask mandate in effect	0.000	−0.009	−0.004	−0.004
	(0.006)	(0.006)	(0.006)	(0.006)
Business reopening in effect	0.012**	−0.005	−0.004	−0.010
	(0.006)	(0.006)	(0.006)	(0.006)
Stay at home order in effect	0.003	−0.000	0.003	−0.002
	(0.007)	(0.007)	(0.007)	(0.008)
N	29,176	29,188	29,178	19,667
Mean of outcome	0.39	0.53	0.54	0.68

Source: Authors' calculations based on surveys 2 through 29 of the 2020 Axios/Ipsos Coronavirus Poll, administered March 20 to October 26, 2020 (Ipsos 2020).

Note: Each column presents linear regression results from a different regression; column header indicates outcome variable. Trust is measured on a continuous scale from 0 to 1, with 0 representing no trust in the institution to look out for you and your family, and 1 representing a great deal of trust. All regressions also include state fixed effects and use Axios/Ipsos survey weights. The variables "Independent" *party ID*, "Less than high school" *educational attainment*, "Income 400-800% FPL," "White, non-Hispanic" *race*, and *age* "40-64" are omitted as base categories. Standard errors in parentheses.

* $p < .10$; ** $p < .05$; *** $p < .01$

Coefficient for summer or fall survey is significantly different from that of spring survey with + $p < .01$.

Coefficient for Republican is significantly different from that of Democrat with [a] $p < .01$.

Point estimates with *p*-values less than 0.05 were considered statistically significant, and estimates with *p*-values less than 0.10 were considered marginally statistically significant.

trust in the federal government, but Republicans experienced steeper declines in trust than Independents or Democrats. In contrast, Democrats had a lower level of trust in federal government than Independents, but experienced smaller declines in trust than Independents. In general, people of lower socioeconomic status and minorities had higher baseline levels of trust but experienced greater declines in trust over the course of the pandemic. For example, less-educated adults had higher levels of trust in the federal government but experienced greater declines than those who were more educated. Similarly, Blacks had higher levels of trust in the federal government than Whites but steeper declines over time. Women's trust in federal and local governments fell more rapidly than men's over time. Most of these trends are similar when we exclude measures of pandemic severity and policies (table A.11) or state fixed effects (table A.12) and use dichotomous measures of trust (table A.13).

Association Between Trust and Protective Health Behaviors

The third part of our analysis studies the relationship between trust and compliance with protective health behaviors recommended by the CDC. The coefficient plots in figure 3 present an abridged version of the coefficient estimates and 95 percent confidence intervals, and table A.14 presents the full results in tabular format.[16]

Figure 3 shows that after controlling for party identification, sociodemographic factors, state-level pandemic severity, state-level policy responses, state of residence, and timing of survey, trust in state government and local health officials and health-care workers are both associated with increased engagement in protective health behaviors, such as wearing masks, maintaining a six-foot distance from others, and staying home and avoiding socializing (referred to in the survey as social distancing). On the other hand, trust in the federal government is associated with lower levels of engagement in these protective behaviors. These effects are large in magnitude as well as statistically significant (and are over and above the effect of partisanship). For example, relative to those with the lowest trust, those with the highest trust in state governments are about 9 percentage points more likely to wear a mask, and those with the highest trust in local health officials and workers are about 16 percentage points more likely to wear a mask. On the other hand, those with the highest trust in the federal government are less likely to wear a mask by about 7 percentage points. The relationship between trust in local government and protective behaviors is not statistically significant.[17] These results suggest that trust in government plays a central role in whether people engage in protective health behaviors but that, if misplaced, trust can backfire.

In table A.15, we show that the results are substantively similar (though the magnitudes of the coefficients differ) if we use dichotomous measure of the trust and behavior variables. Our results are also similar when omitting controls for state-level pandemic severity and policy responses (table A.16).

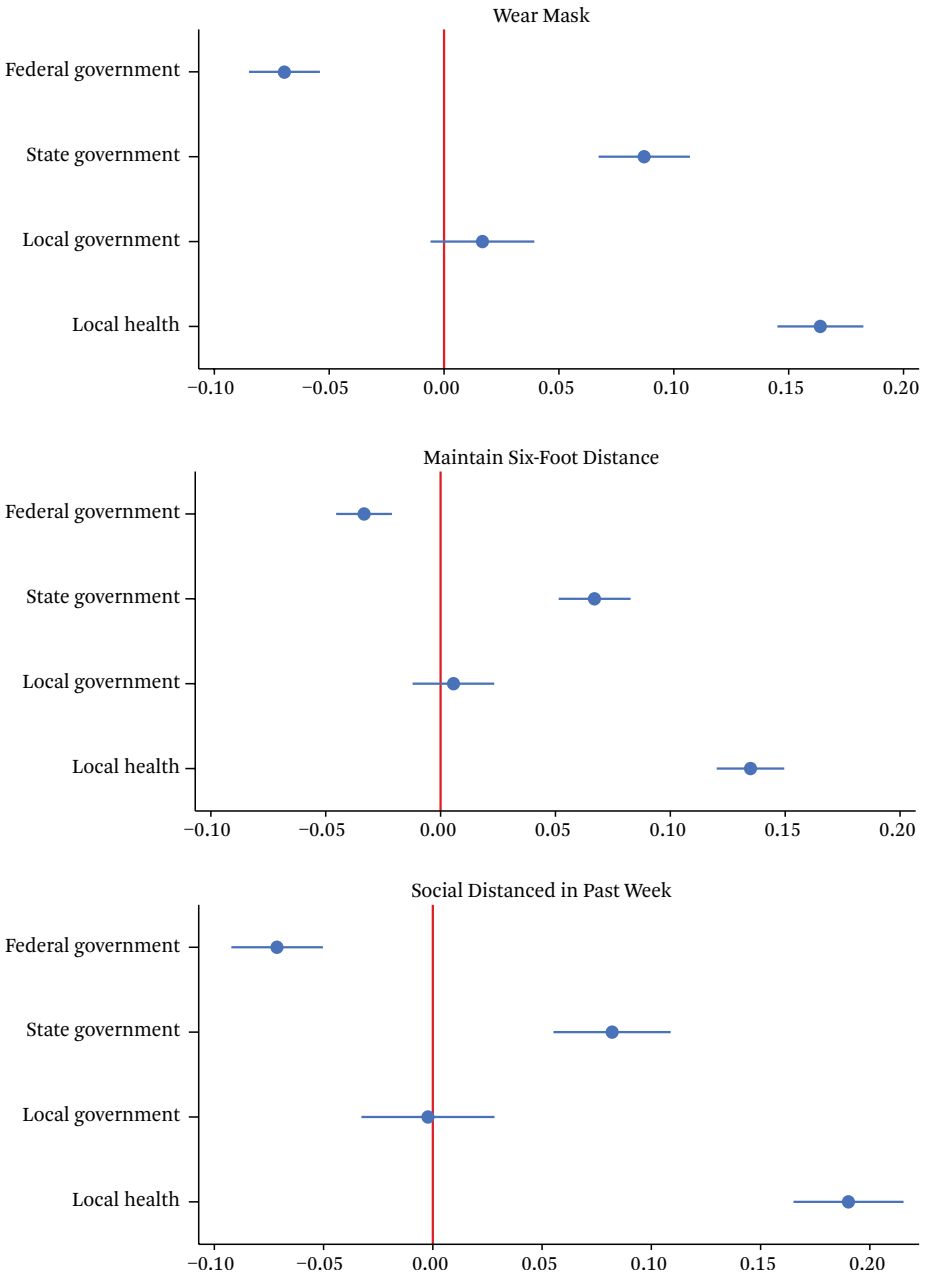
In figure 4, we present coefficient plots for the same regression models stratified by respondents' party identity. (Table A.17 presents the full version of these results and shows whether the coefficient estimates for trust are statistically different by party ID.) We find that trust in the federal government is associated with less mask-wearing among Democrats and Republicans alike; the difference in the magnitudes of the coefficients across parties is not statistically significant. However, trust in state government is more strongly associated with this behavior among Republicans than Democrats. For Republicans, a 1-point increase in trust in state government is associated with a 0.17 (or 25 percent) increase in mask-wearing, versus only a 0.02 (or 2 percent) increase for Democrats. Similarly, trust in local health officials and workers is more strongly associated with Republicans' propensity to wear masks than Democrats. For Republicans, a 1-point increase in trust in local health officials and health-care workers is again associated with a 0.18 (or 27 percent) increase in mask-wearing versus only a 0.07 (or 8 percent) increase for Democrats. On the other hand, trust in local government does not significantly relate to Republicans' engagement in mask-wearing, whereas it is positively correlated with Democrats' engagement in mask-wearing.

For maintaining a six-foot distance in public and social distancing, we find a similar partisan pattern. Trust in the federal government is associated with a lower likelihood of maintaining a six-foot distance for Democrats (–0.04 or –5 percent) but the effect is null for Republicans. However, trust in state government has a larger positive coefficient for Republicans (0.11 or 15 percent) than Democrats (0.03 or 3 percent). Similarly, trust in local health officials and health-care workers is more strongly associated with Republicans' maintenance of a six-foot distance (coefficient is 0.14 or 19 percent)

16. These are the regression results for equation 4.

17. As others have found (for example, Thaler et al. 2020), we also see that Democrats are more likely to engage in recommended health behaviors than both Independents and Republicans, as are Blacks and Hispanics (table A.14).

