

COVID-19 Mortality Rate Trends in Countries and US States

Joel Elvery

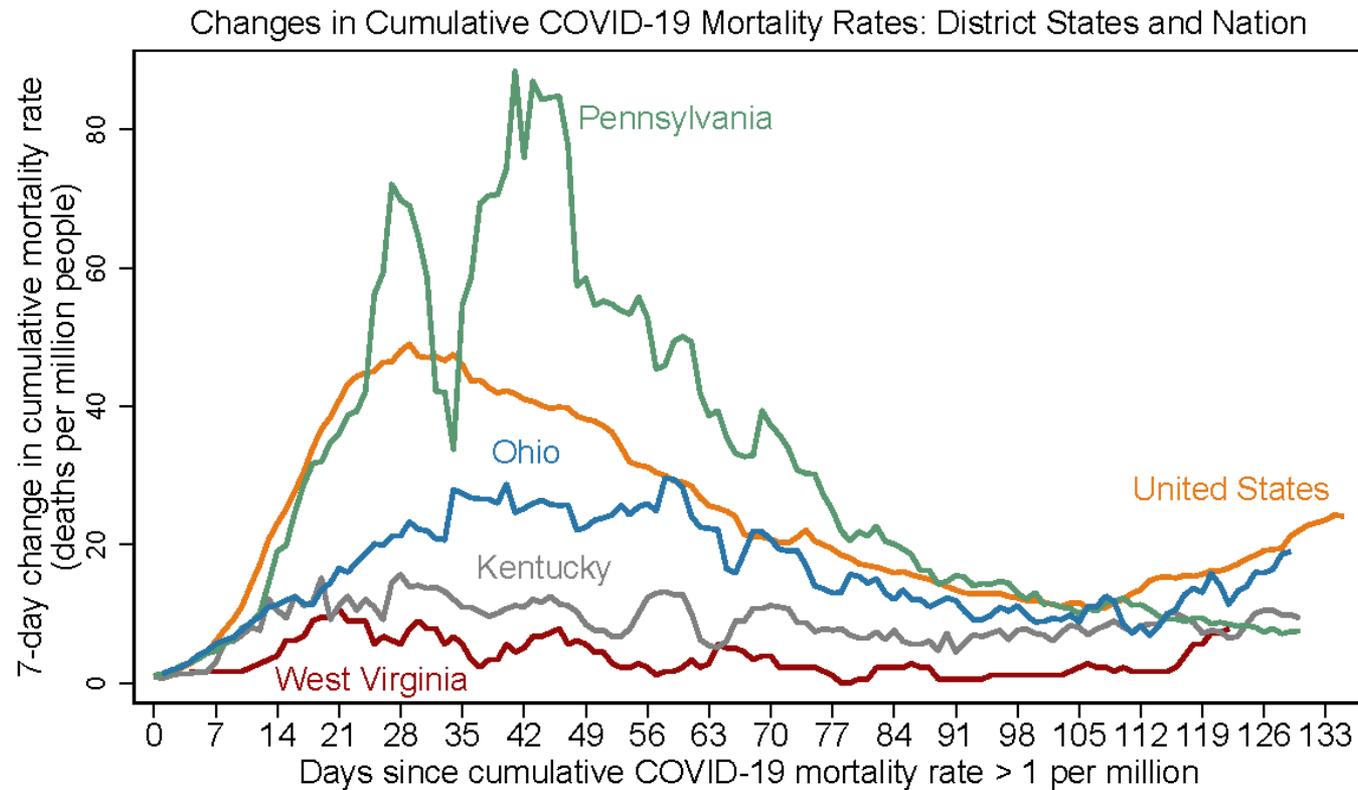
with assistance from Mark Oleson

Updated August 3, 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 August 2, 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.

