

COVID-19 Mortality Rate Trends in Countries and US States

Joel Elvery

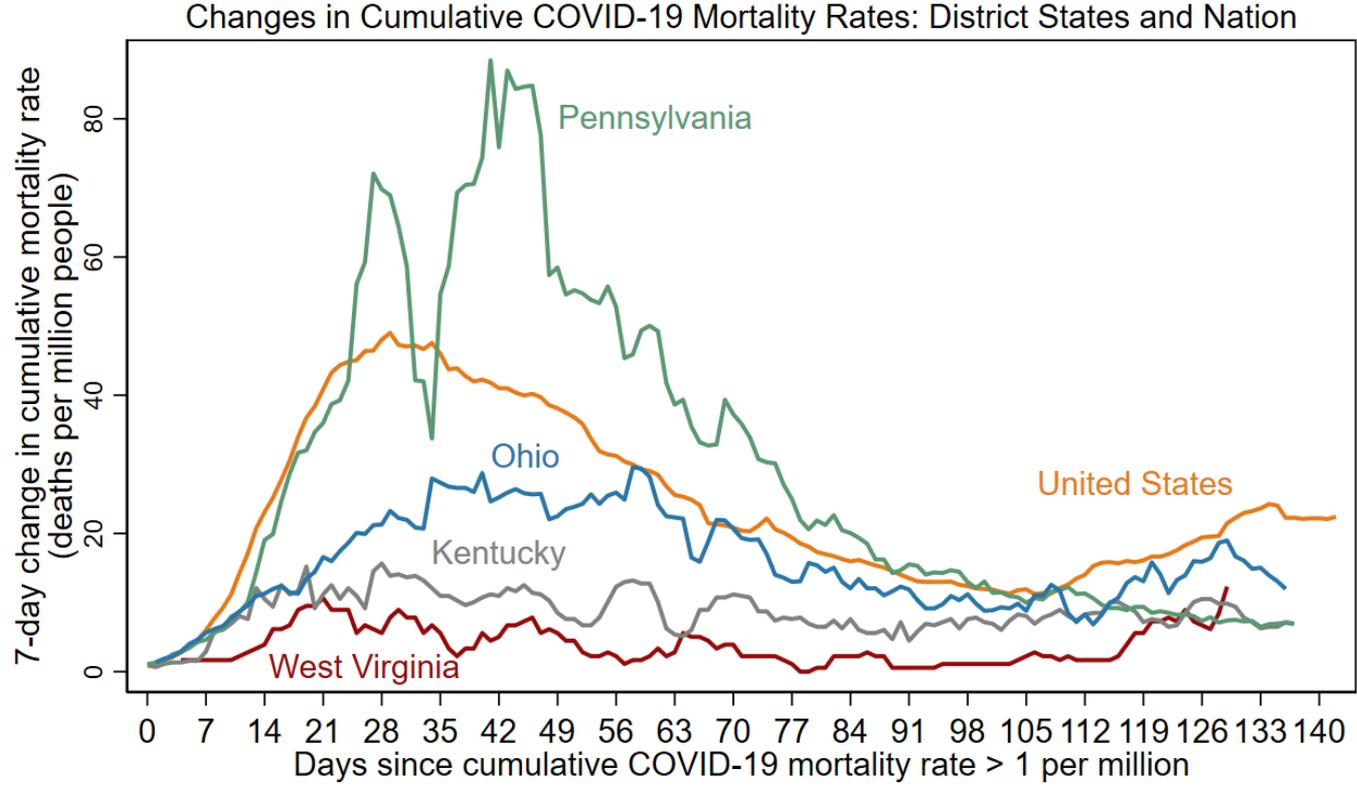
with assistance from Mark Oleson

Updated August 10, 2020

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

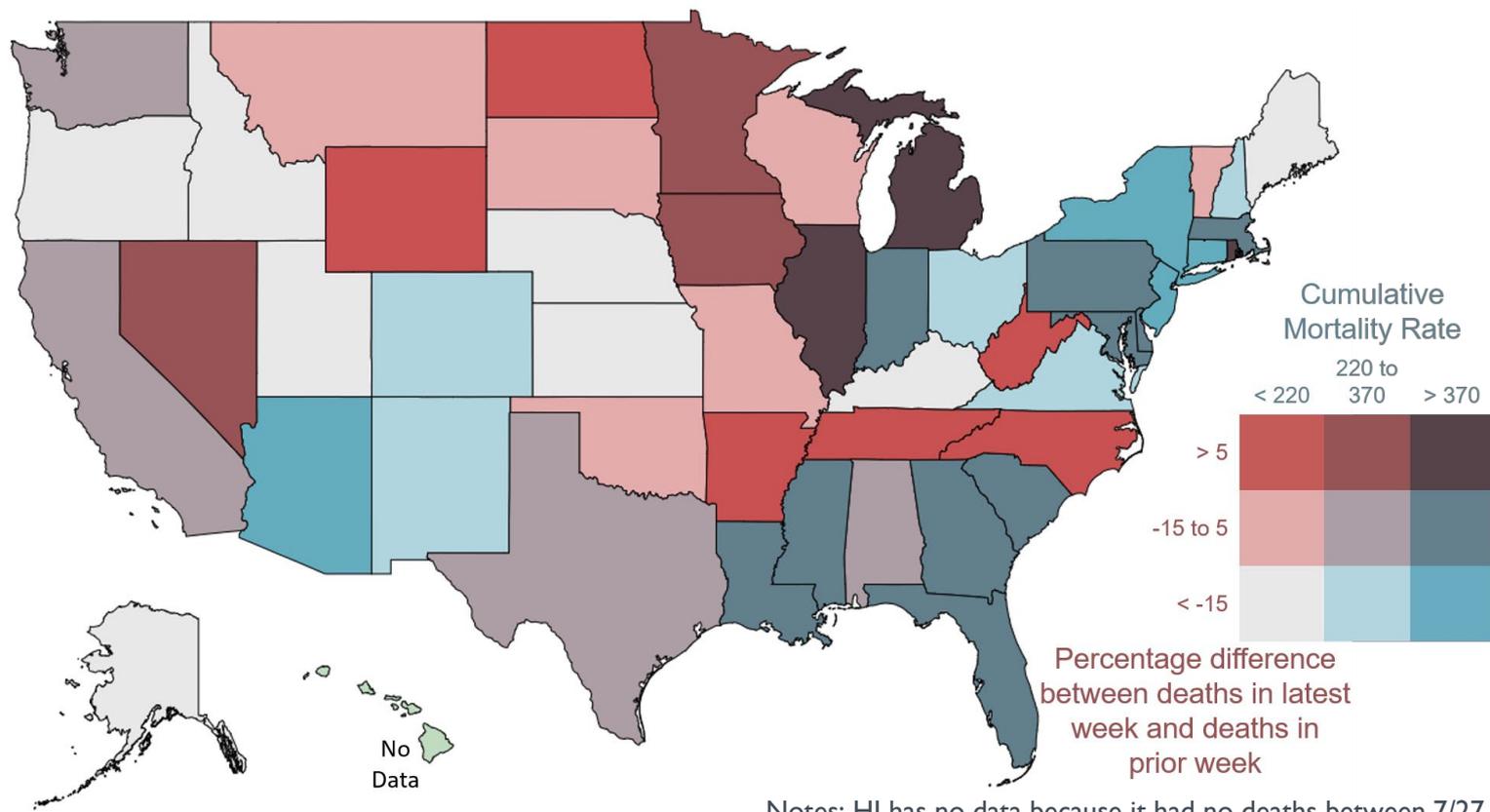
- The charts in this presentation use the same data sources as the charts in two April 2020 District Data Briefs. Please see these reports for additional details.
 - [Getting to Accuracy: Measuring COVID-19 by Mortality Rates and Percentage Changes](#)
 - [A Speeding Rate Starts to Slow: COVID-19 Mortality 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 9, 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 9, the population-adjusted number of COVID-19 deaths per week rose only in West Virginia, and fell in Kentucky, Ohio, Pennsylvania, and in the United States as a whole.



