

How different states have experienced COVID-19 so far (data up to Sept 10, 2022)

This is an update of our analysis of state-level excess mortality data up to September 10, 2022 (data available as at October 13, 2022). COVID-19 continued to contribute to excess mortality through 2022, with the number of COVID-19 deaths in the US now over .

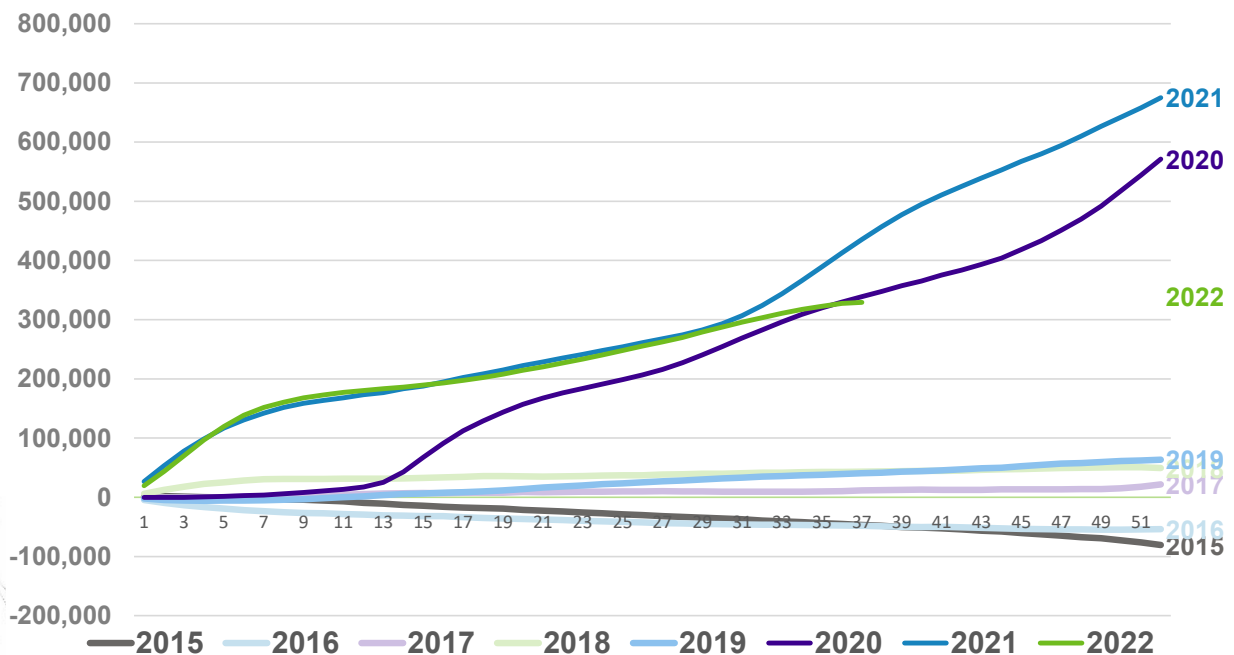
We present charts for each state through September 10, 2022 in the appendix. You will be able to spot the few states still with reporting delays.

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.