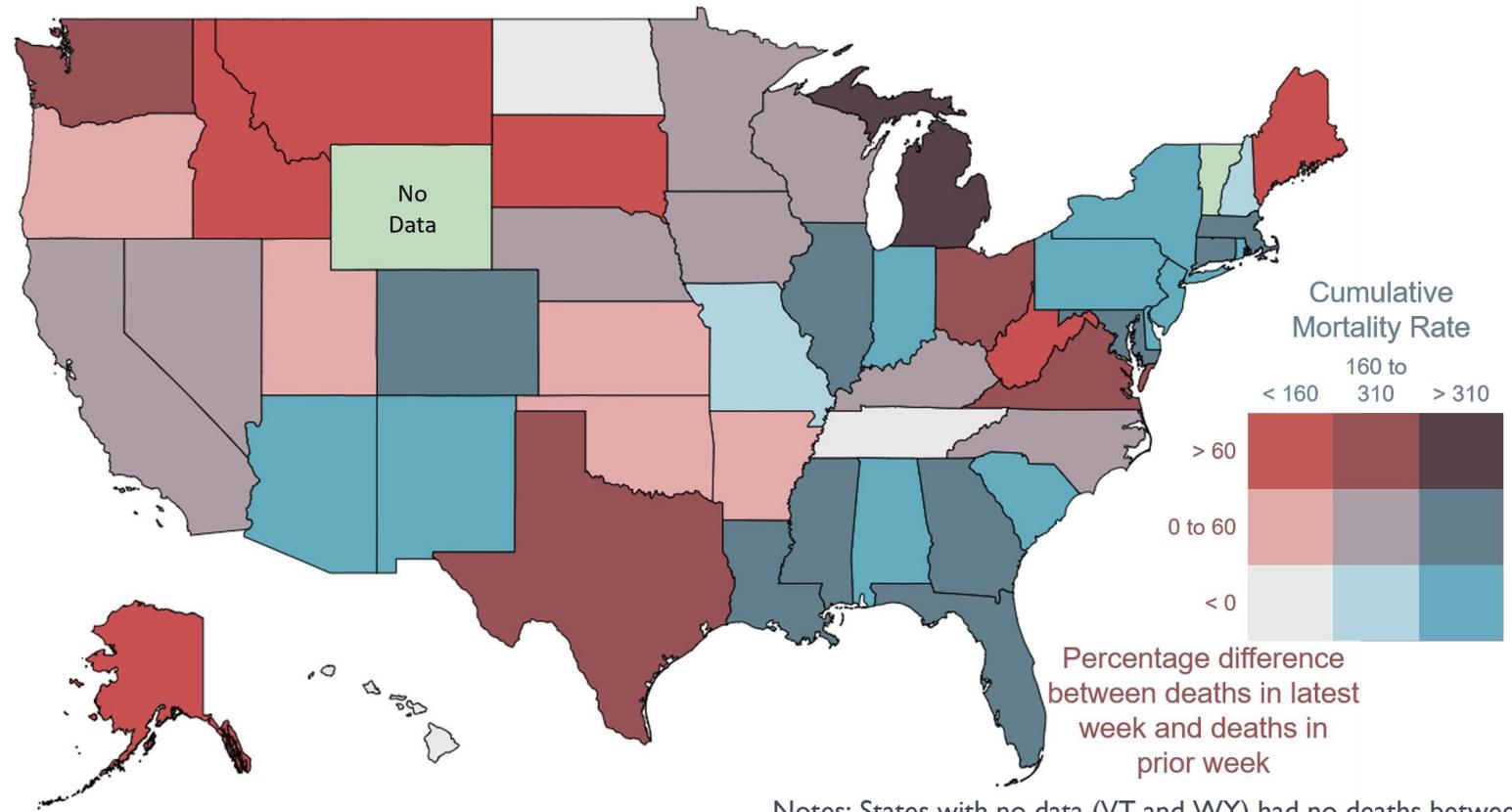
In the week leading up to August 2, the population-adjusted number of COVID-19 deaths per week fell only in Pennsylvania; it rose in Kentucky, Ohio, West Virginia, and in the United States as a whole.



Note: Data through August 02, 2020.

Sources: FRBC calculations, The Center for Systems Science and Engineering at Johns Hopkins Univ., and Bureau of Economic Analysis.