Note: Data through August 9, 2020.
Sources: FRBC calculations, The Center for Systems Science and Engineering at Johns Hopkins Univ., and Bureau of Economic Analysis.

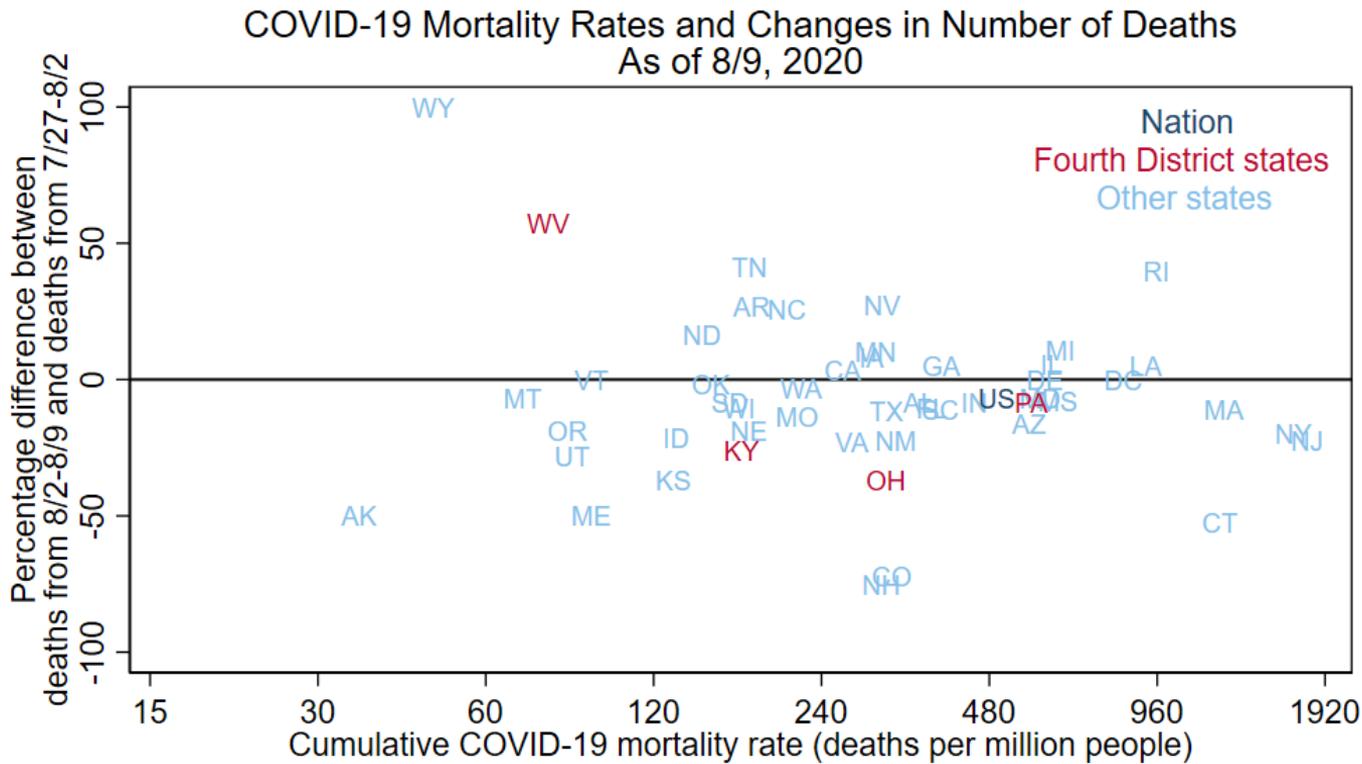
Between August 3 and August 9, the number of COVID-19 deaths per week rose by 5 percent or more in 12 states, including Illinois, Michigan, Nevada, and North Carolina.