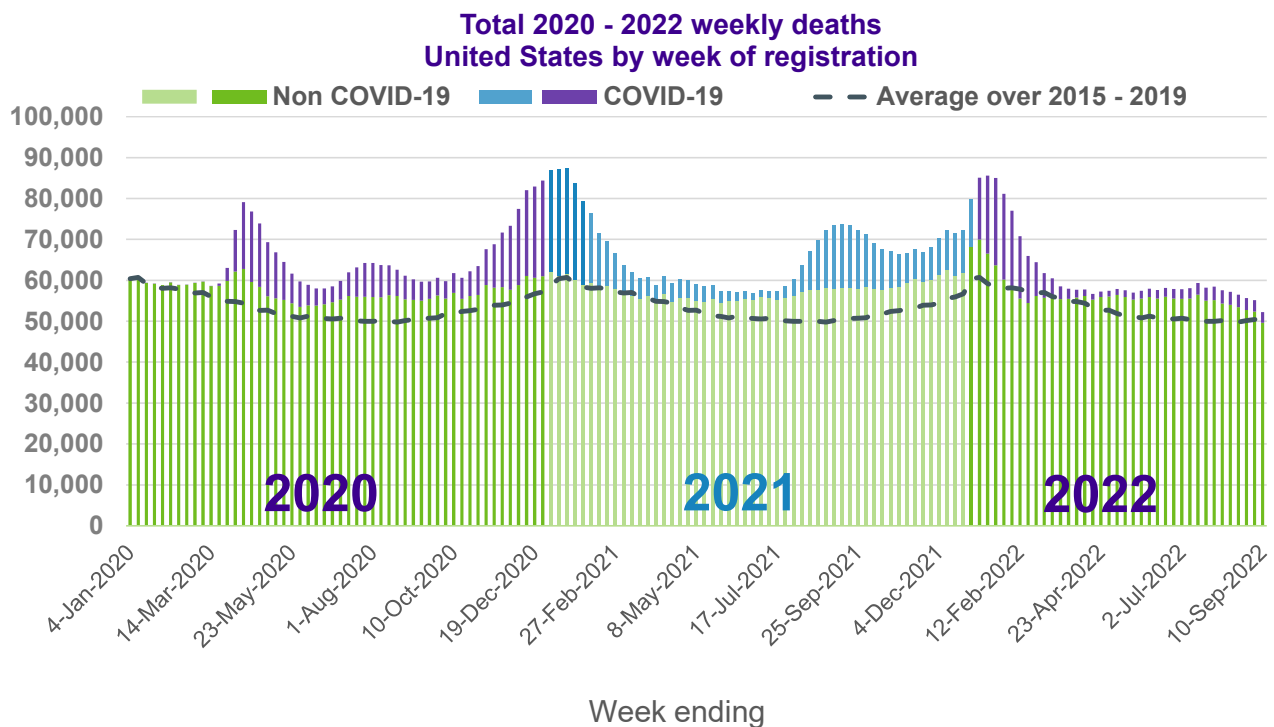
The purple line shows the 2020 experience, the blue line shows the 2021 experience, and the green line shows the 2022 experience. They are strikingly different when compared to the 2015-2019 average. In 2020, 2021, and 2022 the total number of deaths is 120%, 124% and 115% (through September 10, 2022) of the 2015-2019 average, respectively. Allowing for the upward trend in expected deaths due to the aging population, we saw c.117% of expected deaths in 2020 and c.118% expected deaths in 2021. It is disappointing that, even with the roll out of vaccinations in the US, 2021 saw more excess mortality than 2020 and we continue to see significant excess deaths in 2022.

United States cumulative weekly deaths compared to average over 2015-2019



The next chart shows the number of deaths registered in the US each week from the week ending January 4, 2020 through the week ending September 10, 2022. The purple and blue bars show deaths recorded as COVID related, and the green bars show other deaths. The dotted 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 2020 until the week ending September 10, 2022. There are five distinct waves of these 'excess deaths' and each affected different parts of the country to varying extents. The first wave during spring 2020, was felt the hardest in New York, its surrounding areas and other metropolitan hubs like Boston. The second wave during summer 2020, was most harshly felt in the southern 'sunshine belt' states. The third wave in winter 2020/21, was felt right across the US, with only Hawaii not seeing significant COVID-19 deaths in this period. The fourth wave in fall 2021 coinciding with the spread of the delta variant, was felt the hardest in the southern states. The fifth wave in winter 2021/22 coinciding with the spread of the omicron variant, affected many states across the US, with a particularly notable effect in the Midwest. After the fifth wave subsided, we have not seen another prominent wave of deaths. Most notably, a summer wave in the southern states, as seen in 2020 and 2021, did not materialize to the same extent in 2022. With around [250-500 deaths per day](#) observed between early Spring through the beginning of Fall, has COVID-19 now shifted from a pandemic to an endemic phase? The next real test will be what happens after the holidays.



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 October 13 2022 by the Center of Disease Control and Prevention \(CDC\)](#).

