

COVID-19 Mortality Rate Trends in Countries and US States

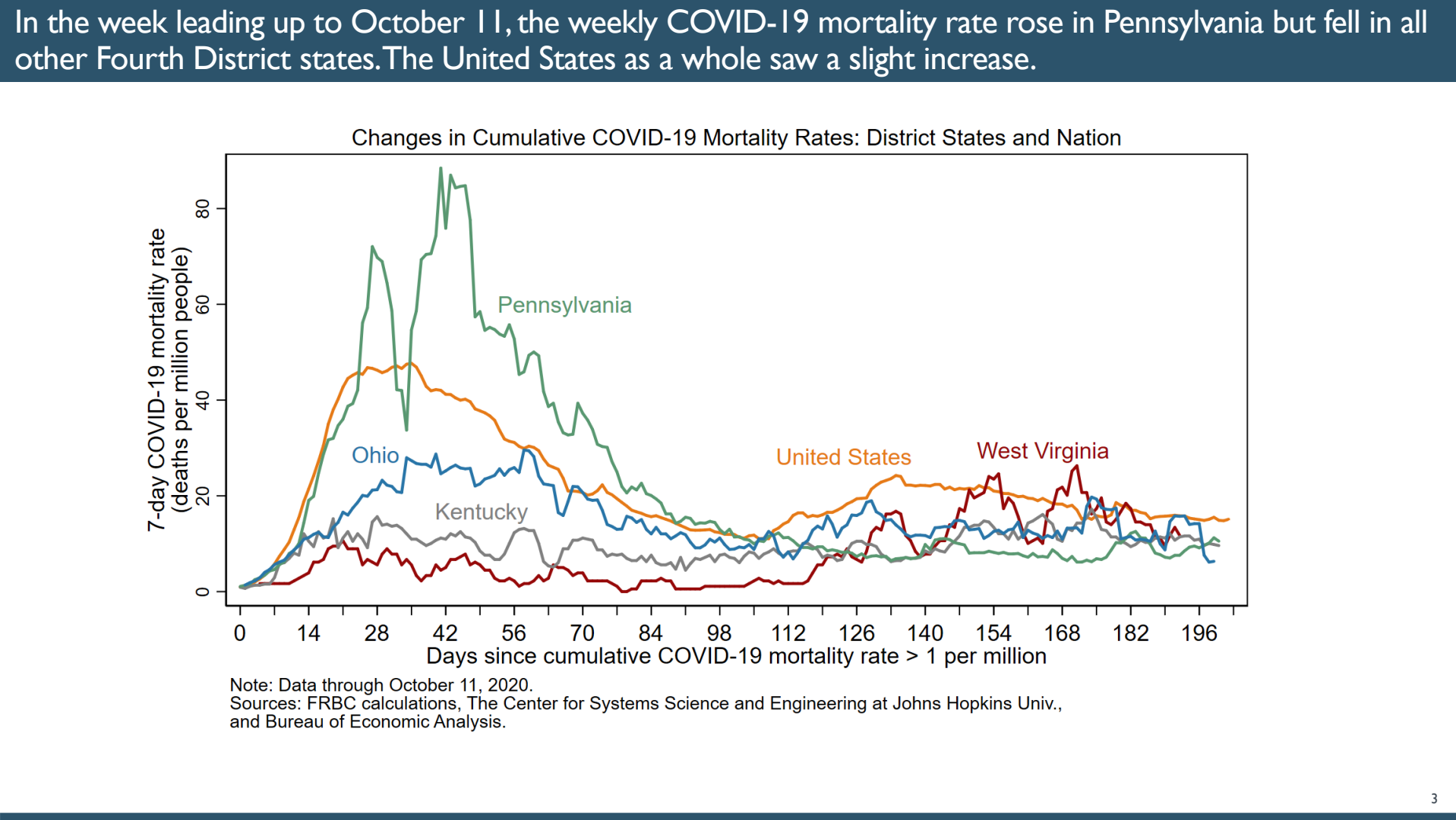
Joel Elvery

Mark Oleson

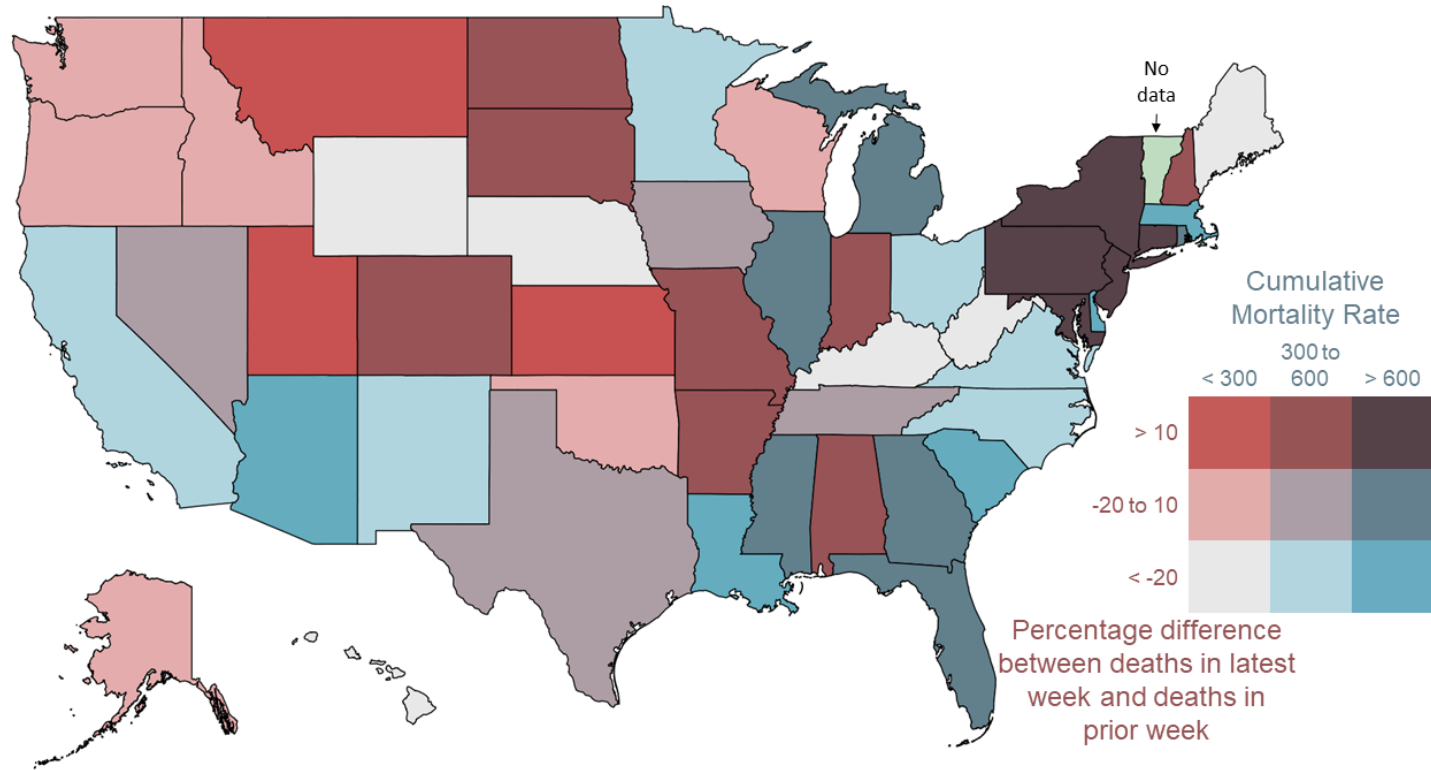
Updated October 13, 2020

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

- 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 October 11, with no attempt to further correct for underreporting.
 - Some large revisions in COVID-19 data have been smoothed. See slide 9 for details.
- 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.



