CLUB VITA

VITAMINS

How different American states have experienced COVID-19 so far (data available at August 19, 2020)

The COVID-19 pandemic has hit the US particularly hard, with over 170,000 recorded COVID-related deaths at the time of writing. However, the experience has not been uniform; here we analyze the latest data to see how different parts of the country have experienced the pandemic.

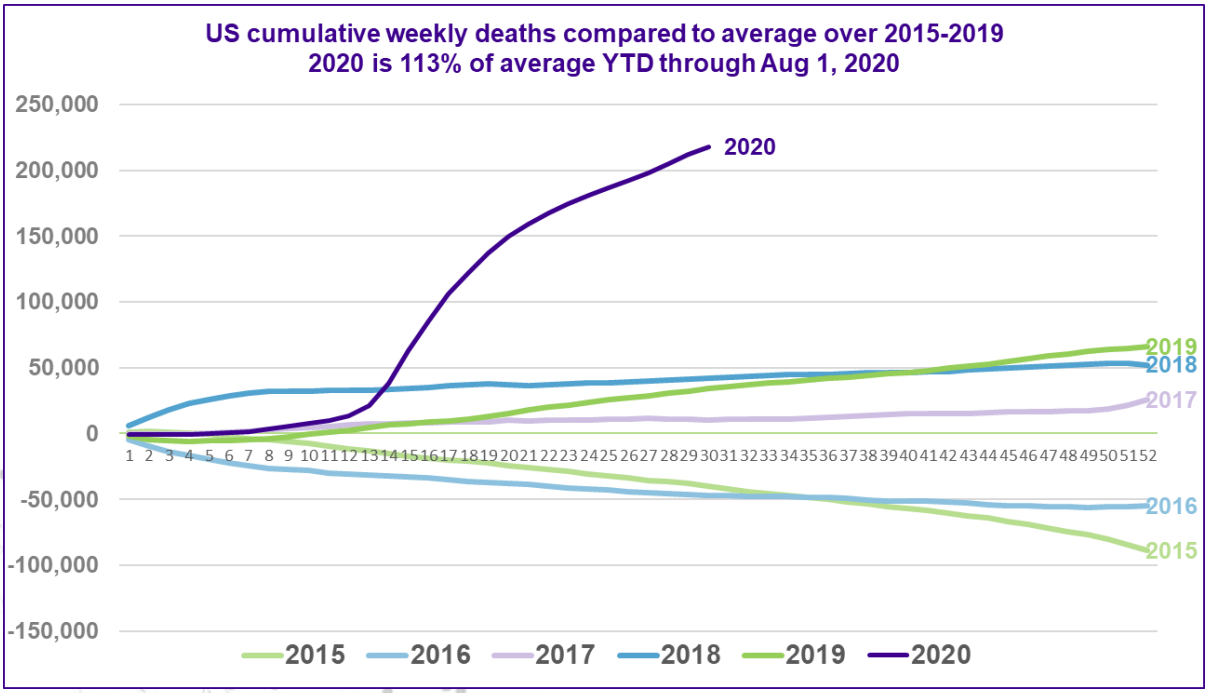
The CDC has come a long way on reporting up to date death data in the US since the start of the pandemic. At the time of writing (August 21, 2020) data for almost all states seem reasonable up to the end of June 2020, there are many states where the data seems reasonable up to the end of July 2020 and some with data up to August 8. We will present charts for each state up to where the data seems reasonable.

Current position of the US

The chart below shows the cumulative weekly deaths in the US for each year from 2015, relative to the average over 2015 to 2019. Note that the aging US population means we would expect the number of deaths to increase slightly each year, all else being equal.

The purple line shows the situation up to the end of August 1, 2020. Despite official estimates of 170,000 COVID-related deaths at August 21, we are seeing around *220,000 deaths* in excess of the five-year average of deaths occurring in the year by August 1 – and even this estimate is likely to be on the low side, as there are some large states that have not yet reported data for July. The period up to August 1 experienced at least 113% of the expected deaths at this point of the year (based on a five-year average).

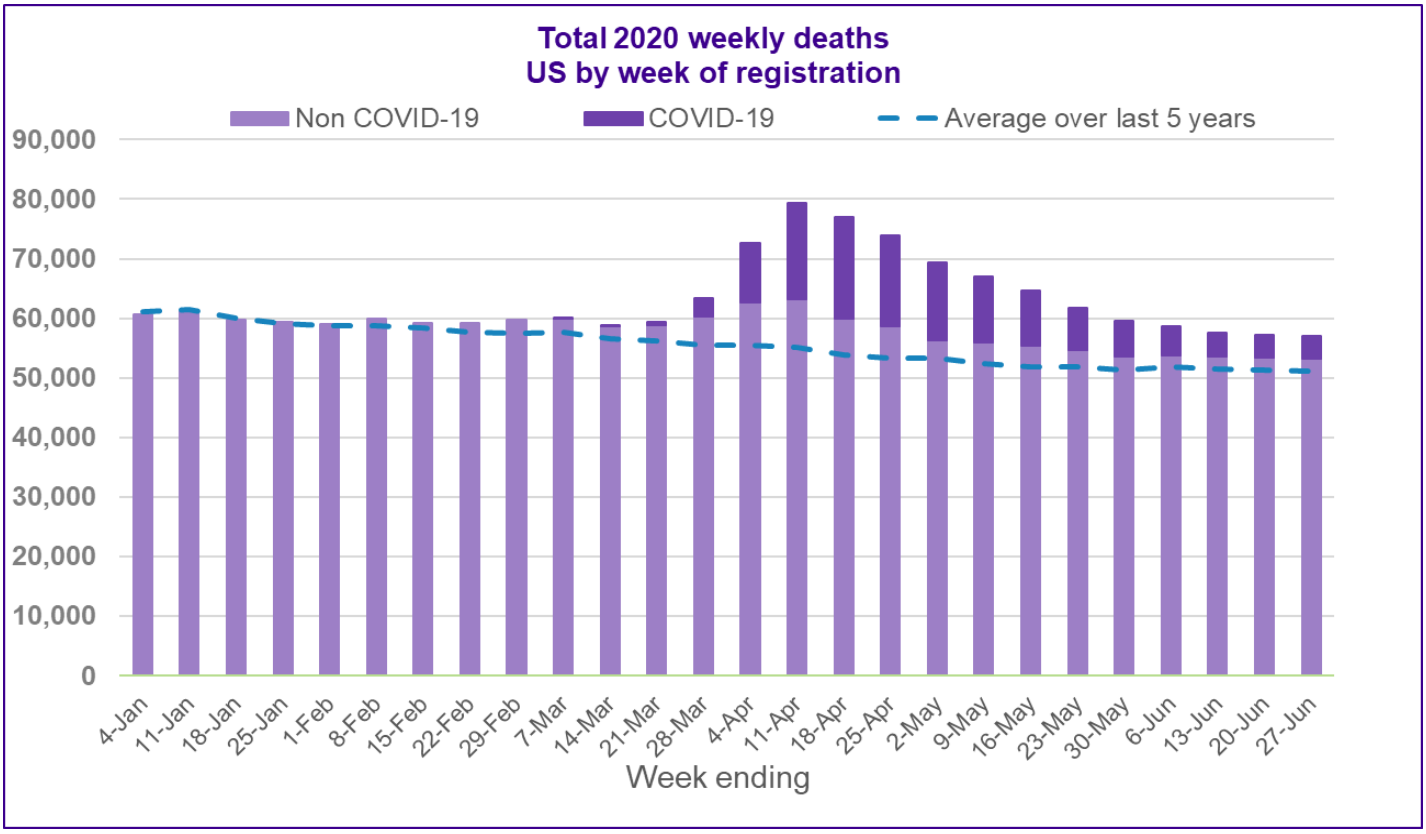
It's safe to say we are experiencing an extreme mortality event.



The next chart shows the number of deaths that registered in the US each week in 2020. The dark purple bars show deaths recorded as COVID related, the light purple bars show other deaths. The blue dashed line shows the average number of deaths for each week of the year based on the previous five years.

The chart shows more deaths being recorded than the previous average from the end of February. There is a distinct (and high) peak to these 'excess deaths' in April. Despite tailing off to a certain extent, there still remains a persistent and significant amount of excess deaths in the latest data.

Another thing we see is that many of these 'excess deaths' were not recorded as COVID-related. It seems likely that some of these excess deaths were in fact due to COVID and were not recorded as such. In understanding the true impact of the pandemic on the US, data on excess deaths will give us a more complete picture than deaths recorded as COVID-related.



In this article we will use similar charts to explore how the pandemic has spread across the US and how different states have been affected differently depending on when outbreaks first occurred.

The source for all the data used in this article is the [Weekly Counts of Deaths by State published on August 19, 2020 by the Center of Disease Control and Prevention (CDC).]

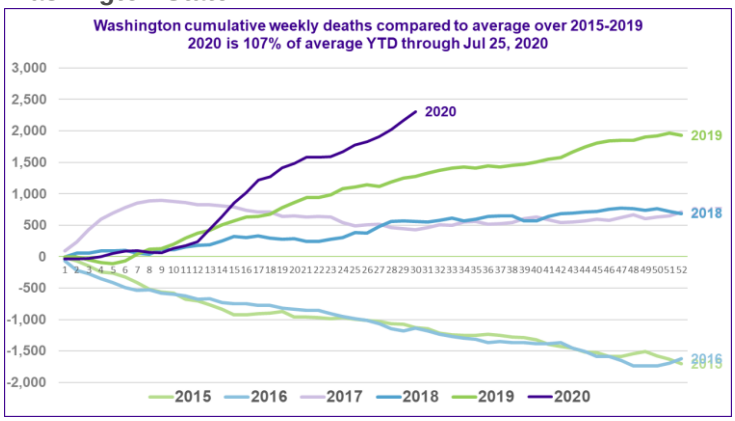
Charts for all states, New York City, District of Columbia and Puerto Rico can be found in the appendix.

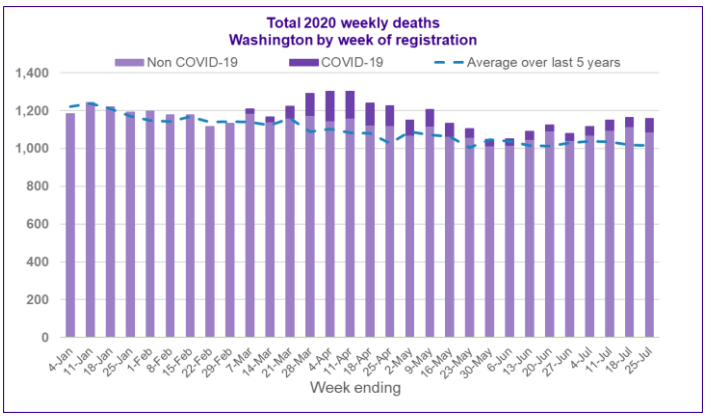
The development of the pandemic

Beginnings

The US pandemic started with a small outbreak in Washington State, with the first death being registered just outside Seattle on February 29th. No major outbreak followed for some time following these initial deaths. There has been a small ‘second wave’ in Washington State in July but overall 2020 mortality for has only reached 107% of the 5-year average for July.

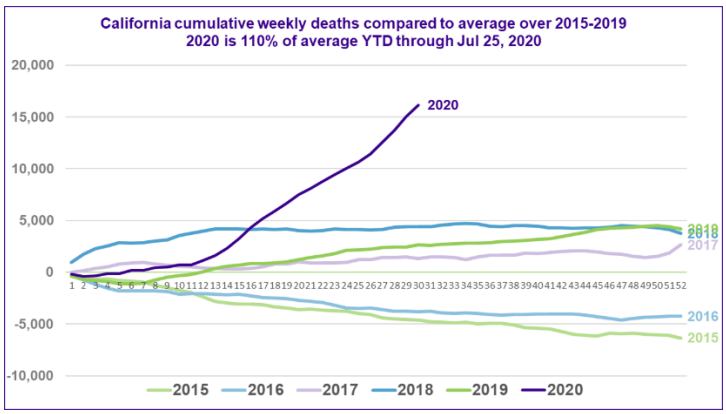
Washington State

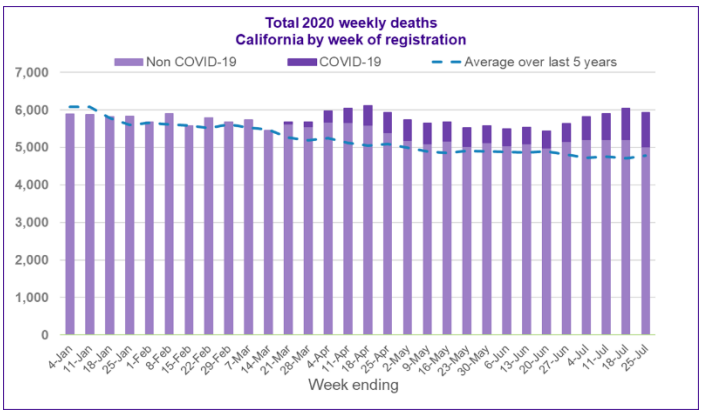




The first death outside Washington State occurred in northern California on March 4th. Again, no major outbreak occurred in California, although persistent excess deaths in the state show that the virus was never completely brought under control.

California

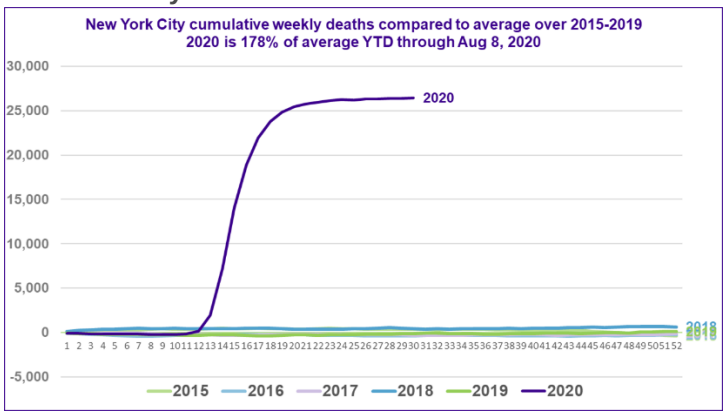


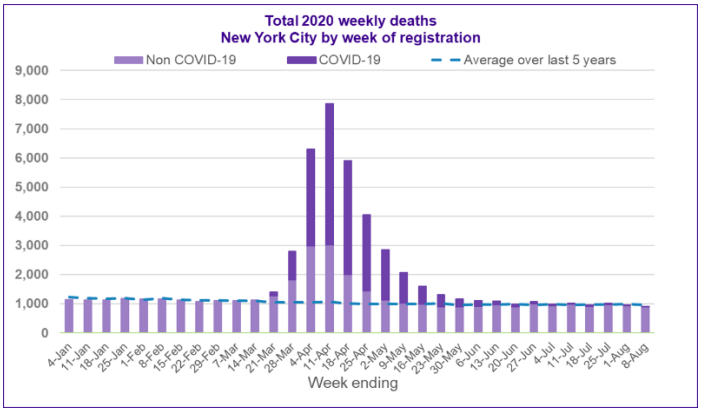


The arrival in the East

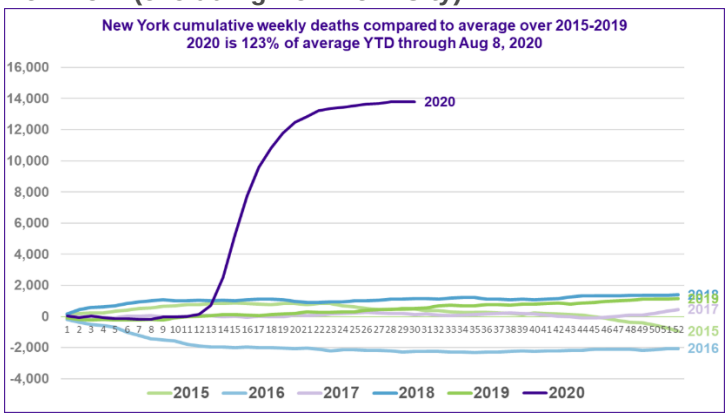
Serious outbreaks began shortly thereafter in the New York City region. The pandemic took a serious toll on NYC and its suburban area. NYC’s spike in excess mortality was the most severe seen in the US to date and was followed quickly by similar increases in its surrounding area. Significant mitigation measures were put in place through this period, seemingly bringing the virus largely under control by late May – early June.