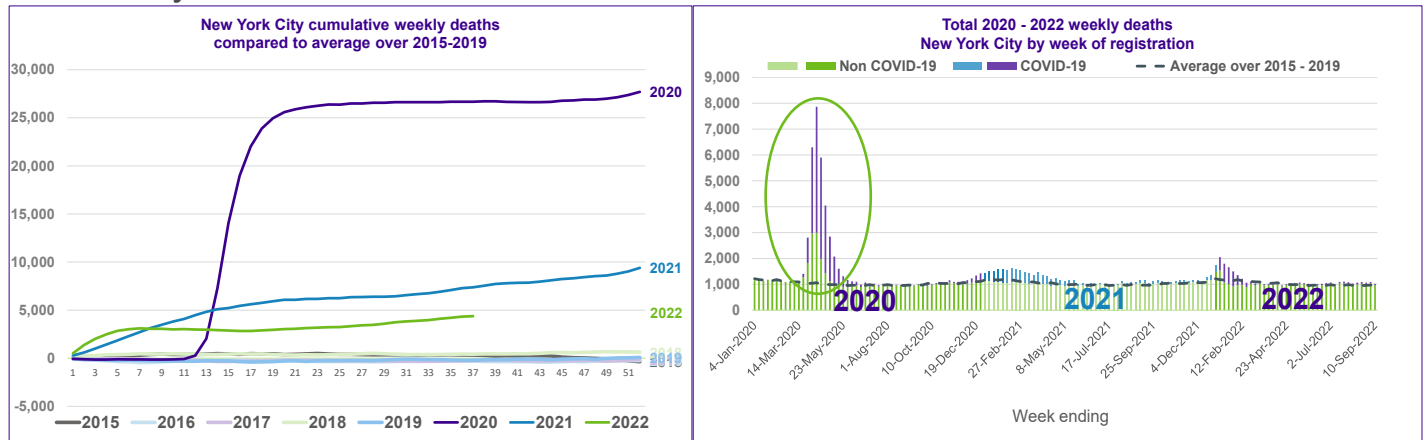
Appendix A: Charts separating the United States into 5 regions (Northeast, Southeast, West, Southwest, and Midwest)

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

The 5 waves

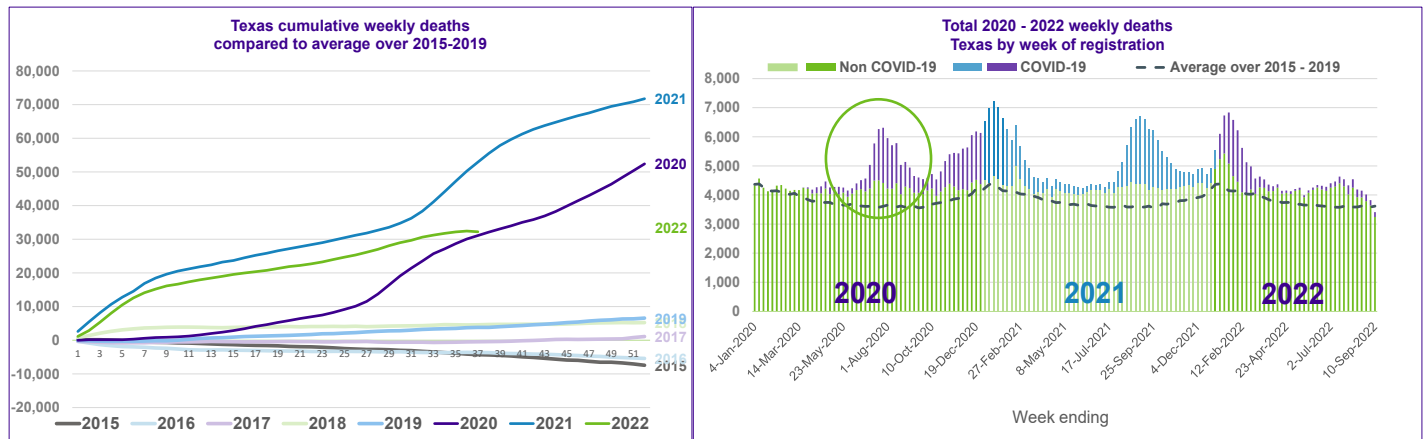
Wave 1 – spring 2020: New York, its surrounding area and other metropolitan hubs

