Factors motivating the timing of COVID-19 shelter in place orders by U.S. governors

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ABSTRACT
This article is an effort to isolate and estimate the impact of political party control of state government on the length of time it took U.S. states to issue shelter-in-place orders (SIPOs) in an effort to control the spread of COVID-19. We adopt a two-step process to isolate the effect of politics. First, we measure the number of days between the date that state-level cases first exceeded one case per 100,000 population and state issuance of a SIPO. This permits us to compare governor’s choices in similar contexts – when the disease is known to be present in the community. Second, we use a statistical tool – survival analysis – to differentiate between state characteristics that might be associated with higher risks of uncontrolled spread and the impact of political party control. We find that the timing of disease progression was remarkably similar across states, suggesting that many states reached the 1:100,000 benchmark at about the same time. By contrast, we find that, even after controlling for a variety of factors, a Republican governor coupled with a Republican majority in the state senate predicts delays in the implementation of SIPOs – delays on the order of two days for Republican states that did act, but no action by more than one-third of those states after more than two months above 1:100,000. In contrast, potentially important decision-making factors such as urbanization, elderly population, hospital beds, extent of chronic diseases, and budget capacity of the state government serve, at best, as poor predictors of SIPO timing.

On January 5, 2020, the World Health Organization (WHO) issued a terse statement announcing that China was experiencing “cases of pneumonia of unknown etiology (unknown cause) detected in Wuhan City, Hubei Province.” Within 60 days of that announcement, the State of Washington became the first U.S. state to reach a caseload of 1 in 100,000 for the disease associated with the SARS-CoV-2 virus, now widely...
known as COVID-19. By March 24, 2020, every U.S. state reached the 1 in 100,000 benchmark, President Trump declared a national emergency, and 14 states implemented Shelter-in-Place Orders (SIPOs). By May 30, 2020, 42 governors had issued SIPOs while eight governors— all Republicans— had not taken such action.

SIPOs have taken the form of gubernatorial executive orders. Recent work in political science and public administration has shifted attention to the choices of governors, arguing that the traditional focus on legislative outputs ignores the important and growing role of direct, unilateral executive actions (Sellers 2017). Public health emergencies give governors a tremendous amount of discretion to act, or not act, in the face of a medical crisis. State and local authorities have a broad set of powers to respond to public health crises—the ability to control the private actions of people and businesses in extraordinary ways. In fact, as early as 1905 the Supreme Court identified legal justifications for compulsory vaccinations—setting the stage for conflicts between public health officials and civil liberties (Gostin 2005). The effects of these actions are powerful because SIPOs limit potential contact in public and private spaces. The actions of government also send signals to individuals about the severity of the threat they face, and these signals can lead individuals to voluntarily take other protective measures (see Sweetman 2006 for a discussion of this effect).

Much of the media coverage and popular discourse compares the scope and impact of COVID-19 to the 1918 Spanish Flu: very few Americans have any experience with or memory of quarantines, the practice of social distancing, large-scale closures of schools and businesses, or the habit of wearing masks to limit the spread of diseases. While no disease with the combination of contagion and morality on the scale of COVID-19 has occurred in the United States in the past 100 years, public health resources and expertise were tested by a potential pandemic in 1976, by the AIDS epidemic, and by the H1N1 pandemic in 2009.

In 1976 and 2009, the federal government mobilized manufacturers and the public health infrastructure to vaccinate millions—in 1976, the disease never broadly emerged and serious side effects associated with the large-scale vaccination campaign led to long-lasting damage to the reputations of the infectious disease community and public health officials (Neustadt and Finberg 1978). The AIDS epidemic presaged much of what we see with COVID-19 today: a particularly large impact on vulnerable populations, denial and stigmatization of the ill, and an evolving understanding that testing and contact tracing would need to be the backbone of the response. The cumulative death toll in the United States alone stands at more than 750,000 spread over three decades (Sheridan 2020). The H1N1 pandemic revealed gaps in the state-level public health infrastructure, but the relatively low mortality rate meant that these shortcomings were not addressed with urgency, if at all (Gannon 2020).

In this context, governors, in particular, were compelled to take innovative, radical action to slow or stop the spread of COVID-19. The pace of their actions varied across states and the timing and intensity of public reaction also varied. Describing the case of Hong Kong, Hartley and Jarvis (2020, 403) conclude that “the COVID-19 pandemic, in its severity, immediacy, and complexity, has exposed weaknesses in the type of institutional capacities typically theorized as essential in crisis situations.” They argue that public trust and political legitimacy are the foundations for institutional capacity to
effectively respond. The challenges in Hong Kong are instructive since the political system is one of concentrated power and unitary control, operating in small geographic area – just the opposite of the U.S. President Woodrow Wilson (1908, 32) stated long ago that “The question of the relation of the States to the Federal Government is the cardinal question of our constitutional system. At every turn of our national development we have been brought face to face with it …” Yet, the response to the spread of COVID-19 is conceivably the greatest test ever faced by the U.S. federal system of government, which seeks to manage a diverse population spread across more land mass than all but two other nations.