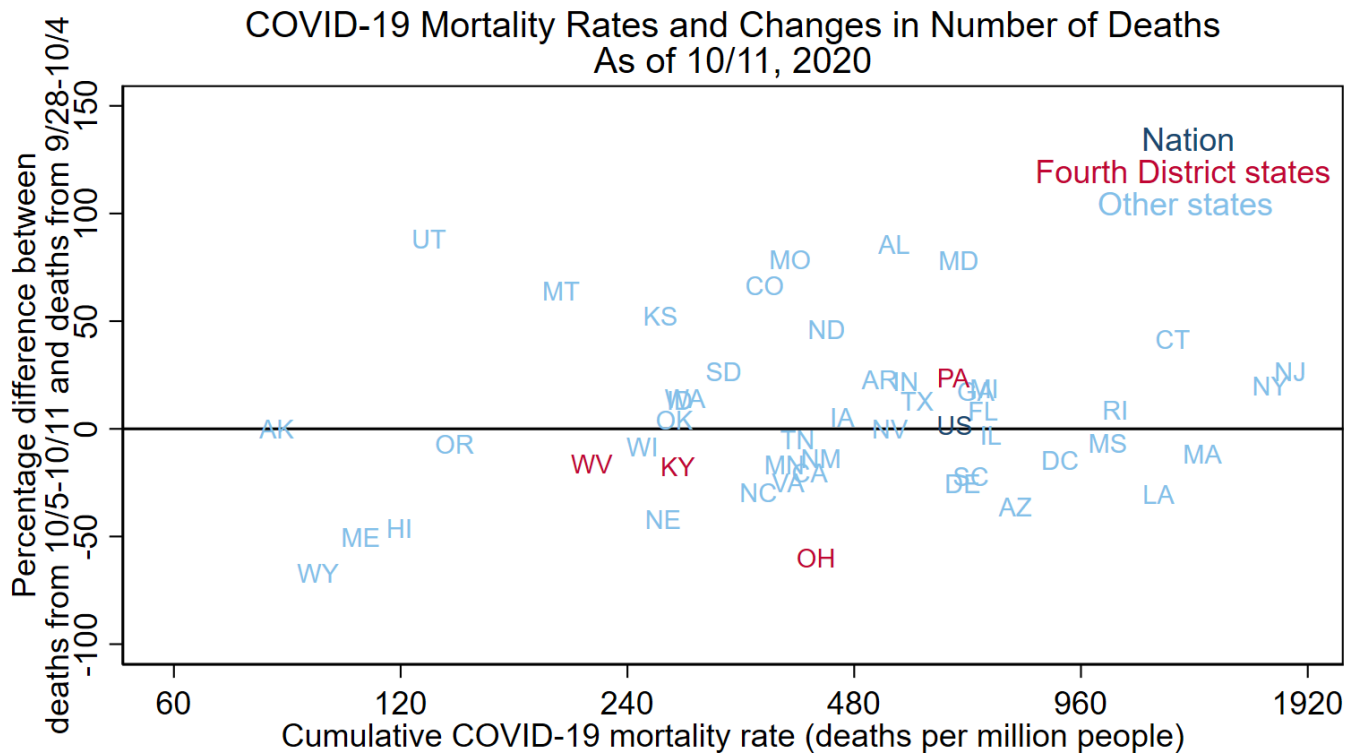
Between October 5 and October 11, the weekly COVID-19 mortality rate rose in 25 states, including Colorado, Michigan, New York, and Texas.



Data for October 11, 2020, accessed on October 13, 2020
"Latest week" is 10/5 to 10/11, "prior week" is 9/28 to 10/4.
Sources: FRBC calculations, CSSE, and BEA.

