Data analysis on state governors' COVID related mandatory order timelines

By Joanna Lin Su, August 20

Four main charts reveal one fundamental question:

The analysis shows that the political affiliation of each governor had little effect on the response time of issuing stay at home orders. However, if we look at the "stay at home time length" (using reopening date - stay at home date), as well as "mask order time length", we see that states with republican governors maintained these orders in effect for shorter periods compared to states with democratic governors. Can this signal to the fact that such decisions are driven by politics rather than public health considerations?

Data analysis methodology:

The analysis looks at state-level **mask wearing order** data from *the U.S. Test and Trace.com*, **state-level staying at home order** and **reopening order time data** from *the National Academy for State Policy*. To note, the reopening dates used in this analysis are based on each State's *first-time issued orders*, given that many states reverse their reopening orders after seeing cases resurge.

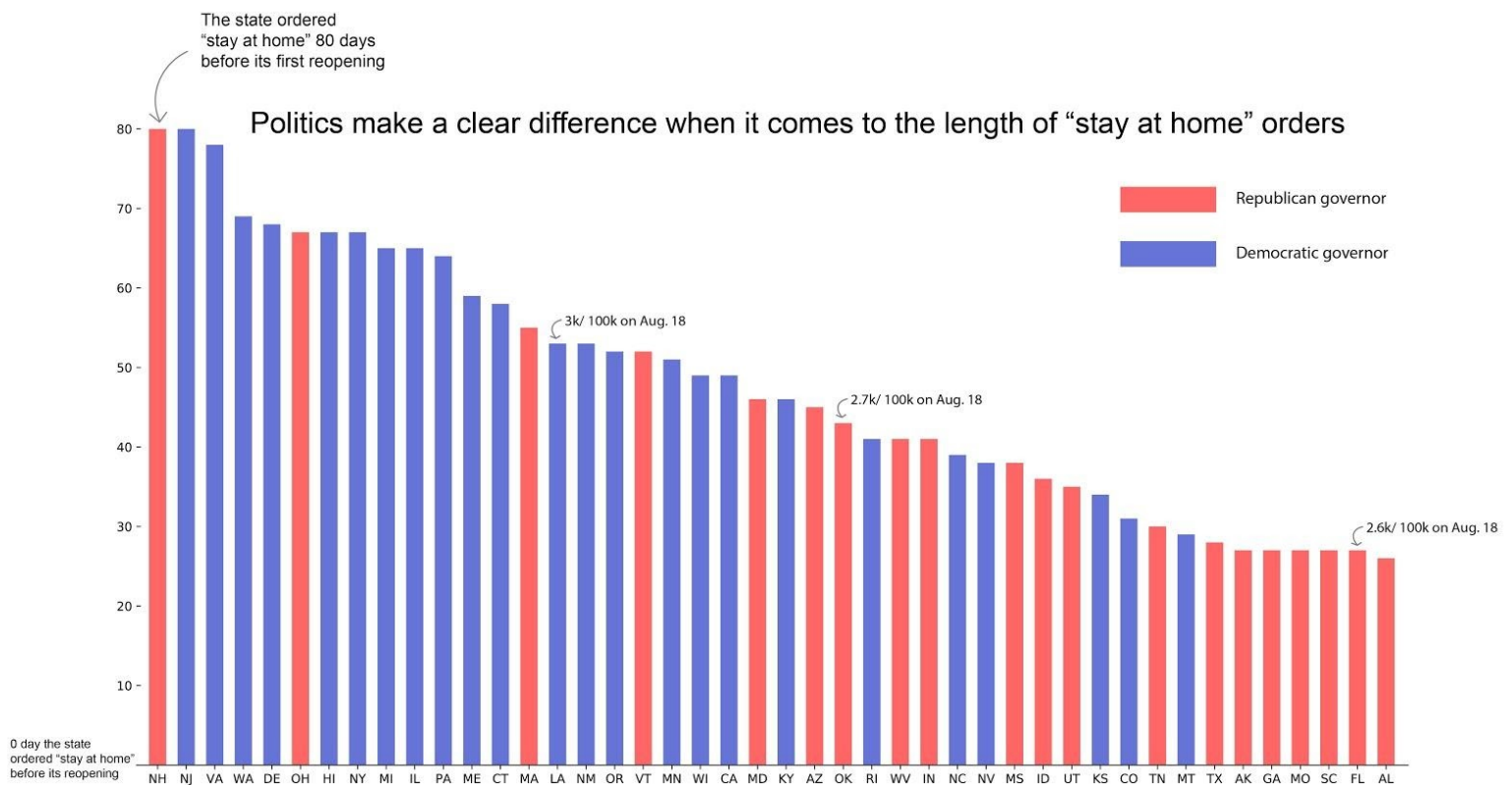How I calculated the three different policies' timelines (pseudo code):