Data for August 9, 2020, accessed on August 10, 2020
 "Latest week" is 8/3 to 8/9, "prior week" is 7/27 to 8/2.
 Sources: FRBC calculations, CSSE, and BEA

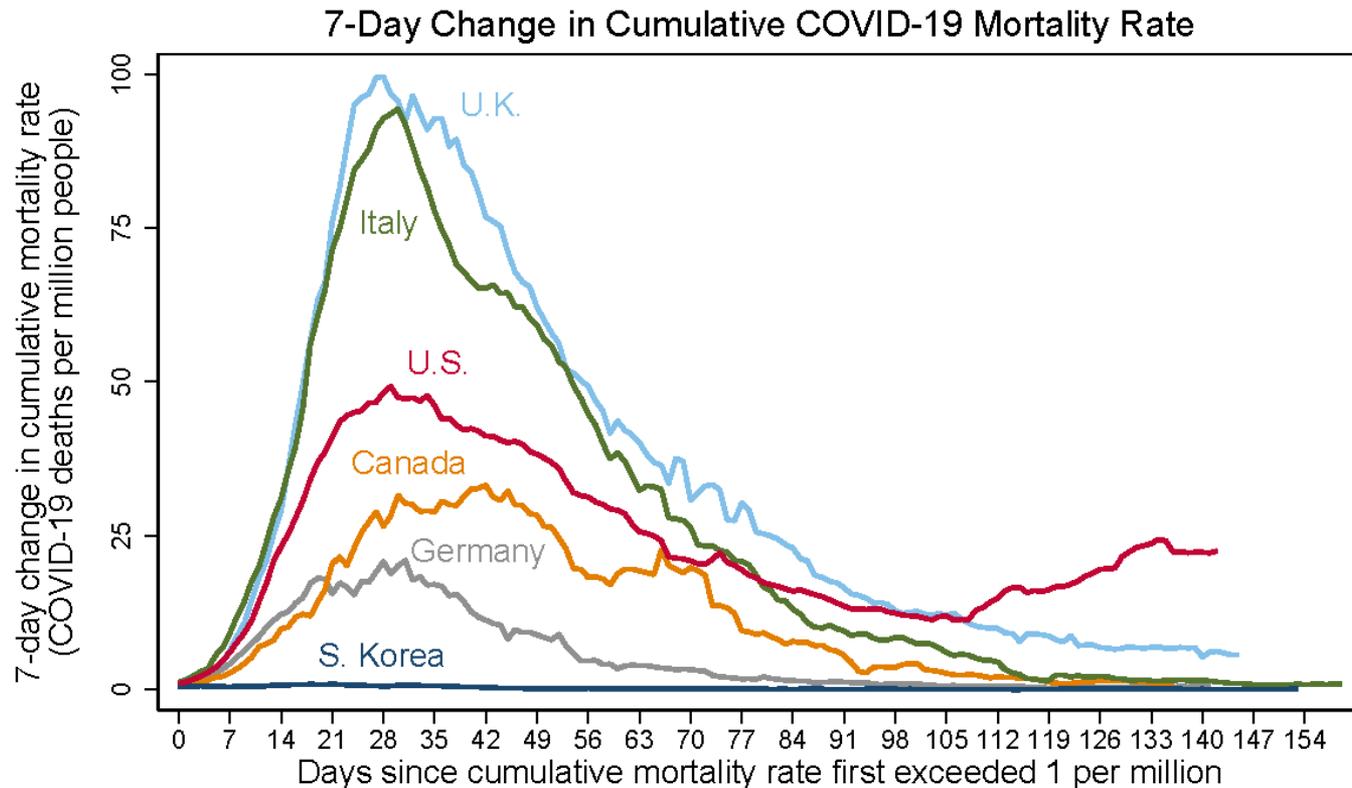
Notes: HI has no data because it had no deaths between 7/27 and 8/2. The District of Columbia is in the bin with mortality rate > 370 and percentage difference from -15 to 5. The color bins on this map are changed with each update to better represent the latest data.

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 excluded because it had no COVID-19 deaths from 7/27-8/2, 2020.
Sources: FRBC calculations, The Center for Systems Science and Engineering at Johns Hopkins Univ., and Bureau of Economic Analysis.