Figure 3. Association Between Trust and Protective Health Behaviors (Coefficient Plots)

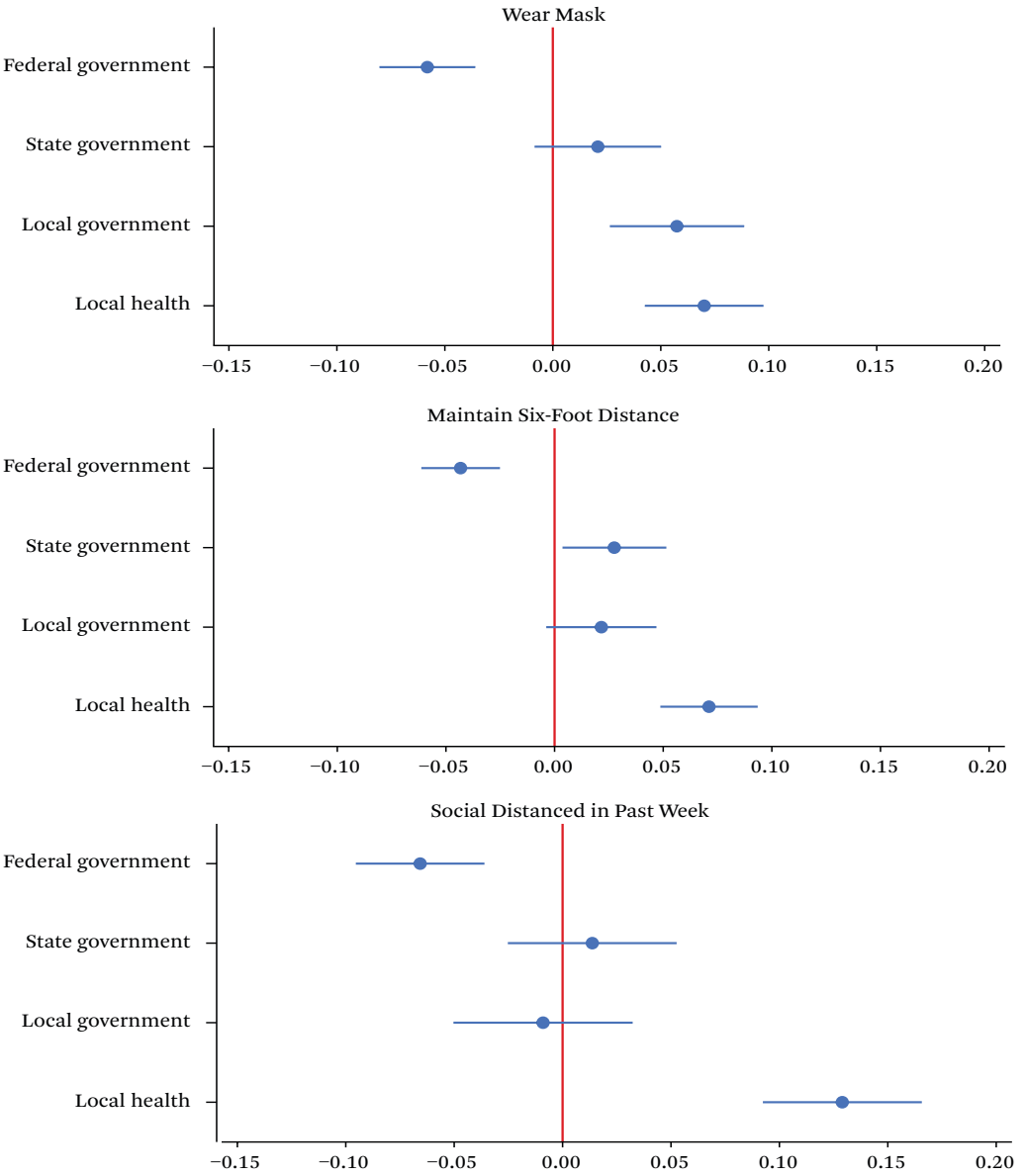


Source: Authors' calculations based on surveys 5 through 23 of the 2020 Axios/Ipsos Coronavirus Poll, administered April 10 to August 31, 2020 (Ipsos 2020).

Note: Each figure presents point estimates and 95 percent confidence intervals from a different regression. Trust is measured on a continuous scale from 0 to 1, 0 representing no trust in the institution to look out for you and your family and 1 representing a great deal of trust. All regressions also include each sociodemographic characteristics, state pandemic severity (logged case rate and logged death rate), state pandemic policy responses (mask mandate, business reopening, and stay-at-home order), state fixed effects, survey fixed effects and use Axios/Ipsos survey weights. For full regression results, see table A.14.

Figure 4. Association Between Trust and Protective Health Behaviors (Coefficient Plots), Separately by Partisanship

Panel A. Democrats

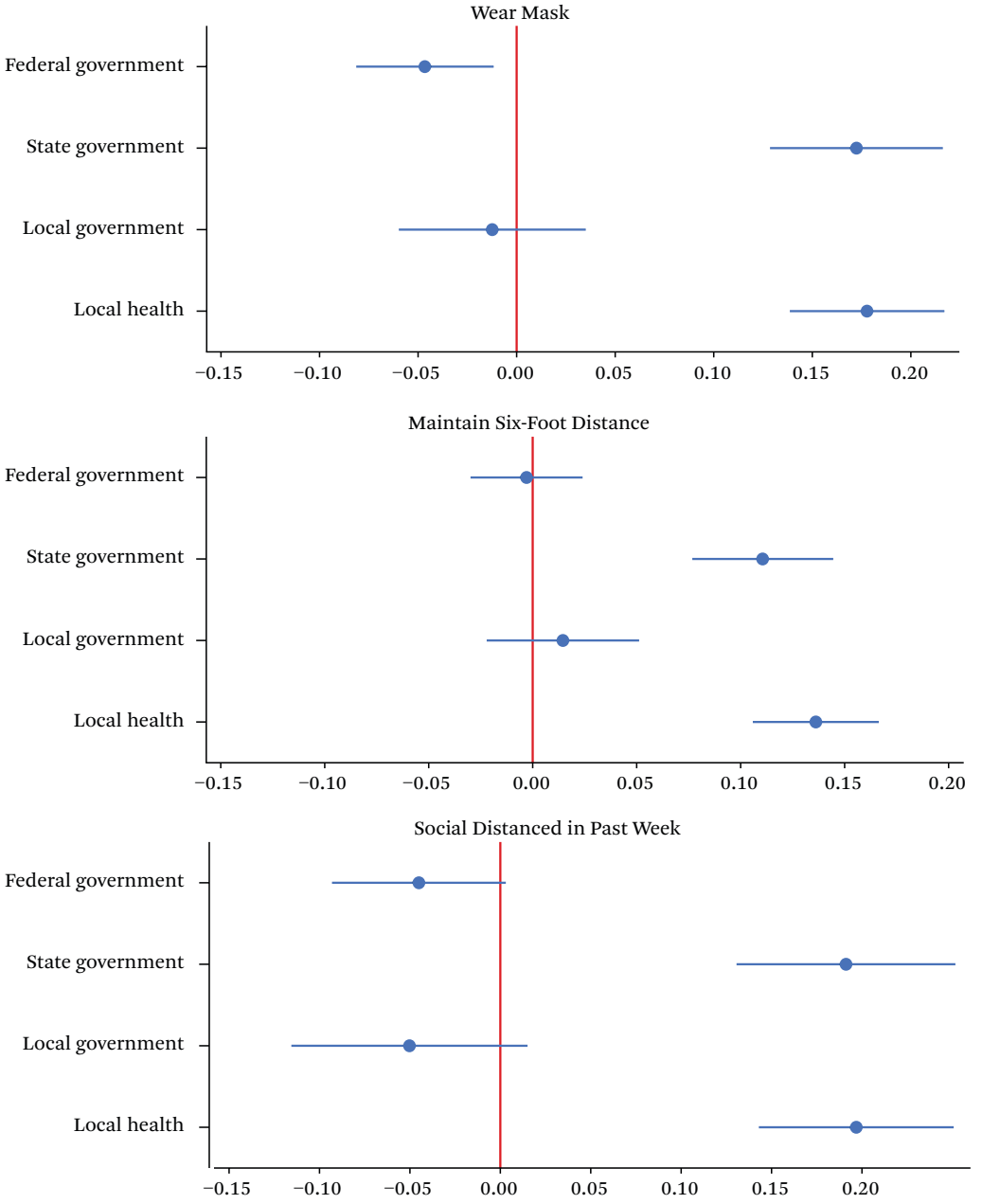


Source: Authors' calculations based on Surveys 5 through 23 of the 2020 Axios/Ipsos Coronavirus Poll, administered April 10 to August 31, 2020 (Ipsos 2020).

Note: Each figure presents point estimates and 95 percent confidence intervals from a different regression. Trust is measured on a continuous scale from 0 to 1, 0 representing no trust in the institution to look out for you and your family and 1 representing a great deal of trust. All regressions also include each sociodemographic characteristics, state pandemic severity (logged case rate and logged death rate), state pandemic policy responses (mask mandate, business reopening, and stay at home order), state fixed effects, survey fixed effects and use Axios/Ipsos survey weights. For full regression results, see table A.17.