1. Mask wearing order timeline = mask order date – date when the state hit 100 confirmed cases /100k population
2. Stay at home order timeline = stay at home order date - date when the state hit 100 confirmed cases/ 100k population
3. Reopen timeline = date when stay at home order first lifted - stay at home order date

The analysis uses governors' political leaning to categorize states instead of the election results because the topic here is mainly about comparing the timelines of three state policies, decisions that are largely driven by the respective governors of each state.

Four major analysis and visualizations:

Politics make a clear difference when it comes to the <u>length</u> of Stay at Home orders

- States have an average "stay at home" duration of around 48 days before they reopened. States that registered shorter "staying at home" periods mostly have Republican governors (22 R and 7 D).

- States that have democratic governors have the average stay at home time of 54 days, while states with republican governors have an average time of 40 days.

- States that are having shorter "staying at home" periods are more likely to see greater outbreaks. (according to the COVID Tracker on Aug 18)

The state ordered "stay at home" 80 days before its first reopening

Politics make a clear difference when it comes to the length of "stay at home" orders

Republican governor

Democratic governor

3k/ 100k on Aug. 18

2.7k/ 100k on Aug. 18

2.6k/ 100k on Aug. 18

0 day the state ordered "stay at home" before its reopening

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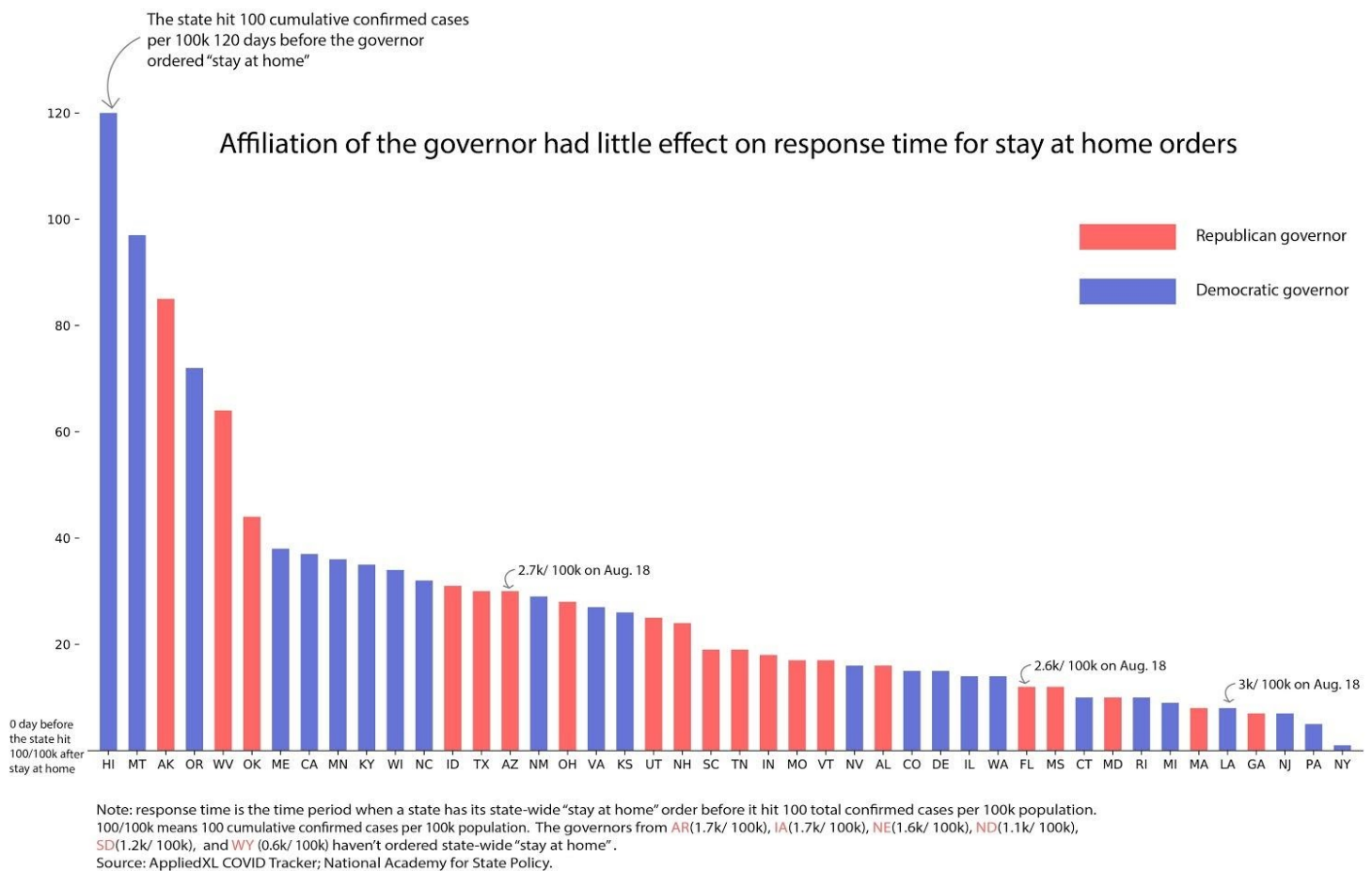
Note: 100/100k means 100 cumulative confirmed cases per 100k population. The governors from AR(1.7k/ 100k), IA(1.7k/ 100k), NE(1.6k/ 100k), ND(1.1k/ 100k), SD(1.2k/ 100k), and WY (0.6k/ 100k) haven't ordered state-wide "stay at home".
Source: AppliedXL COVID Tracker; National Academy for State Policy.