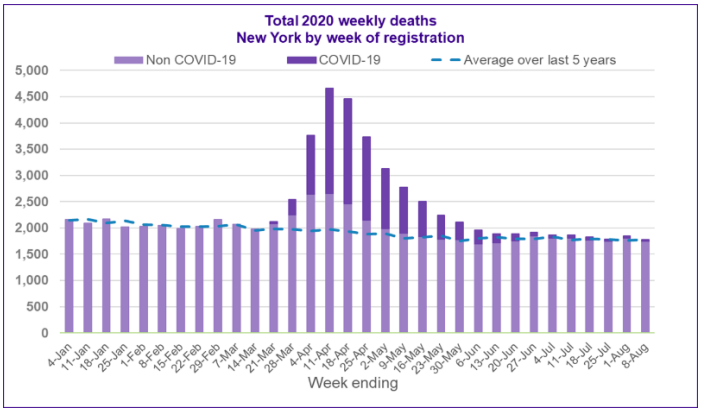
New York City



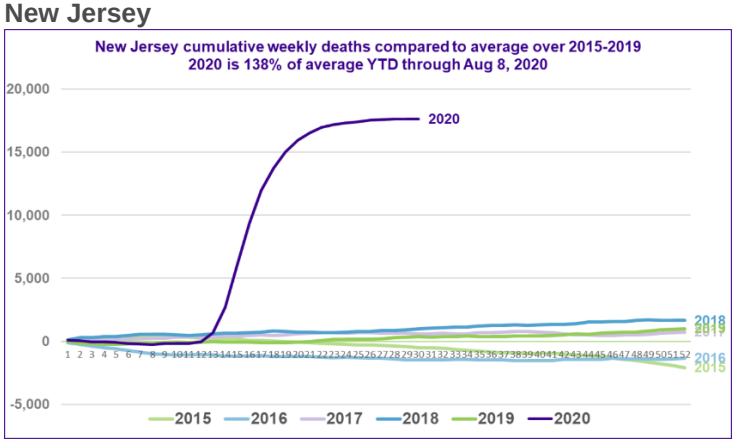


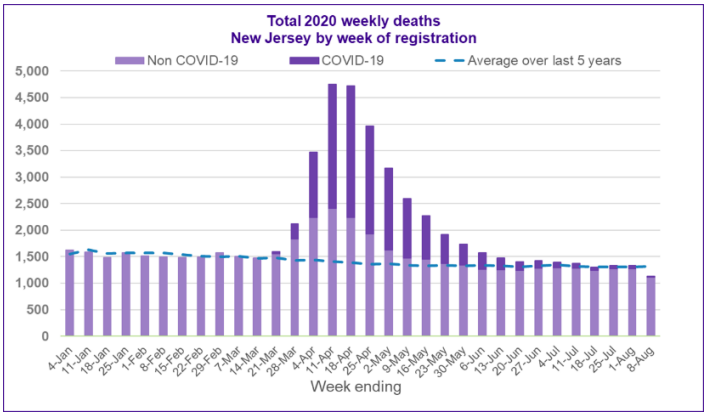
New York (excluding New York City)



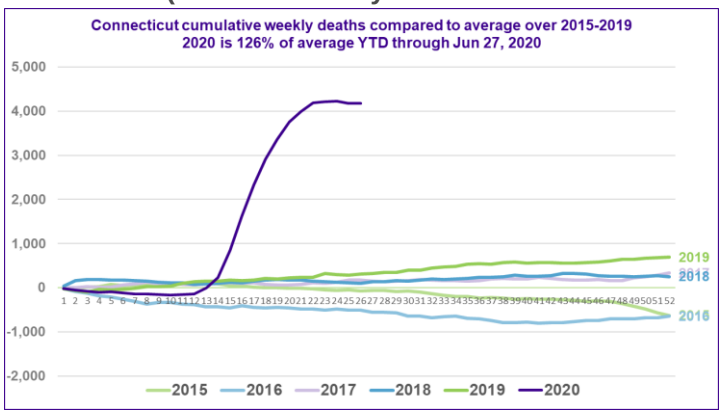


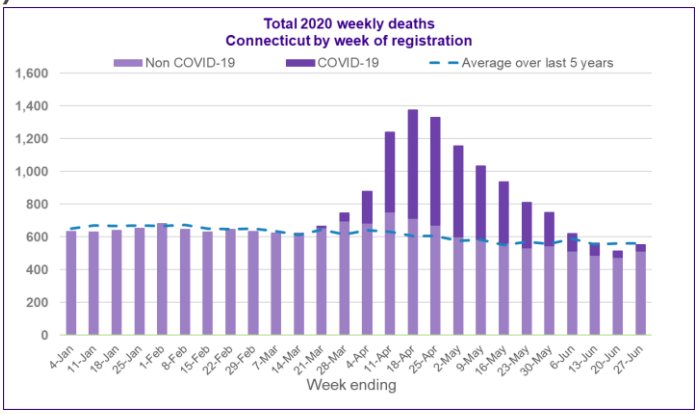
New Jersey





Connecticut (note data is only available until end of June)





Seeding to other metropolitan areas

The outbreak in New York seemed to seed a wave of outbreaks of the virus in other metropolitan areas such as Detroit, Washington DC and Chicago.

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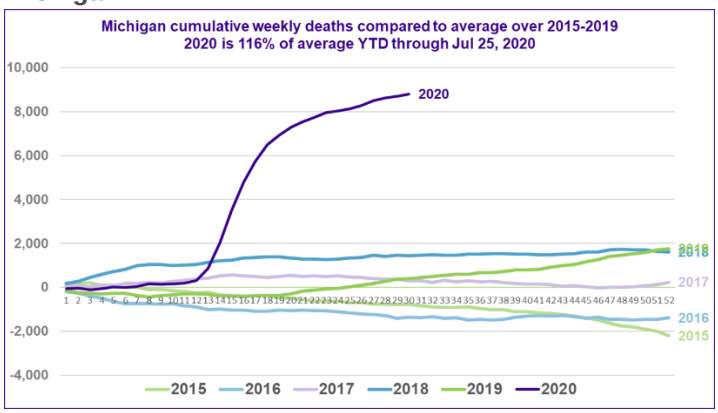
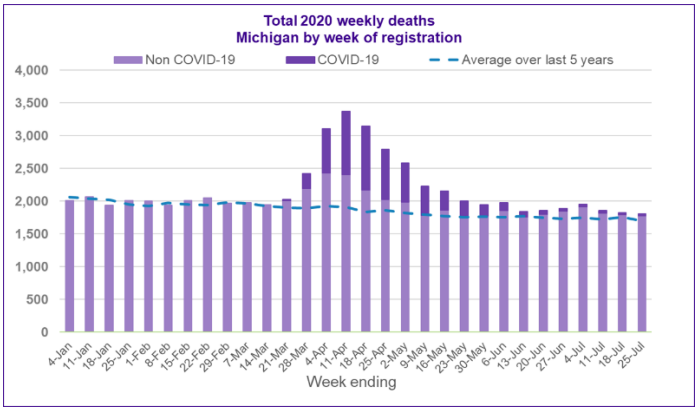
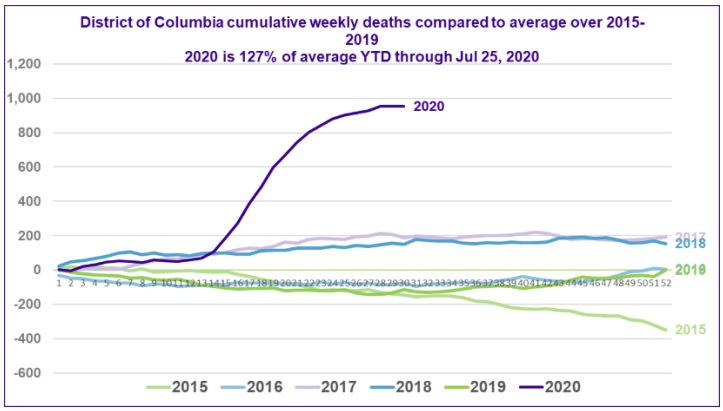
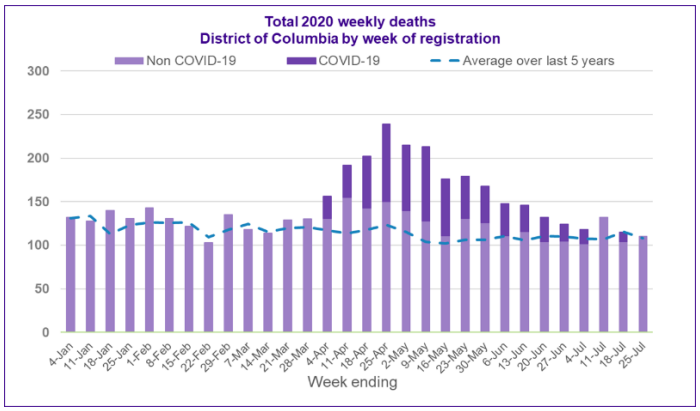


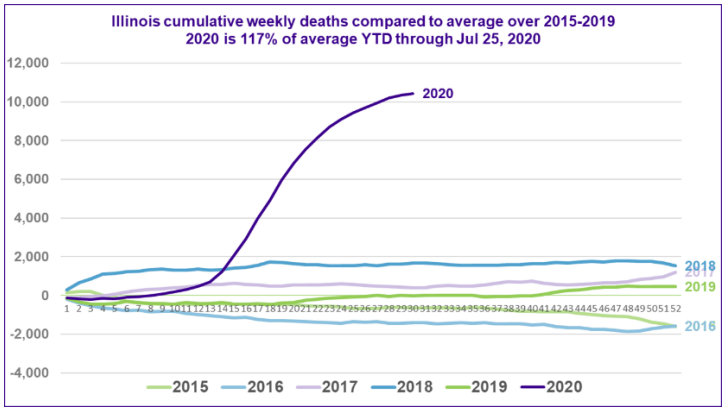


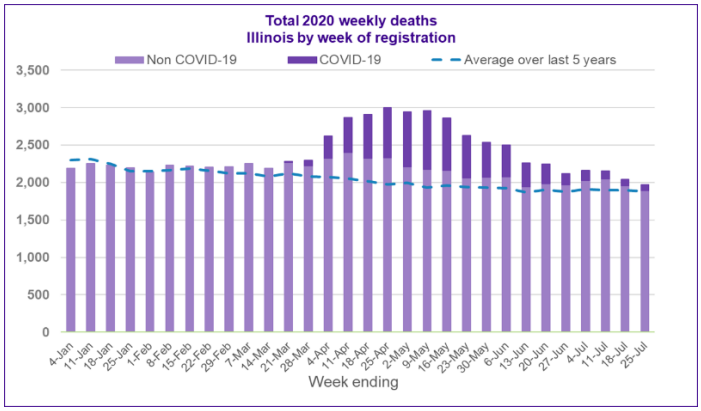
District of Columbia





Illinois

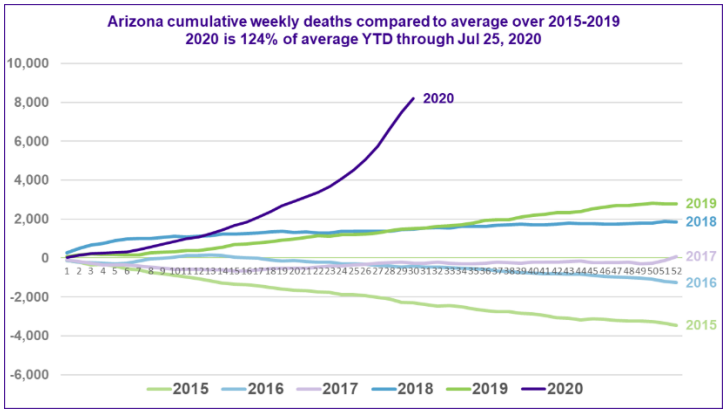


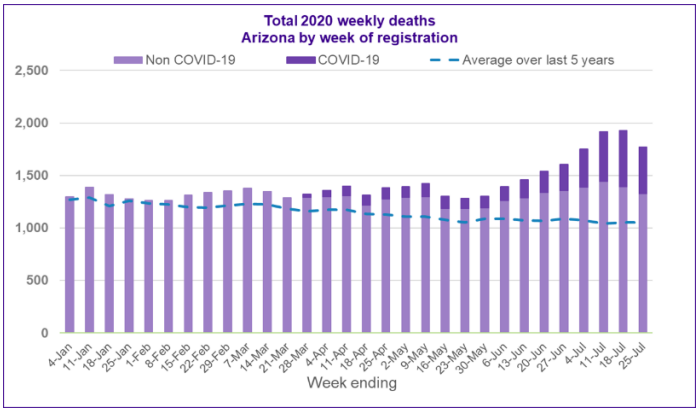


Spread to the sunbelt states

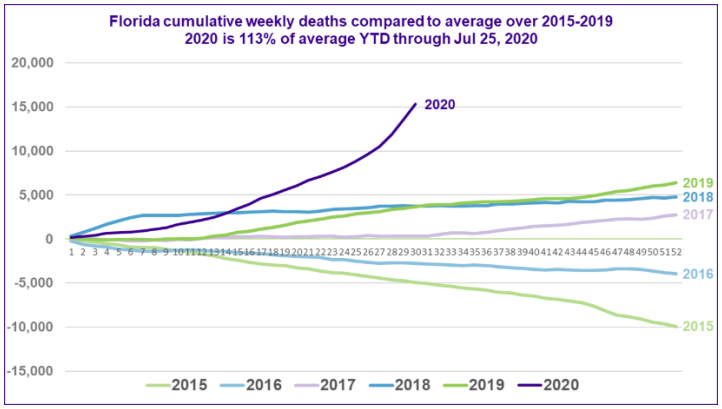
In the last month, sunbelt states have seen a significant increase in COVID-19 cases, leading to excess mortality in that region. While the New York City, Chicago and Detroit regions seem to have flattened the curve, these states are continuing to see increasing mortality:

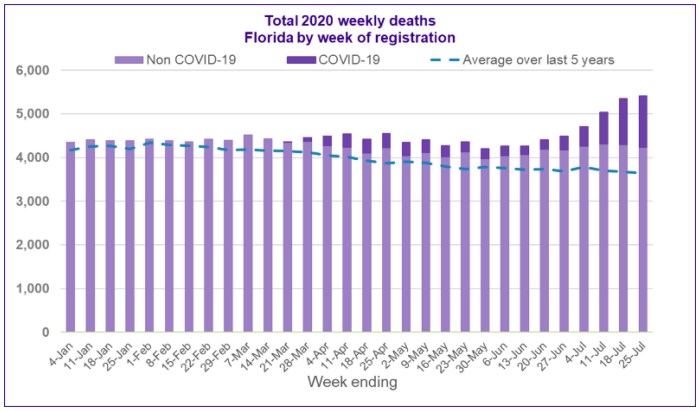
Arizona



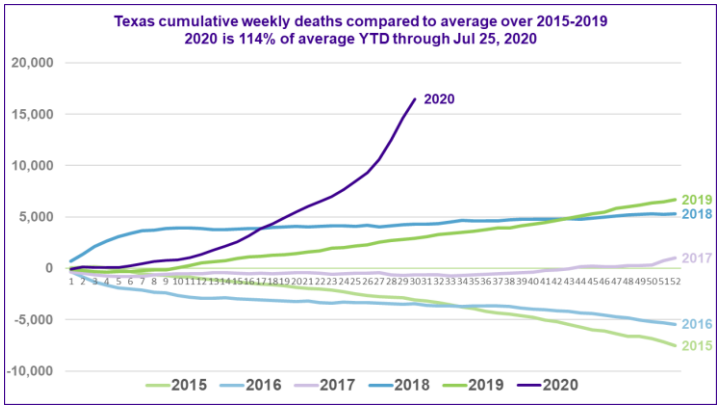


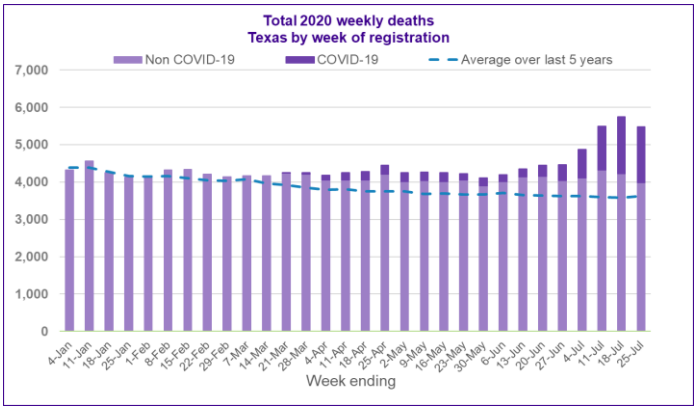
Florida





Texas





What's next?

The pandemic is far from controlled in the US. With summer vacations ending, pressure for kids to return to school and for universities to open, there could easily be an uptick in outbreaks on the horizon. There is some hope that natural immunity built up in areas previously hit by outbreaks may help protect people from a second wave, however, the infection rates seem to be too low for this to have a significant effect.

A government initiative called Operation Warp Speed (OWS) has been introduced with a target of producing 300 million doses of safe effective vaccine for COVID-19 by January 2021. A key objective is to streamline the approval process for vaccines by government regulators overseeing testing protocols and conducting many of the traditional steps towards vaccine production simultaneously. However, even the most optimistic time scales for a vaccine still seem some time away.

It looks like face masks and social distancing will be with us for a while longer.