New York City



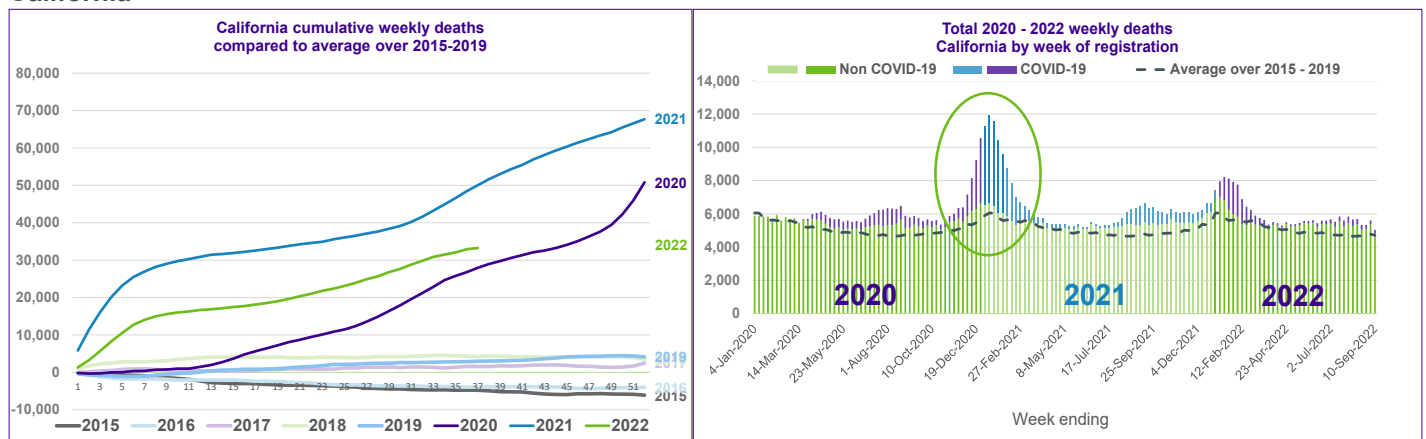
Wave 2 – summer 2020: the sunshine belt

Texas

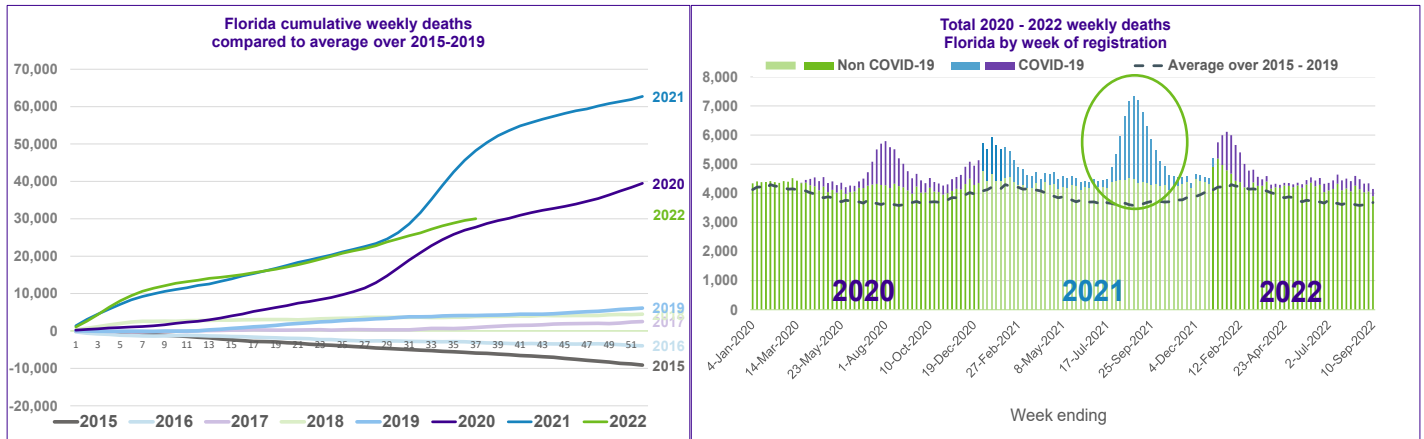


Wave 3 – winter 2020/21: everywhere (apart from Hawaii)

