

### Abstract

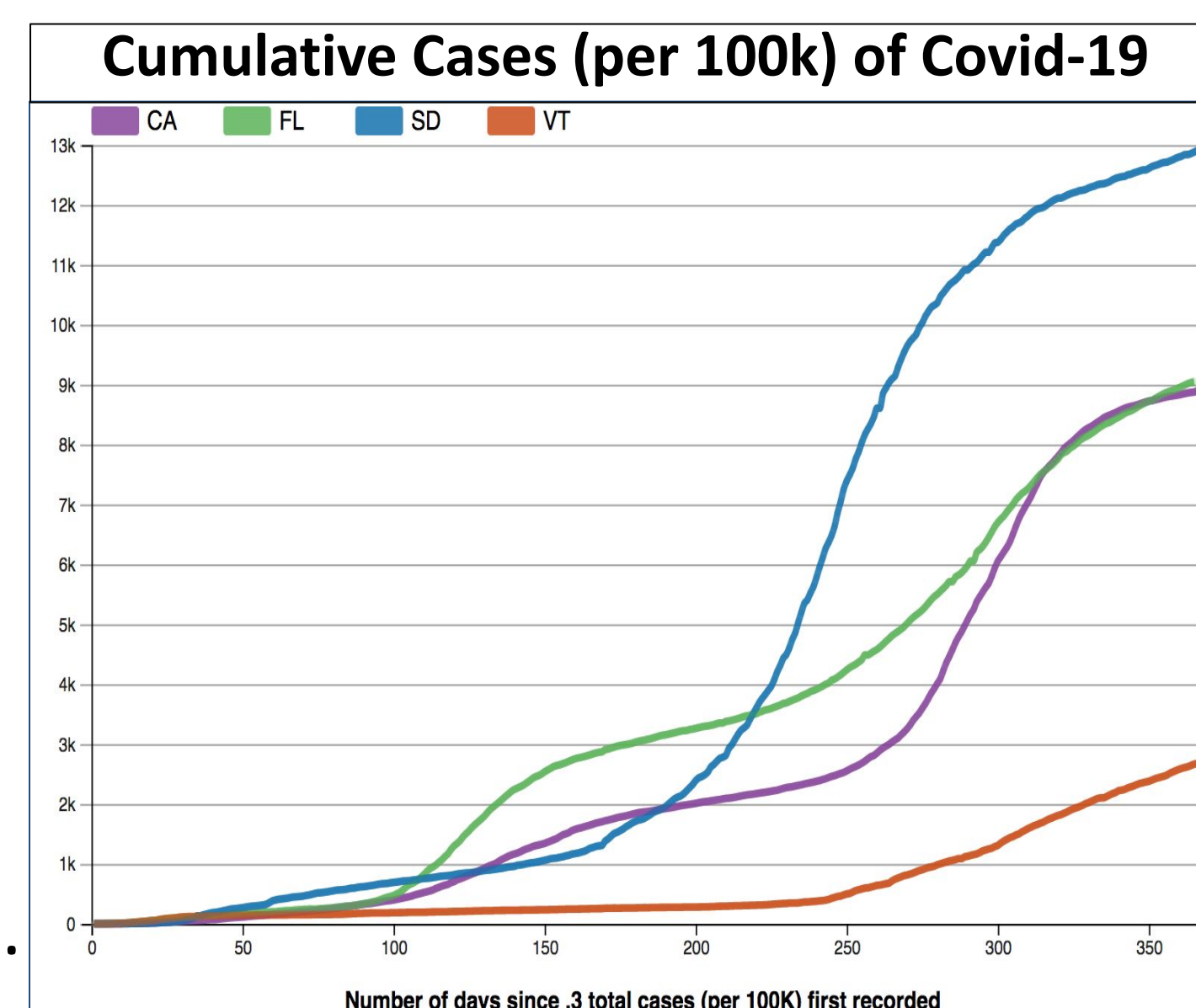
As of March 13, 2021, one year since the Trump Administration declared a national emergency due to the Covid-19 pandemic, nearly 534,316 people have died because of the virus, with a death rate of 1.6 per 1,000 people. Handling of the pandemic heavily depended on decisions of state governors which resulted in a flurry of differing policy actions. In some states, governors' divergent tracks resulted in similar case and death tolls.

This study investigates what factors explain the variance in Covid-19 success across the 50 states. It measures the impact of leadership, state capacity, demographics, and state culture against virus infection and mortality rate.

Findings of this study not only support trends found in current literature but also challenges speculations in the media regarding Covid-19 success. The significance of these results contributes to the broader literature of U.S. healthcare and factors states should focus on to prevent infectious disease outbreaks.

### Importance of Controlling Covid-19

- The factors that account for the disparity between Covid-19 success despite similar policy approaches is unclear.
- The capacity of a state to handle infected people and distribute tests has been speculated to be essential in tracing the virus.
- Due to the intricacies of poverty, vulnerable communities are at a high risk of contracting Covid-19.
- Due to the many differences that exist among states, other factors besides policy approaches could be more important in determining a states' outcome.



### Questions

- What is causing discrepancies in mortality and infection rate between states in the U.S.?
- How does leadership, state capacity, contextual factors, and political cultural values within a state influence the mortality and infection rate?