How did the unique American local-state-national system function early in the first wave of the COVID-19 crisis and, specifically, why did some governors decide to issue SIPOs when they did, while others decided not to act? Put differently, what accounts for the large differences in the timing of the choices of governors about SIPOs? Why did some states – Illinois, New Jersey – move early to shelter in place, while other states – Arkansas, South Dakota – never took this step? Our core assumption is that “every day mattered” in issuing these statewide executive orders to keep all but essential workers at home for all but essential functions, which generally meant a wide range of businesses were shuttered, including restaurants, bars, athletic venues, salons, fitness centers, libraries, schools at all levels, landscaping work, and more. A Columbia University research team estimated that over 50% of all COVID-19 deaths occurring before May 3, 2020, would have been prevented if social distancing and lockdowns had started just one week earlier (Pei, Kandula and Shaman2020).

To isolate the effects of political factors on the timing of the response, we proceed in three steps. First, we consider what we already know about U.S. federalism and crisis response lessons largely learned, or at least considered, after failures in the wake of Hurricane Katrina. Second, we examine the pace of the spread of COVID-19 across the United States using tools of survival data analysis. Finally, we apply the same approach to examining the duration from caseload reaching 1 case per 100,000 population (1:100,000) to the implementation of a SIPO. While controlling for a number of plausible correlates, we find the pace of the spread of the disease was surprisingly uniform with all states reaching 1:100,000 in a fairly narrow time interval. By contrast and using the same controls, states with a Republican governor and Republican-controlled state senate were far less likely to implement SIPOs.

A federal response to emergencies

The world was extremely critical of the 3- to 4-week delay in China’s response as COVID-19 started to spread in Hubei Province yet, when they did act, the Chinese government was able to establish near total population containment and required everyone in public to wear a face mask. In contrast, American responses came city by city and state by state as the federal government chose not to pursue a national approach. There is a robust and growing crisis management literature that provides some insights into how these national differences emerge and persist, and provides a framework for making sense of the progress from problem discovery to learning from crisis (Boin et al. 2005). But, as a crisis, the COVID-19 pandemic is somewhat unique
because at the onset there was very little information or understanding about the nature of the threat (contagion mechanisms and intensity, mortality rate) and no clear consensus about the most appropriate policy responses (Gree et al. 2020). This information deficit opened the door for substantial variation in responses across countries and regions, and indeed across U.S. states.

**The role of the states**

The American system of emergency management assumes that each crisis will hit selected states or at worst a specific region. Thus, the first challenge of the pandemic to America’s federalism is that it was always going to impact every corner of the nation. Even in a major regional crisis such as Hurricane Katrina, poor coordination between local, state and federal authorities resulted in a series of deadly delays in the provision of relief. The statutory framework in the U.S. from the Stafford Act in 1988 requires state governments to ask the federal government to sign an emergency declaration. Without presidential approval of that request, federal resources do not flow to the affected area. For floodplain management, for example, states work with regional FEMA offices to develop coordination plans and FEMA employees work directly with local governments to help them design and implement emergency management plans (Comfort 2007). In the specific domain of public health, there has been a systematic expansion of state powers. The 2006 Pandemic and All-Hazards Preparedness Act anticipated the adoption of new and broader powers at the state level and many states passed legislation in the wake of the 2006 Act to specifically expand public health authorities. COVID-19 quarantine and travel restrictions imposed in New Jersey, for instance, appealed to these new authorities (Jackson and Robertson 2020).

**The federal response**

The federal role is critical yet ambiguous in emergency management. On top of Stafford Act provisions that trigger FEMA responses, two other statutory frameworks structure federal action in public health crises. The federal government can declare a public health emergency under the Public Health Service Act. Health and Human Services Secretary Azur took this step for COVID-19 in late January. This permitted state and local governments to shift resources and people from other public health functions to assist in the COVID-19 response (HHS 2020).

The federal government also has broad authorities under the Pandemic and All-Hazards Preparedness Act. The Act anticipates a robust federal role in surveillance, acquisition of medical supplies and equipment, vaccine discovery and dissemination, and overall coordination of state-level responses. Hodge, Gostin, and Vernick (2007) offered a blunt and prescient assessment of the act: “However, it also does not resolve complex, longstanding issues of interjurisdictional coordination, privacy, liability, private sector incentives, and distributive justice – all of which are critical to improve public health emergency preparedness.” Given the decision by federal authorities to offer limited guidance and few explicit attempts to coordinate a response to COVID-19, the primary authority for adopting specific public health measures was entrusted
with the states. Before turning to the timing of these actions, we consider the role of regional coordination and local government response.