Affiliation of the governor had little effect on response time for stay at home orders.
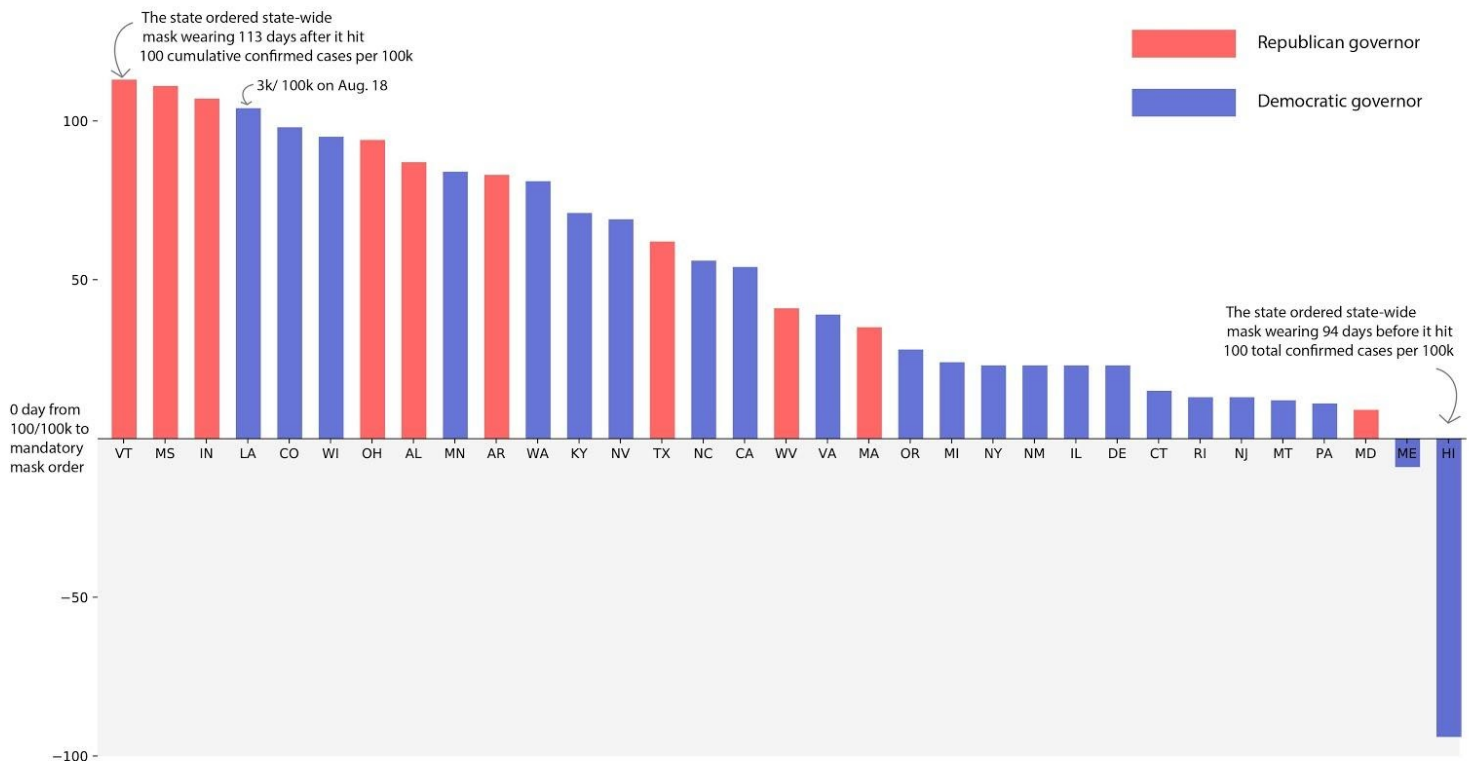
- The average response time of republican/ democratic governors are pretty close -- democratic governors have an avg. response time of 29 days before they hit 100 total cases/ 100K, while republican governors' avg. response time is 26 days. (response time is the time period when a state has its state-wide "stay at home" order *before* it hit 100 total confirmed cases per 100,000 population)