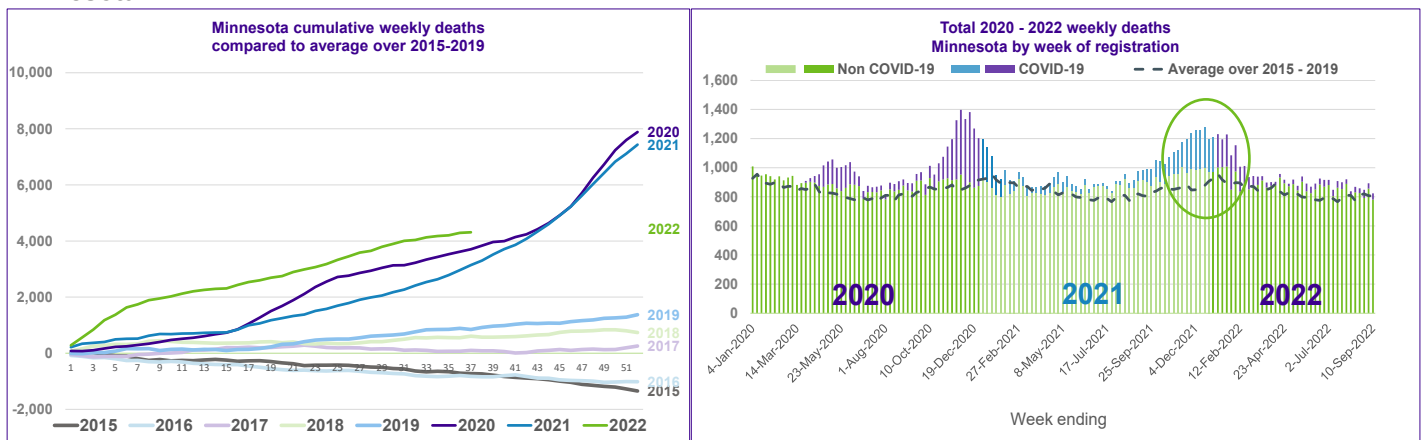
California



Wave 4 – fall 2021 (delta): the South Florida



Wave 5 – winter 2021/22 (omicron): everywhere (including Hawaii!) Minnesota



What's next?

Hospitalizations and daily deaths due to COVID-19 continue to fluctuate around lower levels than observed during any of the five waves set out above. Has our relationship with COVID-19 shifted from a pandemic to an endemic phase with deaths hovering around 300 per day ([as of November 15th](#))? The real test will be what happens following the holiday period. As we head into the winter months of 2022/23, cases of other viruses that remained dormant through the pandemic are on the rise (i.e RSV & Influenza); could this contribute to another wave of excess deaths this winter? Monitoring the emerging experience is as important as ever for understanding future impacts on longevity.



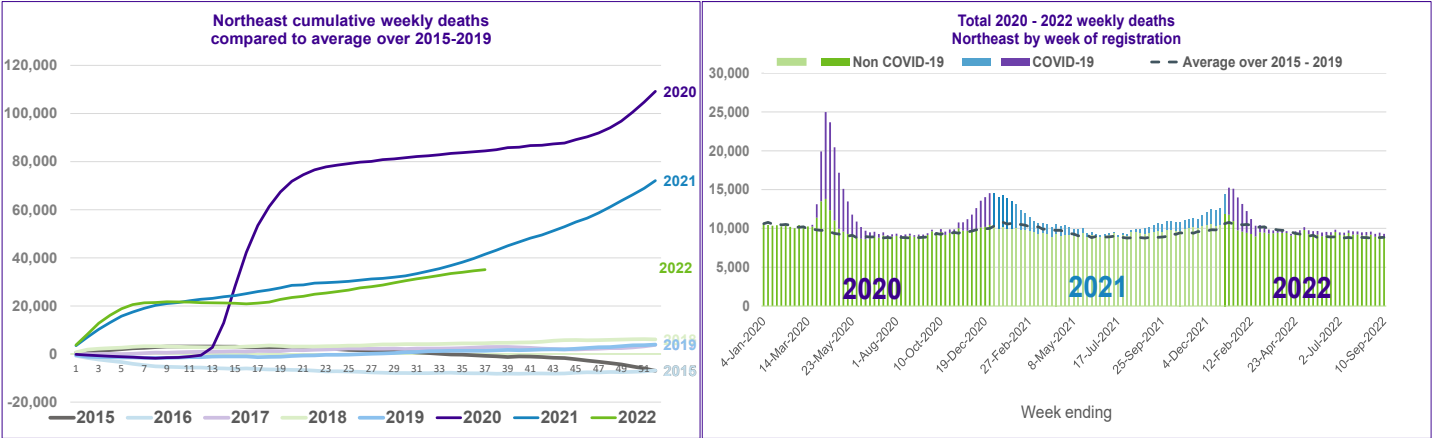
Erik Pickett PhD FIA CERA
Actuary and Chief Content Officer



