COVID-19 Mortality Rate Trends in Countries and US States

Joel Elvery

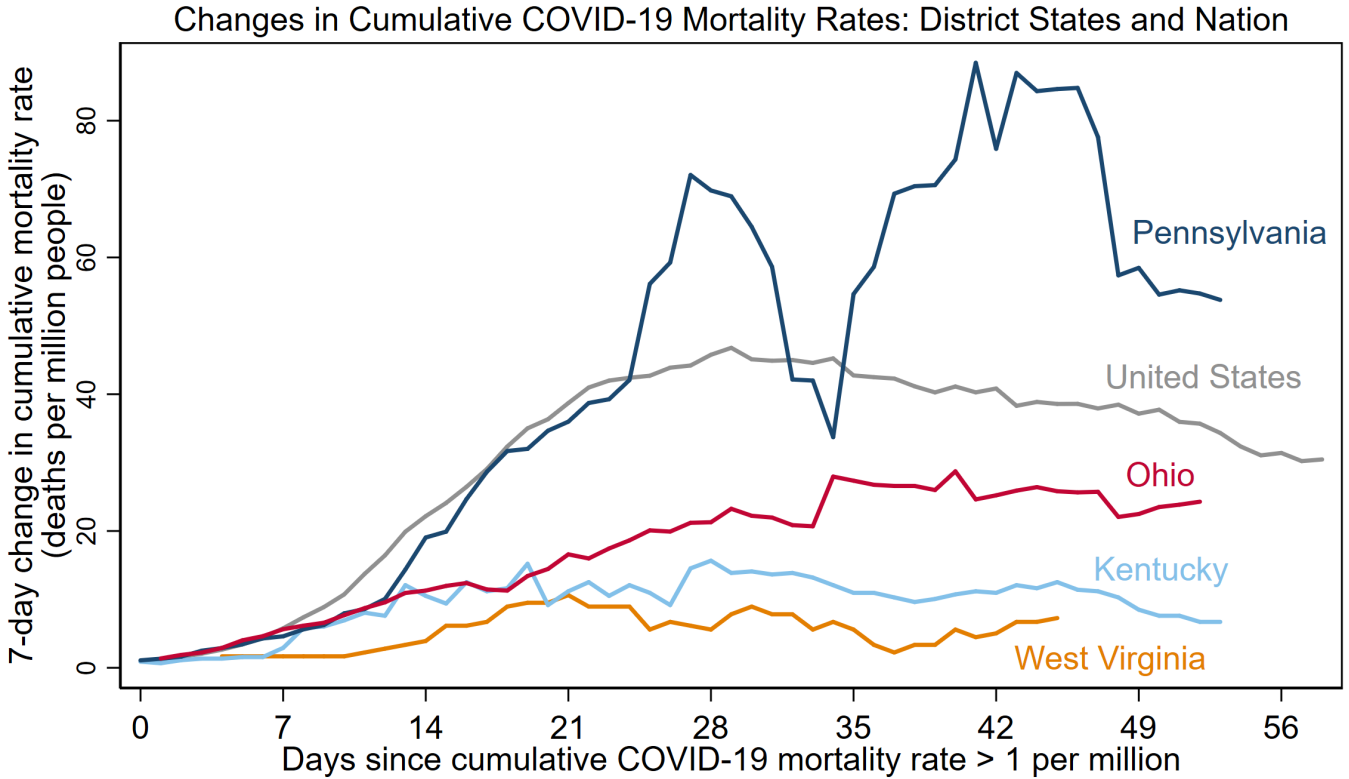
Updated May 18, 2020

FEDERAL RESERVE BANK *of* CLEVELAND
Cleveland | Pittsburgh | Cincinnati

Introduction

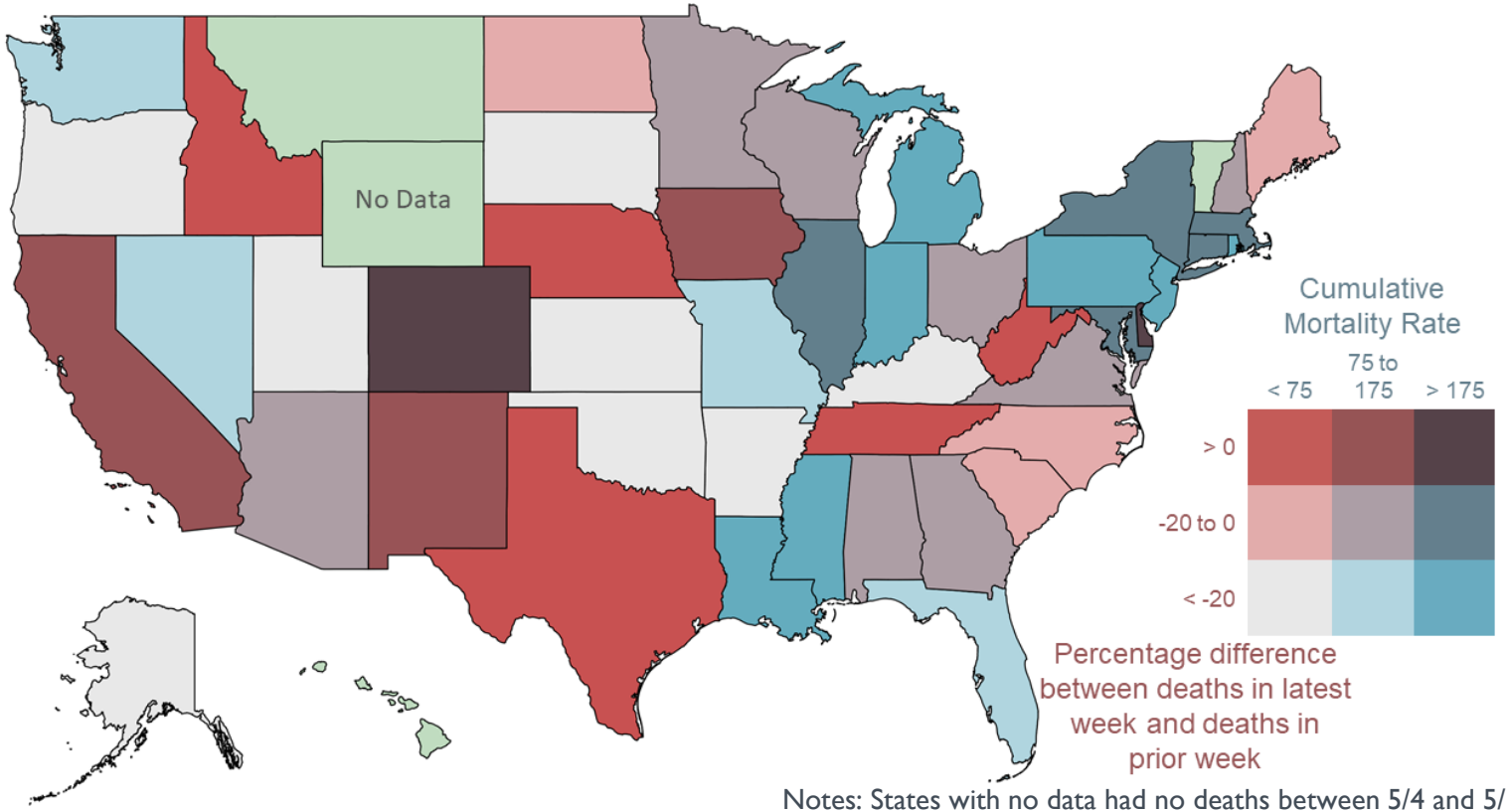
- The charts in this presentation use the same data sources as the charts in two April 2020 District Data Briefs. Please see these reports for additional details.
  - Getting to Accuracy: Measuring COVID-19 by Mortality Rates and Percentage Changes
  - A Speeding Rate Starts to Slow: COVID-19 Mortality Rates by State
- Since those reports were completed, additional evidence shows that COVID-19 deaths have been underreported, both in other countries and in the United States. The following charts present the latest the Center for Systems Science and Engineering at Johns Hopkins University (CSSE) data through May 17, with no attempt to further correct for underreporting.
- The charts have been modified from those in the reports to better convey the current status of the COVID-19 epidemic in the United States.
- All dates in this presentation refer to the year 2020.

In the week leading up to May 17, the population adjusted number of COVID-19 deaths per week declined in KY and PA, was little changed in OH and the US, and rose in WV.