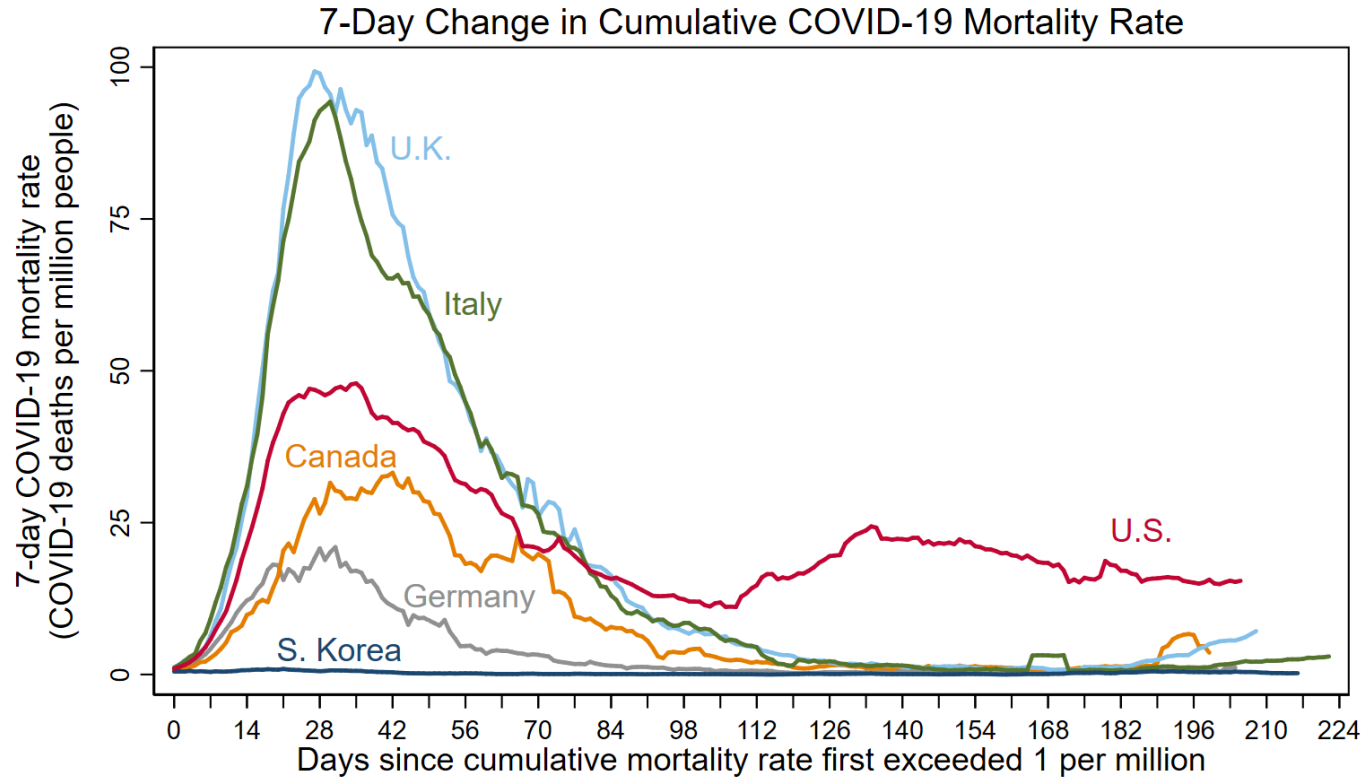
Notes: VT has no data because it had no deaths from 9/28 to 10/4. The District of Columbia is in the bin with mortality rate > 600 and percentage difference between -20 and 10 percent. The color bins on this map are changed with each update to better represent the latest data.

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. VT is excluded because it had no COVID-19 deaths from 9/28 to 10/4. NH is also excluded because the state's weekly deaths increased by more than 200 percent.
Sources: FRBC calculations, The Center for Systems Science and Engineering at Johns Hopkins Univ., and Bureau of Economic Analysis.