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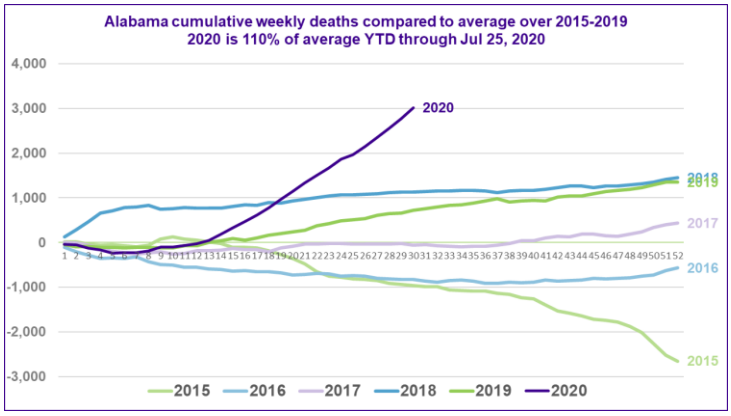
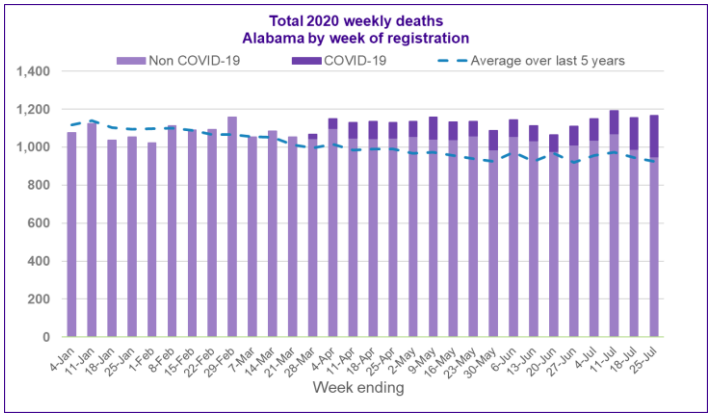
CPO, Club Vita

Dan Reddy FSA EA MAAA
CEO, Club Vita US

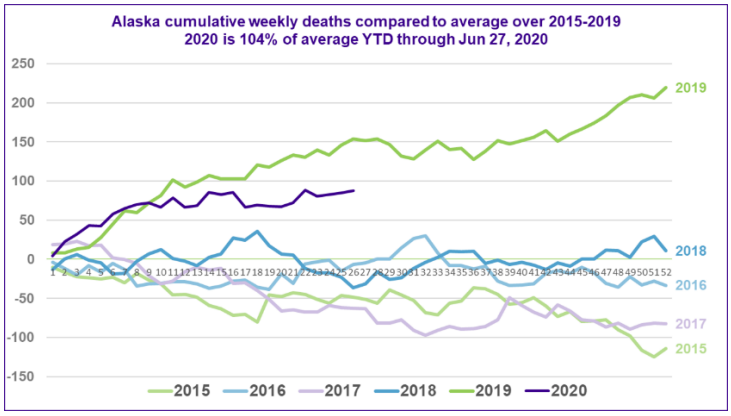
Appendix: Charts for all states, New York City, District of Columbia and Puerto Rico