Figure 4. (*continued*)

Panel B. Republicans

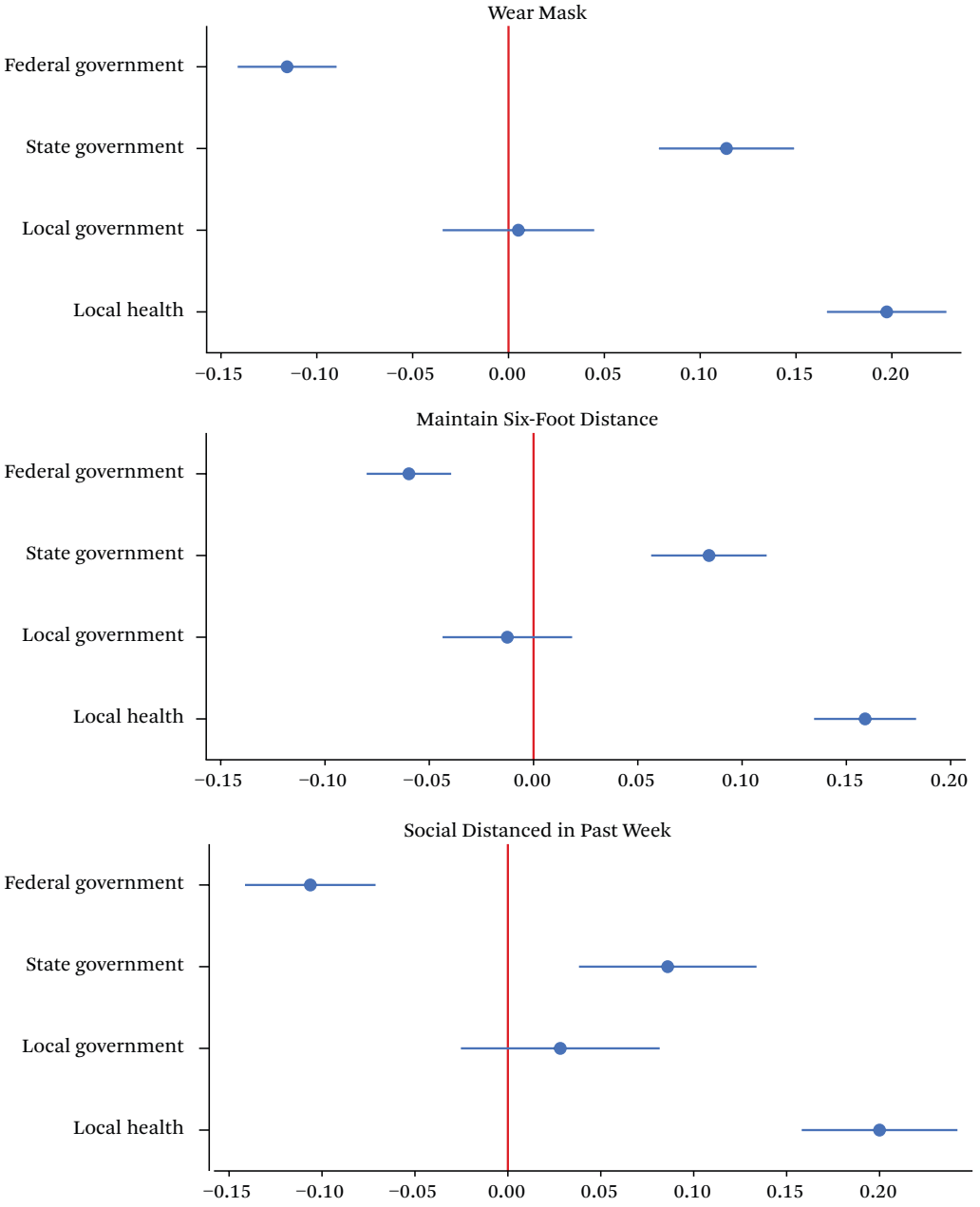


than Democrats' (0.07 or 8 percent). This said, again, trust in local government is not related to Republicans' behavior while it is positively associated with Democrats' ($p < .10$).

For social distancing, we find that trust in the federal government is associated with less social distancing for Democrats and Republicans alike. However, trust in state government is associated with more social distancing among Republicans (0.19 or 27 percent) but not Democrats. Trust in local health officials and health-care workers also has a larger coefficient

Figure 4. (*continued*)

Panel C. Independents



for Republicans (0.20 or 28 percent) than Democrats (0.13 or 15 percent). In this analysis, trust in local government is not associated with social distancing for either Republicans or Democrats. In table A.18 we show that these findings are robust to omitting the controls for state-level pandemic severity and policy responses.

Overall, the results presented in figure 4 show that the relationship between trust in

government actors and recommended health behaviors often differs by partisanship. The relationships between trust in state government and health behaviors among Republicans stand out as especially strong relative to those for Democrats. That said, this pattern merits further exploration, as it could be driven by state legislatures and governorships being currently dominated by Republican elected officials. In other words, partisans may be more likely to follow health advice from copartisan politicians.

Thus, in our final analysis, we assess the relationship between trust in state government and protective health behaviors for those whose party identification matches that of their state governor. Table A.19 shows that for Democrats in states with Democratic governors (panel A) and for Republicans in states with Republican governors (panel C), trust in state government is associated with a greater likelihood of mask-wearing and maintaining a six-foot distance. For Republicans in states with Republican governors, trust in state government is also associated with social distancing. Although the relationships between trust and behavior among Republican respondents remain stronger (especially for social distancing), the coefficients for Democratic respondents' trust in state government has increased, suggesting that the earlier results were driven in part by the dominance of the Republican Party in state politics.

This said, the analyses showing results for partisans living in states with out-party governors tell a different story. For Democrats in states with Republican governors (panel B), greater trust in state government is associated with a reduced likelihood of engaging in protective health behaviors. For Republicans in states with Democratic governors (panel D), higher levels of trust in state government greatly increase the probability of wearing masks, maintaining six-foot distancing, and social distancing. Coefficients here are 50 to 100 percent larger than when Republicans in states with Republican governors are examined.

DISCUSSION

We define trust in government as the belief that government is both competent and oriented toward the public interest and that people weigh performance against expectations. With this in mind, the trends we have observed in trust in government are to a significant degree sensible: although the COVID-19 pandemic could not have been prevented by the U.S. government, it certainly could have been better managed, especially by the federal government. As a result, Americans' trust in the federal government saw some of the steepest aggregate declines. States, which bore the greatest responsibility—many experts would argue unfairly—in grappling with the pandemic during the period under study, also saw significant declines. Although no government entities were spared, trust in local governments and health officials and workers declined the least.[18] These findings are robust to the inclusion of various control variables, including state-level fixed effects and overtime state-level variation in pandemic severity and policies, suggesting these trends are robust, nationwide reactions to an ongoing national crisis. We also note that omitting the state-level controls for pandemic severity and policy responses results in even larger declines in trust, especially for federal and state governments (table A.4). This suggests both that our main estimates represent conservative estimates of declines in trust during this period and also that Americans' personal experiences with the pandemic—knowledge of case counts nearby and interactions with state policies—explains some of the variance in changing trust over time.

We also investigated whether declines in trust varied according to partisanship or membership in vulnerable social groups. Research suggests trust in the federal government among Democrats may have declined more than among Republicans, given that Democrats should be less likely to interpret federal government actions in a favorable light. In addition, low-income people, Black and Hispanic Americans, and women suffered disproportion-

18. We cannot be certain whether the results for local health officials and workers would hold if we had fall 2020 data available for this group.

ately during the pandemic, suggesting we might find greater declines in trust among these groups as well. We found mixed results here. We did not find that Democrats' trust in the federal government declined most; in fact, Republicans' did. Our findings with respect to social groups were more in line with expectations, with trust in the federal government among women, Black Americans, and less-educated Americans falling disproportionately. Our theoretical framework suggests these declines are due to pandemic-caused distress, but another interpretation is plausible. The cited groups, including Republicans, had higher trust in the federal government at the outset of the study. Thus, these trends may stem in part from initially elevated trust relative to others.

Turning to the relevance of trust in government to health behaviors, our results suggest that trust is indeed consequential. Those who trusted their state governments and especially their local health personnel were more likely to report that they wore a mask, maintained a six-foot distance from others, and avoided socializing altogether. These effects were especially large among Republicans. Further, we found that trust in state governments among Republicans living in states with Democratic governors was particularly strongly associated with engaging in expert-recommended health behaviors; the trust-behavior effect was smaller for Republicans in states with Republican governors and reversed for Democrats in states with Republican governors (see table A.19), suggesting a complicated relationship contingent on both the quality of health advice being provided at the state level and a person's partisanship and associated baseline behaviors. We observed another reversal, this time regardless of partisanship, with respect to the federal government. Those with higher trust than others in the federal government, led at the time of our study by President Trump, were less likely to engage in protective health behaviors. Timothy Cook and Paul Gronke (2004) argue that low trust need not be a bad thing—it merely indicates skepticism, or a refusal to give authorities the benefit of the doubt. This example supports their logic: low trust in the federal government during the COVID pandemic may have saved lives.

Our study is limited in two main regards. One caveat is that we are unable to rule out all potential threats to validity necessary to interpret our findings as causal. We can observe that trust declined over time, but we cannot be certain that disappointment with various government entities' handling of the pandemic is the cause. Likewise, we can observe an association between trust in certain government actors and protective health behaviors, but we are not certain whether the former causes the latter or what precisely might link the two phenomena. A second caveat is that our findings are time bound, relevant to the COVID pandemic before the 2020 election. We cannot know how the dynamics might have changed under the Biden administration; however, one straightforward speculation is that trust in the federal government is now predictive of protective health behaviors, returning to the typical trust-behavior link found in other studies.

This analysis advances our understanding of the importance and limits of public trust in government—extending, and in some cases challenging, extant social science research. As research would suggest and we document, trust in government fell markedly during a mishandled public health crisis. Exploring an understudied aspect of political trust, we illustrate that trends in trust varied according to the level and type of government actor in view, with trust falling the most in entities that were either objectively underperforming or a focal point for citizens' expectations. Finally, we clarify that trust in government is conducive to public health only to the extent that authorities' guidance itself is well founded. Although some research has acknowledged the limitations of trust in government in general, to our knowledge, we are the first to provide evidence that trust in government during a public health crisis is not an unmitigated good.