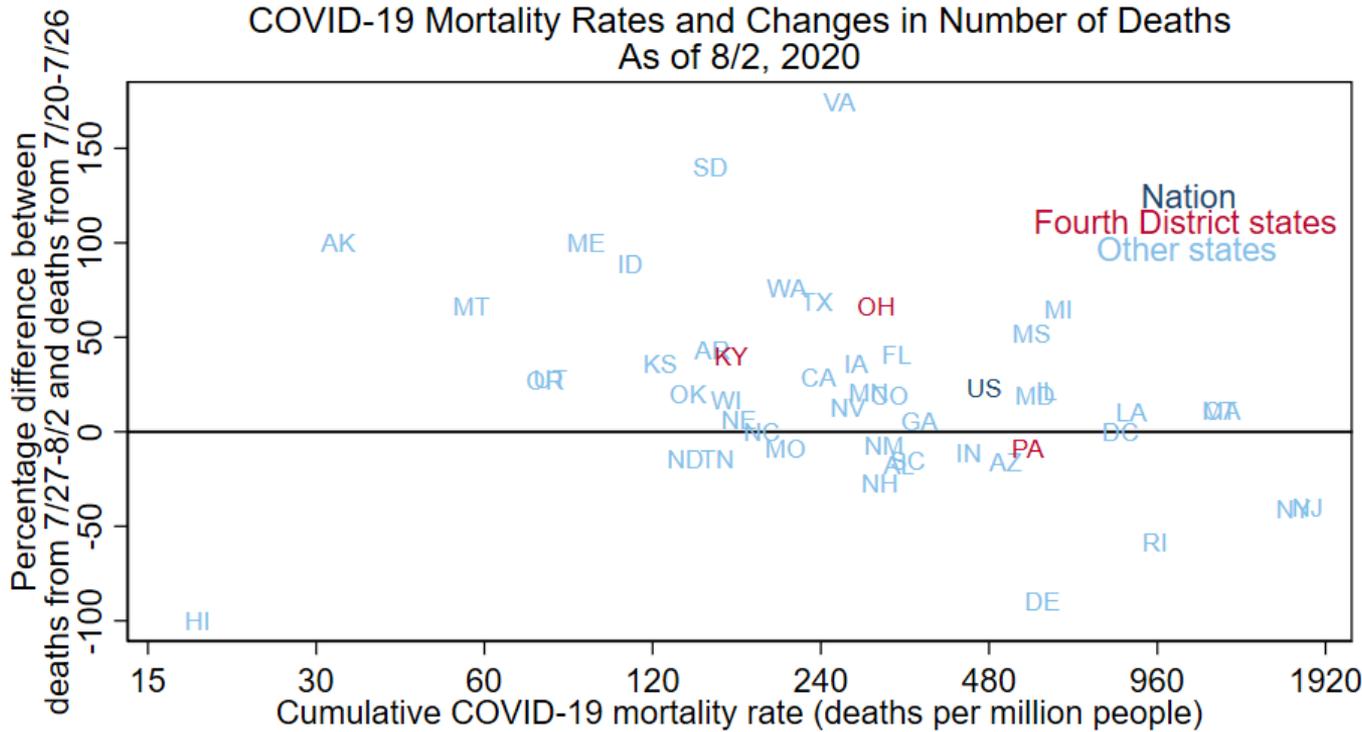
Between July 27 and August 2, the number of COVID-19 deaths per week rose by more than 60 percent in 13 states, including Michigan, Ohio, and West Virginia.



Data for August 2, 2020, accessed on August 3, 2020
 "Latest week" is 7/27 to 8/2, "prior week" is 7/20 to 7/26.
 Sources: FRBC calculations, CSSE, and BEA