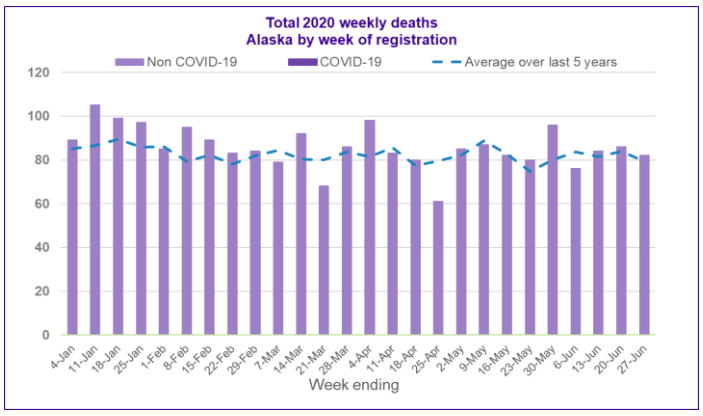
Alabama



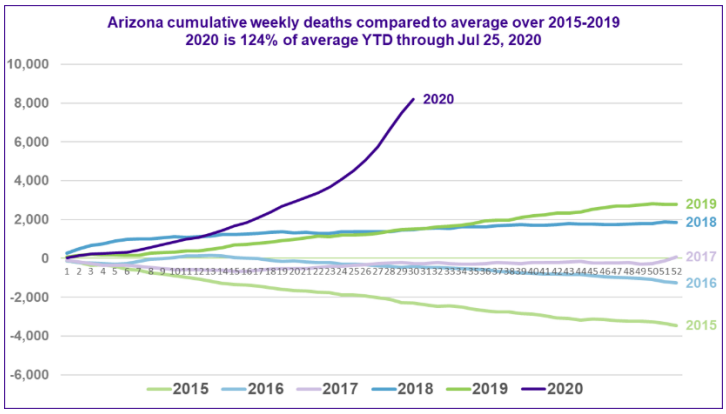


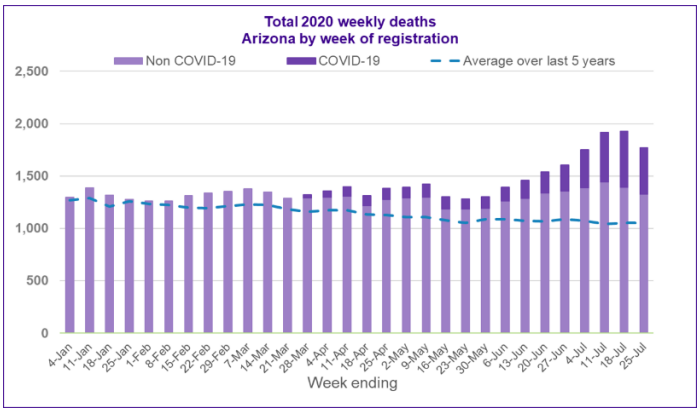
Alaska



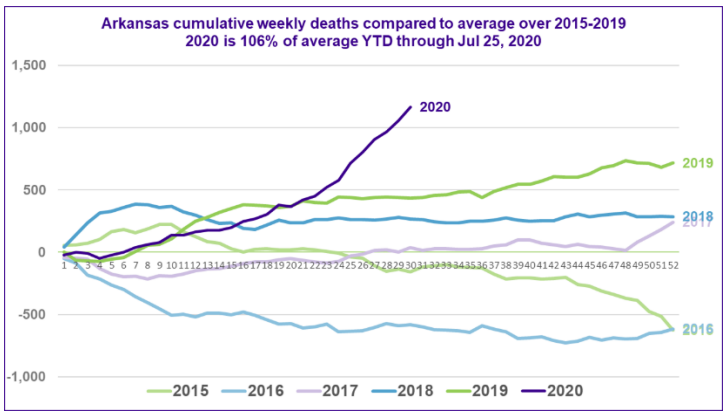


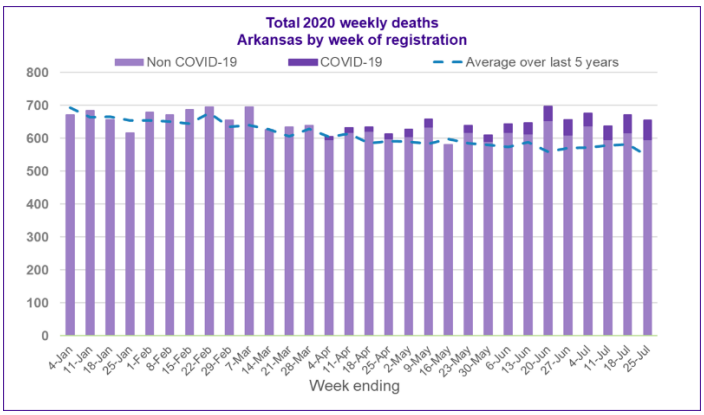
Arizona



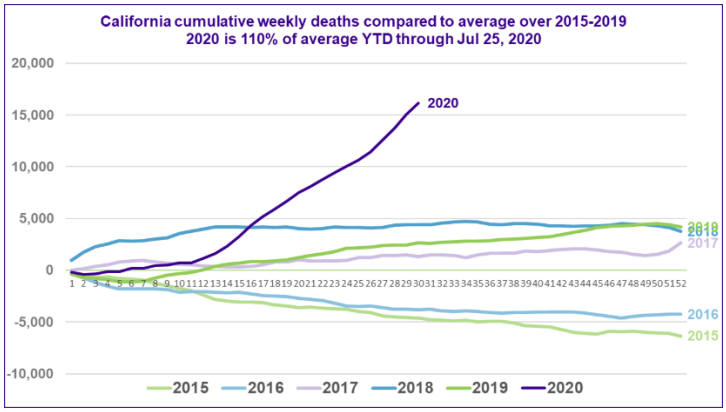


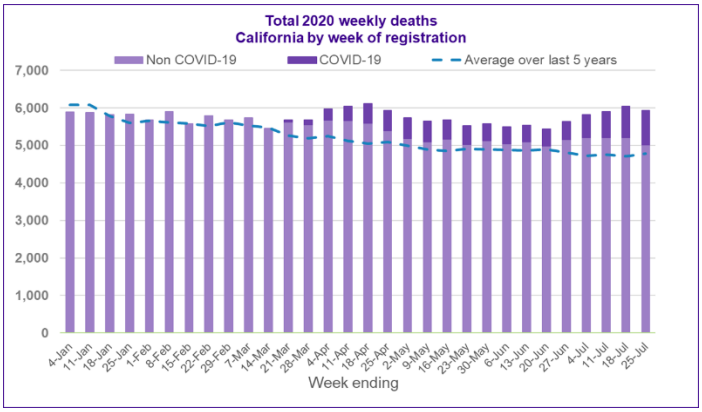
Arkansas



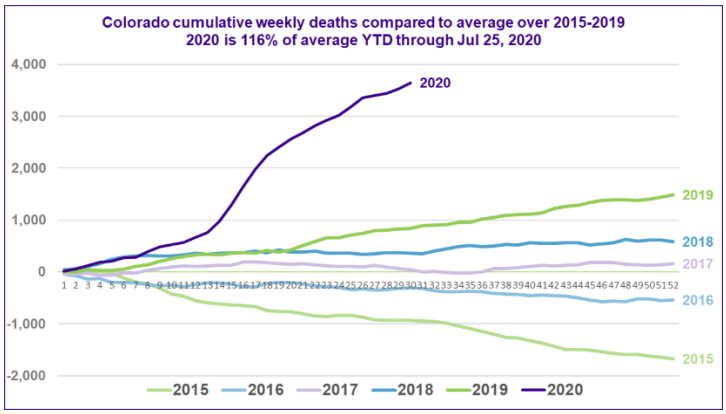


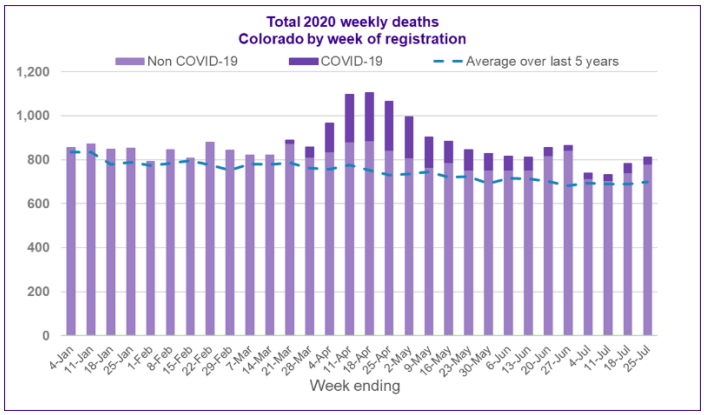
California



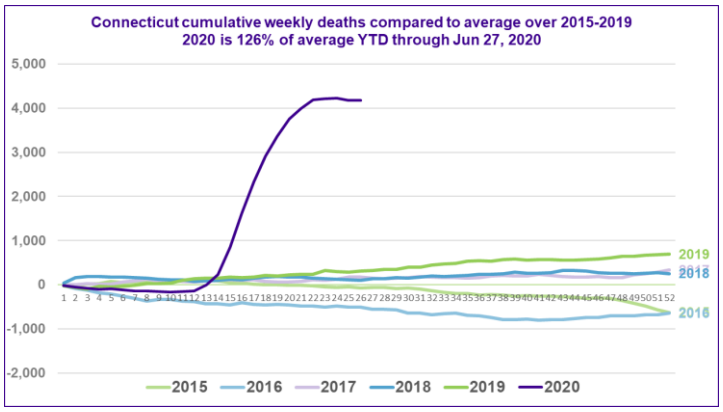


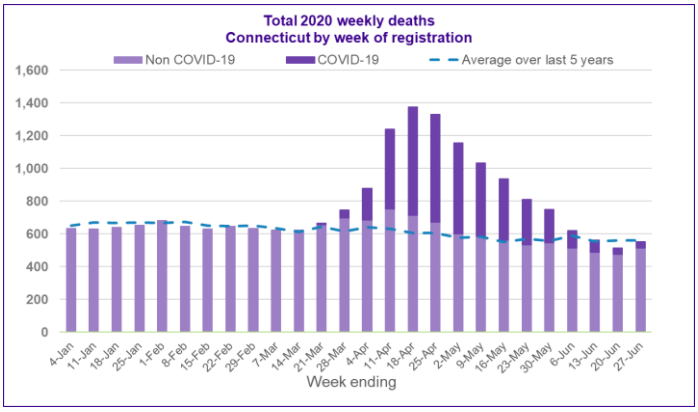
Colorado



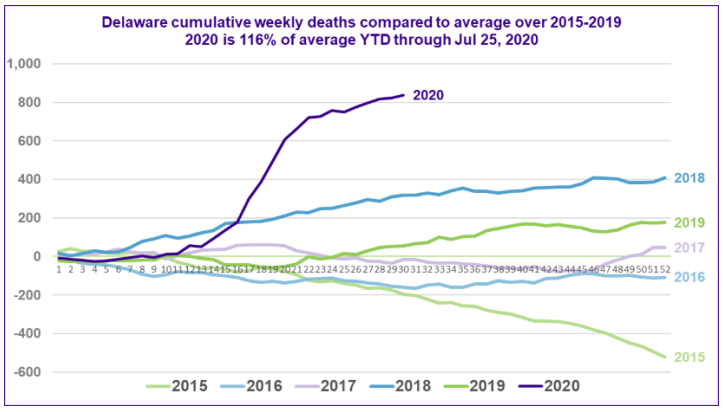


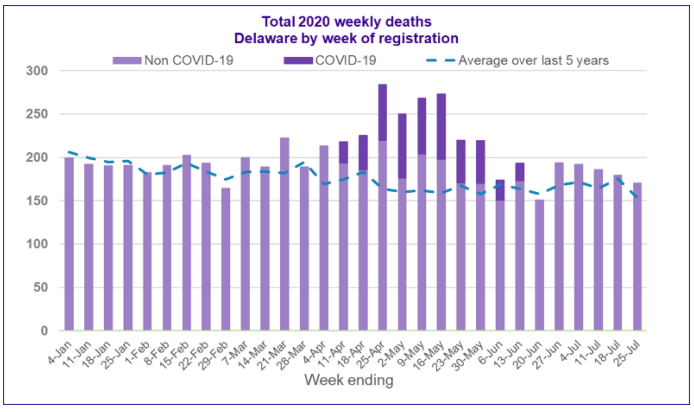
Connecticut



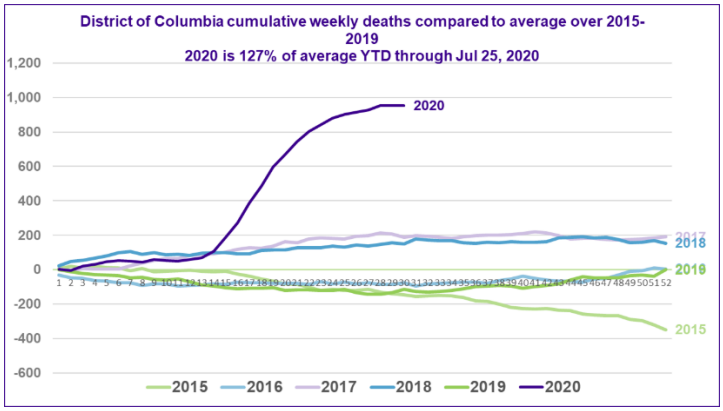


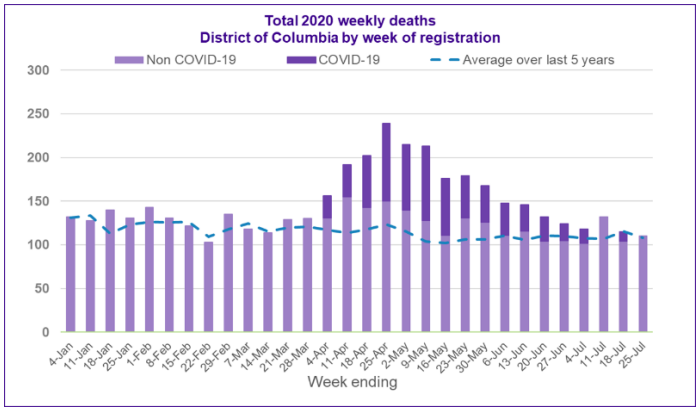
Delaware



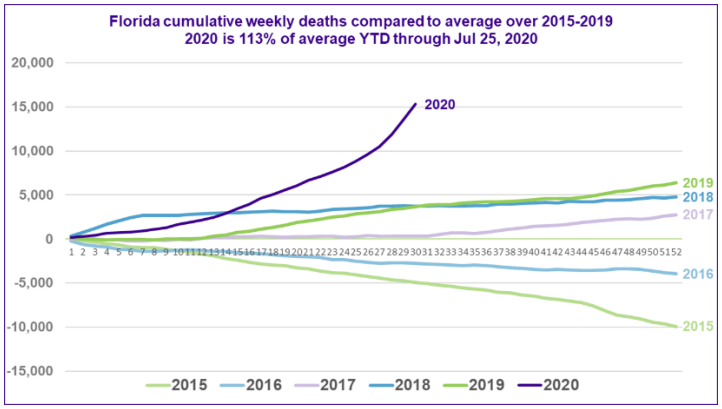


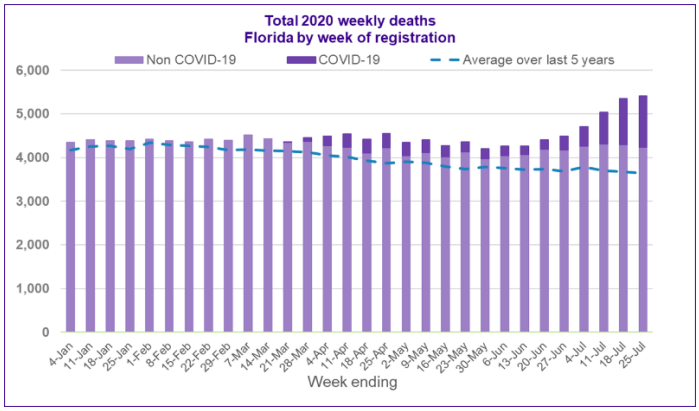
District of Columbia



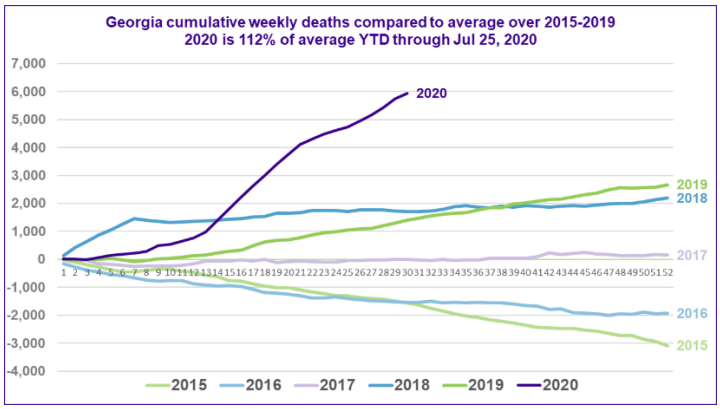


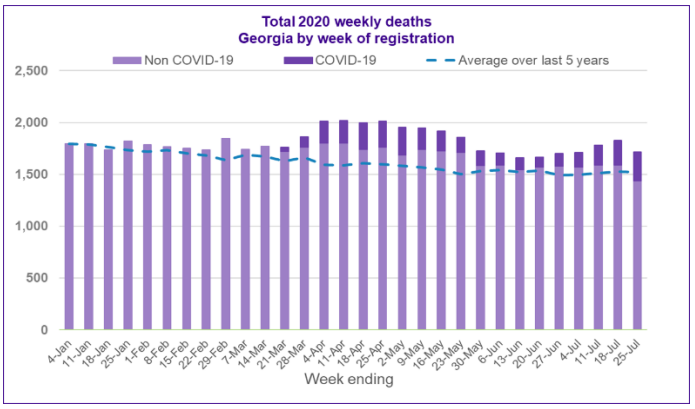
Florida



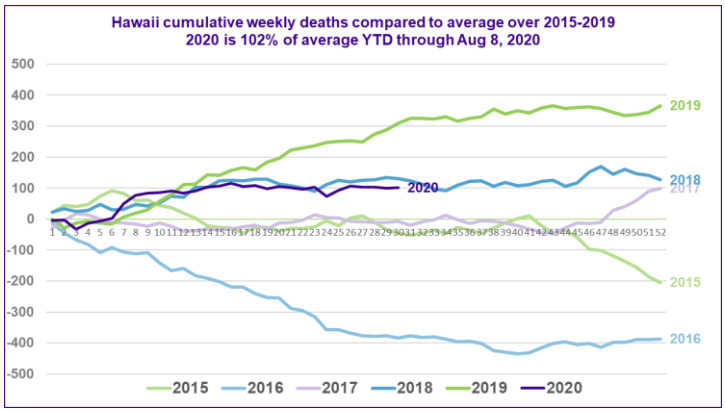


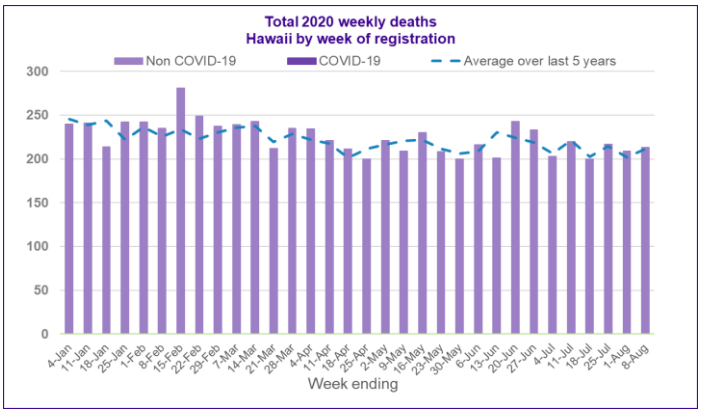
Georgia



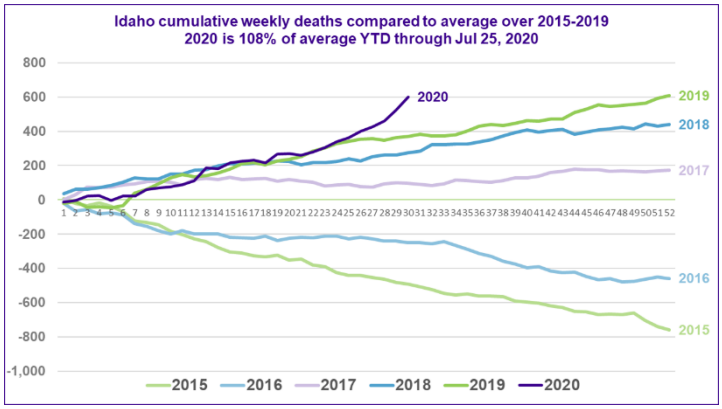


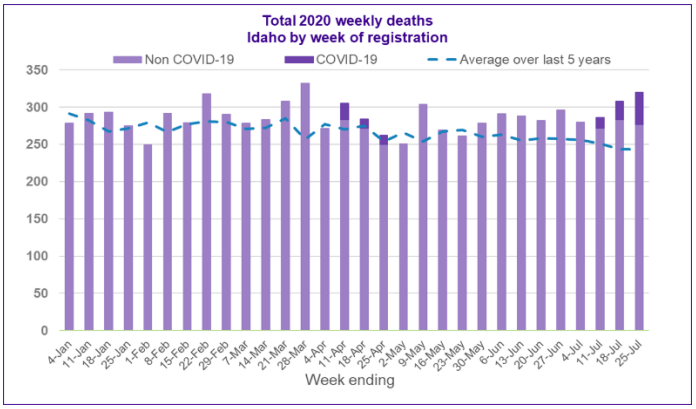
Hawaii



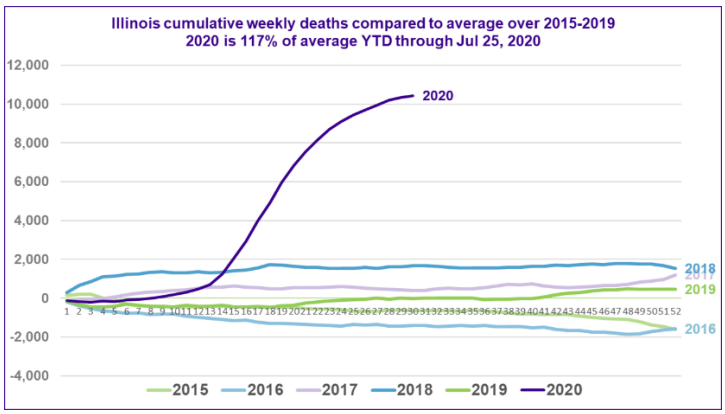


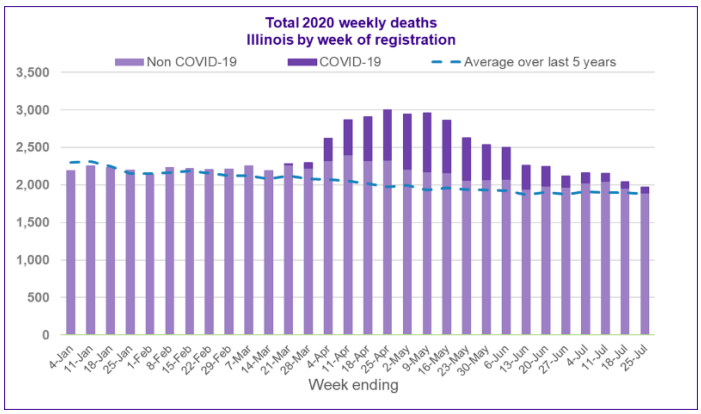
Idaho





Illinois





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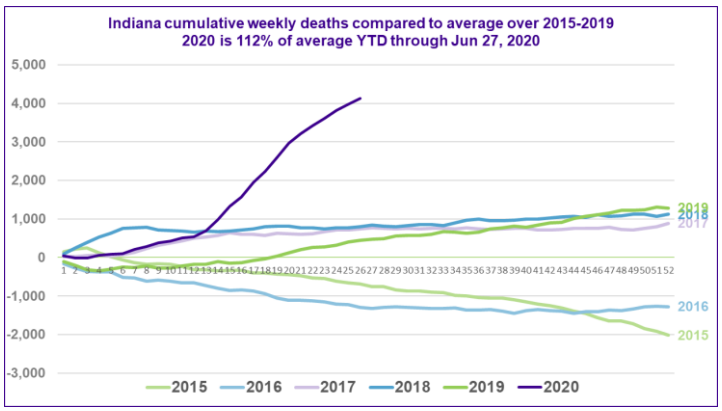

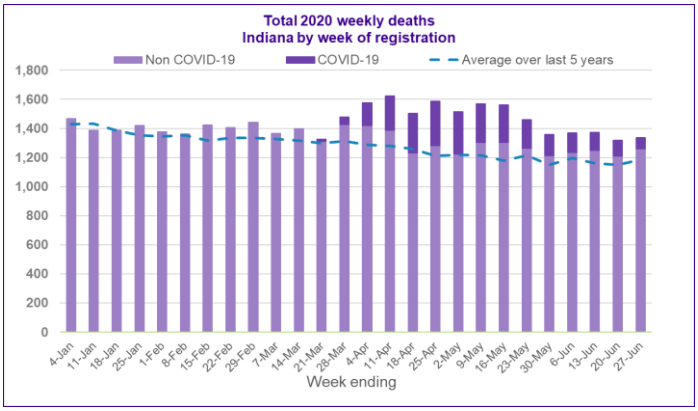

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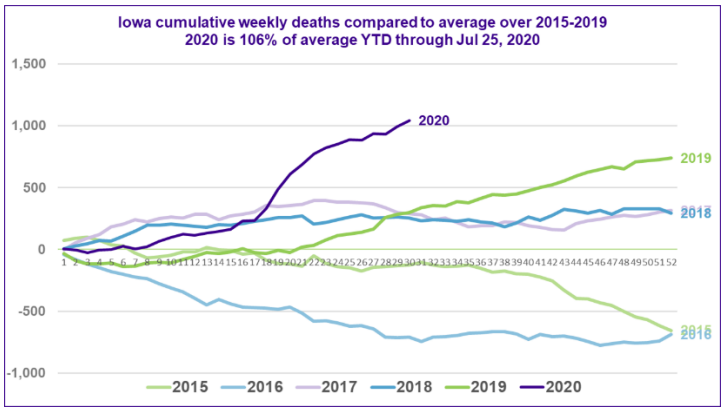

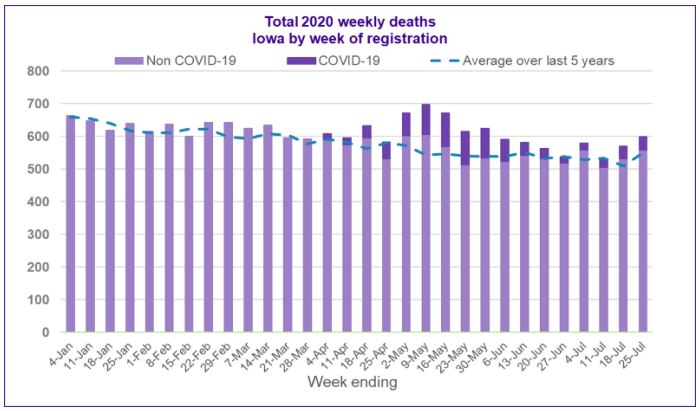

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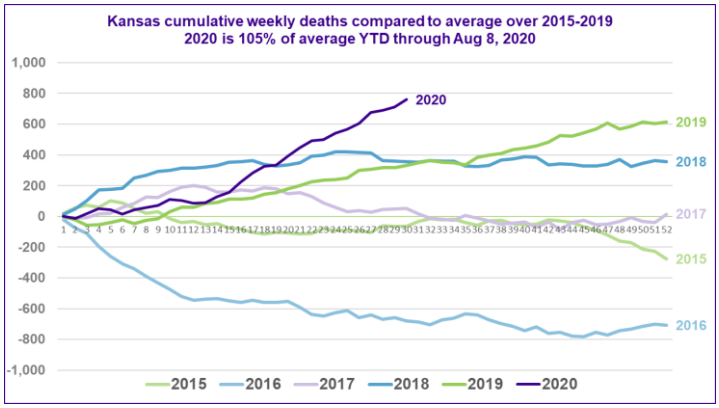

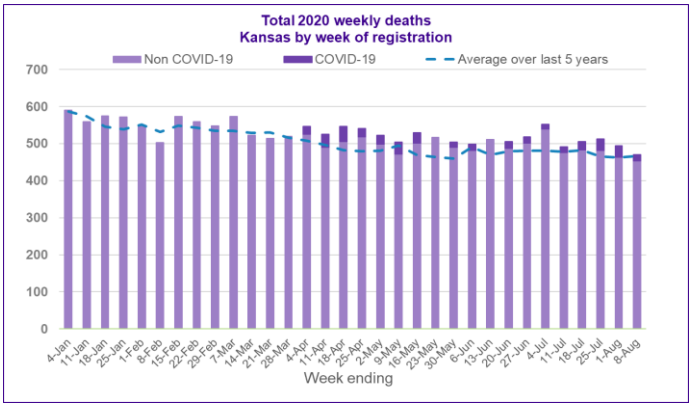

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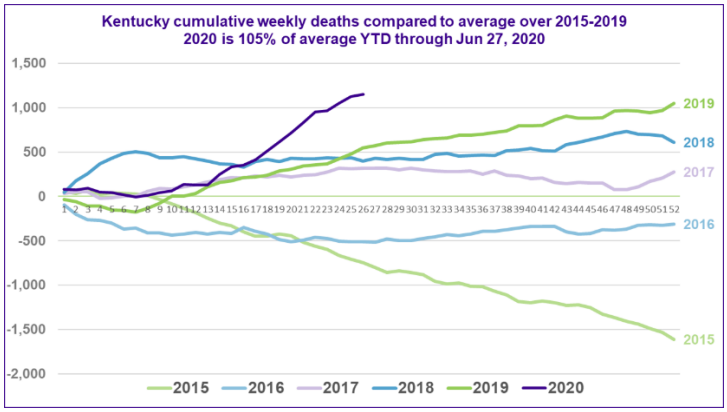