Note: Data through May 17, 2020.
Sources: FRBC calculations, The Center for Systems Science and Engineering at Johns Hopkins Univ., and Bureau of Economic Analysis.

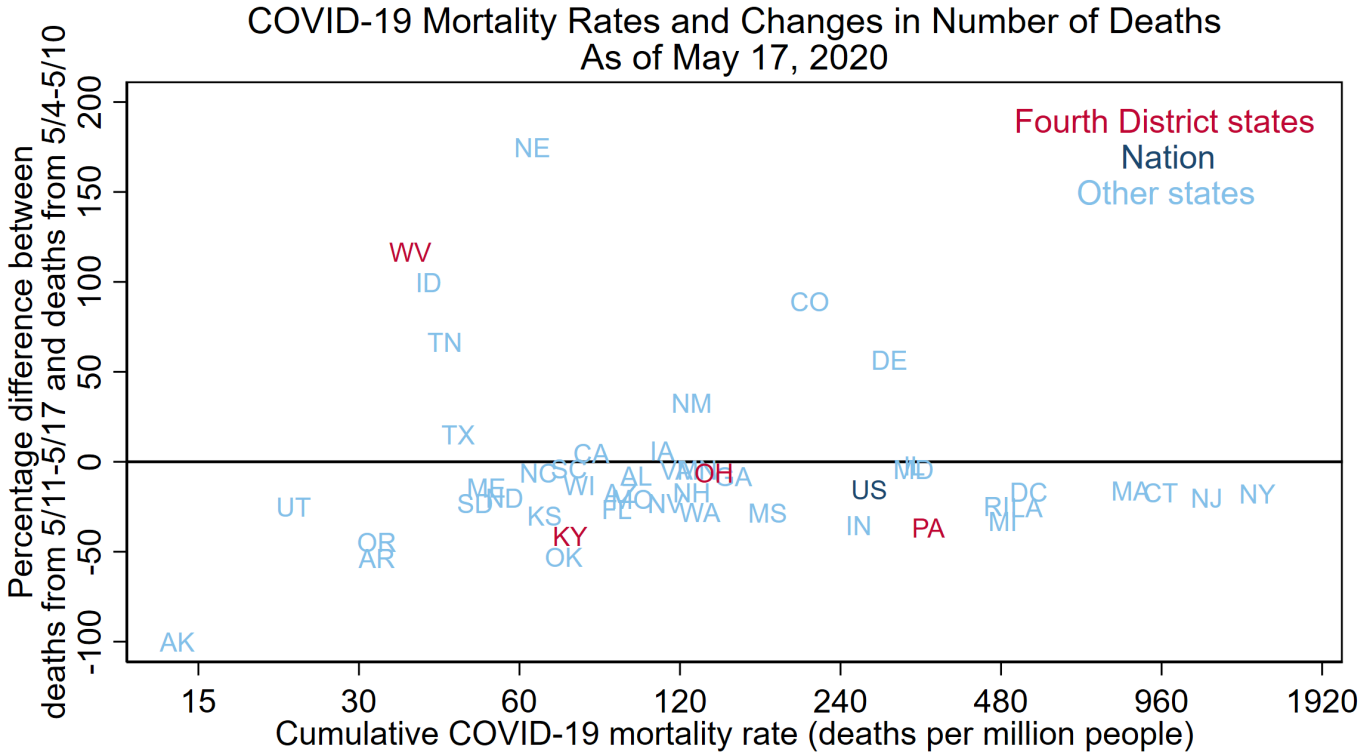
Between May 10 and May 17, the number of COVID-19 deaths per week rose in 10 states, including CO, TN, TX, and WV. Deaths per week fell in all New England and Mid-Atlantic states except DE.