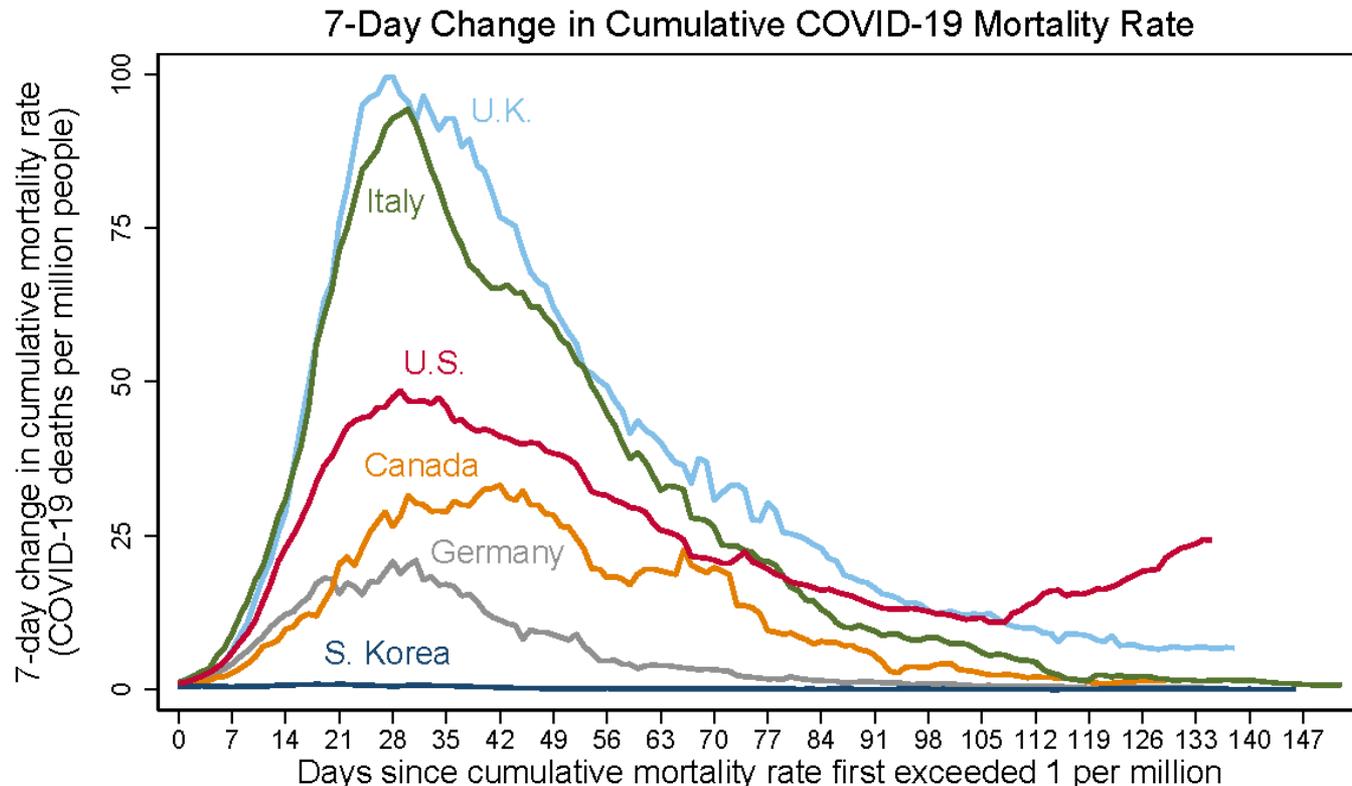
Notes: States with no data (VT and WY) had no deaths between 7/20 and 7/26. The District of Columbia is in the bin with mortality rate > 310 and percentage difference from 0 to 60. The color bins on this map are changed with each update to better represent the latest data.