### Methods

In my analysis, I examined the leadership, state capacity, demographics, and political culture of all 50 states. I constructed a data set to identify the impact of these measures against infection and mortality rates beginning in March 2020 and ending in December 2020. The time frame is based on containment measures first implemented in March, with California imposing the nation's first lockdown on March 19.

The data set included 41 independent variables. Only 14 variables were deemed most important and included in the regression model. The regression analysis determined how these measures predicted Covid-19 case and death rates in the state and its ability to stop the spread.

### Regression Analysis

Table 1. Regression models predicting Covid-19 Infection and Mortality Rates over time across the 50 states.

Variables	Infections (Overall)	Mortality (Overall)
<b>Governance and Leadership</b>		
Republican Party Control	-75.164 (829.173)	-9.471 (28.302)
Mask Mandates December	-559.185 (382.085)	-13.319 (13.041)
Travel	<b>-1330.138**</b> (513.387)	-25.573 (17.523)
Women Governor	-70.870 (660.182)	1.746 (22.533)
<b>State Capacity</b>		
Doctors per capita	8.302 (9.974)	<b>0.897**</b> (0.340)
Total Health Spending per capita	-.008 (.578)	0.017 (.020)
<b>Demographics and Context</b>		
Percent Uninsured	<b>-485.370**</b> (157.884)	-7.971 (5.389)
Urbanization Index	<b>879.812**</b> (488.408)	<b>33.343*</b> (16.670)
Percent Under Poverty	-125.291 (163.451)	9.083 (5.579)
Percent African American	-14.286 (43.200)	0.174 (1.474)
Percent Latino/a	66.052 (45.108)	0.984 (1.540)
Percent Native American	145.334 (90.661)	1.094 (3.094)
<b>State Culture</b>		
Conservative Advantage	<b>220.030**</b> (58.315)	<b>3.393*</b> (1.990)
Trust in Government	383.616 (520.868)	26.766 (17.778)
Constant	0.731 (-2670.584)	<b>0.023**</b> (-626.552)
R-Squared	0.624	0.45
Observations	50	50

Table 2. Regression models predicting Covid-19 Infection Rates over one time frame across the 50 states.

Variables	Infections (May to September)	Mortality (May to September)
<b>Governance and Leadership</b>		
Republican Party Control	<b>555.930**</b> (236.038)	<b>9.019*</b> (5.215)
Mask Mandates December	-163.842 (108.767)	-2.156 (2.403)
Travel	-183.432 (146.144)	0.021 (3.229)
Women Governor	54.881 (187.932)	-0.754 (4.152)
<b>State Capacity</b>		
Doctors per capita	<b>-7.782**</b> (2.839)	0.011 (0.063)
Total Health Spending per capita	-0.247 (.165)	-0.005 (0.004)
<b>Demographics and Context</b>		
Percent Uninsured	-47.059 (44.944)	-0.265 (0.993)
Urbanization Index	29.891 (139.034)	1.953 (3.072)
Percent Under Poverty	-6.279 (46.529)	<b>2.116**</b> (1.028)
Percent African American	<b>33.484**</b> (12.298)	<b>0.964**</b> (0.272)
Percent Latino/a	17.563 (12.841)	<b>0.581**</b> (0.284)
Percent Native American	8.091 (25.808)	-0.651 (0.570)
<b>State Culture</b>		
Conservative Advantage	-0.406 (16.600)	-0.105 (0.367)
Trust in Government	-112.531 (148.274)	3.704 (3.276)
Constant	0.103 (3674.052)	-38.42 (48.555)
R-Squared	0.766	0.732
Observations	50	50

Note: Statistical significance is noted as \*\* p < .05, \* p < .10

### Key Findings

Nine variables were significant in predicting Covid-19 infection and mortality.

The overall model predicted travel restrictions, doctors per capita, percent uninsured, urbanization, and conservative advantage as significant drivers of the infection and mortality rates. Out of the containment policies that I tested, only travel restrictions was a significant factor.

The situation of the pandemic in the United States worsened. The model analyzing the virus toll between May and September is a critical period that captures the second surge of the pandemic.

During this time period, the model showed that racial demographics, including African American and Latino/a, were significant factors influencing a state's infection and mortality rates. In these months, the model also predicted that states with Republican party control had higher case and death rates. The other significant determinants are doctors per capita and percent under poverty between May and September.

### Discussion

The analysis of Covid-19 infection and mortality rates considered the effects of leadership, state capacity, demographics, and state culture.

- The importance of knowing which leadership actions were most impactful would also provide guidance on how to mitigate future pandemics.
- The containment efforts of state governors have shown differences in how Democratic and Republican leaders impose mandates.
- Better state capacity reduced the frequency of epidemics.
- The prominence of underlying conditions among low-income and minority communities highlights inequities that the healthcare system could improve.
- In order to better contain infectious outbreaks in the future, state leaders need to work together to address the unequal ability of the population to protect themselves from disease.

### Acknowledgements

The Centers for Disease Control and Prevention. The Kaiser Family Foundation. The American Association for Retired Persons.

Special thanks to the LMU Department of Political Science and my advisor, Dr. Richard Fox.