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Localized Syndemic Assemblages: COVID-19, Substance Use Disorder, and Overdose Risk in Small-Town America

ANDREW BURNS AND KAT ALBRECHT

Pandemics do not exist in isolation and COVID-19 is no exception. We argue that existing health crises, notably substance use disorder (SUD), developed syndemic relationships with COVID-19 that produced compounding deleterious effects. Combining Merrill Singer's theory of syndemics and assemblage theory, we analyze the combinatory impact of overdose and COVID-19 within a localized context. We focus on Sandusky, Ohio, where we combine police reports, in-depth interviews with area residents, and ethnographic data to compare conditions before and after the emergence of COVID-19. We find dramatic shifts in relevant local contexts due to COVID-19, inhibiting existing systems of law and public policy aimed at overdose prevention and SUD treatment. Further, our findings provide evidence of complications in the COVID-19 response originating from the overdose epidemic.

Keywords: syndemics, assemblage theory, small-town crime, overdose, COVID-19

The global health crisis associated with the emergence of the SARS-CoV-2 virus affected nearly every aspect of human society, including complicating existing social problems. For instance, COVID-19 exacerbated various existing health crises, including substance use disorder (SUD), obesity, mental health issues, and incidence of suicide and suicidal ideation (Brenner and Bhugra 2020; Gao et al. 2021; Khan and Smith 2020; Pfefferbaum and North 2020; Schlosser and Harris 2020). SUD is also among the many comorbidities identified as a risk factor for COVID-19 mortality (Volkow 2020). The compound deleterious effects of SUD and COVID-19 make up what the medical anthropologist Merrill Singer dubbed a *syndemic*—each illness making the other more dangerous and their combination making mitigation more difficult (Hill, Sowers, and Mantzoros 2021; Singer 2009). COVID-19 tends to be *synde-*

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mogenic; forming localized syndemic intersections with various health, economic, political, and social ills throughout the existing epidemiological terrain (Singer 2009, 75–78, 227; Horton 2020; Mendenhall 2020).

Syndemics are examples of what the philosophers Gilles Deleuze and Félix Guattari dubbed *assemblages* (Deleuze and Guattari 1987). Assemblages, in their most abstract, are complex systems of nonhierarchical interconnections between component parts, constituting a productive process (Deleuze and Guattari 1987, 48–71; Buchanan 2020).[1] For our purpose, and following the original usage of the term by Deleuze and Guattari, assemblages are arrangements of discrete yet evolving social forces (Deleuze and Guattari 1987, 275–84). Assemblages constantly form new connections at all levels of social life, altering compositions and outcomes from one country, region, or person to the next (22–24, 56–61). Discrete assemblages originate from definitive sociopolitical events, such as sweeping legal changes, policy declarations, or equivalent expressions of juridical power (Buchanan 2020, 30–34; Deleuze and Guattari 1987, 78–79).

Consequently, a syndemic assemblage has the capacity for compound harm that is greater than the sum of its component disorders and augmented through government or legal authority. We focus on the localized effects of the syndemic assemblage because, as Singer and his colleagues assert, "syndemics arise in populations situated in time and space" (Singer, Bulled, and Leatherman 2022, 12). Thus we explore the compound harm stemming from the COVID-19 pandemic and the ongoing problems of SUD and overdose within a localized context in small-town America. Necessarily, we consider the role of COVID-19 mitigation strategies on the availability and efficacy of existing strategies for addressing and preventing overdose, and for treating substance use disorder.[2]

To address the topic, we study the precarity of underresourced social institutions in small towns and rural areas aimed at addressing overdose and SUD within the context of the global COVID-19 pandemic. Our focus on the problem of overdose mortality enables us to also provide evidence for how COVID-19 complicates overdose prevention and treatment service administration. We specifically examine how the various policies put in place to slow the spread of the virus clashed with systems aimed at the treatment of substance use and consider the capacity for community-wide efforts to prevent overdose deaths. To a lesser extent, but still relevant for consideration of syndemics generally, we also illustrate how the ongoing overdose epidemic impedes readiness for the vital support infrastructure tasked with COVID-19 harm mitigation.

THE SHIFTING OVERDOSE EPIDEMIC

Before COVID-19, the U.S. overdose epidemic manifested in distinct yet overlapping waves (see table 1). In the 2000s, the national trend of overprescribing opioid painkillers resulted in a steady increase in overdose deaths in the United States. When the U.S. government recognized the problem, by the late 2000s, they responded with aggressive measures to curb

1. For brevity and to maintain legibility for a broader audience, we opt for a more general definition of assemblage, necessarily avoiding certain terminology associated with the theoretical system. For instance, we refer to assemblages as complex systems as opposed to *nontotalizable multiplicities*, and discuss components of assemblages as "unique, evolving, social forces" as opposed to discussing the *deterritorialization* and *reterritorialization* of *partial objects* within the *socius*. Likewise, we avoid terms such as *stratification*, which mean very different things in sociology than what is used in the Deleuzo-Guattarian concept of assemblage. To better understand the relationship between our terminology and that of assemblage theory, see Deleuze and Guattari 1987; Delanda 2016; Buchanan 2020. For an example of application of assemblage theory in epidemiology, see Gagnon and Holmes 2016.

2. We wish to acknowledge that, although we are investigating the syndemic effect of COVID-19 mitigation strategies, we do not wish our analysis to be used as validation for antivaccine or related discourses. We acknowledge that the harm mitigation plans in place during the study period were, in fact, both necessary and likely prevented death or serious injury due to COVID-19 for millions of Americans.

Table 1. The Overdose Epidemic Wave Model

#	Range*	Apparent Causes	Implicated Substances
Wave 1	2000–2010	Rx opioids, pill mills	prescription opioids
Interwave Period	2010–2013	pill mill crackdown	prescription opioids, heroin
Wave 2	2013–2015	high demand	heroin
Wave 3	2015–2019	high demand	heroin, fentanyl
Wave 4	2019–2020	ubiquity of fentanyl	stimulants, fentanyl
Wave 5	2020–2022**	COVID-19	stimulants, fentanyl

Source: Authors' tabulation based on Ciccarone 2019; Hainer 2019; Alter and Yeager 2020a; Alter and Yeager 2020b.

Note: * All ranges are approximations, based on sources listed above and as corroborated from interviews and other data collection.

** Ongoing at time of publication.

the prescription of opioids, shutting down and prosecuting some medical providers and pharmacists, effectively signaling the end of overprescribing (Quinones 2015). Despite this aggressive response, these government interventions failed to address or curb the elevated demand for opioids (Ciccarone 2019; Quinones 2015). Consequently, many of the millions of Americans using prescription opioids for nonmedical purposes made the transition en masse to heroin around 2010, a shift that accelerated drug overdose mortality (Ciccarone 2019; NASEM 2017). A third, still deadlier, wave of drug overdoses emerged around 2015, when the influx of synthetic opioids, particularly fentanyl and carfentanil, proliferated within the illicit opioid supply as the demand for heroin increased (Ciccarone 2019). Soon after, these potent synthetic opioids made their way into the illicit stimulant supply, precipitating increased overdose deaths among people who use cocaine and methamphetamine, and shifting the nature of the overdose epidemic again (wave 4) (Hainer 2019). Most recently, the emergence of COVID-19 instigated a further spike in demand and subsequent overdose (Alter and Yeager 2020a, 2020b). Ultimately, the effects of the syndemic assemblage resulting from COVID-19 and related mitigation strategies, when coupled with the ongoing overdose epidemic, constituted a fifth distinct wave of overdose mortality (Burgess-Hull et al. 2022).

As the potential for widespread COVID-19 transmission in the United States became apparent in March 2020, federal, state, and local governments instituted sweeping public health policies designed to stop the viral spread. These policies included stay-at-home orders, social distancing requirements, and restrictions on public gatherings. These policies proved vital for the prevention of widespread COVID-19 infection during the early months of the pandemic (IMHE COVID-19 Forecasting Team 2020; Moreland et al. 2020). COVID-19 mitigation policies nonetheless had unintended consequences. Research indicates that results included widespread adverse mental health outcomes stemming from prolonged social isolation (Khan et al. 2022). Likewise, the closure of nonessential businesses, a necessary component of the global response to the pandemic, dramatically decreased the potential for person-to-person viral spread but had the unintended consequence of driving the U.S. unemployment rate to the highest on record, the highest number of jobs being lost in the leisure and hospitality sector (Falk et al. 2021).

In addition to psychological distress and economic uncertainty, U.S. pandemic mitigation strategies complicated or halted the enactment of various federal, state, and local policies aimed at reducing overdose mortality and supporting people seeking SUD services. The results of these complications included a nationwide spike in overdose deaths followed by a new, higher, baseline of domestic overdose

mortality (Becker and Fiellin 2020; Robeznieks 2020; Volkow 2020). The dramatic increase in overdoses and related deaths during the early months of the COVID-19 dwarfed rates from prior months that were already bleak due to the increased presence of fentanyl analogs in the illicit drug supply (Glober et al. 2020; Mason et al. 2021).

Increased overdose risks affected not only individuals with existing SUD but also people with no existing SUD prior to March 2020. In one study of U.S. psychoactive substance use patterns, 18.2 percent of respondents reported an increase in or the initiation of substance use within two months of the initial stay-at-home orders (McKnight-Eily et al. 2021). Thus evidence suggests that mitigation strategies to prevent the spread of COVID-19 may have increased the likelihood of overdose among populations already at risk and among those previously considered not to be at risk.

