

COVID-19 Mortality Rate Trends in Countries and US States

Joel Elvery

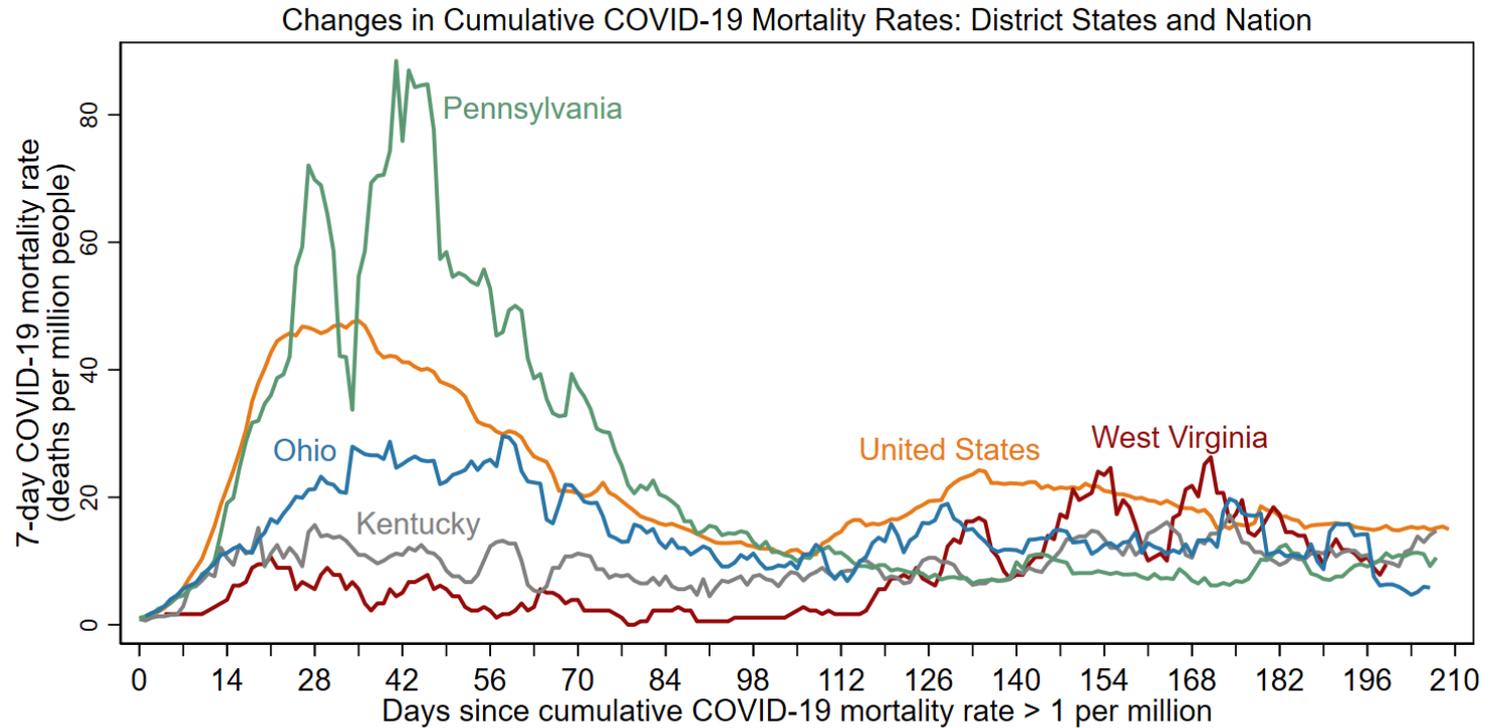
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- The charts in this presentation use the same data sources as the charts in two April 2020 District Data Briefs. Please see these reports for additional details.
 - [Getting to Accuracy: Measuring COVID-19 by Mortality Rates and Percentage Changes](#)
 - [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 data from the Center for Systems Science and Engineering at Johns Hopkins University (CSSE) through October 18, 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.