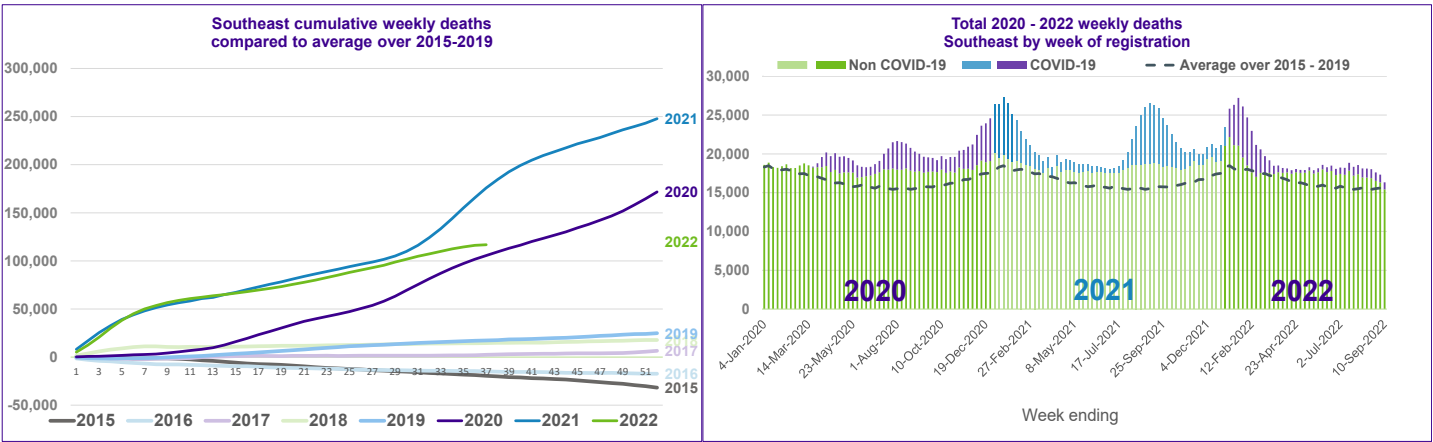
Carmen Gatta ASA EA
Director, Client Delivery, Club Vita US

Appendix A: Charts by Region of the United States: Northeast, Southeast, West, Southwest, and Midwest– data available at October 13, 2022