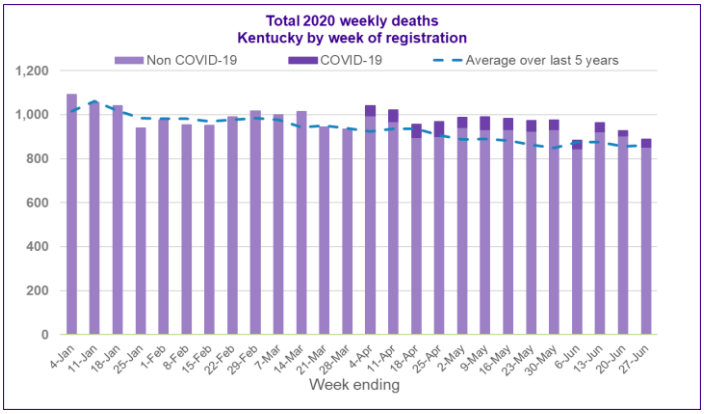

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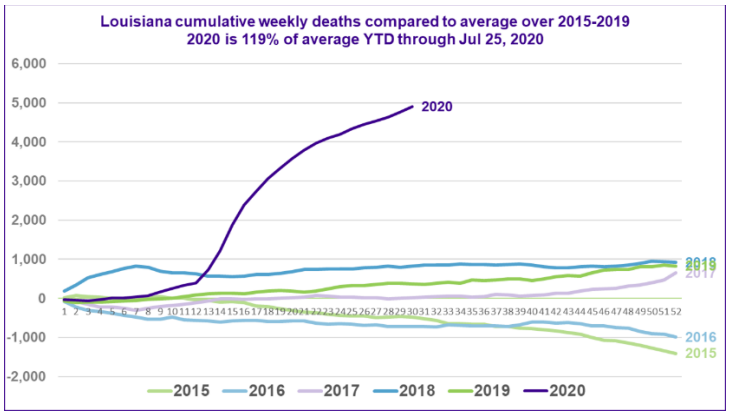

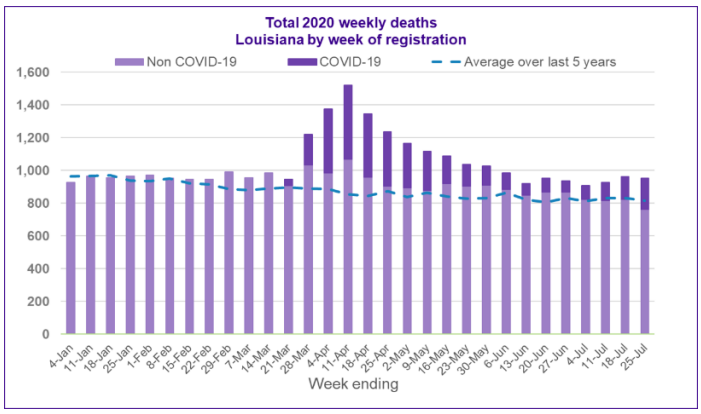

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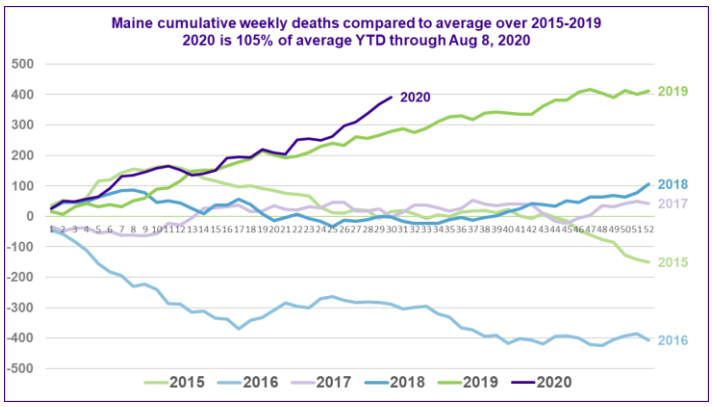

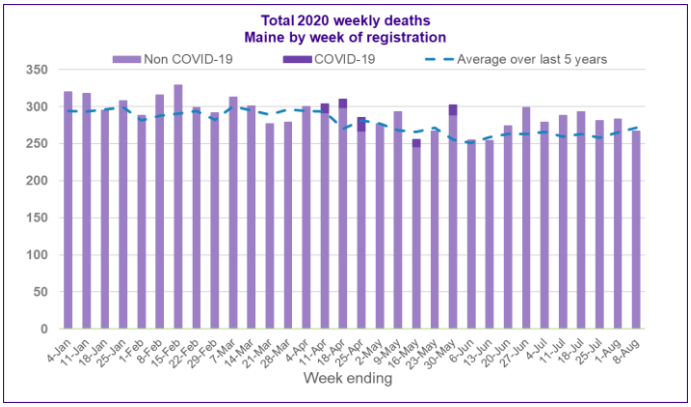

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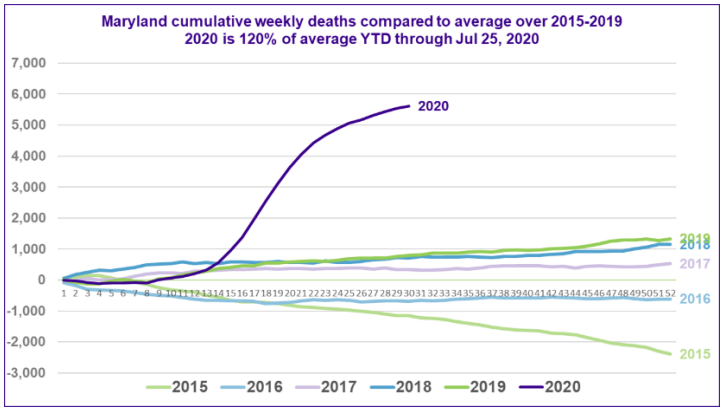

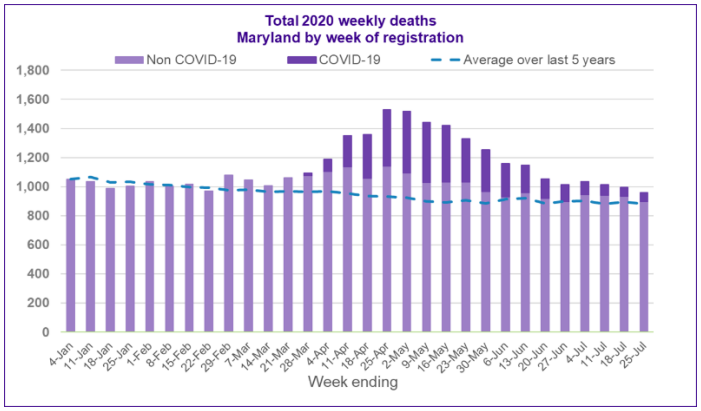

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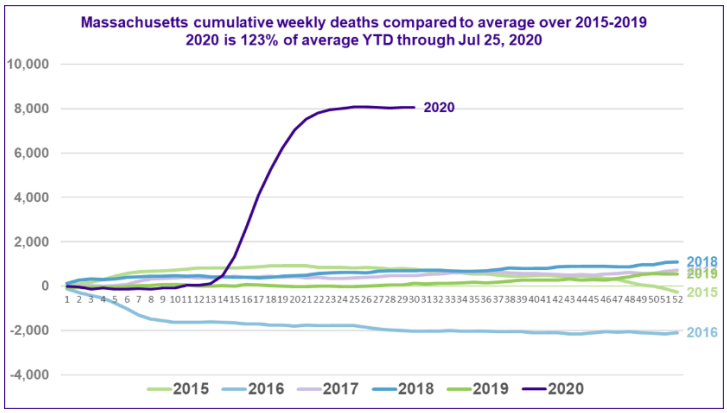

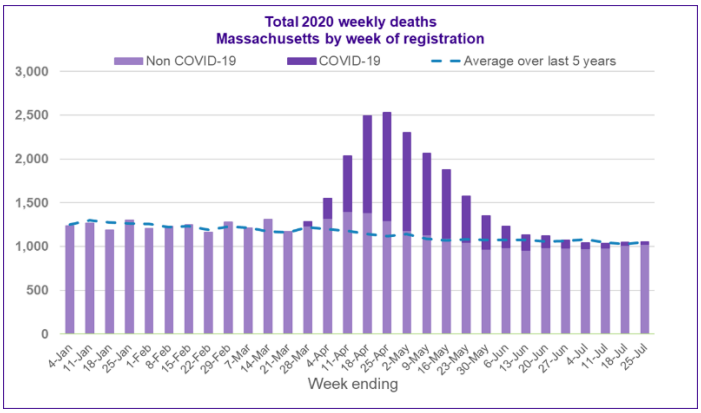

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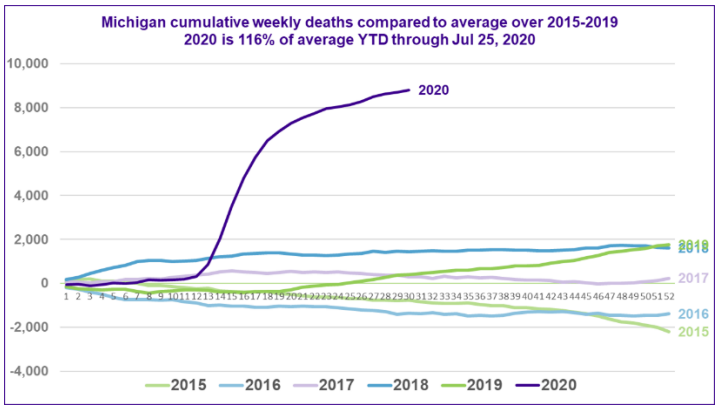

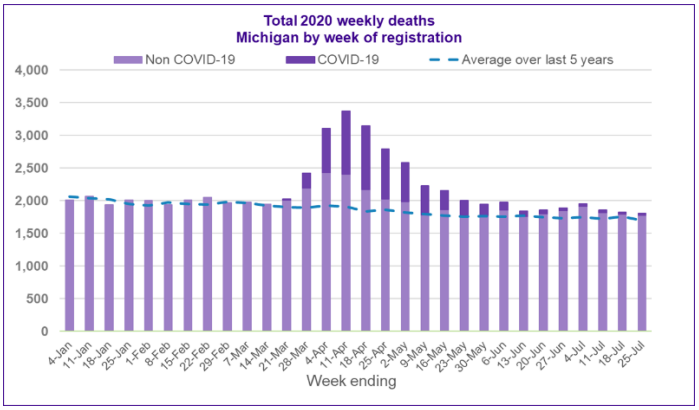

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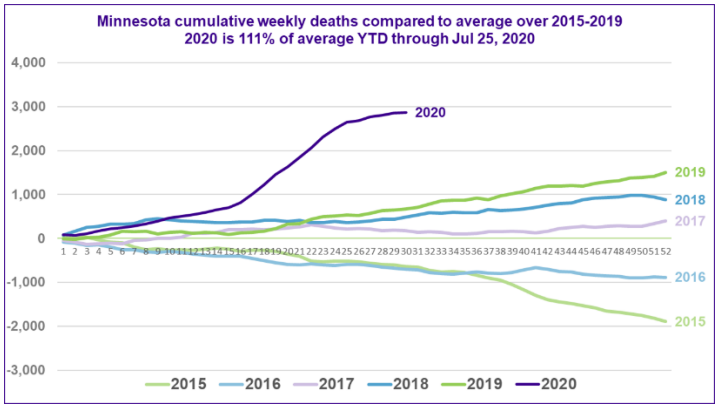

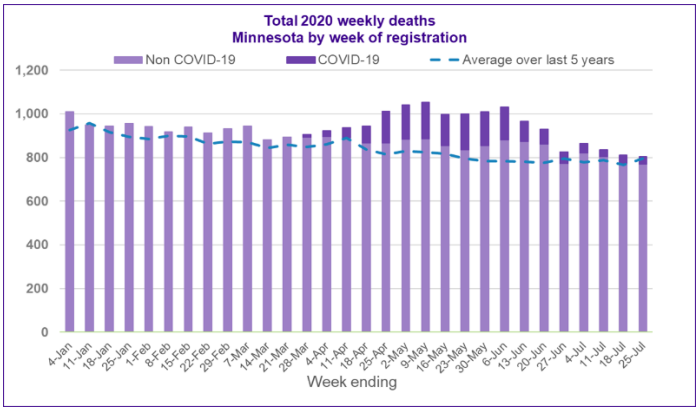

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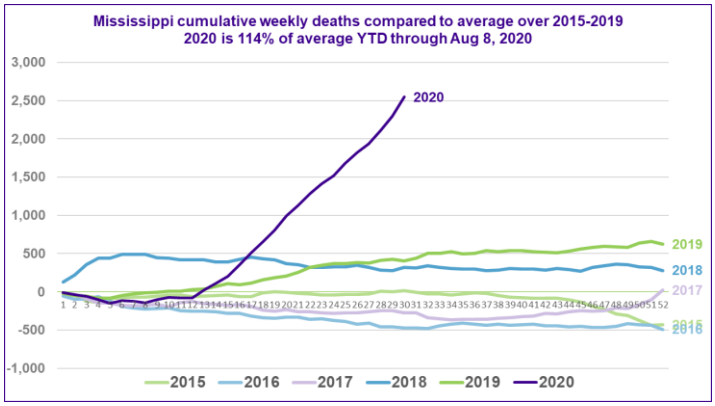

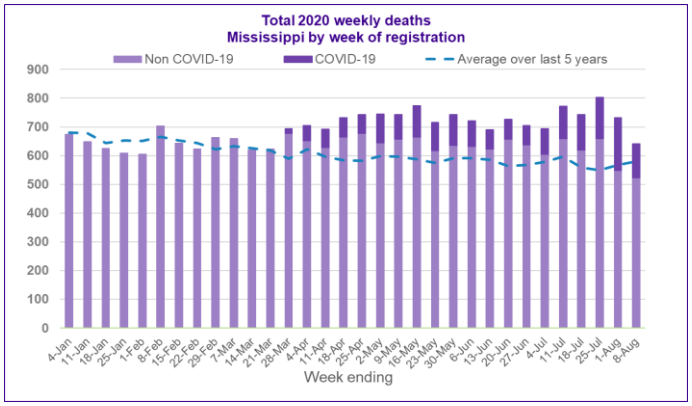

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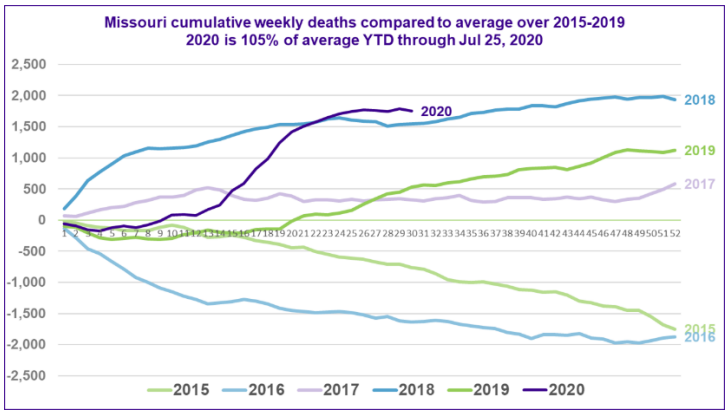

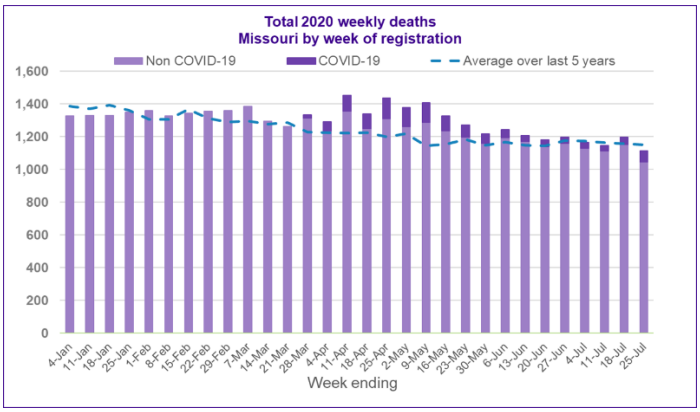

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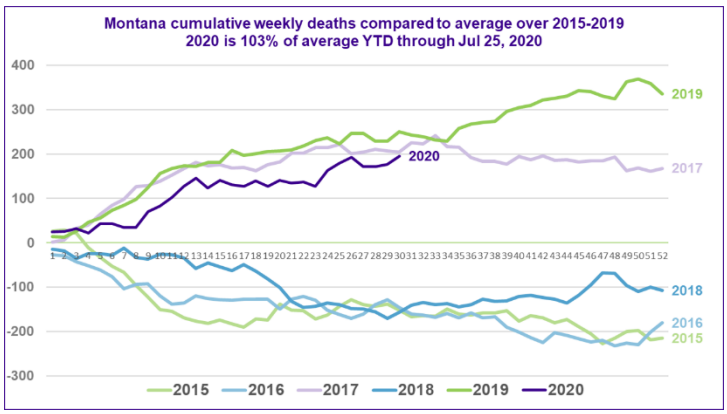