**Regional collaboration**

The first-in-a-century scale of the COVID-19 global health crisis creates a renewed interest in the adequacy and timeliness of collective response within the U.S. during emergency conditions. As the White House turned attention from the virus to the economy just weeks after many states issued their first SIPOs, some governors assumed the lead by banding together in three regional collaborations (Flint 2020). Six northeastern states, including New York and New Jersey, formed the Multi-State pact. California, Washington and Oregon announced the Western States Pact in early April, which Colorado and Nevada joined several weeks later. Six Midwestern states announced a similar arrangement at the same time. One goal of the pacts was for each state to commit to using similar standards and data to re-open the economy, taking steps to ensure that actions in one state would not set back progress in neighboring states (see, for example, the Joint Statement of the Governors, 2020). This type of coordination problem is a common public policy challenge (Peters 2018). While these regional collaborations are relatively informal and individual governors retain executive authority in their states, they can be viewed as part of the federal-state tug-of-war on reopening the U.S. economy.

**Local responses**

In many states, cities enacted a SIPO before the state acted. In some cases, governors decided not to enact a statewide SIPO specifically because the majority of the population was already covered by local decisions. For example, Lincoln, Nebraska, issued an ordinance on March 26 to ban gatherings of 10 or more people, among other restrictions, and Omaha took significant actions on March 15 and March 18. Together these local actions may have enabled the governor to announce that further action was not warranted. In at least one other case, the state government actively frustrated local efforts. One day after issuing a statewide SIPO, the Georgia governor ordered all beaches open even when local governments had ordered them closed (Willetts 2020). Several months later the Georgia governor voided decisions by fifteen local governments to order people to wear masks in public (Amy and Nadler 2020).

Such state preemption of local ordinances has been on the rise, and this essentially means that states can pass legislation to stop local governments from establishing policies within specific areas of jurisdiction. For example, state law can establish gun control policies and prohibit local governments within that state from enacting any related policies. Reflecting on the pandemic, Davidson and Haddow (2020) conclude that “[a] decade of preemption has left cities starting from behind….in critical policy areas such as paid sick leave, tenant protections, and access to critically needed broadband.” They report that in some states SIPOs set a regulatory floor that permits local governments to be even more proactive while other SIPOs set a regulatory ceiling through preemption, foreclosing a more assertive local response. We focus on state-level actions
and thus one possible explanatory factor that we do not fully account for is these varying state-local relationships.

**How did the pandemic response become politicized?**

One somewhat surprising aspect of the U.S. experience is the rapid politicization of many dimensions of the crisis. How are we to understand the severity and scope of the disease (crisis or hoax?), whether or not economic concerns should be prioritized over public health, and whether or not masks should be required in public? Answers to these tradeoffs or questions fall neatly along partisan lines, so it makes sense to see Republican elected officials and Democratic elected officials responding to the crisis in different ways, as they respond to their different partisan constituencies. A growing body of empirical work reveals this ideological response playing out in other policy areas. The range of policy choices that are impacted is remarkable, ranging from climate change (Brewer 2012; Clark et al. 2020; Dunlap, Mccright, and Yarosh 2016; Merkley and Stecula 2018), healthcare reform (Heinrich and Johnson 2008), abortion (Carmines, Gerrity, and Wagner 2010), LGBTQ rights (Frank 2012), and religious values (Glaeser, Ponzetto, and Shapiro 2005), to broader concerns about markets and the economy (Ura and Ellis 2012).

Given this research, the political conflict over SIPOs and masks should not come as a surprise. The U.S. response to the 9/11 terrorist attacks, particularly the Patriot Act, also exposed sharp partisan differences in how elected officials balance civil liberties with national security. Historically, the balance between public health and civil liberties has been a visible source of conflict in the enforcement of immunization mandates. At the turn of the 20th century, U.S. local and state authorities faced resistance to vaccine mandates, and this led to the Supreme Court upholding the public health powers of state and local governments. Vaccine resistance may join the other dimensions of pandemic response that have become politicized, especially if a national policy or mandate is not pursued in the event that a safe and effective vaccine becomes available.

**What state factors might matter?**

There are a number of political and nonpolitical factors that might explain the differences in timing that we observe for both implementation of a SIPO and the spread of the disease. The most important political feature is the party of the governor, but U.S. governors share power with a legislature and in thirteen states this power is shared with the opposite party. To account for the different configurations of party control, we employ four categories to focus on the impact of the governor: Democratic governor and Democratic majority in the upper chamber of the state legislature, Republican control of both, or shared control with either a Republican or Democratic governor. (For the statistical model below, the baseline category is joint Republican control \(n = 22\), so coefficients can test the differences between Democratic and Republican control of either the governor or the legislature.) We considered and tested the popular vote margin for Donald Trump over Hillary Clinton, but that measure was not a good predictor of cases or gubernatorial actions (results from these alternative models are available in
an online appendix (https://doi.org/10.7910/DVN/UIFVSX)). We also considered adding the proportion of the federal congressional delegation from each state that was Democratic or Republican, and that measure was also not as useful as political party control of state government. All of these measures are correlated, and the best single predictor is party political control of state-level offices.