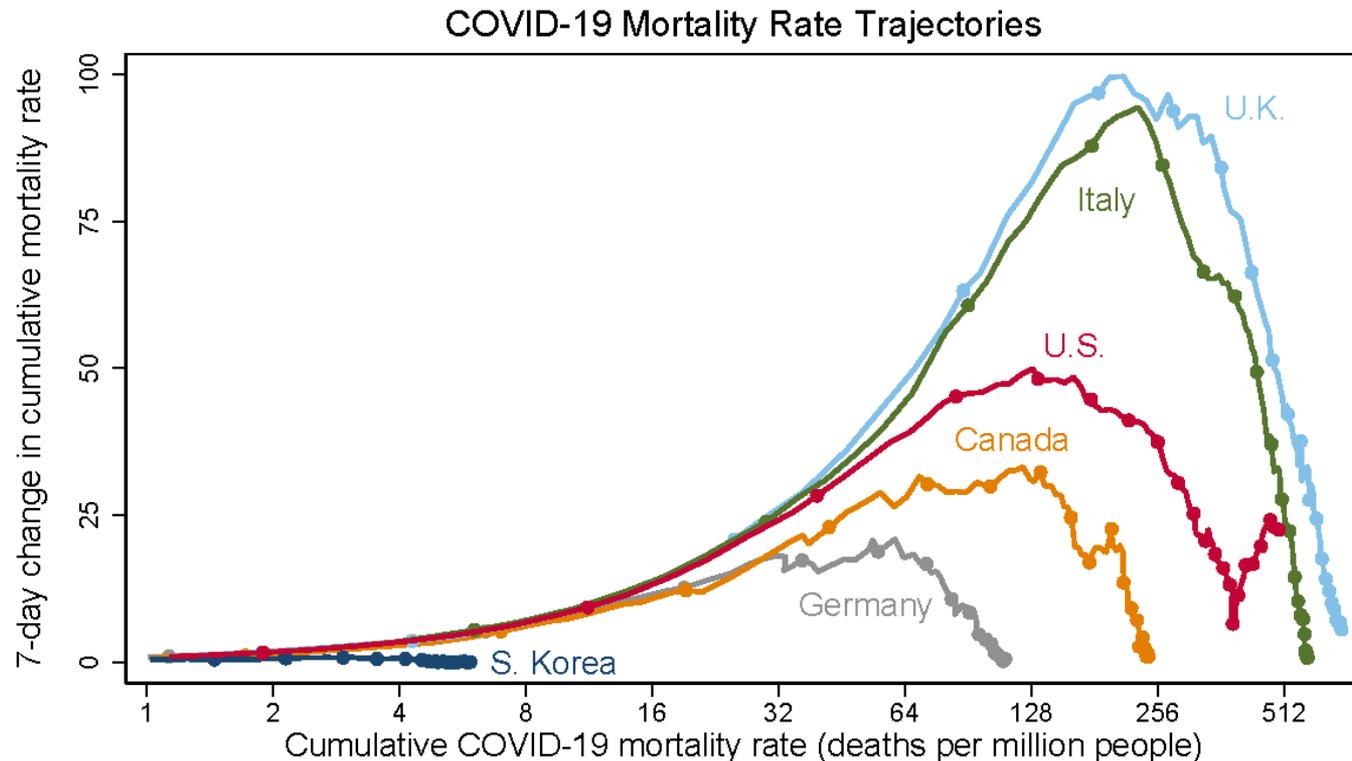
In the week ending on August 9, the United States had 23 COVID-19 deaths per million residents, much higher than the comparable figures for Canada and the United Kingdom (respectively, 1 and 6 per million).



Notes: 3/22/2020 was first day US rate > 1. Data through 8/9/2020.