Data for May 17, 2020, accessed on May 18, 2020
"Latest week" is 5/11 to 5/17, "prior week" is 5/4 to 5/10.
Sources: FRBC calculations, CSSE, and BEA

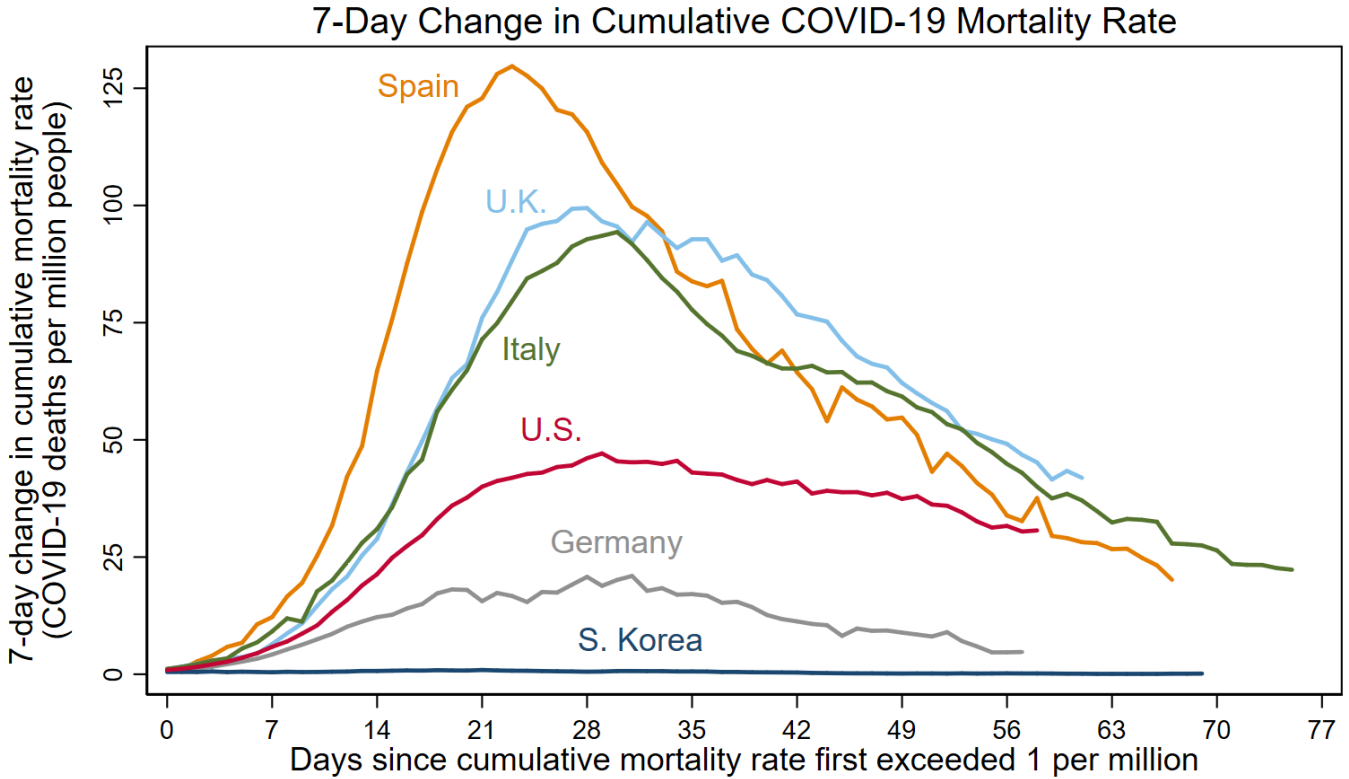
Notes: States with no data had no deaths between 5/4 and 5/10. The District of Columbia is in the bin with mortality rate > 175 and percentage difference of -20 to 0 percent. The color bins on this map are changed with each update to better represent the latest data.

This chart gives similar information to the map, but it is more precise and includes the nation as a whole.