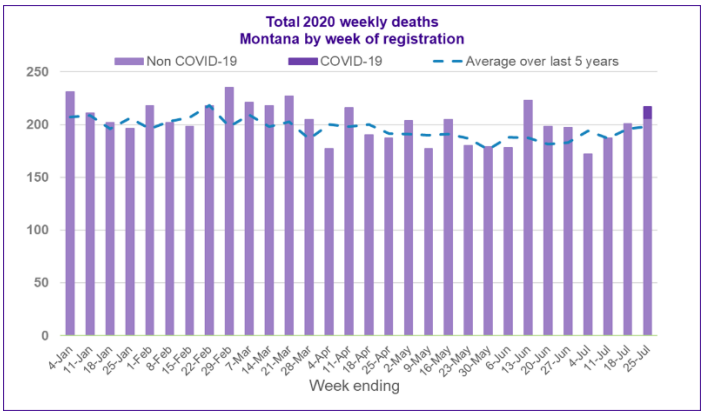

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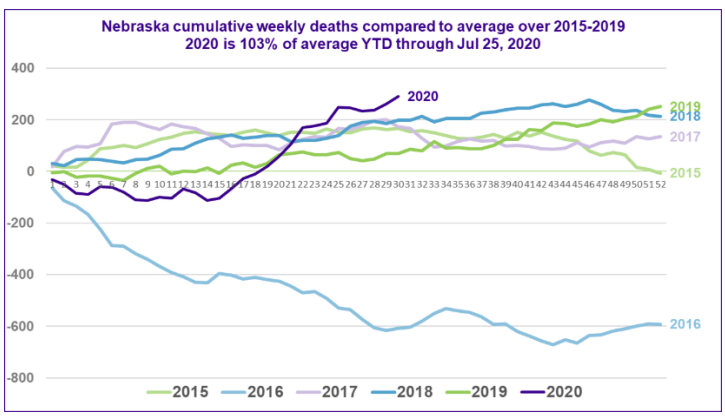

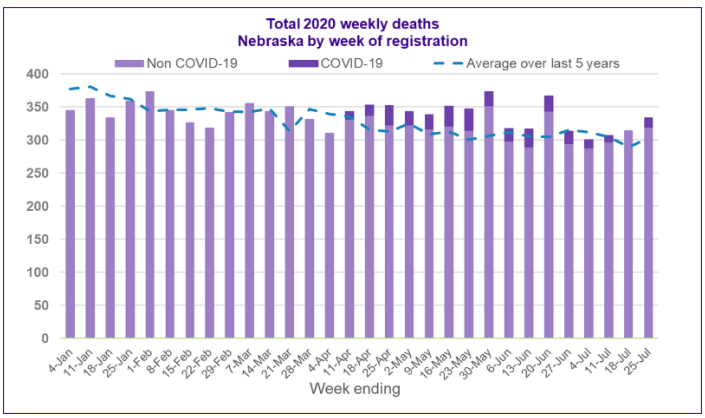

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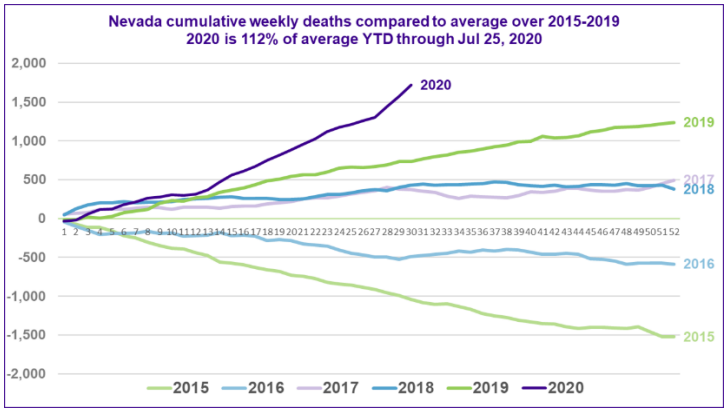

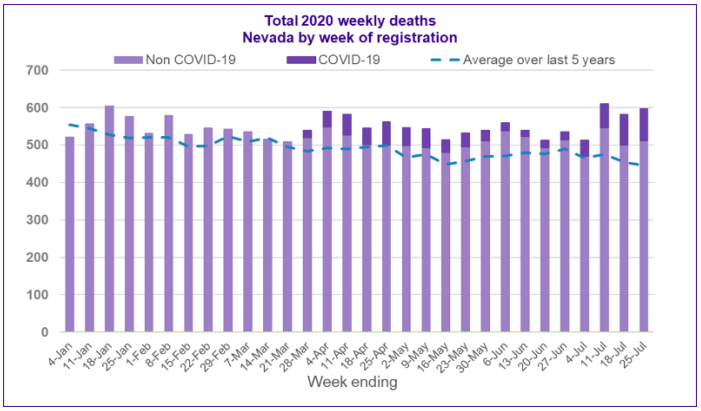

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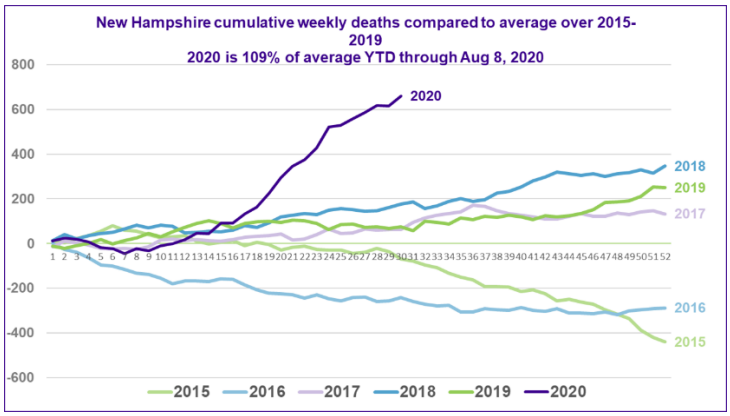

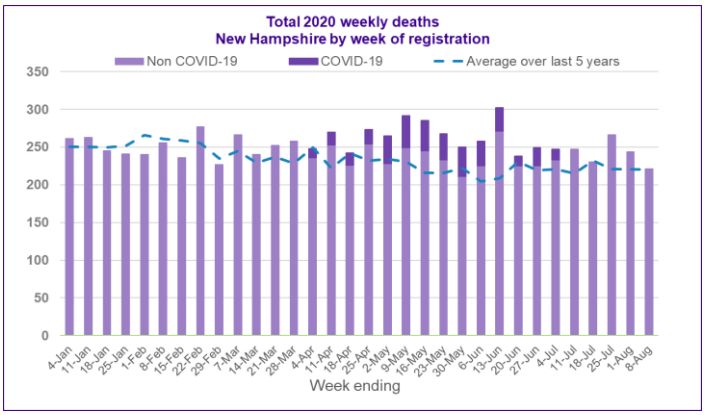

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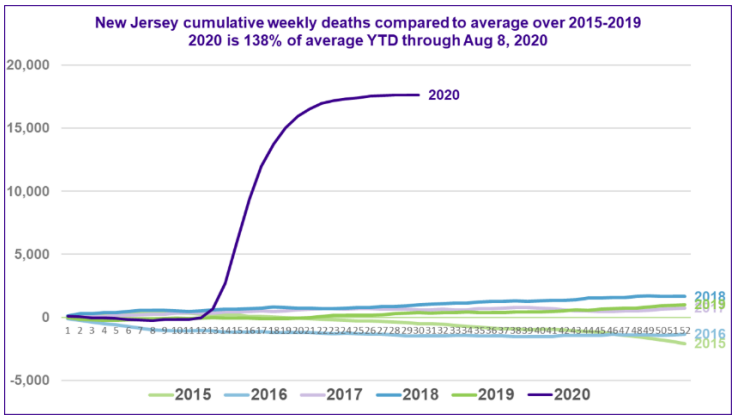

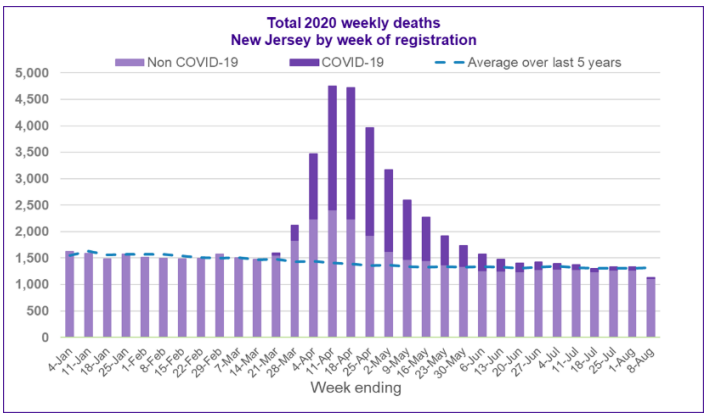

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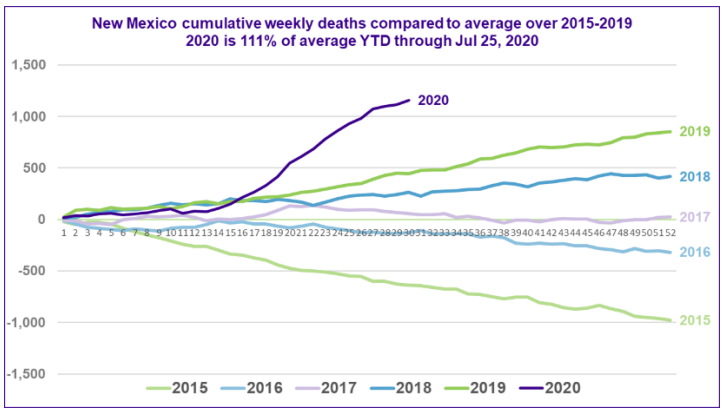
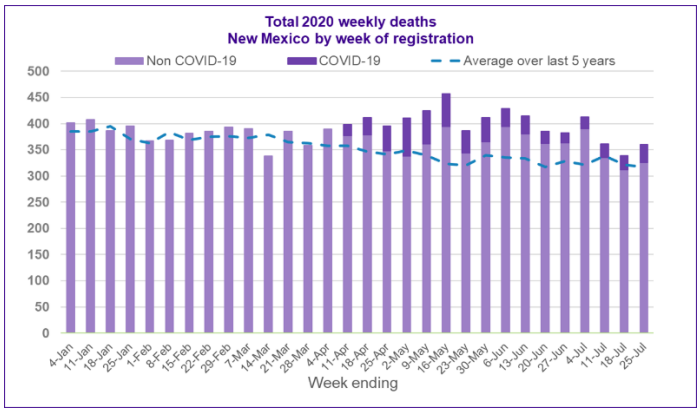
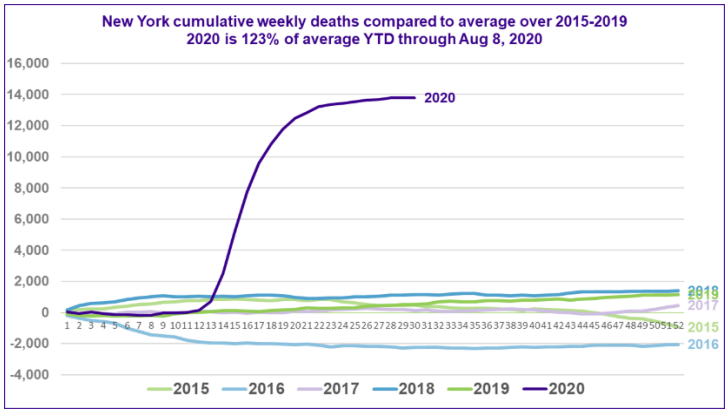
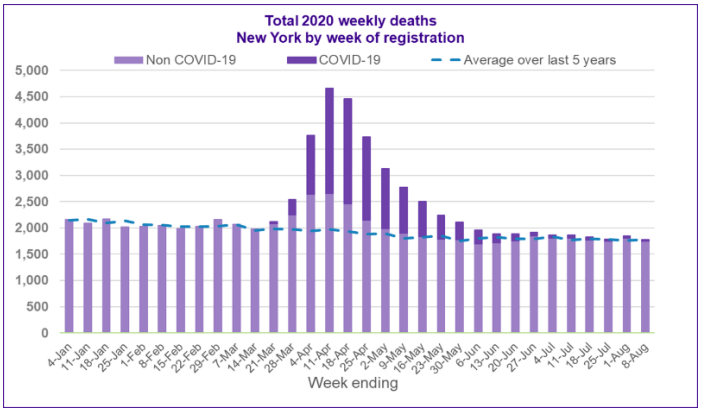




New York (exc New York City)





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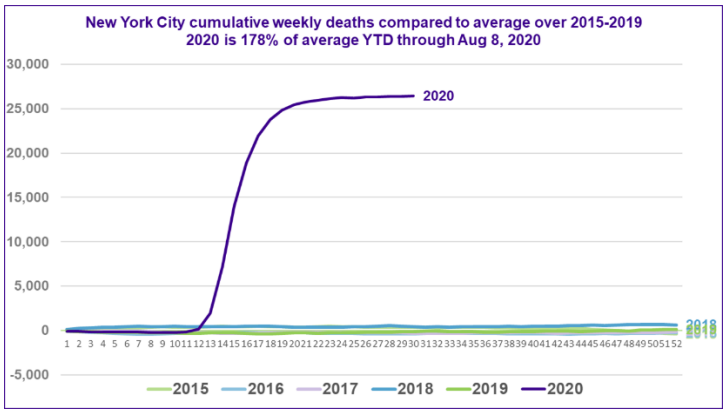
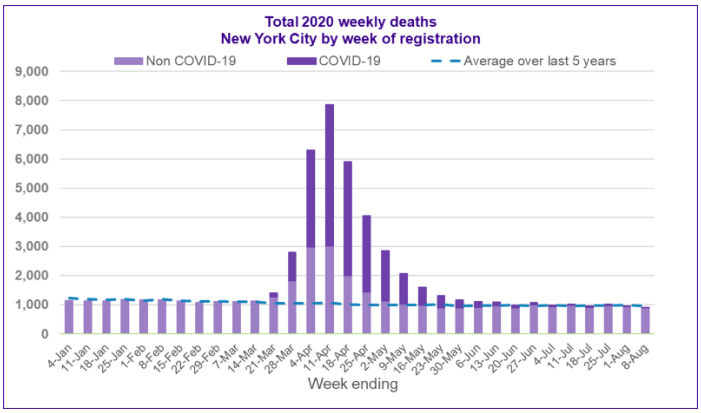
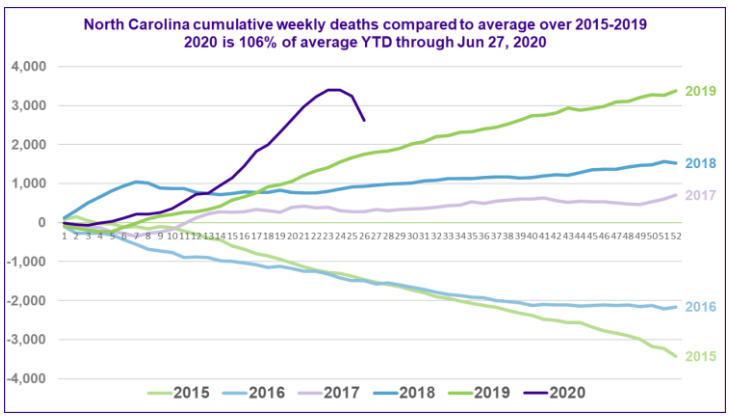
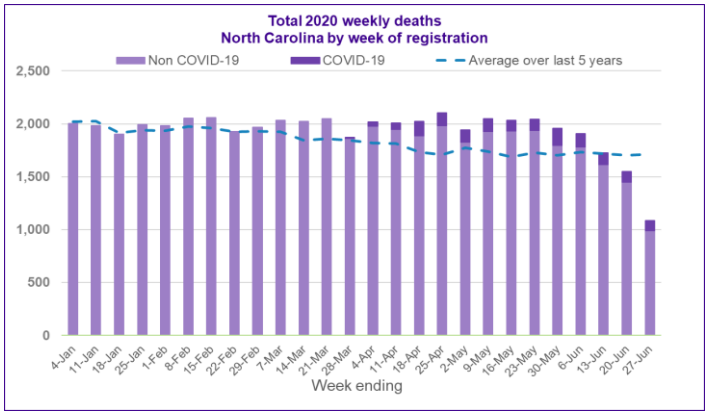