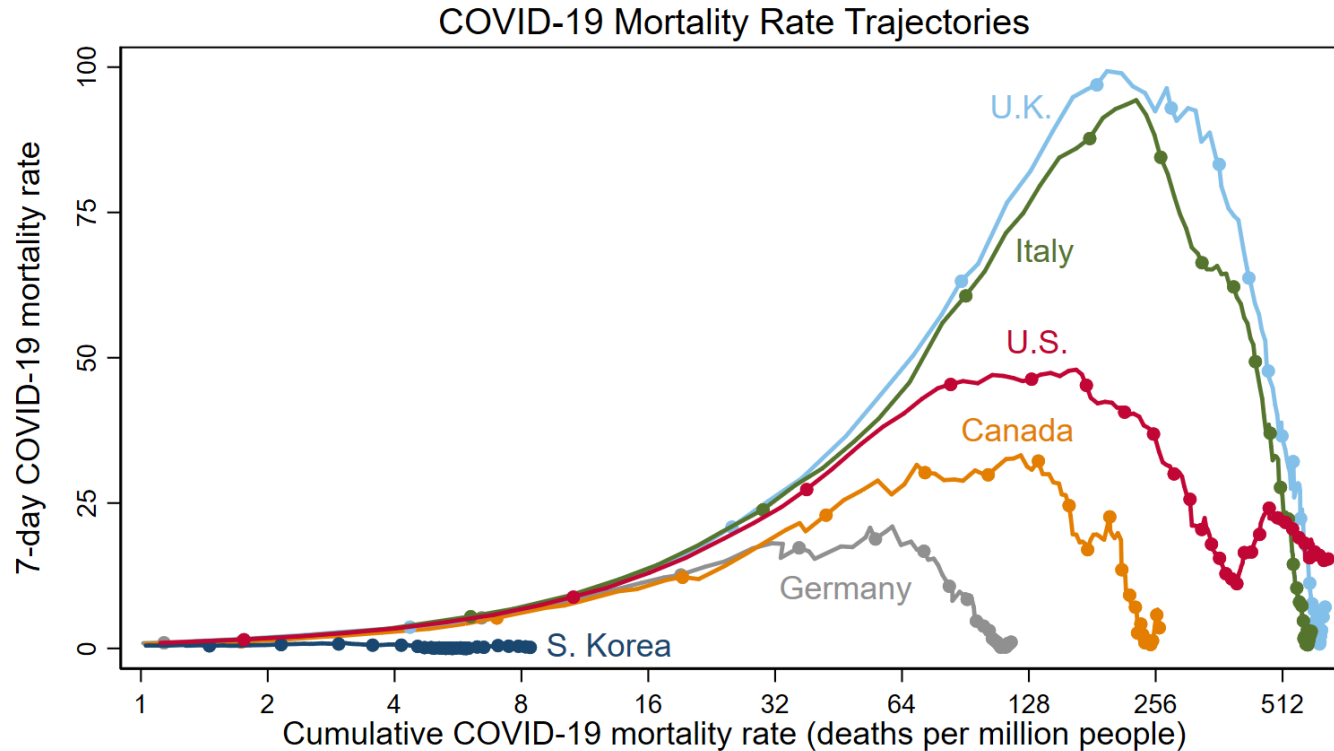
The 7-day COVID-19 mortality rate in the United States has fallen modestly and remains high relative to those in Canada and European countries at a comparable number of days into each of their epidemics.



Notes: 3/22/2020 was first day US rate > 1. Data through 10/11/2020.