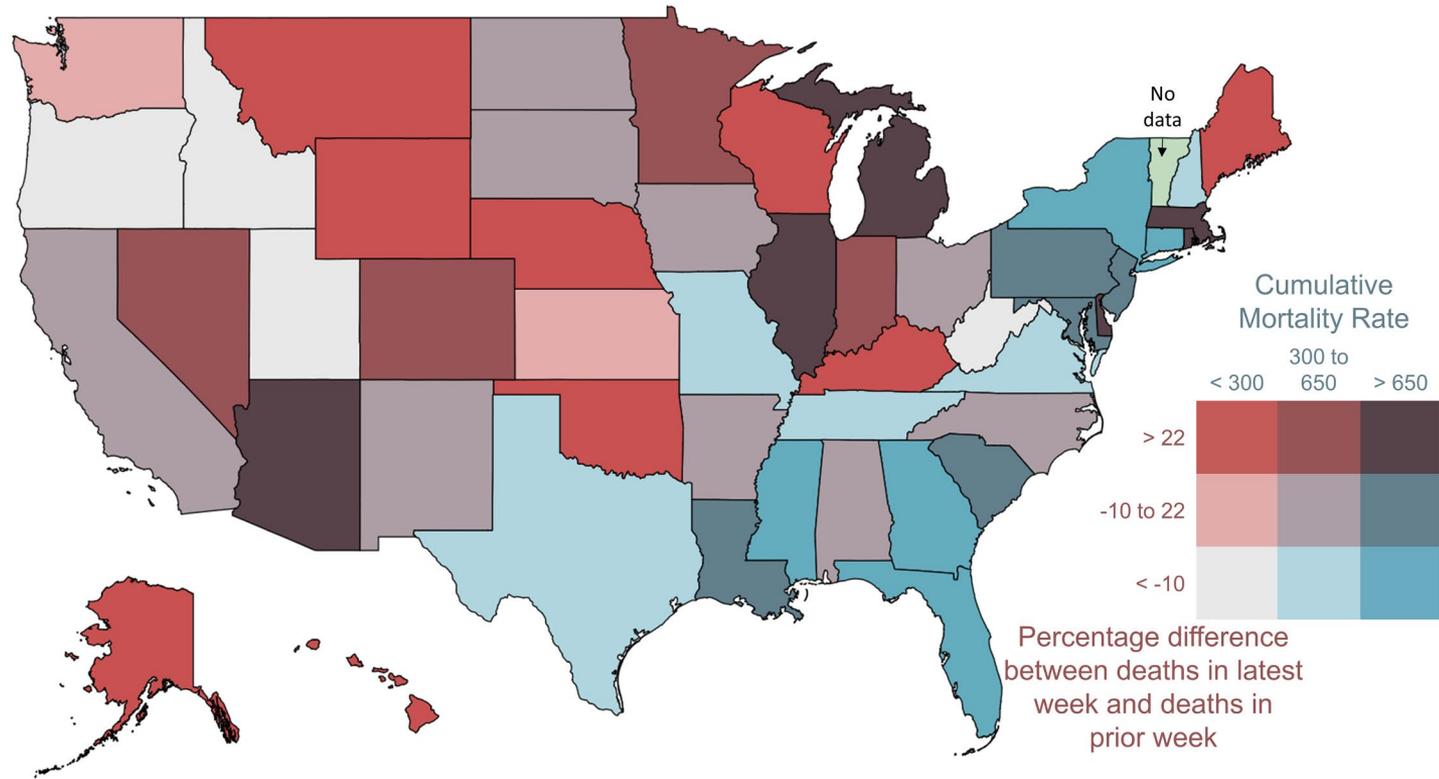
In the week leading up to October 18, the weekly COVID-19 mortality rate rose in Kentucky and fell in all other Fourth District states. The United States as a whole saw a slight decrease.



Note: Data through October 18, 2020.