Interrelatedly, ongoing overdose and SUD complicated COVID-19 responses. Evidence shows that COVID-19 is deadlier among individuals with SUD (Volkow 2020). Likewise, the ongoing overdose crisis contributed to limitations in institutional responses to the virus, such as decreased hospital capacity, and reduced first-responder efficacy (Ochalek et al. 2020; Volkow 2020). Although COVID-19 rendered overdose deadlier through isolation, increased emergency room visits for nonfatal overdoses strained a system already stretched to capacity due to soaring COVID-19 patient numbers (Ochalek et al. 2020).

Localizing the Syndemic Assemblage

As mentioned, we adopt a locally situated perspective. In so doing, we join other researchers addressing issues of locality within the larger global impact of COVID-19. For instance, research shows how community-based organizations (CBOs) in the San Francisco Bay Area shifted their services to better address inequality in the social and structural determinants of health amid the COVID-19 pandemic (Cohen et al. 2022, this issue). SUD and overdose rates varied between urban and non-urban places before the COVID-19 pandemic (Monnat and Rigg 2016; Young, Havens, and Leukefeld 2012). This variation, however, shifted in response to the pandemic. For instance, state-mandated stay-at-home orders were associated with a 17.59 percent increase in overall incidence of overdose nationwide and with increases in overdose numbers in 61.84 percent of counties monitored by the Overdose Detection Mapping Application Program (ODMAP) (Alter and Yeager 2020a, 2020b). Notably, ODMAP reports from five U.S. states detailed a shift in the most severe overdose issues from urban to non-urban counties (Alter and Yeager 2020a, 3). Overdose numbers soared in rural areas, suburbs, small-town micropolitans, and the infrastructurally interdependent surrounding micropolitan statistical areas (μSAs) (Alter and Yeager 2020a, 3).

With the shift from rural to urban in mind, we use a *localizing* view of the global COVID-19 pandemic. Thus we consider how global processes influence conditions within a locality as, in turn, local actors and conditions shape the relevance of global contexts (Long 2003). Addressing syndemics through a localizing perspective offers an opportunity to study the interconnections between diseases and specific local conditions. We therefore conceptualize *localized syndemic assemblages* as a combination of two or more diseases, as enhanced or attenuated through relevant laws, policies, and practices, and situated within the context of specific local conditions.

Site of the Research

Sandusky, Ohio, is a Rust Belt town with a population of approximately twenty-five thousand residents, situated along the shoreline of Lake Erie (U.S. Census Bureau 2019). Sandusky, and the rest of Erie County, comprise the Sandusky μSA. The main industry is tourism and hospitality. The town's main tourist attraction, Cedar Point Amusement Park, draws millions of visitors to the area annually (OLESI 2017). Despite the popularity of Cedar Point, Sandusky has had decades of economic uncertainty and has poverty and violent crime rates far above the national average (U.S. Census Bureau 2019; Hackworth 2018). Sandusky also hosts a thriving illicit drug market, as evidenced by a recent seventeen-count indictment in U.S. District Court involving seven Sandusky residents, and by several other court cases in recent years, in-

cluding *State v. Reed*,[3] *State v. Leavell*,[4] and *State v. Nettles* (Dunn 2019).[5] The town's vital tourism industry, perennial economic blight, and active clandestine drug economy establish Sandusky as a dynamic research setting, full of complexity, and contradictions. This dynamism provides a distinct challenge to existing conceptions of small-town life and the potential impact a global pandemic may have on the lives of small-town residents.

RESEARCH DESIGN

We advance the literature on syndemics through a novel consideration of the local effects of COVID-19, SUD, and overdose in Sandusky, Ohio, and the surrounding μSA (Long 2003; Singer 2009). In so doing, we show how two otherwise thoughtful public health plans clashed to create unforeseen consequences. We draw on ethnographic, interview, and institutional data to identify relevant aspects of the local SUD and overdose assemblage before the COVID-19 pandemic, contrasting these elements with the subsequent syndemic assemblage. We consolidate ongoing ethnographic data collection, police incident reports, and interviews with local area residents during an eleven-month pre-COVID comparison period and again during the first eleven months of the pandemic.

The Sandusky Police Department (SPD) makes incident reports available publicly through a case reporting system called Glyph reports. We extract all available Glyph reports related to drug overdoses before and during the COVID-19 pandemic. We collect and analyze all available reports from the following three categories: narcotics overdose, EMS-overdose or poisoning, and death investigations (collectively *overdose calls*).[6] We carefully read each Glyph report, employing thematic coding of the reporting officer's narrative of the event. We code Glyph report data, both to compare report rates and to identify shifts in narrative thematic patterns. Our findings provide relevant insights from police engagement with overdose events, highlighting the importance of community involvement, including eyewitness reporting, as a prerequisite for effective emergency response by police and other first responders.

In addition to Glyph reports, we conduct interviews with participants who live and work in the Sandusky μSA, including interviews with first responders, medical professionals, and people with SUD or a relevant personal history of psychoactive substance use. Using the best practices set forth by qualitative researcher methodologists Yan Zhang, Barbara Wildemuth, and Michael Quinn Patton; we opt for an ongoing unstructured interview approach (Zhang and Wildemuth 2009; Patton 2002). We employ thematic coding to address issues and conditions that exist throughout the study period and add greater depth to the identification of situational changes emerging during the COVID-19 period.

Our interview sample consists of thirty-two in-person and telephone interviews; seventeen before COVID-19 and thirteen after. We interviewed a total of twenty-five participants, some participants receiving follow-up interviews within the study period. Every participant either works or resides in Sandusky and all have some relationship, personally or professionally, to SUD and overdose. Interview participants include one active fentanyl and methamphetamine user ($n = 1$), several former drug users ($n = 19$), some of whom are now either recovery professionals ($n = 6$) or active nonprofessional recovery advocates in the community ($n = 4$). The interview sample includes four area residents with no relevant substance use history but possessing relevant professional insights, including a former parole officer, and a full-time emergency medical technician (EMT) and

3. *State v. Reed*, 2020-Ohio-138.

4. *State v. Leavell*, 2016-Ohio-5275.

5. *State v. Nettles*, 2018-Ohio-4908, appeal allowed, 2019-Ohio-1315, 155 Ohio St. 3d 1419, 120 N.E.3d 865.

6. Death investigations are conducted for a variety of reasons and in a variety of circumstances. We coded the narrative in each death investigation and consulted outside sources to confirm that the death involved an overdose.

Table 2. Erie County, Ohio: SUD, Overdose Mitigation Strategies, and Syndemic Disruptions

September 2016	ORC 2925.11 strengthens legal protection for 'Good Samaritans.'
January 2018	ECHD opens detox facility and adopts Project DAWN.
March 2020	Several area manufacturing companies temporarily shut down.
April 13, 2020	IRS begins distributing Economic Impact Payments.
April 2020	Erie County's unemployment rate becomes the highest in the state at 25.4 percent.
May 2020	Erie County's unemployment rate remains the highest in the state: 19.9 percent.
July 2020	Ohio records a 29 percent increase in overdose deaths for the first half of 2020.
July 13, 2020	Erie County experiences a 23 percent increase in COVID-19 cases and a sharp increase in emergency room visits within a two-week period.
August 5, 2020	Erie County Health Department announces a major spike in overdoses.

Source: Authors' tabulation.

911 dispatcher. We combine these data with ethnographic research and information from available community resources to provide an in-depth interrogation of the syndemic assemblage of COVID-19, SUD, and overdose.

BACKGROUND

In the years preceding the COVID-19 pandemic, federal, state, and local county government agencies initiated several legal and policy changes to address the steady increase of overdose deaths. Table 2 provides a timeline for some of the most significant changes relevant to the Sandusky μSA, beginning with the 2016 update to Ohio Revised Code 2925.11; better known as Ohio's Good Samaritan Law (Ohio Legislative Service Commission 2019).[7] The updated law shields most bystanders from arrest or prosecution if police find drugs during an overdose, a policy known to dramatically increase the likelihood of bystanders calling 911 (Banta-Green et al. 2011; Jakubowski et al. 2018) Erie County Health Department later established the area's only state-run detox facility, adopted Ohio's Project DAWN initiative to facilitate the distribution of naloxone (Narcan), and developed an official relationship with local CBO, Sandusky Artisans Recovery Community Center (SARCC) (Jackson 2018; Ohio Department of Health 2020; SARCC 2019).

COVID-19 produced significant negative economic impacts for the Sandusky μSA. Tourism and manufacturing, both central to the local economy, experienced an almost total shutdown for several months. Manufacturers deemed nonessential laid off thousands of area residents (Harrington 2020; Sandusky Register 2020). The Cedar Point amusement park delayed its season by nearly four months and maintained limited operations throughout the remainder of its seasonal schedule (Naymik 2020). As a result, Erie County's unemployment rate was 25.4 percent in April 2020, maintaining the highest unemployment rate in Ohio for two months (Bureau of Labor Statistics 2020). The high rate is particularly relevant within this study due to the positive association between economic stressors and substance use (Bruguera et al. 2018).

FINDINGS

The contrast between Sandusky's overdose and substance use problem before and during the COVID-19 pandemic illustrates the consequences of local syndemic assemblages. Sandusky experienced a greater than 50 percent increase in overdose calls between the pre-COVID ($n = 63$) and COVID-19 ($n = 95$) study periods. Moreover, six deaths were confirmed during the COVID-19 study period and none reported in the pre-COVID period.