Beyond partisan control, we considered a variety of factors that might both be associated with rapid spread or higher mortality and thus might animate quicker action by state-level decision makers. This focused on three categories: state capacity to detect and report, factors that facilitate spread (international air travel and population density), and the presence of vulnerable populations (lower income, elderly, or with underlying health problems). Table 1 describes these variables.

One complication of using state-level data is the strong links between what might seem to be different measures. Table 2 reports the state-level correlation between the candidate independent variables. Five of these factors, in particular, are strongly related – state median household income, the percentage of the population diagnosed with diabetes, hospital beds per capita, international air travel, and the proportion of the population in an urban area. States with higher median incomes are more likely to be urban, have lower incidence of diabetes, have lower incidence of cardiovascular disease, have fewer hospital beds per capita, and have one or more of the FAA core 30 airports. Since these variables are so highly correlated, we narrowed to four measures that are roughly unrelated to each other: urban population, elderly population, total population size, and state government resources. The percentage living in urban areas turns out be a useful proxy for vulnerability due to air travel, population density, and lower medical capacity. After introducing this set of factors, we should not see major differences between states governed by the Republican or Democratic Party if underlying factors, rather than politics, drove state decisions.

Table 1. Factors that could contribute to rapid spread of COVID-19 and perhaps more rapid action.

| International air travel | Does the state have an FAA core 30 airport? |
|--------------------------|--------------------------------------------|
| Urban population         | Percentage of the state population living in urban areas |
| Diabetes                 | Percentage of the state population with diabetes |
| Cardiovascular disease   | Percentage of the state population with cardiovascular disease |
| Elderly                  | Percentage of the state population aged 65 and over |
| Lower income             | State median household income |
| State government resources | Tax revenue per capita |
| Hospital/medical capacity | Hospital beds per 100,000 population |
| Total population         | State population |

Full descriptions of data sources are available in the online appendix (https://doi.org/10.7910/DVN/UIFVSX).

Table 2. Interstate correlation of risk factors.

| FAA Core 30 | Hospital | State | Urban | Income | CVD | Elderly | Diabetes |
|-------------|----------|-------|-------|--------|-----|---------|----------|
| FAA Core 30 | 1.00     | −0.40 | −0.39 | 0.57   | 0.43| −0.30   | −0.28    | −0.04    |
| Hospital capacity | −0.40 | 1.00 | 0.25 | −0.52 | −0.44| 0.54   | 0.12   | 0.19    |
| State capacity | −0.39 | 0.25 | 1.00 | −0.35 | 0.18| −0.19  | 0.11   | −0.37   |
| Urban | 0.57 | −0.52 | −0.35 | 1.00 | 0.53 | −0.51 | −0.33 | −0.14 |
| Income | 0.43 | −0.44 | 0.18 | 0.53 | 1.00 | −0.73 | −0.28 | −0.57 |
| Cardiovascular disease | −0.30 | 0.54 | −0.19 | −0.51 | −0.73| 1.00 | 0.35 | 0.75 |
| Elderly | −0.28 | 0.12 | 0.11 | −0.33 | −0.28| 0.35 | 1.00 | 0.06 |
| Diabetes | −0.04 | 0.19 | −0.37 | −0.14 | −0.57| 0.75 | 0.06 | 1.00 |
**Measuring time to action**

In order to understand the timing of each governor’s response, we determine the date when the level of cases first exceeded 1 per 100,000 population (1:100,000) for each state. While the media or the public might focus on the arrival of the first case or the first death, it is likely that state executives were focused less on the absolute numbers or arrival of the first case and more on the rate of infection. Data on caseloads are archived and published by Johns Hopkins University (Dong, Du, and Gardner, 2020). The data are confirmed cases, so state-to-state variation in testing and other factors may introduce errors in this measurement of COVID-19 onset. Since there was no shared understanding of appropriate metrics or reporting conventions in the early stages of the pandemic, we treat this number as a proxy for the level of attention the outbreak was receiving from decision makers.

The earliest states recorded this level of infection between March 6 and March 11 - in Washington, Massachusetts, and New York. The last states to experience cases at this level were Indiana, Missouri, Arizona, and West Virginia between March 20 and March 24. For each duration – caseload and SIPO – we present three types of data – the median time to event for states with a Republican governor or Democratic governor, the length of time it took states with various configurations of political control to experience each event, and a simple parametric model of the duration, combining political control and other factors. Figure 1 compares the time it took states with Republican governors and Democratic governors to reach the case threshold. These boxplots indicate the median (the solid line in the center of each box), the 25th and 75th percentiles (the lower and upper sides of each box), and the range of reported durations (the ends of each vertical line). Outliers are indicated by an asterisk.