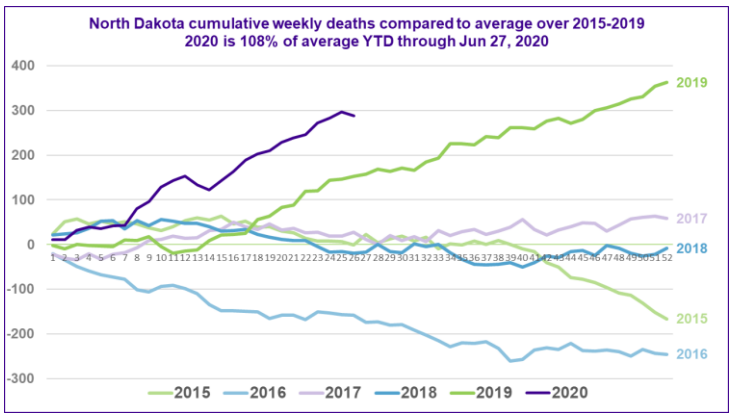


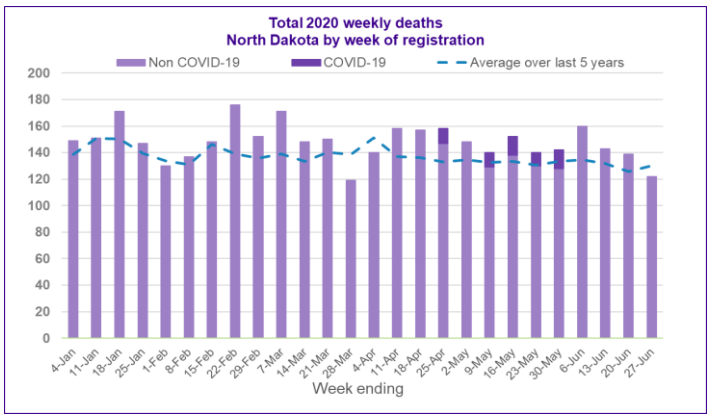
North Carolina



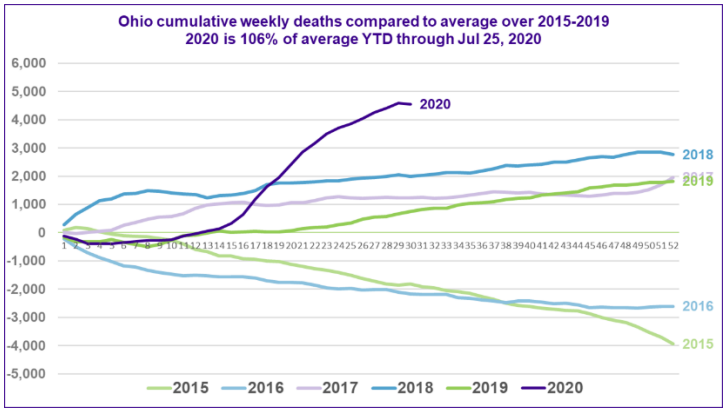


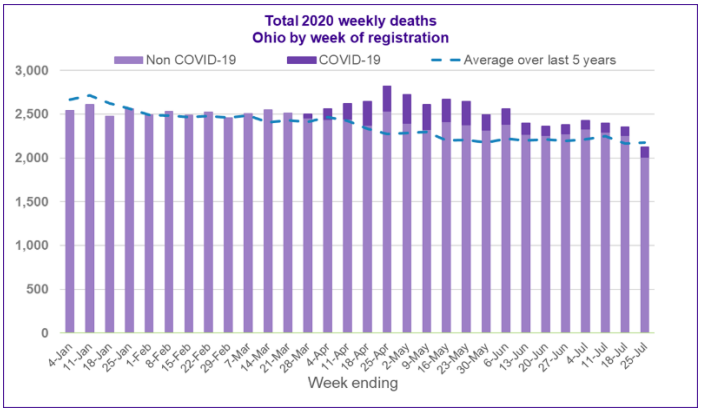
North Dakota



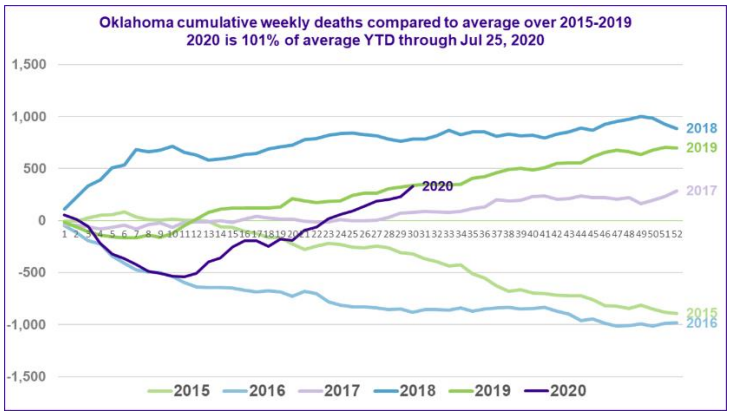


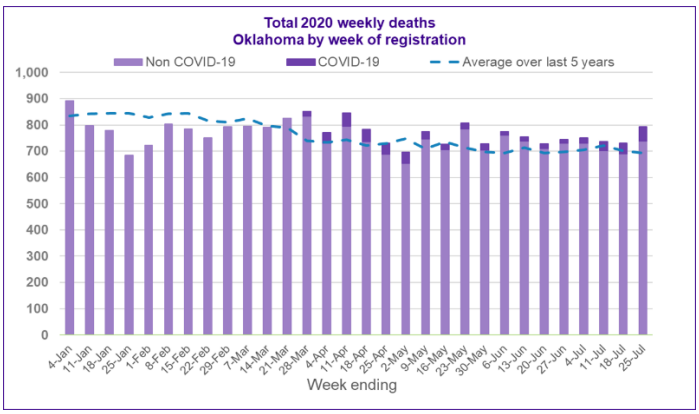
Ohio



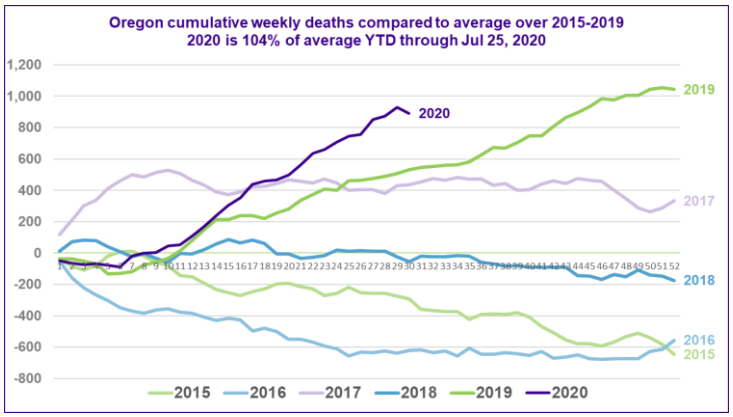


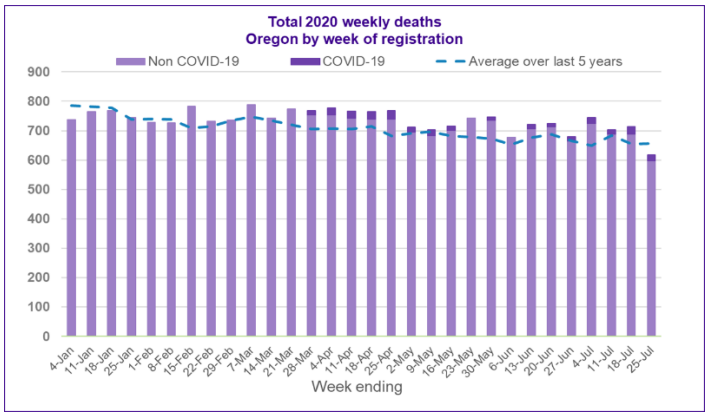
Oklahoma



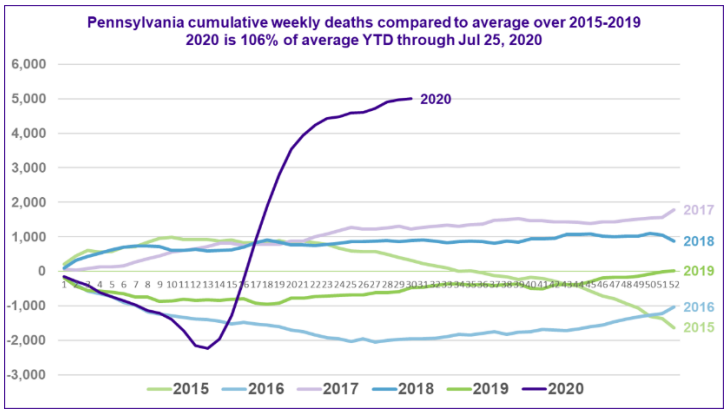


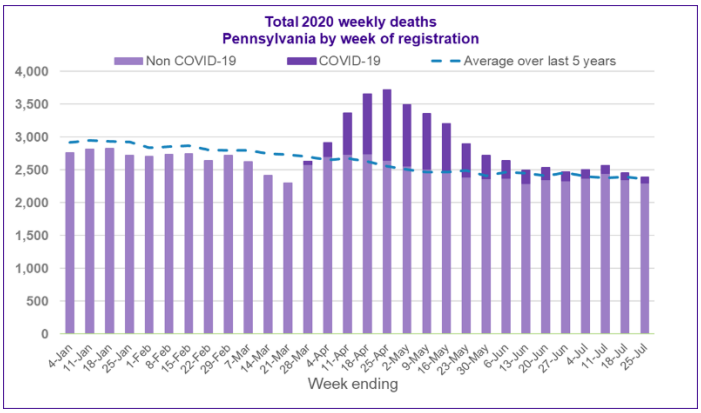
Oregon



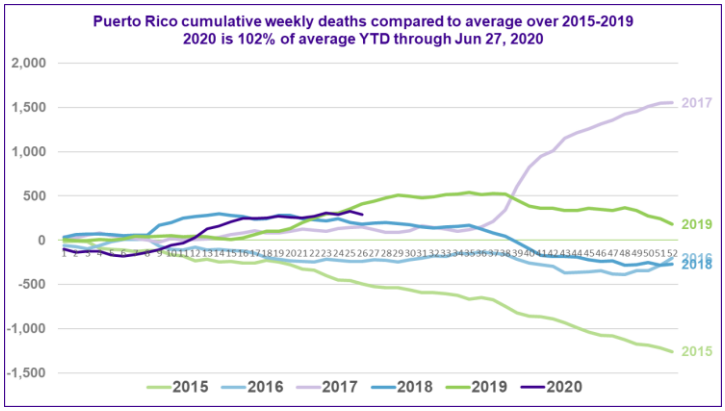


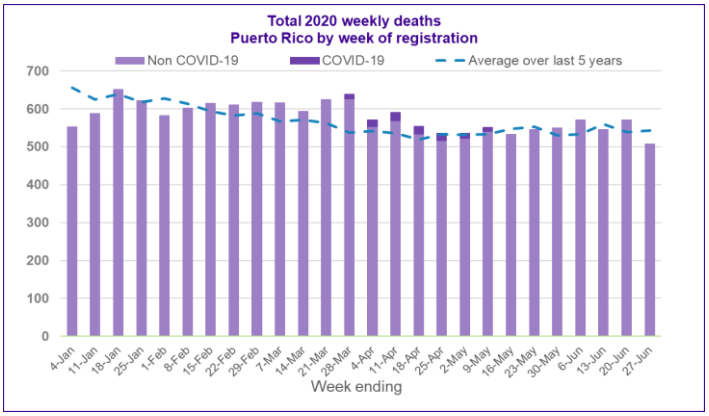
Pennsylvania



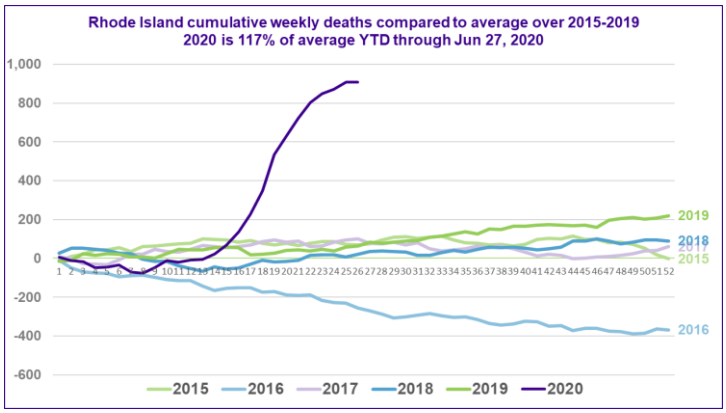


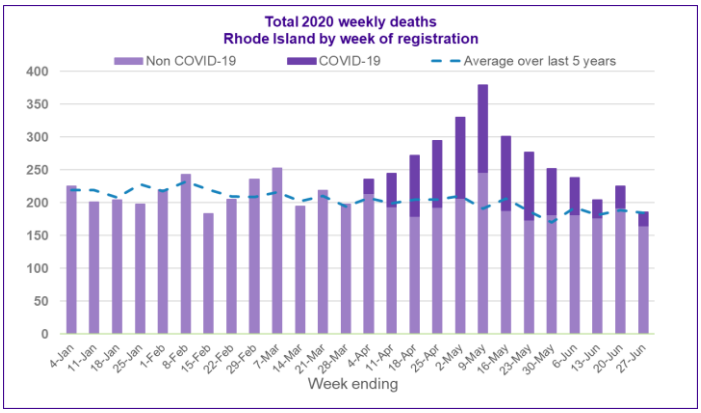
Puerto Rico



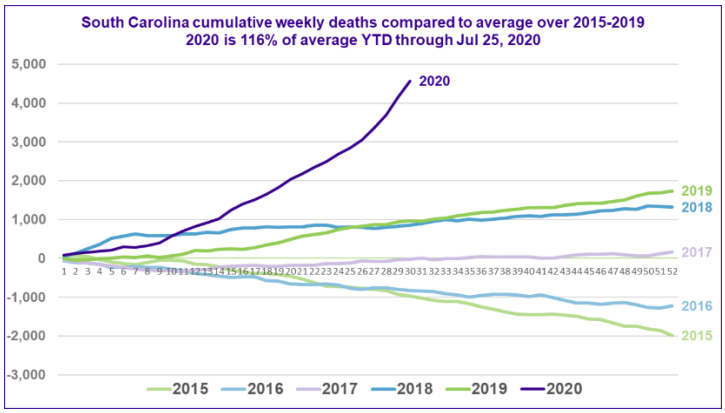


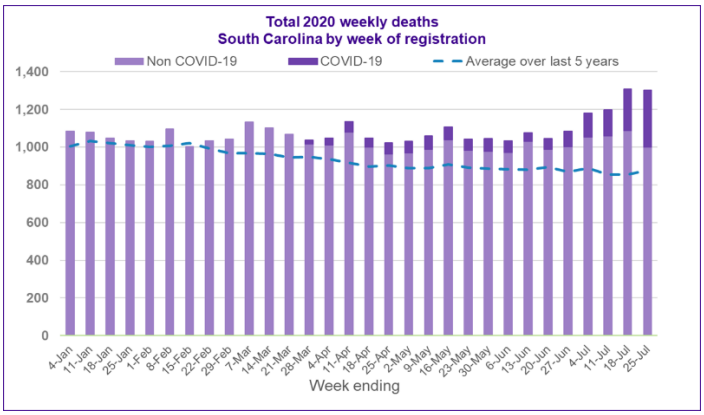
Rhode Island



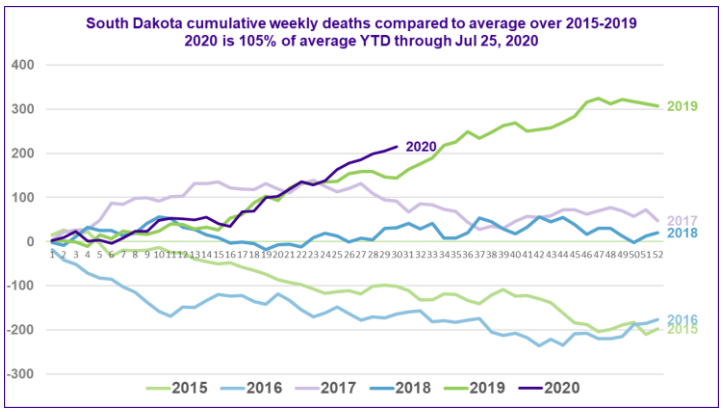


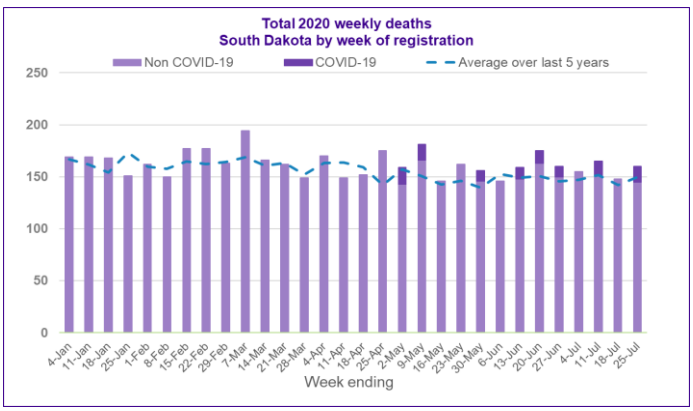
South Carolina



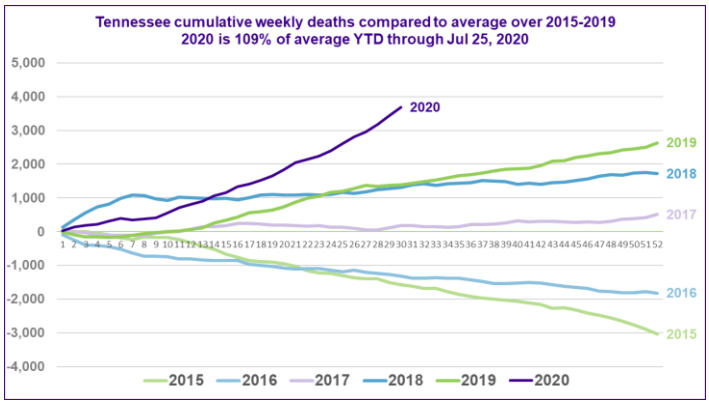


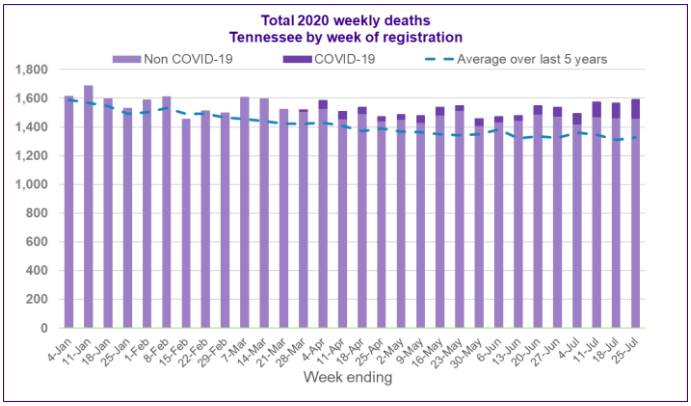
South Dakota



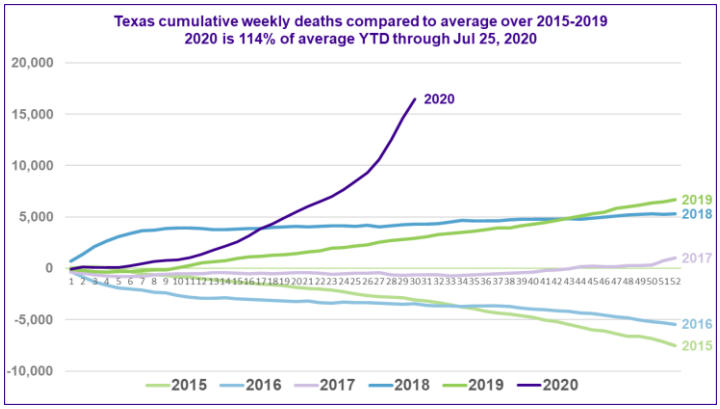


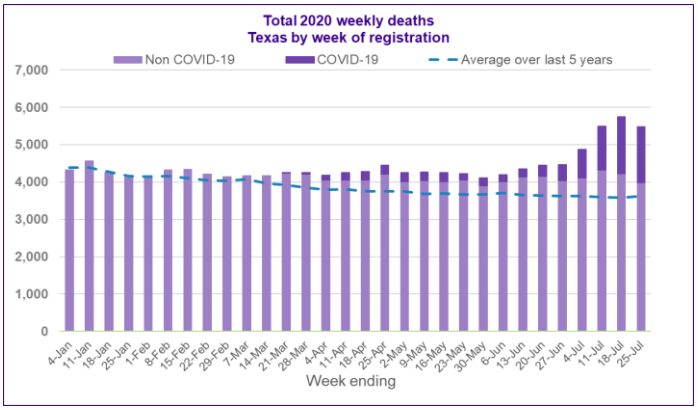
Tennessee



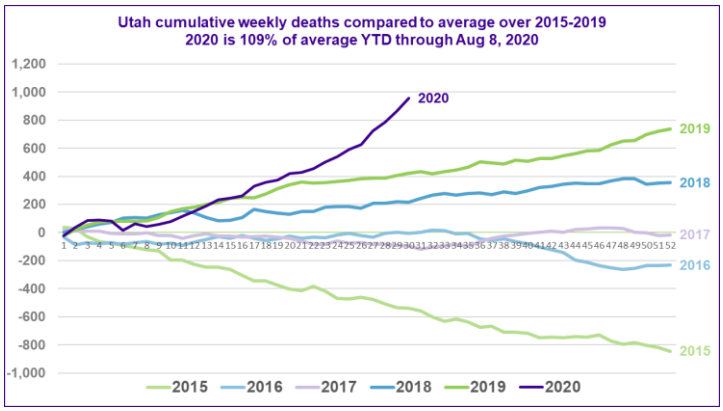


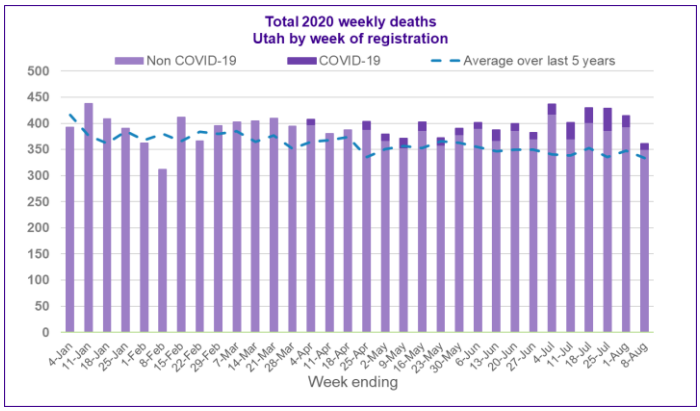