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

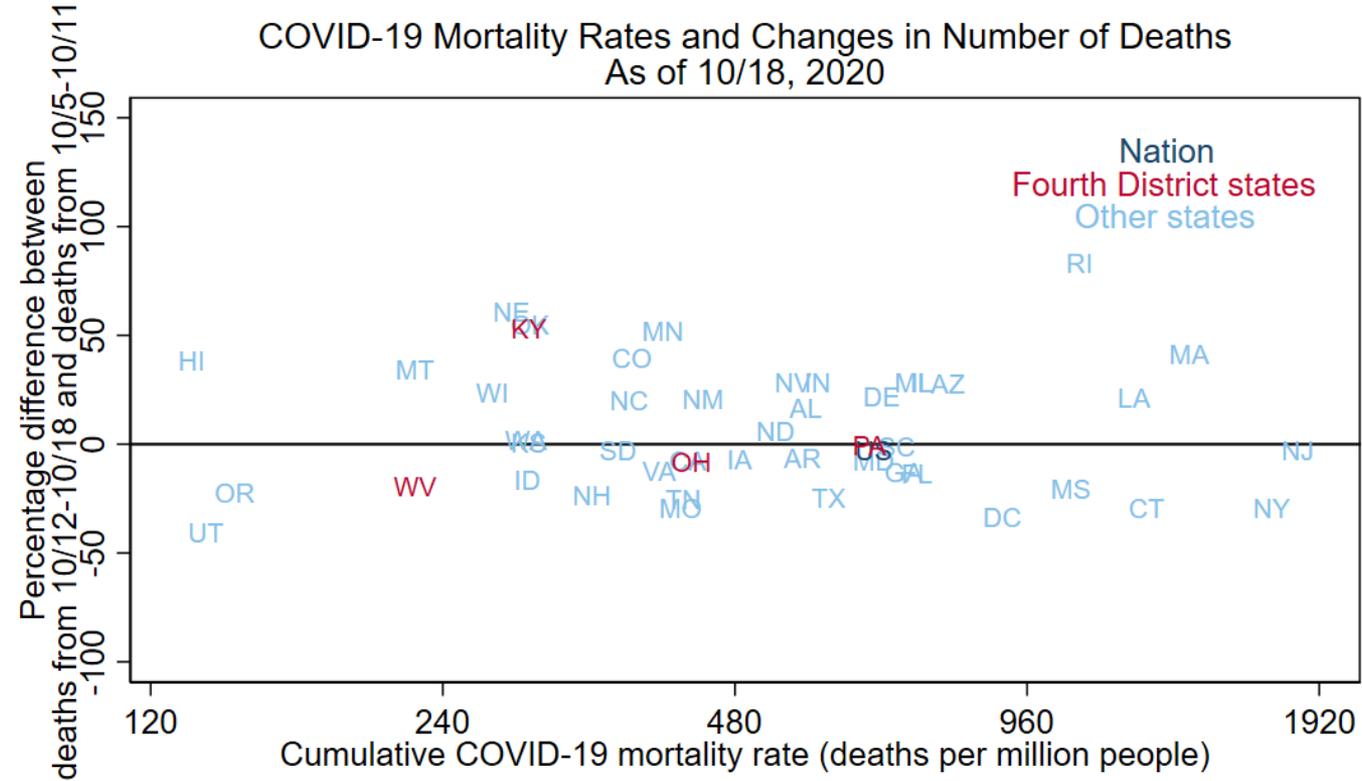
Between October 12 and October 18, the weekly COVID-19 mortality rate rose in 23 states, including Colorado, Indiana, Michigan, and Wisconsin.



Data for October 18, 2020, accessed on October 19, 2020
“Latest week” is 10/12 to 10/19, “prior week” is 10/5 to 10/11.
Sources: FRBC calculations, CSSE, and BEA.