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



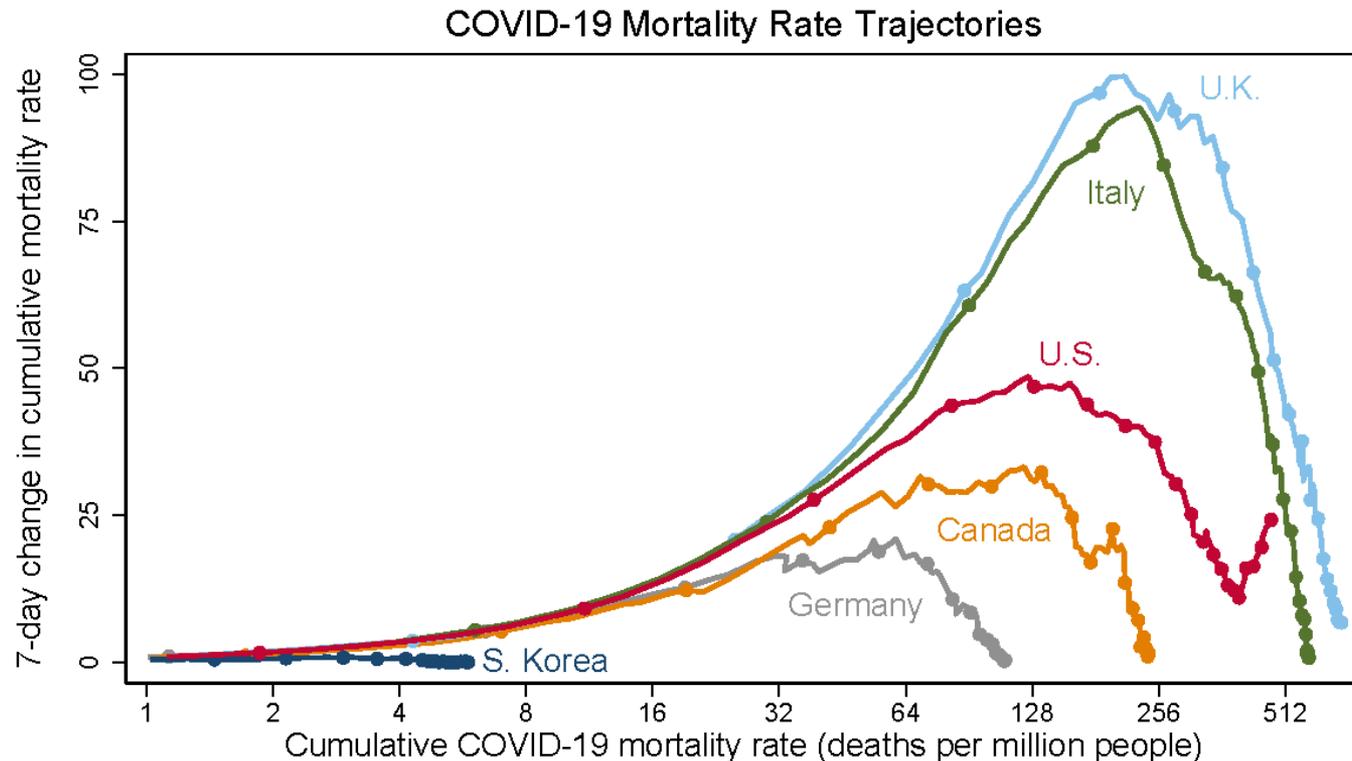
Notes: Horizontal axis has log scale. VT and WY excluded because they had no COVID-19 deaths from 7/20-7/26, 2020.
WV also excluded with a 366 percent increase in COVID-19 deaths since the week of 7/20-7/26, 2020.
Sources: FRBC calculations, The Center for Systems Science and Engineering at Johns Hopkins Univ., and Bureau of Economic Analysis.

The number of deaths per week began rising again in the United States on July 8. In contrast, deaths per week fell during the comparable number of days into the epidemics in Canada, Germany, Italy, and the UK.



Notes: 3/22/2020 was first day US rate > 1. Data through 8/02/2020.
Sources: FRBC calculations, The Center for Systems Science and Engineering at Johns Hopkins Univ., and the World Bank