The strongest thematic categories in the

7. Two policies cover eyewitnesses, ORC 2925.11B(2)(c)(i), and persons experiencing an overdose, ORC 2925.11B(2)(c)(ii).

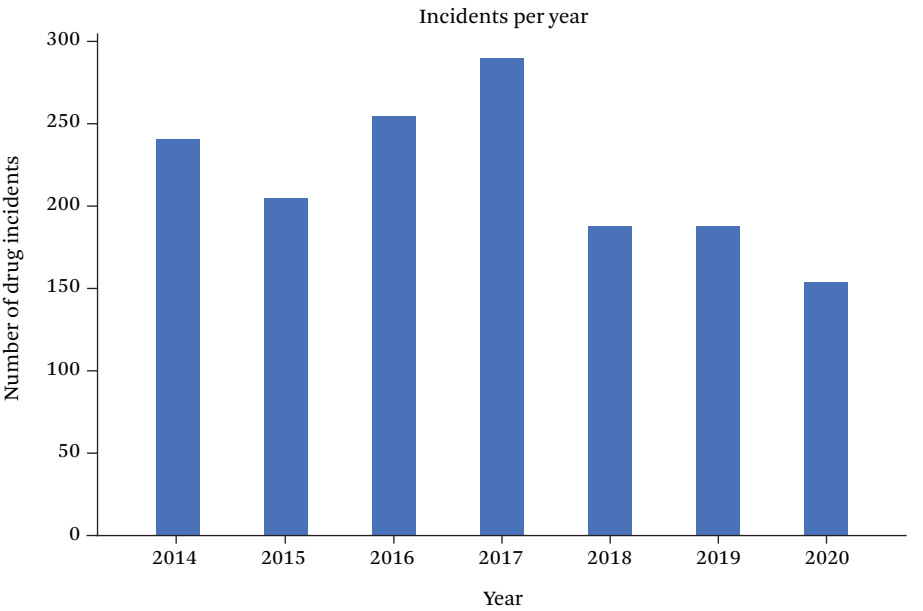
data concern the use of Narcan by police officers, citizen knowledge of Narcan deployment and availability, and the observance of new laws and policies. Before COVID-19, prior interactions with individuals who had a history of overdose helped police make fast decisions to deploy life-saving treatments such as Narcan. Illicit substances were ever present but often included ersatz synthetic opioids, even in the case of psychostimulants, a substitution that rendered all such substances deadlier. Among people who use drugs, *user-dealers*, or people who both consume and sell drugs, keep Narcan handy to avoid overdoses. First responders deal with resuscitating individuals, including friends, and loved ones. None of these elements disappeared due to COVID-19. On the contrary, general and economic uncertainty, social isolation, and the inability of government institutions to accommodate at-risk populations combined to exacerbate the already worrisome local overdose and SUD situation.

Police Data on Substance Use and Overdose

Figure 1 plots the number of drug-related police interactions in Sandusky in recent years, demonstrating the pervasive presence of illicit psychoactive substances. At first glance, the number of drug-related police contacts in Sandusky for 2020 may suggest a decrease in drug availability, as the number represents a seven-year low. In truth, this mirrors the national trend during the early months of the COVID-19 pandemic as policing priorities changed and overall crime rates declined (Abrams 2021; Sisak, Bleiberg, and Dazio 2020). Notably, the decrease in police drug contacts is far less pronounced in Sandusky than in most major metropolitan areas during, and because of, stay-at-home orders (Abrams 2021).

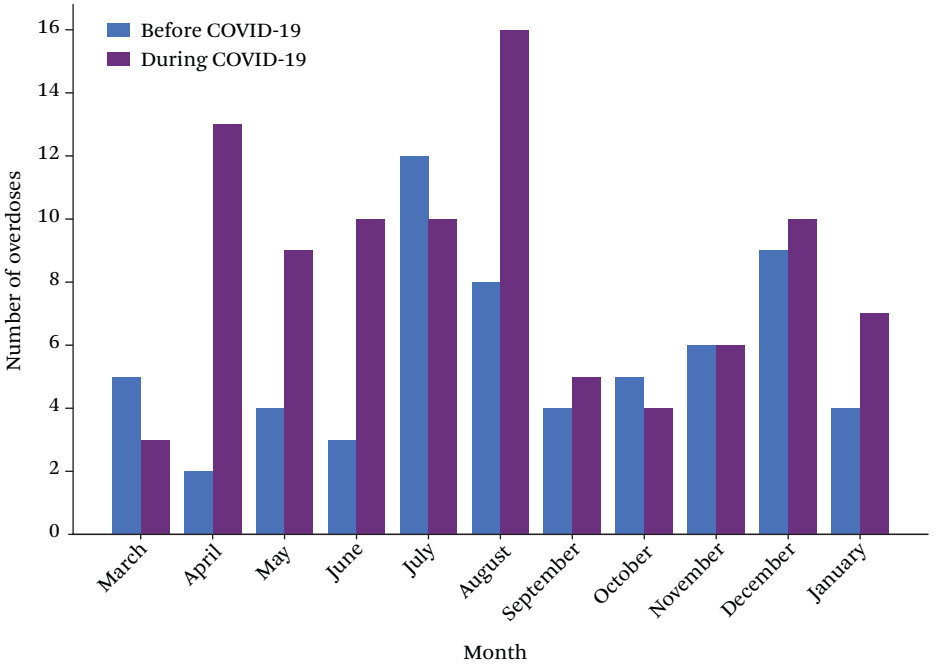
Figure 2 compares the number of overdose calls in each matched month of the studied period. Despite decreased drug contacts overall, overdose calls increased during the COVID-19 period. From April to June 2020, when unemployment was highest in Erie County and tighter restrictions caused social and economic uncertainty, the number of overdose-related calls for service significantly outpaced the prior year. The month with the highest overall calls for service, August 2020, coincided with a significant spike in overdoses in the county (Jackson 2020a). More overdose

Figure 1. Yearly Number of Drug Contacts by Sandusky Police



Source: Authors' tabulation.

Figure 2. Overdoses in Sandusky



Source: Authors' tabulation.
Note: March 9, 2019, through January 31, 2020, and March 9, 2020, through January 31, 2021.

calls were made for service during the COVID-19 period in eight out of the eleven months relative to the pre-COVID period. The COVID-19 period also had a higher number of overdose calls for service overall.

Overdose Reversal and Official Use of Narcan

Glyph reports demonstrate that knowledge of signs of overdose, access to Narcan, and changes in drug policy all factor into the official SPD overdose response, both before and during COVID-19. In their reports, officers regularly explain how they know someone was experiencing an overdose. Common symptoms of overdose noted by officers include pinpoint pupils, skin with a blue or purple hue, trouble breathing, and appearing lifeless. Officers used these observations and any information from witnesses on the scene to justify deploying Narcan before emergency medical services (EMS) arrived. Narcan had a positive effect in most cases, though sometimes it took multiple doses from police officers and other first responders. Officers applied numerous medical techniques to reverse an overdose. For instance, one report stated, "An officer attempted a sternum rub in attempts to wake Bonnie. I administered 2 doses of nasal Narcan with attempts to rouse [her] between them. Bonnie was barely breathing and still unconscious. SFD arrived on scene and administered an additional 8 doses of Narcan."

Police employed sternum rubs and cardiopulmonary resuscitation (CPR), sometimes in tandem with the deployment of Narcan. In total, Narcan was deployed in 71 percent of overdose calls across both study periods.

Officers relied on prior knowledge of an individual's substance use history in their decision to deploy Narcan. The data included several such cases, reports referencing as many as five prior overdoses known to the police. One officer explained his decision-making calculus: "I had prior knowledge that Danielle was [a] user of opiates so I administered 1 dose of Narcan and began chest compression to get the oxygen moving through her lungs. I received reaction to the first dose and administered an-

other. I continued the compressions and [she] woke up."

This excerpt illustrates an essential aspect of small-town police involvement in life-saving medical treatment. The likelihood is greater that police officers in small-town settings might be familiar with prior drug use or overdose among their constituents than their counterparts in larger jurisdictions.

Police capacity to respond to the incidence of overdose relies heavily on the information of bystanders and their capacity to contact authorities. Before COVID-19, this capacity was greatly expanded by Ohio's Good Samaritan Laws. Friends, acquaintances, or strangers that witnessed an overdose, whether in a private residence or public space, could dial 911 and report the incident, even if they might otherwise fear their own drug charges from such an interaction. As we show later, the social isolation from stay-at-home orders meant to stop the spread of the coronavirus had the unintended consequence of reducing the likelihood that an eyewitness would be present at the time of an overdose. Relatedly, as the next section illustrates, a well-informed citizenry, once able to react immediately to an overdose event, was rendered ineffectual by social distancing guidelines.

Civilian Narcan Use

Before COVID-19, Glyph reports describe bystanders, friends, family, and other witnesses deploying Narcan directly before police arrived at an overdose call. One report reads, "On arrival, I was directed to the kitchen where Otto was unconscious on the floor. Several empty packs of Narcan were laying next to [him]. There were several subjects in the residence who left as soon as I arrived."

Bystander deployment of Narcan has important implications. First, it illustrates community members' awareness and the capacity to recognize and reverse an overdose. Lisa told officers that a man had overdosed in front of her in one such incident: "so she ran next door and borrowed Narcan from the neighbors." Lisa's actions represent cases where bystanders might not have Narcan on their person but possess knowledge of other community members who do. Witnesses provided detailed information to SPD, local EMS, or Sandusky Fire Department (SFD) regarding Narcan administration.