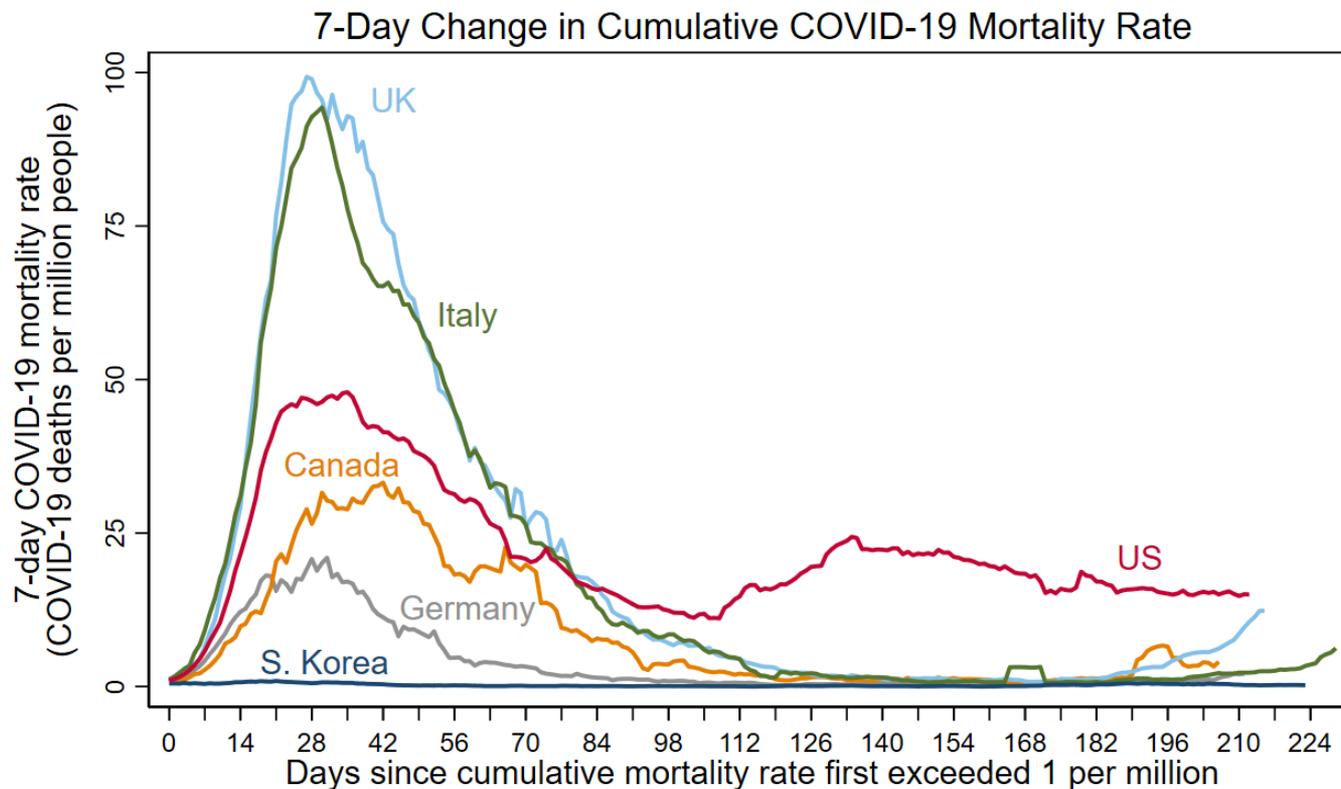
Notes: VT has no data because it had no deaths from 10/5 to 10/11. The District of Columbia is in the bin with mortality rate > 650 and percentage difference below -10 percent. The color bins on this map are changed with each update to better represent the latest data.

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 10/5 to 10/11. AK, WY, and ME are also excluded because the states' weekly deaths increased by more than 180 percent. Sources: FRBC calculations, the Center for Systems Science and Engineering at Johns Hopkins University, and Bureau of Economic Analysis.

