

Abstract

It is well known that the COVID-19 pandemic has impacted nearly every aspect of personal and public life from changes in daily habits to changes in political affiliation. Prior research has identified key dates throughout 2020 that act as inflection points in COVID-19 morbidity, mortality, test positivity, and testing rates in states governed by Democratic or Republican leaders. By May 30, 2020 Republican-governed states exhibited higher COVID-test positivity rates compared to their Democratic counterparts. Similarly, Republican-led states eclipsed Democratic-governed ones for COVID-morbidity (June 3, 2020) and COVID-mortality (July 4, 2020) rates. By September 30, 2020 states under Republican leadership exhibited lower testing rates while Democratic-governed states continued at relatively high testing levels. It can be inferred that these changes could influence approval ratings of incumbent partisan leaders as the effects of the pandemic grew in 2020. This research seeks to measure the changes in partisan loyalty at every level of government throughout the course of the pandemic stretching from January to October 2020. Statistical analyses, specifically the Mantel test, will be used to seek putative correlations amongst state-specific morbidity and mortality rates against metapolling data for the gubernatorial, house, senate, and presidential races. To gain a better understanding of partisan changes, special attention will be given to the incumbent leaders and how they faired in their respective 2020 races.

Stay-at-Home Orders: Initial Start Dates



Adapted from Allcott *et al.*, 2020

Initial "Stay-at-Home" Orders by **Gubernatorial-Partisan Affiliation** Republican-governed states Democrat-governed states 12-Mar 24-Mar 26-Ma 30-Mar 2-Apr "Stay-at-Home" Order Start Date

Non-pharmaceutical interventions (NPIs), such as statewide closures accompanied by Stay-at-Home (SAH) orders were deployed nationally in early 2020 at five different start times. The earliest SAH order was given on 12 MARCH 2020, and the latest was on 2 APRIL 2020. We mapped the SAH start-date heatmap (adapted from Allcott et al., 2020) against party affiliation (Democrat or Republican) at the state-level. Doing so reveals a trend that Democrat-governed states adopted SAH orders very early during the pandemic, with Republican-led states adopting SAH orders with considerable delay.





Public-use COVID data from the CDC was plotted to illustrate average daily COVID-19 morbidity and mortality rates for a 10-month timeframe of 2020. Inflection points were then mapped onto COVID burden plots based on published work (Allcott *et al.*, 2020; Neelon *et al.*, 2021). For each inflection point, Democratic-governed states lead the metric prior to the given date while Republican-governed states surpassed Democratic-governed states after the listed date. For example, Republican-governed states surpassed Democratic-governed states in terms of mean daily morbidity and mortality incidence starting on June 3 and July 4, respectively.

Using the R-programming environment, we are currently generating data matrices with temporally-aligned elements derived from two data sources: 1) a public-use CDC database regarding COVID-19 morbidity and mortality measurements in all 50 American states from January 22 through October 3, 2020, and 2) a public-use FiveThirtyEight database containing over 14 thousand polls conducted in the same time interval at four different governmental levels (gubernatorial, house, senate, and presidential polls). As many polls spanned numerous days, we are currently calculating average meta-polling aggregate values for each day using custom R scripts. Once all databases are temporally aligned, our dataframe objects will be suitable for carrying out statistical correlation tests, including the Mantel test from within the R-programming environment. Our initial hypothesis is that we might see polling sentiment inflections in heavily-burdened electoral races near dates of known

¹Allcott *et al.*, 2020. Polarization and Public Health: Partisan Differences in Social Distancing During the Coronavirus Pandemic. National Bureau of Economic Research (NBER) Working Paper Series.

²Gallup 1942. How Important is Public Opinion in Time of War? *Proceedings of the American*

³Hatchett *et al.*, 2007. Public health interventions (PHI) and epidemic intensity during the 1918

⁴Kanu et al., 2020. Declines in SARS-CoV-2 Transmission, Hospitalizations, and Mortality After Implementation of Mitigation Measures: Delaware, March–June 2020. Centers for Disease Control

⁵Kreps and Kriner. Model Uncertainty, political contestation, and public trust in science: Evidence

⁶Lee *et al.*, 2021. Counties with High COVID-19 Incidence and Relatively Large Racial and Ethnic Minority Populations in the United States, April 1–December 22, 2020. Centers for Disease Control

⁷Neelon et al., 2021. Associations between governor political affiliation and COVID-19 cases,

⁸Rossen *et al.*, 2020. Excess Deaths Associated with COVID-19, by Age and Race and Ethnicity in the United States, January 26–October 3, 2020. *Centers for Disease Control and Prevention: Morbidity*

⁹Safran. 2006. Public Opinion as a Constraint against War: Democracies' Responses to Operation Iraqi Freedom. Foreign Policy Analysis. 2: 137-156.

¹⁰Warshaw *et al.*, 2020. Fatalities from COVID-19 are reducing Americans' support for Republicans at every level of federal office. *Science Advances*. 6: eabd8564.