Second, an unknown number of residents have overdosed and avoided contact with police through peer or bystander intervention. Prior to the COVID-19 pandemic, this meant that someone using substances with overdose potential could rely on a friend or co-user to reverse an overdose if needed. During the COVID-19 period, however, social isolation and long-term stay-at-home orders enhanced this population's vulnerability, due to a lack of available bystanders to witness and report an overdose.

Law, Policy, and Procedure

The Glyph reports document the enactment of Good Samaritan Laws before the emergence of COVID-19. SPD officers cross-referenced a mobile digital terminal system, called ALERT, to determine whether criminal charges were warranted at the scene of an overdose. In keeping with Ohio law, one officer reported as follows: "I checked ALERT and learned that Richard had no previous overdoses, so Richard will not be charged with Possession of Marijuana or Drug Paraphernalia. Due to this, these items were retained and placed in the Evidence Receiving Room (ERR) for disposal."

Richard, an eyewitness who might have otherwise fled the scene without contacting authorities, reported the overdose and stayed onsite long enough to interact with the reporting officer. Examples such as these provide instrumental insight, further illustrating the importance of Good Samaritan Laws. Unfortunately, the need for social distancing necessarily reduced the efficacy of these laws, contributing to the syndemic effect of COVID-19 on overdose prevention.

Drug User-Dealers, Narcan, and the Availability of Narcotics

As confirmed in police Glyph reports, substances such as the highly potent synthetic opioid fentanyl, and its more concentrated analog carfentanil, remained readily available in the local drug supply alongside cannabis, methamphetamine, and other psychoactive substances. Although less readily available than metham-

phetamine and fentanyl, heroin and cocaine are also present throughout the study period. Frequently, substances sold as heroin or fentanyl may instead contain carfentanil or some other, highly concentrated opioid, making the potency variable and the risk of overdose greater. Our data shows that, for this and several reasons, many local user-dealers, those who both use and sell illicit psychoactive substances, maintain a ready supply of Narcan.

Much of our information on the inner workings of the local drug market comes from Zachary, a one-time user-dealer and frequent user of heroin, fentanyl, and methamphetamine. Zachary has intimate and extensive knowledge of local fentanyl and methamphetamine availability in Sandusky. Zachary informs us that he regularly purchases fentanyl from as many as six user-dealers, many of whom he has known most of his life.

User-dealers often use their residences for illegal drug sales. Most people selling fentanyl expect buyers to use some portion of their product onsite in front of them to prove that they are not working with the police. This, however, creates an additional concern: the potential for a customer to overdose onsite. According to Zachary, the concern, then, is that if an overdose proves fatal, the user-dealer might then "catch a body," that is, be charged with involuntary manslaughter. These concerns motivate user-dealers to maintain a supply of Narcan in house. Zachary illustrates such a scenario: "My one buddy, I've known him forever. He sells dope. So, like I said, somebody went to his house to get some. And he wasn't letting nobody use at his house because of that reason, but he must have been comfortable letting this kid. I don't know how long, how much he did, but he f—ing fell out. Luckily, they had Narcan at the house. The Narcanned him and brought him back to, but it's just too scary, man."

User-dealers have multiple reasons to maintain a ready supply of Narcan to prevent the death of friends and customers and prevent their overdoses. Zachary's account mirrors the use of Narcan by ordinary citizens in the Glyph reports but also confirms that, unbeknownst to police and official records, nonfatal overdose events are occurring in the community.

To further supplement official police data on area overdoses, we spoke with Joe, an EMT and 911 dispatcher working in the Sandusky μSA. Joe has extensive and up-to-date knowledge of the local overdose problem. Although police are routinely onsite for overdose calls, EMTs are more intimately acquainted with the outcomes of overdose victims, whether fatal or otherwise. Joe's experience as a small-town EMT includes responding to overdose calls for friends, neighbors, and relatives. According to Joe, and later corroborated by a few of his fellow EMTs, this was a common occurrence before COVID-19. As stressful and emotionally tasking as his position was before COVID-19, Joe later explains that the pandemic made the local drug problem, and his job more broadly, significantly worse. We next provide an in-depth description of the syndemic impact of COVID-19 on first responders, substance users, and recovery support personnel in the area.

THE SYNDEMIC IMPACT OF COVID-19

As the threat of the SARS-CoV-2 virus became a reality in the United States, federal and state governments announced strategies designed to slow the viral spread based on guidelines from federal and state agencies. The CDC recommended the restriction of large gatherings and travel, widespread stay-at-home orders for high-density population centers, and closing schools to impede community spread (Schuchat and CDC COVID-19 and Response Team 2020). The widespread layoffs, cancellation or delay of medical and psychiatric treatment, and suspension of daily routine that followed were known risk factors for anxiety and depression (Blustein et al. 2020; Venkatesh and Edirappuli 2020). Relatedly, research identified COVID-19 as a risk factor for new addictive behaviors, relapse, and SUD, citing decreases in overall health and wellness resulting from social isolation, fear of job loss, and concerns over financial stability and viral infection (Dubey et al. 2020). Taken together, the negative unintended consequences of COVID-19 precautions constitute a second-order impact with syndemogenic effects.

At the start of the COVID-19 study period, as Ohio issued stay-at-home orders, problem drug use and overdose increased in the Sandusky area. For area residents dealing with SUD, the

loss of regular routine and services meant an increased potential for relapse (Dubey et al. 2020). Mental health support, treatment for addiction, and recovery support services disappeared for weeks as providers scrambled to transition from in-person to digital formats. Several certified peer recovery specialists (CPRS) asserted that the loss of vital mental health and recovery resources, coupled with prolonged social isolation, caused the spike in overdose deaths.

As the early months of the pandemic progressed, most recovery professionals and volunteers transitioned to virtual meeting platforms though a few opted to disregard CDC guidelines and reinstate in-person meetings. The transition to virtual recovery services, a lifesaver for some, proved impossible for others due to a lack of access to digital communications technology. COVID-19 also meant that first responders worked longer hours, often short staffed due to outbreaks of the virus within their ranks, and that colleagues quit because of burnout. Although first responders cope with fatigue, uncertainty, and constant risk, peer recovery supporters report trauma fatigue, exasperation, and frustration associated with an inability to provide services at the rate they could before COVID-19.

Recovery Services During COVID-19

One major local syndemic effect in the early months of the pandemic was the short-term loss and long-term impediment of community-based and professional addiction services, such as 12-Step groups and intensive outpatient programs (IOPs). The recovery professionals we interviewed implicated social distancing guidelines in an inability to provide official and unofficial addiction and recovery services. The result, according to our interview participants, was a rise in relapses that led to the spike in overdose deaths during the early months of the pandemic.

The lack of available services, along with the implicit need to move in-person services to virtual left several within the local recovery community uneasy. In the early days of statewide and national shutdowns, Howard, a CPRS, began implementing a plan to host virtual meetings through SARCC. As a person in addiction recovery with a 12-Step background, Howard values his anonymity and initially expressed reluctance in virtual meetings, saying, "my confidentiality is shot, I didn't have any interest in it." Still, he began the process and became a major proponent for virtual recovery meetings. Additionally, Howard and his partner are both immunocompromised and cite virtual meetings as a significant factor in their continued health and wellness.

Months after the initial shock of global shutdown and widespread social isolation, most 12-Step and similar recovery meetings switched from an in-person to a virtual meeting format or went to a group telephone system. Despite these resources, many area residents still had no way to access these services. A few CPRS and volunteer peer supporters point out that not all their clients have access to laptops or smartphones. Many vulnerable people became isolated during stay-at-home orders because of this new digital divide.

Gary, a CPRS who personally relies on 12-Step recovery meetings, decided to start an open-air Narcotics Anonymous (NA) meeting in a public park while social distancing guidelines still limited public gatherings. Gary estimates that this weekly NA meeting averages fifteen to twenty people, more than the CDC recommendation for public gatherings at the time. Gary expressed a belief that the need for in-person meetings outweighed the potential risk of COVID-19 transmission: "For a while we didn't have meetings. I think after like seventy-five or eighty days, and a few phone calls from people I said, well, you know what, let's get together. You know, I got a lot of people [saying] 'no, no, no, no.' I said, well, the disease [of addiction] is running rampant right now. We need to get together. Sometimes, just the fellowship helps you."

Gary's assertion that addiction is "running rampant" during the early months of the COVID-19 pandemic, though it does not fully recognize the safety concerns inherent in the spread of SARS-CoV-2, nonetheless points out the concern among those in the recovery community. As we demonstrate, by the time of Gary's decision to hold an open-air NA meeting, COVID-19 had already become associated with a massive increase in overdose deaths in the local area.

Mental Health During a Syndemic

Mental health challenges are associated with new substance abuse and relapse (Dubey et al. 2020). Area residents we interviewed described emergent mental distress due to social isolation and a pervasive fear of the unknown. Relatedly, medical professionals pointed to a potential mental health crisis in the Sandusky area due to COVID-19. Because trauma, depression, and suicidal ideation are all associated with an enhanced risk of overdose, we highlight how these risk factors increased in prevalence within the area due to COVID-19 (APA 2013).

In our discussion with Howard, he expressed concerns that a severe mental health crisis had developed in the area because of COVID-19. Like Howard, both a CPRS and a paraprofessional working with the Erie County Health Department, many of his colleagues straddle multiple institutional and noninstitutional roles and echoed this concern. Irene, a CPRS who manages a local crisis hotline for a local hospital, is also active in the 12-Step recovery community. Irene expressed concerns over the interrelated health crises of alcohol and other drug abuse (AOD) alongside mental health in the area. Irene explained that, like overdose death rates, area suicide rates were "going through the roof" during the COVID-19 study period. She further described that the local crisis hotline experienced a dramatic increase in calls, especially among adolescents, "because of COVID." When asked whether these adolescents were calling due to mental health or substance abuse issues, Irene replied, "Both. You know, how it is with adolescents and kids, a lot of them don't want to admit to AOD issues, because they're afraid of getting in trouble. But I have had some that do. A huge majority of it is, with the adolescents, is suicidal thoughts. Because I feel like typically, the parents feel like they can handle it until it reaches that level."