![Figure 1](image-url)

*Figure 1.* While the first state to reach 1 case per 100,000 population had a Democratic governor and the last state had a Republican governor, the median time between the WHO announcement and the case threshold was only one day longer for Republican states.
By March 19 all of the states with a Democratic governor or Democratic legislature had caseloads exceeding 1:100,000. Seven Republican-controlled states took a few days longer to reach the threshold, and the last state, West Virginia, did so on March 24. The data make it clear that the disease progressed to 1 case per 100,000 population at nearly the same pace across all 50 states.

To measure the effect of party control on duration to 1:100,000 we employ a simple visualization strategy based on the proportion of states in each group that reach the threshold on a particular day. This approach uses tools of survival data analysis, treating each instance as an event. States that do not experience the event remain “at risk” the next day. Figure 2 summarizes the experiences of the number of days that elapse between the WHO announcement and cases reaching 1:100,000 for states in the four configurations of political control. The vertical axis is the cumulative proportion of states in each group that reached the threshold. The figure leads to a slightly different conclusion from the simple medians above – as expected, the virus spread and was detected at about the same rate in each of the four configurations of political control – 100% of states in each category experience this caseload level within 73 to 79 days. States with a Republican governor and Republican state senate do reach the threshold almost a full week later. A related statistical test, a log-rank test of survival differences, indicates the observed difference is statistically significant (p~0.04), so the 6-day difference for this one political configuration is both statistically and substantively meaningful.

Figure 2. All states surpassed 1 confirmed case per 100,000 population within 79 days of the WHO announcement on January 5. States with a Democratic governor or Democratic state senate crossed this threshold about 6 days before the final states with a Republican governor and Republican senate.
Does political control matter when other factors are considered?

It would seem obvious that other factors could and should account for these differences – states with a Republican governor and a Republican state senate might be more rural, poorer, or have fewer international travelers. To account for this possibility, we employ a statistical model to test the effect of these factors, which seem relevant from a public management perspective. The statistical approach, broadly labeled survival analysis, is useful for dependent variables that measure a specific time interval. Applications of this approach are common in both medicine (survival time for treated patients) and industry (mean time-to-failure for products) and have underpinned important work in political science and public administration (Box-Steffensmeier and Jones, 2004). For both durations of interest we adopt an accelerated failure time model, a specific type of survival model that assumes a particular distribution for the hazard function (the probability that a state experiences an event at some time \( t \), given that it had not experienced the event at time \( t-1 \)). Several alternative distributional assumptions were evaluated to approximate this hazard (Weibull, exponential, log-logistic). The Weibull approximation was the best fit for both durations and the results were not sensitive to this choice.\(^1\) Table 3 reports the estimates for the time from the WHO announcement to a case burden of more than 1 per 100,000 population.

Somewhat surprisingly, none of the factors we expected to matter – urbanization, large population, high tax revenue (state capacity measure, but a proxy for income too) – impact the speed of this spread. States with a Republican governor and a Republican state senate were slower to experience this case burden – and the extent of that difference is important. Controlling for other factors, the coefficients suggest that states with shared or complete Democratic control are about four days earlier than Republican states. The rural-urban difference, for instance, is much smaller – the estimates indicate only one day would separate the most urban state (94% urban) from the most rural state (38% urban).

What explains the divergence in SIPO timing?

The second duration we focus on is the time between states reaching the 1:100,000 case burden to implementation of SIPOs. Compared to the spread of the disease, this

Table 3. Weibull model of disease progression.

| Political control | \( \beta \) | \( SE(\beta) \) |
|-------------------|----------|-------------|
| Baseline category |          |             |
| Republican governor and state senate | \(-0.03^{**} \) | \(0.01\) |
| Democratic governor only | \(-0.05^{**} \) | \(0.02\) |
| Republican governor only | \(-0.04^{**} \) | \(0.01\) |
| Democratic governor and senate | \(-0.0003 \) | \(0.0004\) |
| Urban | 0.0002 | \(0.002\) |
| Elderly | \(-0.0001 \) | \(0.0003\) |
| State resources | \(-0.0003 \) | \(0.001\) |
| Population | 4.31^{**} | \(0.05\) |
| Constant | | |
| N | 50 | |
| Log Likelihood | \(-93.18 \) | |
| Chi² | 32.86^{**} | \(df = 7\) |

Time from WHO announcement to COVID-19 case burden exceeding 1 case per 100,000 population.

\(^{**}\)Significant at the 5 percent level.
duration should be more a function of the political and/or institutional contexts in which decisions are made. The states that moved most rapidly to a SIPO were West Virginia (SIPO issued on the same day that cases surpassed 1 in 100,000), Washington, and a cluster of states in the Midwest (MI, OH, IN and IL) – all six states acted within one week of hitting the caseload benchmark. In addition to the eight states that never issued a SIPO, two states – Georgia and South Carolina – took more than two weeks to implement a SIPO after reaching this benchmark.