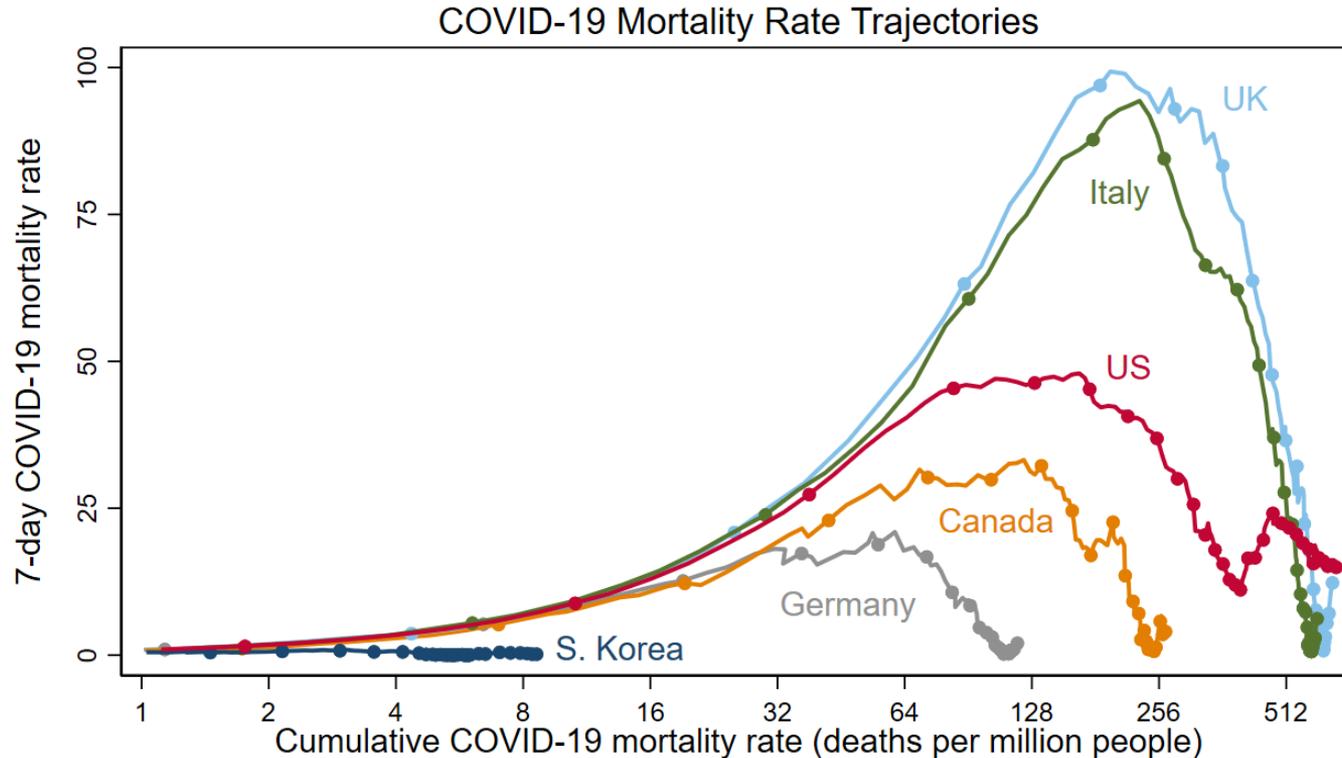
The 7-day COVID-19 mortality rate in the United States has changed little in the past four weeks and is higher than the rates in Canada and most European countries.



Notes: 3/22/2020 was first day US rate > 1. Data through 10/18/2020.