Irene, like Howard, hoped to sound the alarm about widespread declines in mental health in the Sandusky area due to COVID-19. Despite the dire state of mental health locally, Irene sought to maintain a positive overall outlook during our discussion. For Irene, and many of the people we interviewed, any positivity was hard fought, if possible.

Patricia, a former opioid addict turned volunteer recovery advocate, decried the loss of regular in-person contact. She espoused newfound pessimism in explaining that COVID-19 rendered her work, connecting active drug users with recovery services, nearly impossible. Worse still, Patricia described the chaotic uncertainty and recurring tragedy that she experienced as halfway houses and sober living facilities abruptly reduced their capacity or ceased operations entirely in the early weeks of adjusting to COVID-19 restrictions. She explained: "Unfortunately, there's so many different facets to this nightmare that there is not a solution. It's not just a financial solution, because I had an eighteen-year-old girl that I had in [a sober living house] for six months. Then when COVID happened; she left, lived in a tent, got her stimulus check, and was dead within twelve hours [in a nearby city]."

Patricia insisted that this story was not unique and that situations had not improved after the initial lockdown period. Patricia reported that, in a rural county adjacent to Erie County, fifty-eight people overdosed between mid-December 2020 and mid-January 2021; about 40 percent were fatal.

Patricia continued to explain that restrictions related to COVID-19 forced her clients to contend with months-long wait times for medically assisted treatment (MAT). State laws require that MAT prescriptions be refilled in person. In addition to long waits for MAT, IOP providers that once served upward of twenty-five people per day capped their enrollment at ten participants to comply with social distancing protocols. Patricia described the precarity of the situation, further aggravated by the death of loved ones due to COVID-19, through the experiences of two of her colleagues: "[My one friend is] heartbroken. There was a two-week period where every other day she was posting one of her girls had overdosed and died, and it just broke my heart because she doesn't do the job for the money. [My other friend] lost her father to COVID complications, and she's [only able to serve] half of her IOP class."

Institutional Disarray

Interviews repeatedly implicate COVID-related restrictions as contributing factors in delays and breakdowns in services and public safety. Likewise, interview participants highlighted the inability of government agencies to address issues posed by COVID-19 restrictions and the impact these failures had on vulnerable populations. For instance, Patricia tells of an issue that she encountered at several county jails in the area: a failure to produce COVID-safe ways for inmates to be reached by anyone outside the county lockup. Before COVID-19, most local county jails maintained a videophone system to communicate with inmates. Ordinarily, videophones are available for public use via a proprietary prepaid phone card and accessible in a public lobby area. During the height of COVID-19 restrictions, videophones were inaccessible. Patricia explained how this restriction affects an already damaged system of justice during the pandemic: "[Attorneys] are struggling with not being able to have communication with their clients prior to hearings that are being postponed beyond belief. They're postponed six months out! They can't see their clients. Their clients are sitting in jail without any treatment services, without any religious services, without any visitation."

This failure to address gaps in existing communications systems placed undue stress on inmates, their families, and legal representation. Patricia adds that other services available to inmates before the pandemic, including addiction treatment, were suspended because of COVID-19.

First responders dealt with long shifts for days or weeks during the early months of the pandemic. These extended hours, coupled with increased health risks, led to career-ending burnout. Joe described working long hours as an EMT and 911 dispatcher and struggling to manage the stress of being on the front lines of an overdose epidemic during a viral pandemic. When we interviewed Joe, his day included a standard twelve-hour shift as a 911 dispatcher: the shortest shift for him in weeks and the first of a scheduled ten-day stretch. COVID-19 outbreaks forced multiple ambulance stations in the area to close due to a lack of available staff. Joe's station, too, was short staffed for months. This resulted in chronic exhaustion, or burnout, for EMTs and other first responders. In addition to burnout, viral outbreaks, and related first-responder turnover; Joe stated that EMTs were forced to reuse personal protective equipment "until they're soiled." This likely contributed to several of Joe's fellow EMTs contracting COVID-19, resulting in fewer available EMTs and longer work shifts for those who remained. Joe explained: "People are burned out, or tired. My boss, who just left here a few minutes ago, has not seen his house in three days. He's been hopping from station to station to station because we're closed. We got people out sick, and we got people quitting because they're tired. They're burned out! They're sick of getting run. You come in on an ambulance and you're gonna run twenty-three or twenty-four hours, and it's gonna be nonstop balls-to-the-wall."

Another aspect of the impossible working situations for EMTs was patient transport logistics. When COVID-19 infection rates were at their peak, hospitals statewide filled up with patients, forcing ambulances in Joe's company to transport patients upward of a hundred miles to the nearest available facility. This excess travel decreased first-responder capacity to respond to drug overdoses and other life-threatening emergencies. Conversely, until first responders began receiving the new COVID-19 vaccine, toward the end of the study period, every overdose call constituted another chance for an EMT to contract COVID-19. If we consider the decrease in first-responder readiness, as Joe illustrates, alongside the increase in substance use relapses among people in long-term recovery, as Gary suggests, and the widespread mental health struggles that Irene dealt with daily through the local crisis hotline—the syndemic effects of COVID-19 on the health of the local population in general, and elevated overdose mortality risk, becomes evident. Likewise, Joe points out that the increase in overdose calls diminished EMT readiness, leading to longer wait times for COVID-19 patients needing transportation to hospitals and other emergency care necessities.

DISCUSSION

The local syndemic assemblage of COVID-19, SUD, and drug overdose exacerbated already staggering overdose death rates. Extensive layoffs, an indirect effect of government COVID-19 safety guidelines, illustrate the multiplicative effects of COVID-19 on poverty, itself already endemic in the Sandusky area. The lives of the area's most vulnerable residents shifted from challenging to critical when economic uncertainty increased and vital social institutions shut down. Mental health deterioration at the community level, suicidal ideation increasing among adolescents, and problem substance use all fall under the heading of collectively enmeshed public health crises within the local area alongside the threat of the SARS-CoV-2 virus (Singer 2009).

Having focused on how COVID-19 made the overdose and substance use problems worse, we believe it is important to reiterate that substance use also increases the potential for COVID-19 illness to be more life threatening (Gao et al. 2021; Volkow 2020). In a more localized context, drug-seeking behavior such as breaking stay-at-home orders to procure psychoactive substances added increased risk for COVID-19 transmission.

The Sandusky μSA syndemic assemblage, though unique in its composition, provides useful principles for future research. Social structural elements exist as components of an assemblage within a localized sociogeographic context. Rather than focusing exclusively on any one element (such as access to Narcan) in isolation, we seek out many relevant elements and consider how they function together as a system. Without taking the syndemic relationships between diseases and social ills into account, health and public policy responses fail to account for distinct, yet recognizable, variation in risk and outcome.

Sandusky represents a single small-town area, with its own distinct local syndemic assemblage. We recognize that other areas will have differing syndemic assemblages. Consider, for instance, a similarly populated area with higher-than-average incomes; their COVID-19 risk may be the same, as could their chances of overdose. However, the more affluent area is less likely to be significantly affected by layoffs and to have greater resources to access supplemental mental health and recovery services. Thus assessment and planning for future syndemics, and the recognition of existing syndemics, requires local assessment of potential complications from emerging or proposed guidelines, policies, or procedures.

Our data suggest several potential policy interventions. Our research suggests the necessity for enhanced mental health and wellness services for all community members during global crises and prolonged periods of socioeconomic uncertainty. Any plan seeking to address social isolation to promote community health, especially mental health, must first address the digital divide within the community. Finally, we assert the need for future crisis planning to presuppose the potential for localized syndemic effects and consider the interaction of existing public health epidemics and relevant socioeconomic conditions when formulating mitigation strategies.

We argue that any consideration of locally overlapping health crises in isolation mischaracterizes their cumulative impact. COVID-19 initiated an unprecedented change to daily life and social conditions globally, but syndemics are best understood within their local contexts. The overdose epidemic was never an isolated issue, implicating various inequalities as contributing factors and potential outcomes. Although referring to COVID-19 as a pandemic and characterizing SUD, overdoses, and related deaths collectively as an epidemic, we must stress that they are in no way distinct in terms of effects when cooccurring. Our research illustrates this.

CONCLUSION

In this study, we consider official police data, qualitative interview, and ethnographic data to explore the synergistic interaction between the emergence of COVID-19 and a community experiencing a deadly overdose epidemic. We assert that the two crises combined, and thus made up a syndemic, creating unique complications within the local, small-town context. It is this context, the laws, local socioeconomic conditions, and access to needed services, that join to form the local syndemic assemblage. In this study, we consider the laws, policies, and

services operating in Sandusky, Ohio. We find the life-saving availability of naloxone (Narcan) by first responders and Good Samaritan laws aimed to help overdose reporting were obstructed by COVID-19 guidelines and the policies they precipitated. COVID-19 further complicated the existing overdose situation in the local area, posing new obstacles for people seeking services for substance use disorder, and for service providers. Our research demonstrates how COVID-19 exacerbated the ongoing overdose crisis, amalgamating with it to form a distinct syndemic assemblage and ensuring that any interventions that failed to address both problems were unable to address either.

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