- NY, PA, and NJ had the shortest response times, of 1 day, 5 days and 7 days respectively. However, they had relatively longer "staying at home" periods of 66 days, 59 days, 73 days. In comparison, GA is seeing a short response time (7 days) and it also had its first reopening order earlier than many others (20 days after its state governor ordered "staying at home"). And FL reopens 15 days after its staying at home order.

The state hit 100 cumulative confirmed cases per 100k 120 days before the governor ordered "stay at home"

Affiliation of the governor had little effect on response time for stay at home orders

Republican governor
Democratic governor

2.7k/ 100k on Aug. 18
2.6k/ 100k on Aug. 18
3k/ 100k on Aug. 18

0 day before the state hit 100/100k after stay at home

HI MT AK OR WV OK ME CA MN KY WI NC ID TX AZ NM OH VA KS UT NH SC TN IN MO VT NV AL CO DE IL WA FL MS CT MD RI MI MA LA GA NJ PA NY

Note: response time is the time period when a state has its state-wide "stay at home" order before it hit 100 total confirmed cases per 100k population. 100/100k means 100 cumulative confirmed cases per 100k population. The governors from AR(1.7k/ 100k), IA(1.7k/ 100k), NE(1.6k/ 100k), ND(1.1k/ 100k), SD(1.2k/ 100k), and WY (0.6k/ 100k) haven't ordered state-wide "stay at home".
Source: AppliedXL COVID Tracker; National Academy for State Policy.

On average Republican governors took twice as long to issue a mask-wearing order than their Democrat counterparts.

- Republican governors tend to order statewide masks-wearing on an average of 74 days after the state hit 100/ 100K, while democratic governors' avg. response time is half shorter- 37 days.

- Many of the hardest hit states now have not issued state-wide mask wearing orders. GA, which had a "stay at home" order close to 100/100K and reopened quickly after that, has never mandated its citizens to wear masks.

- Only two states (HI and ME) ordered "mask-wearing" policies prior to hitting 100 total confirmed cases per 100K.