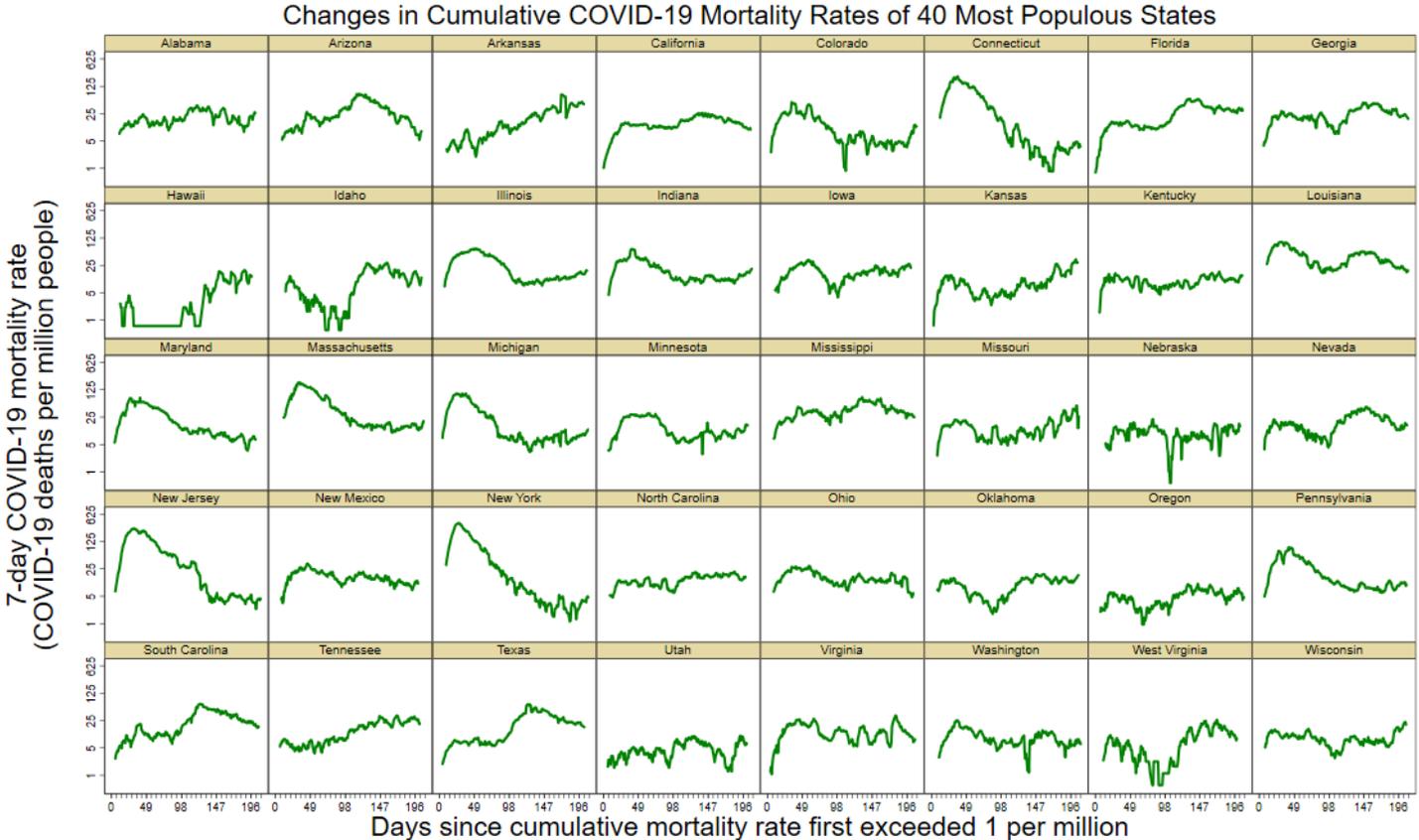
Sources: FRBC calculations, the Center for Systems Science and Engineering at Johns Hopkins University, and the World Bank.

As of October 19, the cumulative COVID-19 mortality rate of the United States is 671 deaths per million people. This is above the rates of Italy and the UK (605 and 658 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 18, 2020. Sources: FRBC calculations, the Center for Systems Science and Engineering at Johns Hopkins University, 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 1/22-10/18/2020.
 Sources: FRBC calculations, the Center for Systems Science and Engineering at Johns Hopkins University, and BEA.

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.