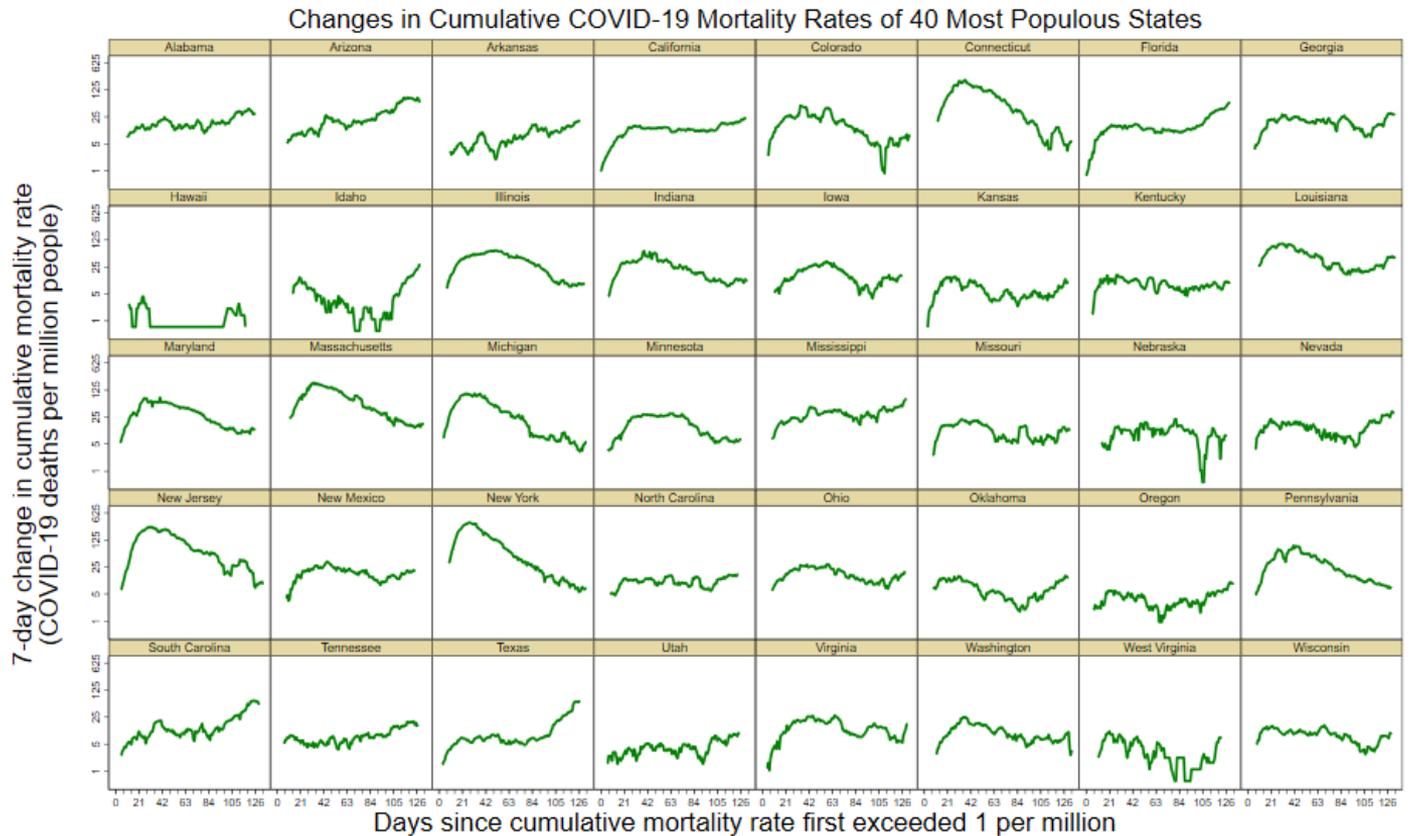
As of August 2, the cumulative COVID-19 mortality rate of the United States is 473 deaths per million people. This is more than four times that of Germany and almost twice that of Canada.



Notes: Horizontal axis has log scale. Excluding days when mortality rate < 1. Dots on Sundays to show time. Data through August 02, 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.



Notes: Data points excluded if cumulative mortality rate < 1. Data from 1/22-8/2/2020.
Sources: FRBC calculations, The Center for Systems Science and Engineering at Johns Hopkins Univ., and BEA

- Some large 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 upward on June 25; New Jersey and US data are adjusted from 3/10 to 6/24.
 - Illinois revised deaths upward on July 7; Illinois and US are adjusted from 3/23 to 7/6.