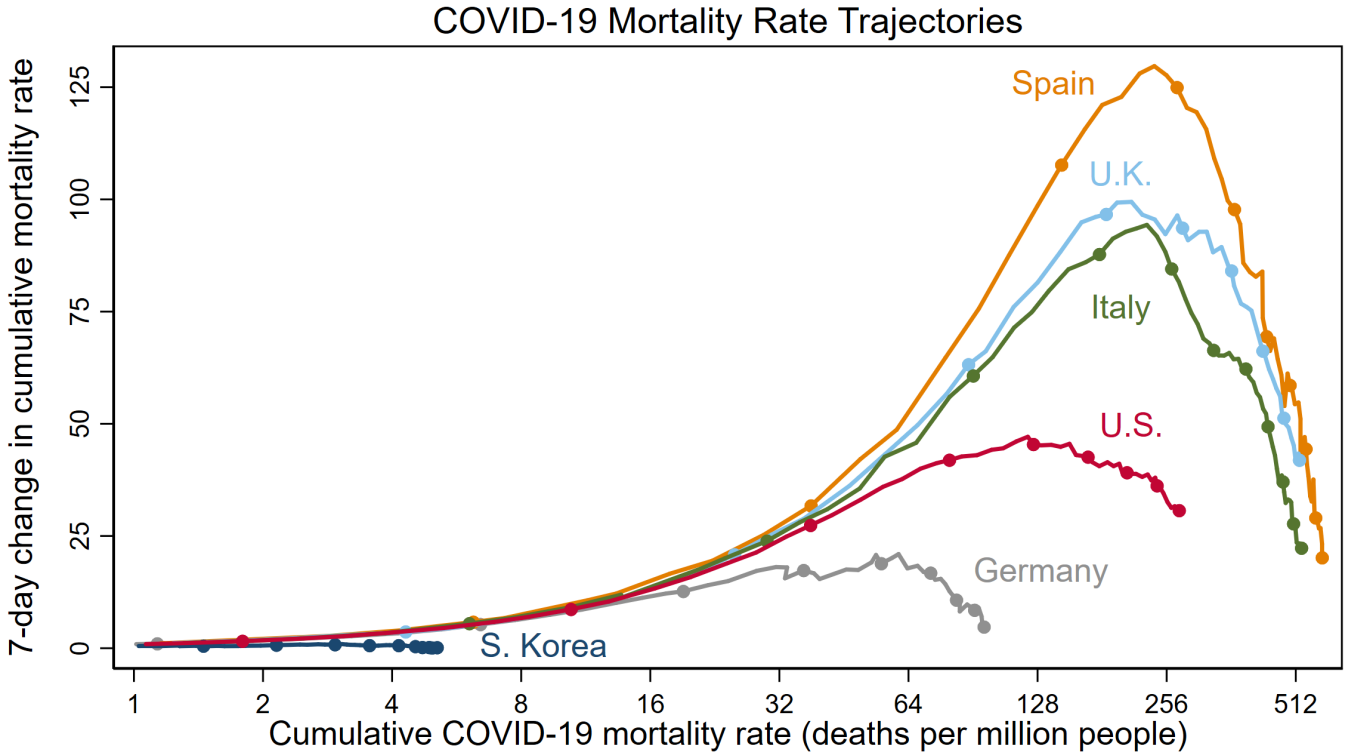
Notes: Horizontal axis has log scale. HI, MT, VT, and WY excluded because they had no COVID-19 deaths between 5/4 and 5/10, 2020.
Sources: FRBC calculations, The Center for Systems Science and Engineering at Johns Hopkins Univ., and Bureau of Economic Analysis.

The epidemic curve of the US peaked at a lower weekly change in the cumulative mortality rate than the curves of Italy, Spain, and the UK. However, the decline from the peak has been relatively small in the US.



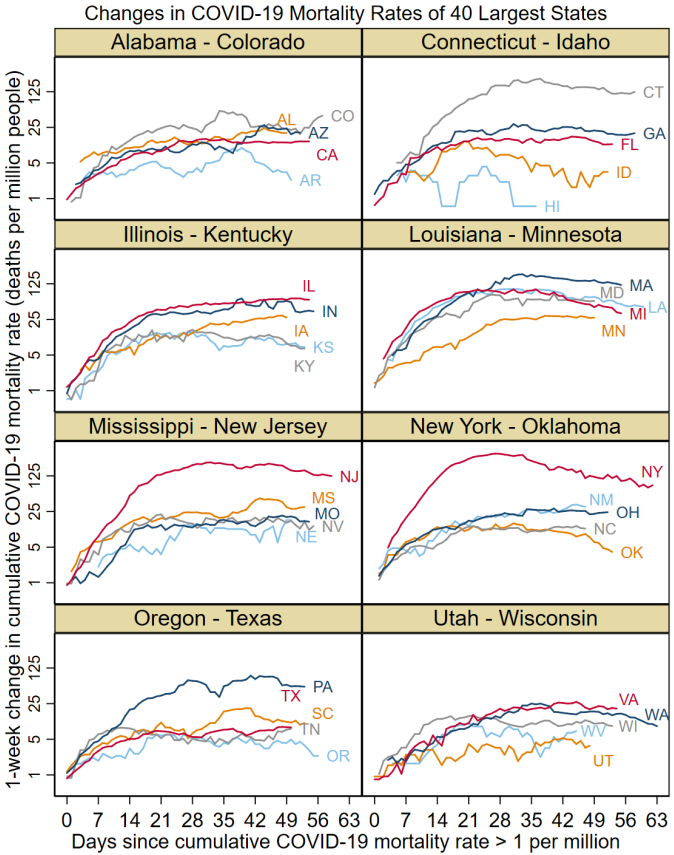
Notes: 3/22/2020 was first day US rate > 1. Data through 5/17/2020.
Sources: FRBC calculations, The Center for Systems Science and Engineering at Johns Hopkins Univ., and the World Bank