On average Republican governors took twice as long to issue mask-wearing order than their Democrat counterparts
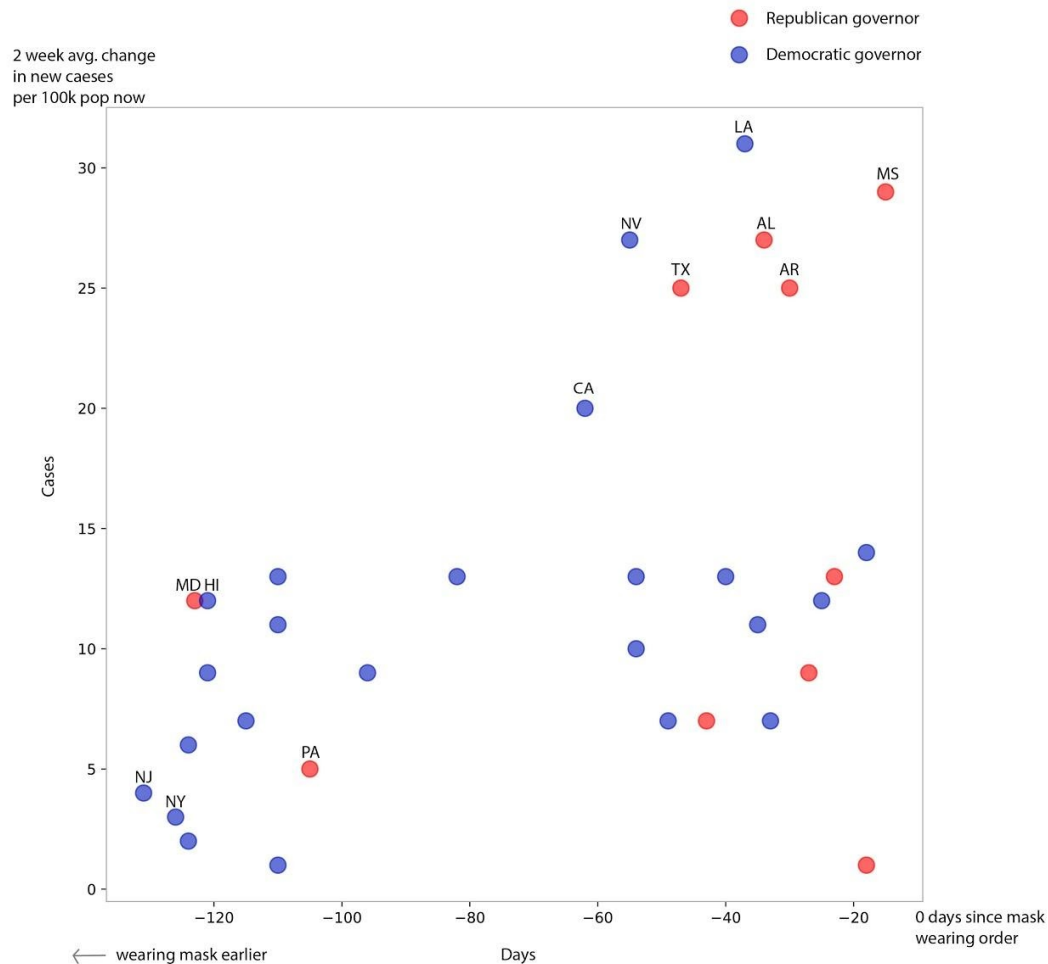

Note: 100/100k means 100 cumulative confirmed cases per 100k population. The governors from AZ(2.7k cumulative cases/ 100k pop on Aug.18), FL(2.6k/ 100k) , GA(2.3k/ 100k), TN(2k/ 100k), IA(1.7k/ 100k), NE(1.6k/ 100k), ID(1.2k/ 100k), KS(1.2k/ 100k), ND(1.1k/ 100k), OK(1.2k/ 100k), SC(2k/ 100k), SD(1.2k/ 100k), UT(1.5k/ 100k), WY(0.6k/ 100k) ,MO(0.6k/ 100k), and NH(0.5k/ 100k) haven't ordered state-wide "stay at home" .
Source: AppliedXL COVID Tracker; US Test and Trace. com

Comparing the real-time 2-week avg. changes in new cases/ 100K pop and the time period from each state ordered mask-wearing policy till now:

- States which waited longer to issue mask-wearing orders are more likely to be currently facing bigger outbreaks over the most recent 2-week period.

States that ordered state-wide mask wearing later are seeing bigger outbreaks