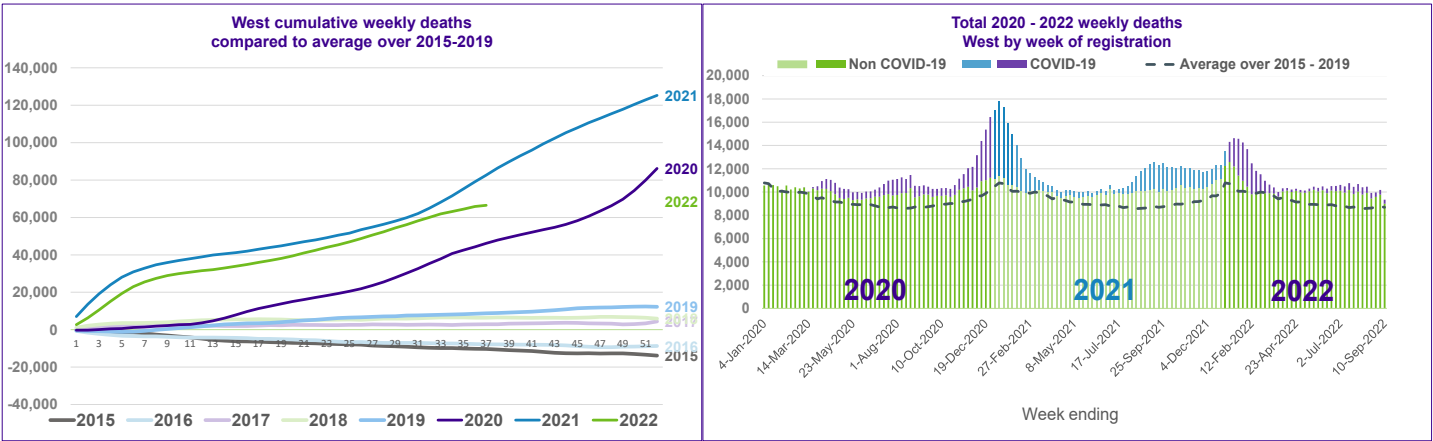
Northeast



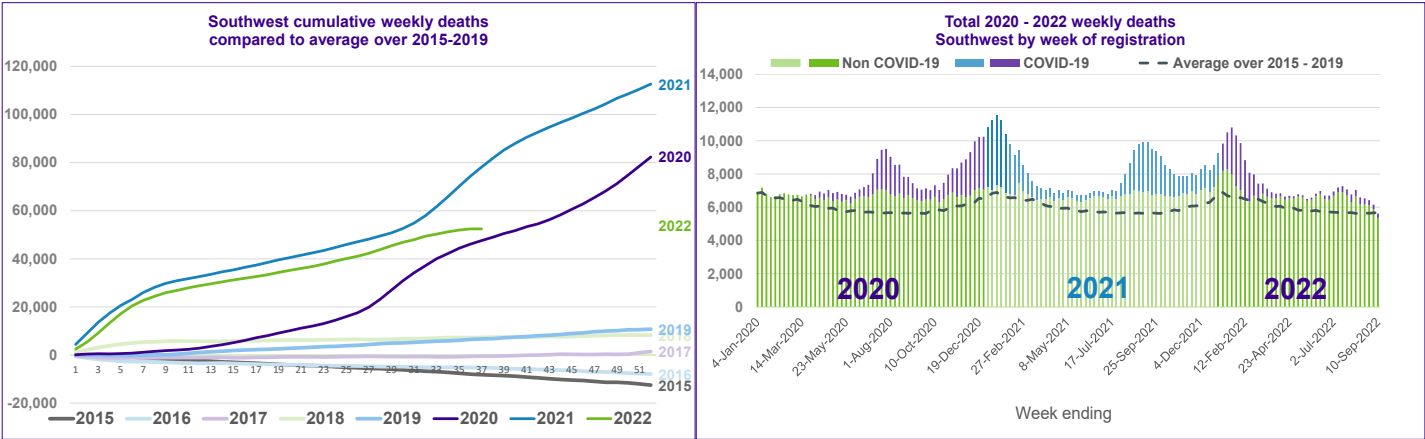
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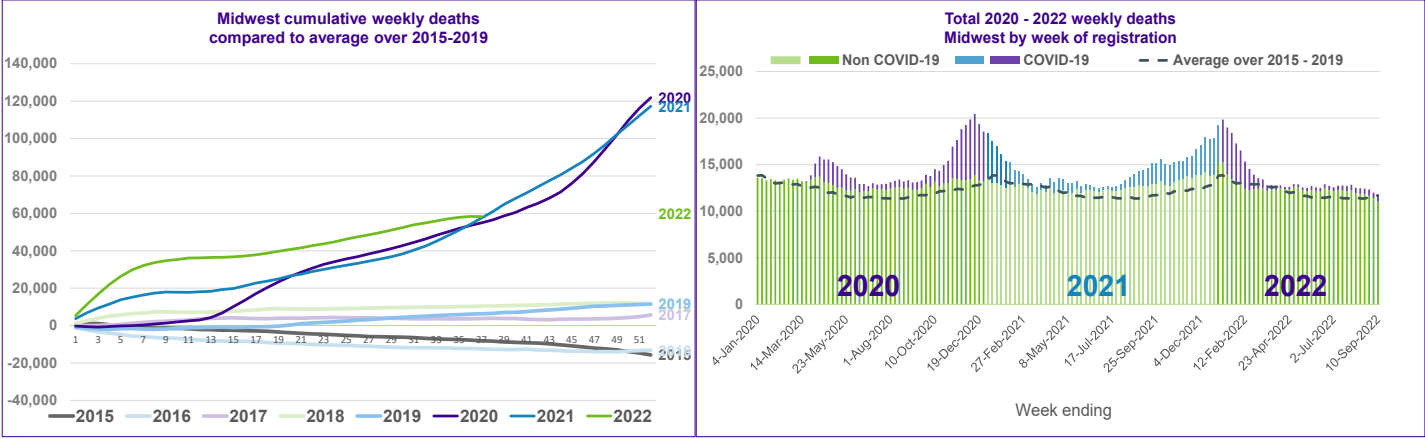
West