As of May 17, the COVID-19 mortality rate of the US is 274 deaths per million people. This is more than double that of Germany and just over half those of Italy and UK.

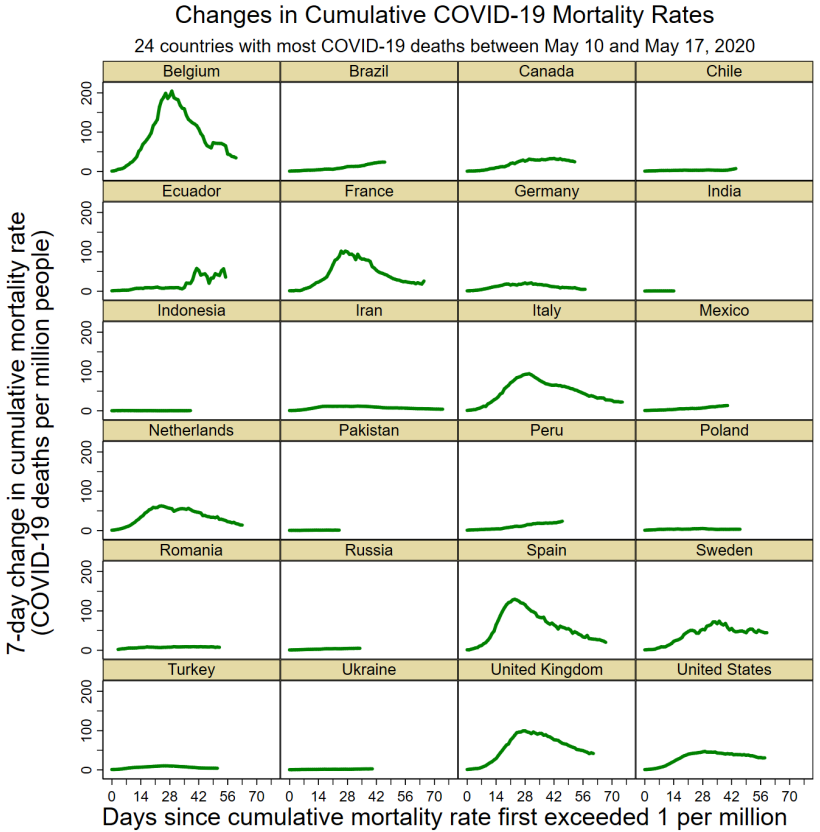


Notes: Horizontal axis has log scale. Excluding days when mortality rate < 1. Dots on Sundays to show time. Data through May 17, 2020.
Sources: FRBC calculations, The Center for Systems Science and Engineering at Johns Hopkins Univ., and the World Bank

These charts show the changes in COVID-19 mortality rates for the 40 largest US states (left) and the 24 countries with the highest number of COVID-19 deaths in the week leading up to May 17 (right).



Notes: Vertical axis uses a log scale. Number of days capped at 56. Data through May 17, 2020.
Sources: FRBC calculations, The Center for Systems Science and Engineering at Johns Hopkins Univ.,and Bureau of Economic Analysis.



Notes: Data points excluded if cumulative mortality rate < 1. Data from 1/22-5/17/2020.
Sources: FRBC calculations, The Center for Systems Science and Engineering at Johns Hopkins Univ., and the World Bank