Figure 3 summarizes the durations for states with Republican and Democratic governors. The Republican states include eight states that never acted. In order to include all 50 states in the figure, we treat these states as if they acted at the end of the observation period (May 30 2020). This censoring problem is discussed in more detail below, but the figure makes it clear that, unlike the spread of the disease, the time between cases and the SIPO implementation is quite different for these groups of states. The median Republican state waited 16 days after the 1:100,000 threshold was breached while the median Democratic state acted in 9 days – a week more swiftly.

The time between a state crossing 1:100,000 cases and the effective date for a SIPO is summarized in Figure 4 for all four configurations of political control. Unified Democratic control or shared Democratic control of any form was associated with a much more rapid implementation of SIPOs. All the states in these three categories acted within 17 days of reaching the case threshold. This is in sharp contrast to the 22 states where the Republican Party controls both the upper chamber of the legislature and the governor – only 14 of these states (63%) adopted a SIPO by the end of the observation period. The log-rank test of survival differences confirms that the sample differences are statistically significant ($p < .010$). Eight observations were censored.

![Figure 3](image.png)

**Figure 3.** All states with Democratic governors implemented a Shelter in Place Order (SIPO) within 17 days of reaching 1 case per 100,000 population, while only half of states with Republican governors acted at the same pace.
meaning that the observation period ended without a SIPO – these observations are designated with “+” on Figure 4 – 72 to 75 days elapsed between the time these states reached 1:100,000 threshold and May 30. (After May 30, states that had enacted SIPOs had either permitted the SIPO to expire or initiated some type of phased re-opening, so a longer observation period would not yield any new events related to the first wave of this pandemic.)

What about other state factors?

As above, we employ an accelerated failure time model to estimate the impact of selected state features on the implementation of a SIPO. The model coefficients and standard errors are reported in Tables 4 and 5. Table 4 excludes the eight states that did not implement a SIPO. The estimates make it clear that it is very difficult to use state features to predict which of the remaining forty-two states would act first or act last. All of the states moved within a narrow range and neither political nor other factors matter.

Table 5 includes the eight right-censored states, treating the last of day of observation (May 30) as the effective date of action for each, which is a very conservative approach for estimating state differences. Introducing those states clarifies two things. First, contrary to what we might expect, rural states were no slower or faster to adopt SIPOs. But three of the factors we expected to influence decision making do matter – larger states move faster, states with high tax revenue per capita move more slowly, and states with high elderly populations move faster. The second of these is counterintuitive and leaves us to wonder if states with more institutionalized public health
decision making were slower to act than similarly situated states (i.e., taking more time to process information and generate/approve policy prescriptions), though this is admittedly speculative.

After introducing appropriate controls, it is clear that Democratic governors acted faster (shorter time to SIPO) and the estimates indicate that a Republican governor sharing power with a Democratic senate acted faster than other Republican governors. The coefficients suggest that shared control or unified Democratic control impacts the pace to a SIPO in exactly the same way (direction and size of effect). The size of the coefficient is much larger for the SIPO models than the caseload model in Table 3. The coefficient on unified Democratic control is $-1.44^{**}$ for the timing of SIPO compared to $-0.03$ for the model in Table 3, implying a more than 40-day difference between unified Republican states and unified Democratic states in SIPO timing, but only a 4-day difference in initial spread of the disease.

Compared to the impact of the political variables, the impact of the other state features is small. Population, for instance, is also on the order of days, not weeks. All else equal, a governor of a state with 10 million residents would act about 4 days faster than a governor of a state with 1 million residents.

### Table 4. Weibull model of SIPO adoption, eight right-censored states excluded.

| Political control          | Baseline category |  
|----------------------------|-------------------|
| Democratic governor only   | $-0.24$ (0.17)    |
| Republican governor only   | $-0.03$ (0.27)    |
| Democratic governor and senate | $-0.07$ (0.21) |
| Urban                     | $-0.001$ (0.004)  |
| Elderly                   | $0.003$ (0.03)    |
| State resources           | $-0.0003$ (0.0003)|
| Population                | $0.0001$ (0.01)   |
| Constant                  | $2.96^{**}$ (0.71)|

Log Likelihood: $-121.84

$\chi^2$: $5.44^{**}$ (df = 7)

**Significant at the 5 percent level.

### Table 5. Weibull model of SIPO adoption, eight right-censored states included with May 30 action deadline.

| Political control          | Baseline category |  
|----------------------------|-------------------|
| Democratic governor only   | $1.44^{**}$ (0.26)|
| Republican governor only   | $1.72^{**}$ (0.40)|
| Democratic governor and senate | $1.58^{**}$ (0.27)|
| Urban                     | $-0.01$ (0.01)    |
| Elderly                   | $-0.10^{*}$ (0.05)|
| State resources           | $0.01^{**}$ (0.005)|
| Population                | $-0.05^{**}$ (0.01)|
| Constant                  | $5.21^{**}$ (1.29)|