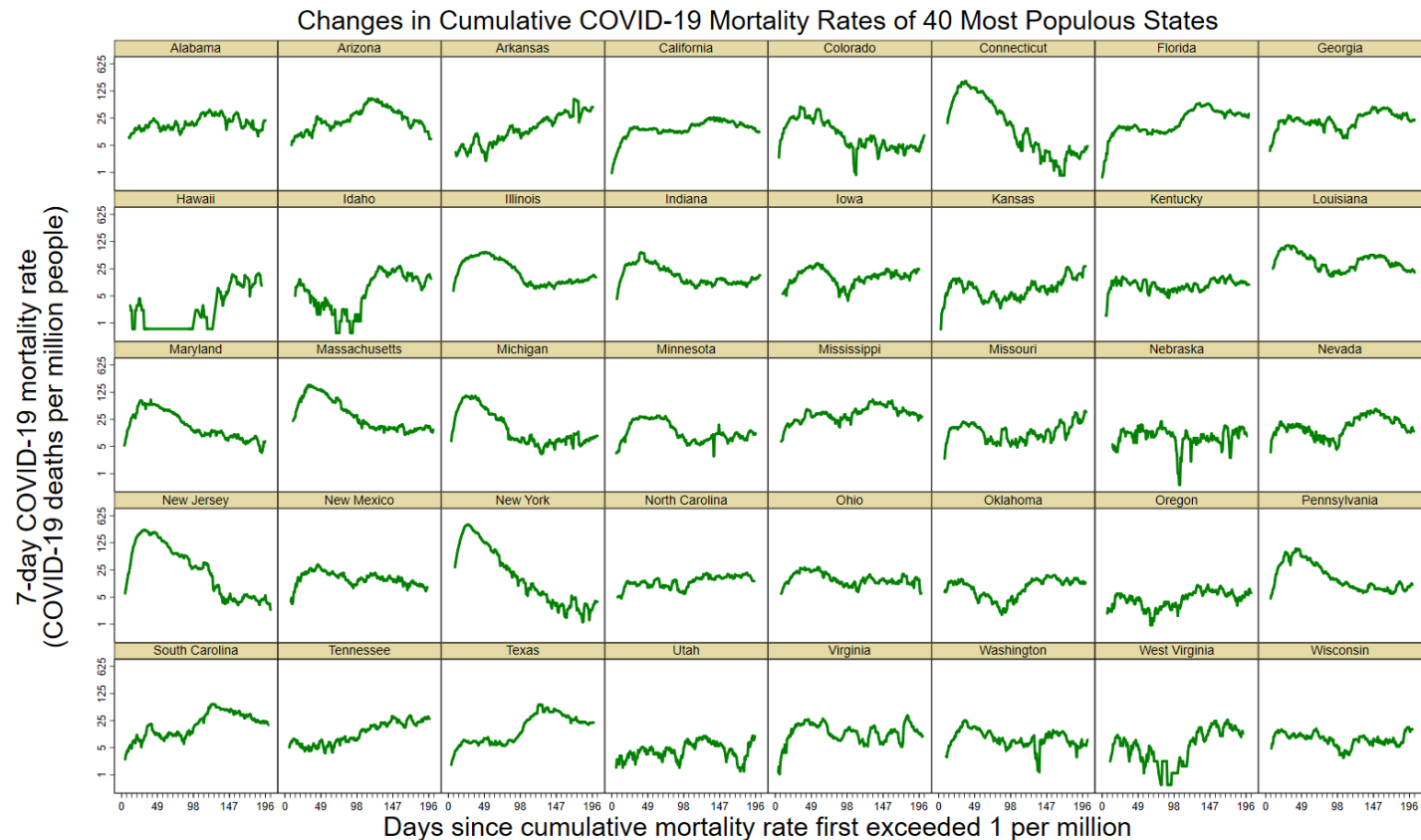
Sources: FRBC calculations, The Center for Systems Science and Engineering at Johns Hopkins Univ., and the World Bank

As of October 11, the cumulative COVID-19 mortality rate of the United States is 656 deaths per million people. This is above the rates of Italy and the UK (598 and 645 deaths per million, respectively).



Notes: Horizontal axis has log scale. Excluding days when mortality rate < 1. Dots on Sundays to show time.
Data through October 11, 2020.
Sources: FRBC calculations, The Center for Systems Science and Engineering at Johns Hopkins Univ., and the World Bank

This chart shows the changes in COVID-19 mortality rates for the 40 most populous US states.



Appendix: Adjustments for data revisions

- Some significant revisions to the reported number of COVID-19 deaths cause large single-day jumps.
- We smooth some of these jumps by multiplying daily changes for a period of time by a scaling factor so that the adjusted series meets the post-revision series.
- We have used this approach for the following revisions and periods:
 - Spain revised deaths downward on May 25; data are adjusted from 3/3 to 5/24.
 - New Jersey revised deaths downward on June 25; data are adjusted from 3/10 to 6/24.
 - Illinois revised deaths upward on July 7; Illinois and United States are adjusted from 3/23 to 7/6.
 - New Jersey revised deaths downward on August 26; data are adjusted from 3/18 to 8/25.
- Other data cleaning
 - Ohio's reported cumulative deaths jumped up on August 29 and reversed on August 30. We set Ohio's cumulative deaths on August 29 to the midpoint of deaths on August 28 and 30 and incorporated this change into the US total for August 29.