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

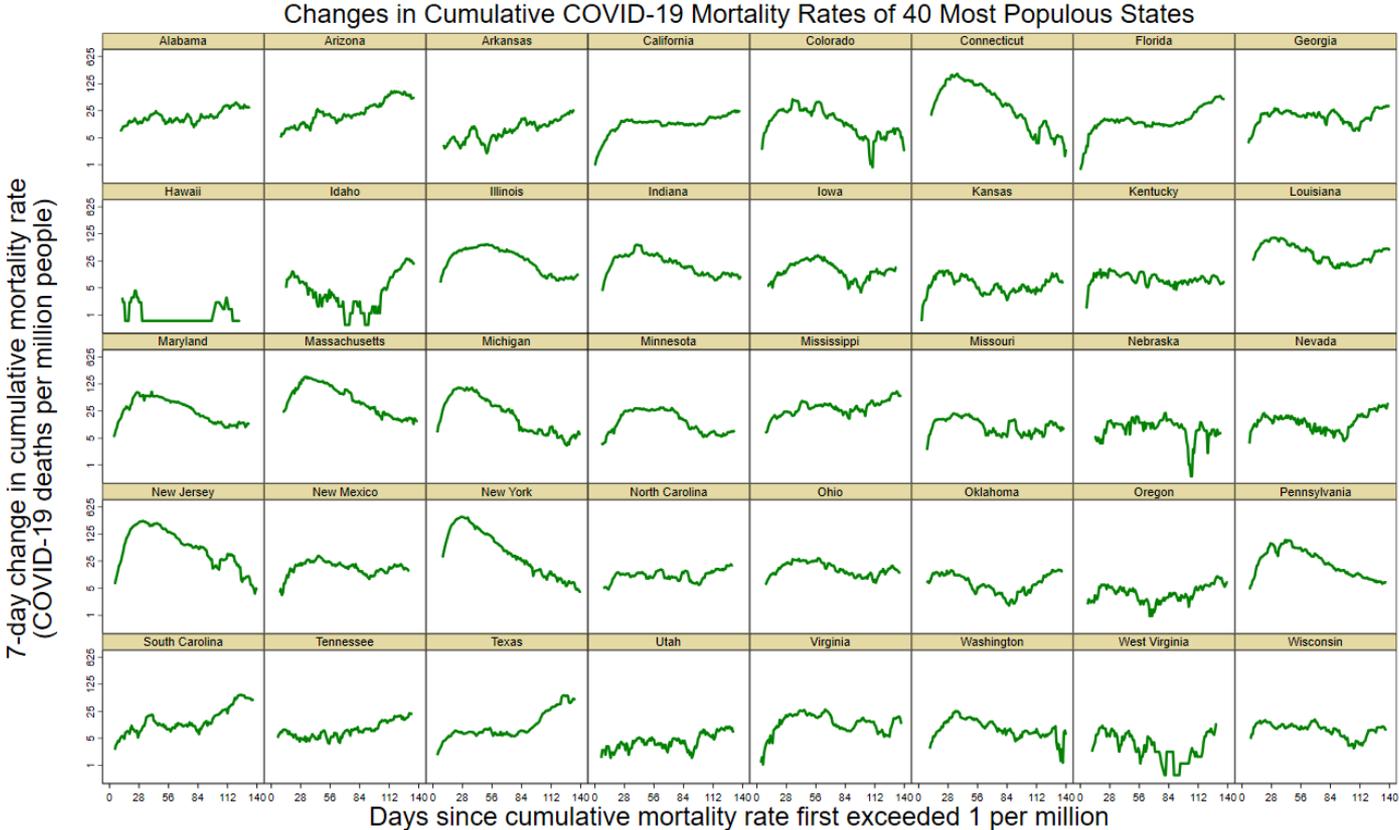
As of August 9, the cumulative COVID-19 mortality rate of the United States is 498 deaths per million people. This is more than four times that of Germany and more than twice that of Canada.



Notes: Horizontal axis has log scale. Excluding days when mortality rate < 1. Dots on Sundays to show time. Data through August 09, 2020.

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

This chart show 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 1/22-8/9/2020.
 Sources: FRBC calculations, The Center for Systems Science and Engineering at Johns Hopkins Univ., and BEA

- Some significant revisions to the reported number of COVID-19 deaths cause large single-day jumps.
- I 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.
- I 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; NJ 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.