Log Likelihood: $-154.28

$\chi^2$: $47.81^{**}$ (df = 7)

**Significant at the 5 percent level.

*Significant at the 10 percent level.
Conclusion

Our analysis points exactly where public management practitioners and scholars likely wish it did not point – directly at partisan politics as the primary explanatory factor for decisions to delay or avoid issuing SIPOs precisely when many nations were locking down their external borders and enacting strong internal movement controls. Reflecting on our title and planning for the next national epidemic or global pandemic, or even future waves of COVID-19, should the distributed approach to emergency management be abandoned or does it generally serve us well? That is a big question to be sure, and our research is just one piece to be considered in such a conversation. One way to answer the question is quite simple: devolving authority to 50 governors has resulted in executive action that likely slowed the spread of the disease in parts of the nation with the highest population density. The piecemeal approach of federalism does produce quite different outcomes. Near the end of July 2020, 7 months out from the WHO announcement, the eight states that did not issue SIPOs had a median per capita case burden of 1,100 per 100,000 while states that did issue SIPOs had a considerably lower median burden of 900 per 100,000.

If the federal government had been solely responsible, with executive authority concentrated in the White House, rapid implementation of movement controls may not have occurred in those 42 states. Devolving authority also permits the emergence of regional collaborations that may lead to more coordinated institutional capacity to respond to future waves of COVID-19 or even the next pandemic; whereas, a centralized federal response might also preempt such initiatives. The big unknown is whether or not the federal government would have issued a nationwide shelter-in-place order if states did not have the capacity or authority to act individually.

The result of the current institutional structure is a highly uneven response with SIPOs in effect within about 17 days for 42 states, but not in place for the remaining 8 states at the end of May 2020. All 8 of those states are controlled by Republican politicians. This stark difference highlights the way federalism can frustrate coordinated action, yet also reveals how many states have the authority and capacity to act in the absence of specific direction from the central government. Our conclusion in the early stages of this pandemic is that some or even many citizens in democracies will always challenge actions that limit individual activity and choices. As a consequence, the balance between personal freedom and public health may vary across subnational units and permit more rapid public health actions in some places. In this case, what is missing is a functional system of crisis coordination that permits gains in some states to be maintained when other states choose not to act. U.S. states cannot seal off their borders like nations can do, and thus if the virus spreads in some states it will spill over to other states in due course. Solving this coordination problem remains a crucial challenge for responding to this pandemic, and the next one.

Note

1. See the online appendix (https://doi.org/10.7910/DVN/UIFVSX) for a broader set of models, results for three hazard functions, three different types of measures of political control, and three different case thresholds. The results reported here are robust to all of these choices.
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References

Amy, Jeff, and Ben Nadler. 2020. “Georgia Gov. Explicitly Voids Mask Orders in 15 Localities.” AP, July 16. Accessed 22 July 2020. aol.com
Boin, Arjn, Paul ’T Hart, Eric Stern, and Bengt Sundelius. 2005. The Politics of Crisis Management: Public Leadership under Pressure. Cambridge: Cambridge University Press.
Box-Steppensmeier, Janet, and Bradford Jones. 2004. Event History Modeling: A Guide for Social Scientists (Analytical Methods for Social Research). Cambridge: Cambridge University Press.
Brewer, Paul R. 2012. “Polarisation in the USA: Climate Change, Party Politics, and Public Opinion in the Obama Era.” European Political Science 11 (1): 7–17. doi:10.1057/eps.2011.10.
Carmines, Edward G., Jessica C. Gerrity, and Michael W. Wagner. 2010. “How Abortion Became a Partisan Issue: Media Coverage of the Interest Group–Political Party Connection.” Politics and Policy 38 (6): 1135–1158. doi:10.1111/j.1747-1346.2010.00272.x.
Clark, April, Florian Justwan, Juliet E. Carlisle, Michael Clark, April Clark, Florian Justwan, Juliet E. Carlisle, et al. 2020. “Polarization Politics and Hopes for a Green Agenda in the United States.” Environmental Politics 29 (4): 719–745. doi:10.1080/09644016.2019.1654238.
Comfort, Louise K. 2007. “Crisis Management in Hindsight: Cognition, Communication, Coordination, and Control.” Public Administration Review 67: 189–197. doi:10.1111/j.1540-6210.2007.00827.x.
Davidson, Nestor M., and Kim Haddow. 2020. “Expert Forum: State Preemption and Local Responses in the Pandemic.” September 1. Accessed 22 July 2020. www.acslaw.org
Dong, E., H. Du, and L. Gardner. 2020. “An Interactive Web-Based Dashboard to Track COVID-19 in Real Time.” The Lancet. Infectious Diseases 20 (5): 533–534. doi:10.1016/S1473-3099(20)30120-1.
Dunlap, Riley E., Aaron M. Mccright, and Jerrod H. Yarosh. 2016. “The Political Divide on Climate Change: Partisan Polarization Widens in the U.S.” Environment: Science and Policy for Sustainable Development 58 (5): 4–23.
Flint, Anthony. 2020. “The Coronavirus Pandemic Makes a Case for Megaregions.” April 22. Accessed 22 July 2020. www.citilabs.com
Frank, Barney. 2012. “Party Polarization Is Now Complete.” The Gay and Lesbian Review Worldwide 19 (5): 10–12.
Gannon, Seth. 2020. “H1N1 Influenza and the U.S. Response: Looking Back at 2009” The Center for Strategic and International Studies, January 12. Accessed 8 September 2020. www.csis.org
Glaeser, Edward, Giacomo Ponzetto, and Jesse Shapiro. 2005. “Strategic Extremism: Why Republicans and Democrats Divide on Religious Values.” The Quarterly Journal of Economics 120 (4): 1283–1330. doi:10.1162/003355305775097533.
Gostin, Lawrence O. 2005. “Jacobson v Massachusetts at 100 Years: Police Power and Civil Liberties in Tension.” American Journal of Public Health 95 (4): 576–581. doi:10.2105/AJPH.2004.055152.