Texas



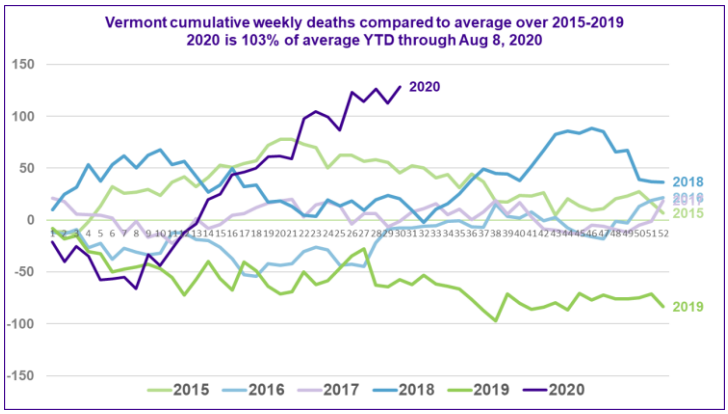


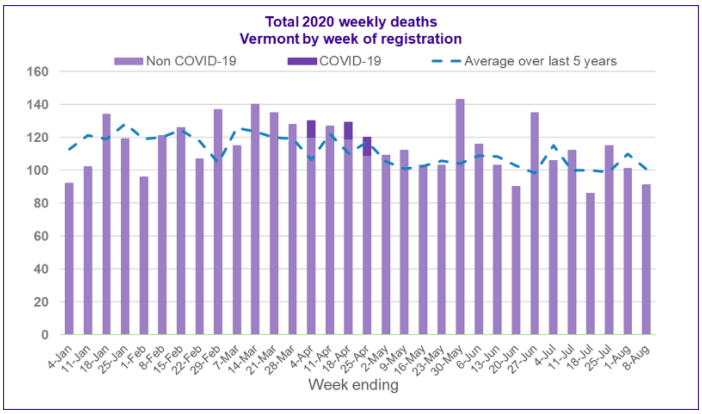
Utah



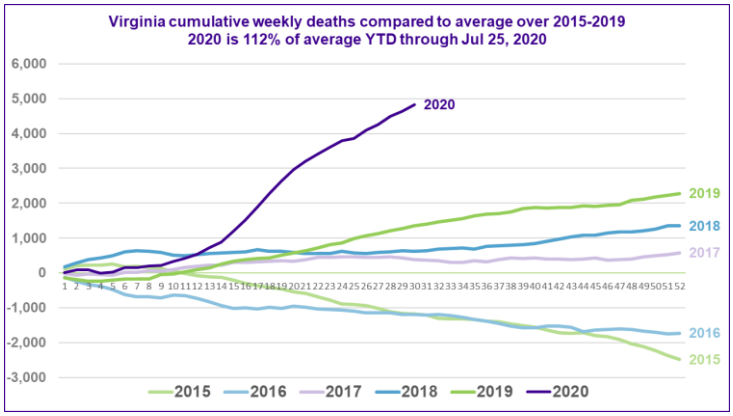


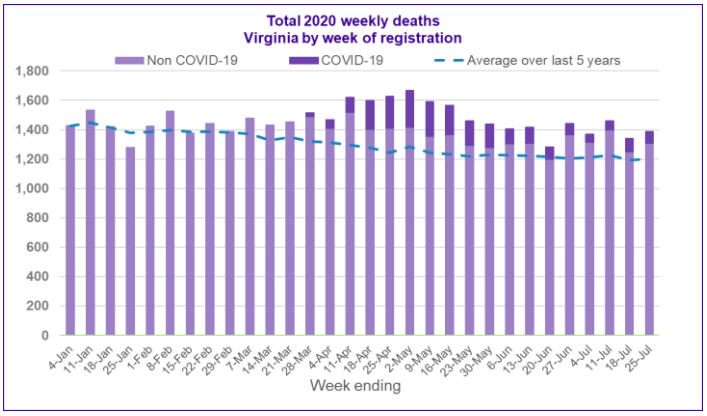
Vermont



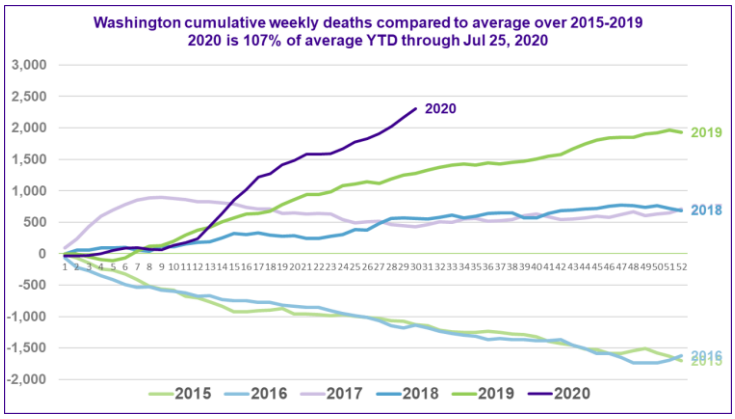


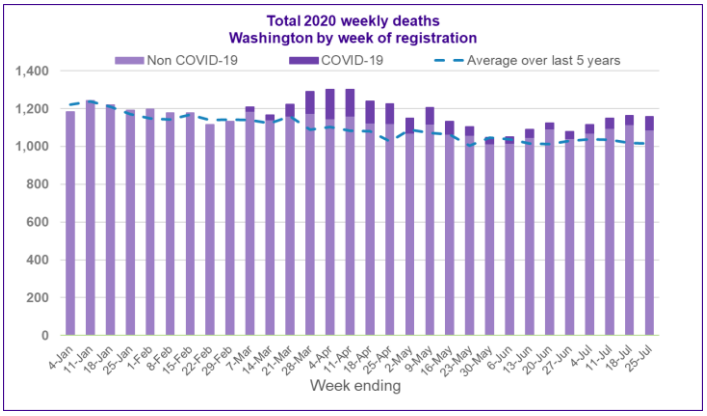
Virginia



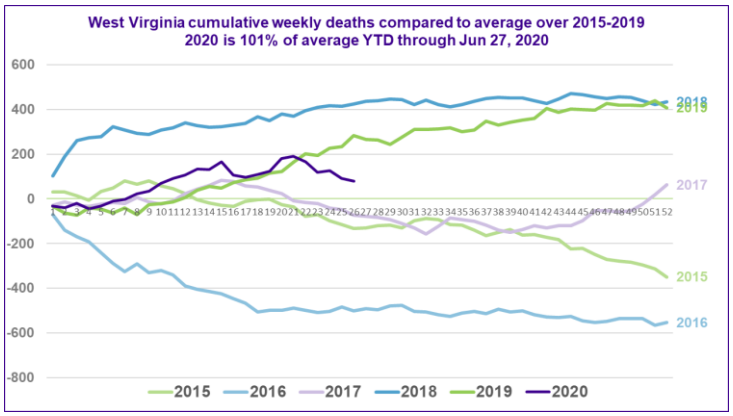


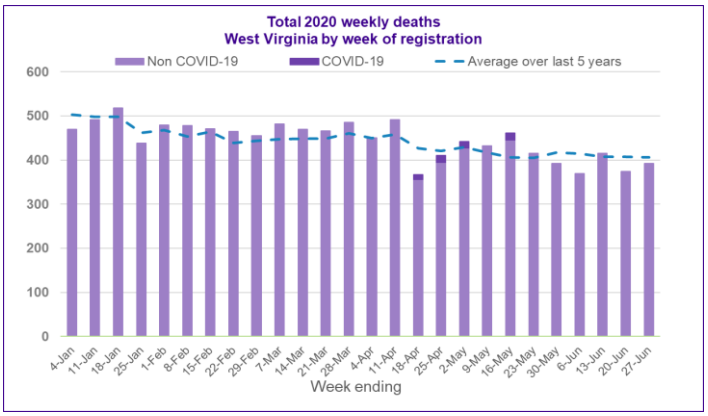
Washington



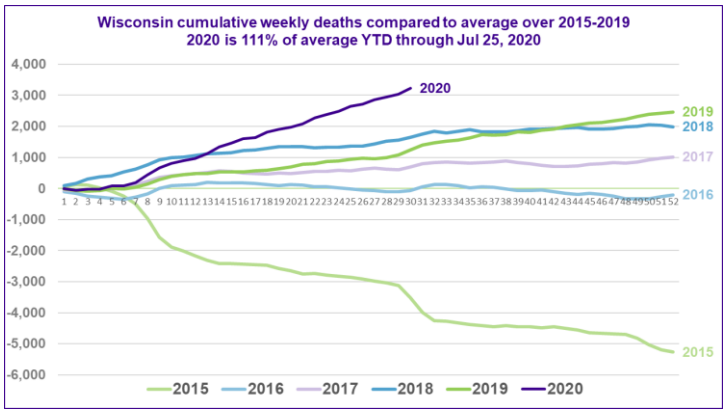


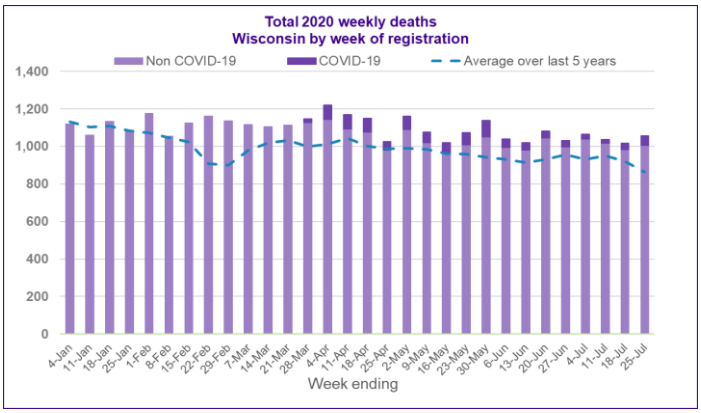
West Virginia



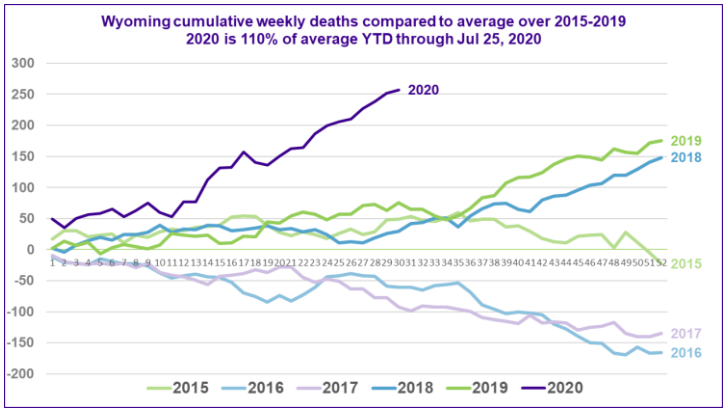


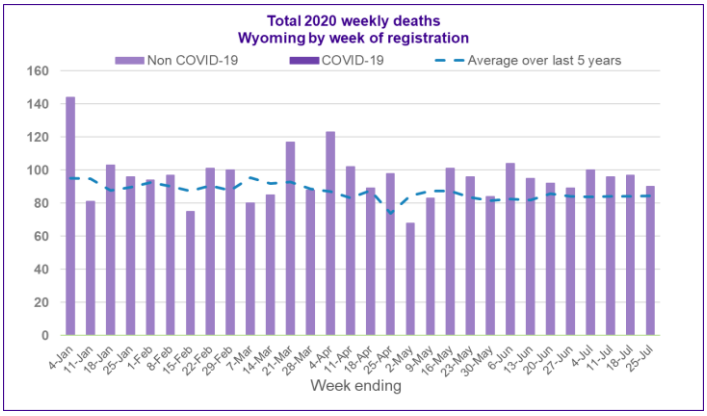
Wisconsin





Wyoming


Wyoming cumulative weekly deaths compared to average over 2015-2019
2020 is 110% of average YTD through Jul 25, 2020
300
250
200
150
100
50
0
-50
-100
-150
-200
2020
2019
2018
2015
2017
2016
2015
2016
2017
2018
2019
2020


Total 2020 weekly deaths
Wyoming by week of registration
Non COVID-19
COVID-19
Average over last 5 years
160
140
120
100
80
60
40
20
0
4-Jan
11-Jan
18-Jan
25-Jan
1-Feb
8-Feb
15-Feb
22-Feb
29-Feb
7-Mar
14-Mar
21-Mar
28-Mar
4-Apr
11-Apr
18-Apr
25-Apr
2-May
9-May
16-May
23-May
30-May
6-Jun
13-Jun
20-Jun
27-Jun
4-Jul
11-Jul
18-Jul
25-Jul
Week ending