Gree, Scott L., Elizabeth J. King, Elize Massard da Fonseca, and Andre Peralta-Santos. 2020. “The Comparative Politics of COVID-19: The Need to Understand Government Responses.” Global Public Health 15 (9): 1413–1416.

Hartley, Kris, and Darryl S. L. Jarvis. 2020. “Policymaking in a Low-Trust State: Legitimacy, State Capacity, and Responses to COVID-19 in Hong Kong.” Policy and Society 39 (3): 403–423. doi:10.1080/14494035.2020.1783791.

Health and Human Services (HHS). 2020. “Secretary Azar Declares Public Health Emergency for United States for 2019 Novel Coronavirus.” Accessed 20 July 2020. www.hhs.gov

Heinrich, Janet, and Carole M. Johnson. 2008. “Policy and Politics: Democrats, Republicans, and Health Care Reform.” American Journal of Nursing 108 (10): 33–34.

Hodge, James G., Lawrence O. Gostin, and Jon S. Vernick. 2007. “The Pandemic and All-Hazards Preparedness Act: Improving Public Health Emergency Response.” JAMA 297 (15): 1708–1711. doi:10.1001/jama.297.15.1708.

Jackson, John Zen., and James A. Robertson. 2020. “COVID-19: When Mandatory Isolation and Quarantine Become Necessary.” New Jersey Law Journal, March 25. Accessed 22 July 2020. www.law.com.

Joint Statement of the Governors. 2020. “California, Oregon & Washington Announce Western States Pact.” April 13. Accessed 7 September 2020. www.gov.ca.gov

Merkley, E., and D. A. Stecula. 2018. “Party Elites or Manufactured Doubt? The Informational Context of Climate Change Polarization.” Science Communication 40 (2): 258–274. doi:10.1177/1075547018760334.

Neustadt, R., and H. Fineberg. 1978. The Swine Flu Affair: Decisionmaking on a Slippery Disease. Washington DC: U.S. Department of Health, Education, and Welfare.

Pei, Sen, Kandula Sasikran, and Shaman Jeffrey. 2020. “Differential Effects of Intervention Timing on COVID-19 Spread in the United States.” Accessed 2 September 2020. www.medrxiv.org

Peters, B. Guy. 2018. “The Challenge of Policy Coordination.” Policy Design and Practice 1 (1): 1–11. doi:10.1080/25741292.2018.1437946.

Sellers, Mitchell Dylan. 2017. “Gubernatorial Use of Executive Orders: Unilateral Action and Policy Adoption.” Journal of Public Policy 37 (3): 315–339. doi:10.1017/S0143814X16000180.

Sheridan, Thomas. 2020. “Pandemics and Politics: Lessons from the HIV/AIDS Crisis.” The Hill, April 25. Accessed 30 August 2020. thehill.com

Sweetman, Arthur. 2006. “Introduction to Economic Issues in Epidemiology and Public Policy” in SARS in Context: Memory, History, and Policy.” In McGill-Queen’s/Associated Medical Services Studies in the History of Medicine, Health, and Society, edited by Jacalyn Duffin and Arthur Sweetman. Vol. 27. Montreal, QC: McGill-Queen’s University Press.

Ura, Joseph Daniel, and Christopher R. Ellis. 2012. “Partisan Moods: Polarization and the Dynamics of Mass Party Preferences.” The Journal of Politics 74 (1): 277–291. doi:10.1017/S0022381611001587.

Willetts, Mitchell. 2020. “Georgia Governor Opens Beaches a Day After Issuing Statewide Stay-at-Home Order.” The State, April 3. Accessed 22 July 2020. www.thestate.com

Wilson, Woodrow. 1908. “The States and the Federal Government.” North American Review 187 (630): 684–701.