Southwest

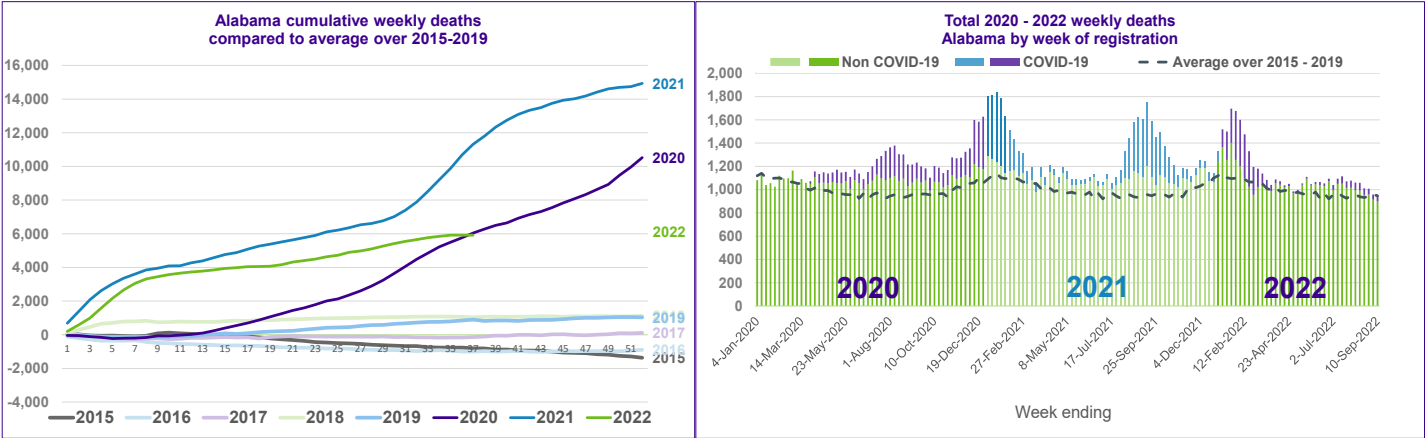


Midwest

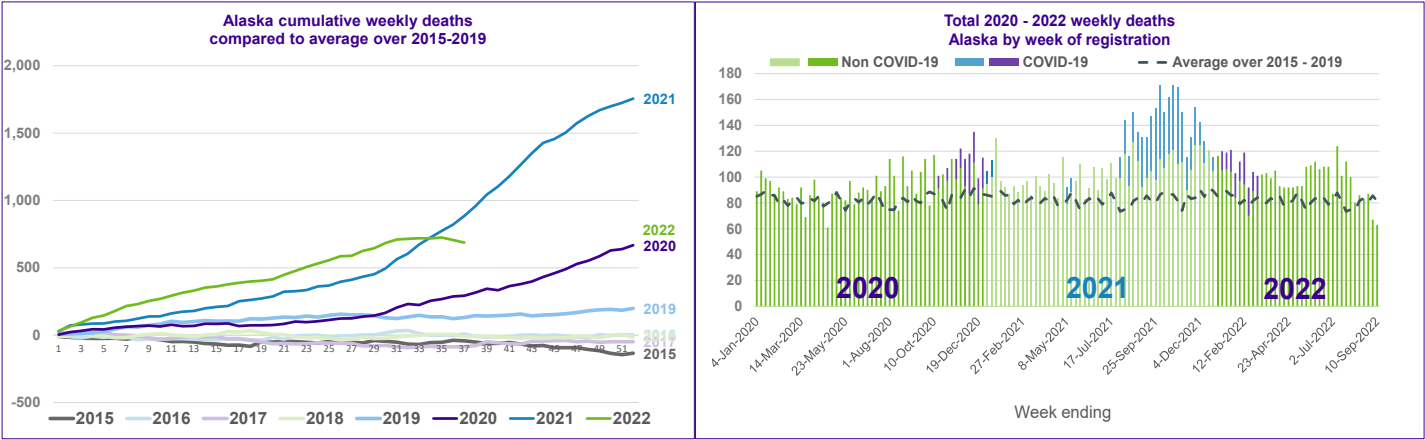


Appendix B: Charts for all states, New York City, District of Columbia and Puerto Rico – data available at October 13, 2022

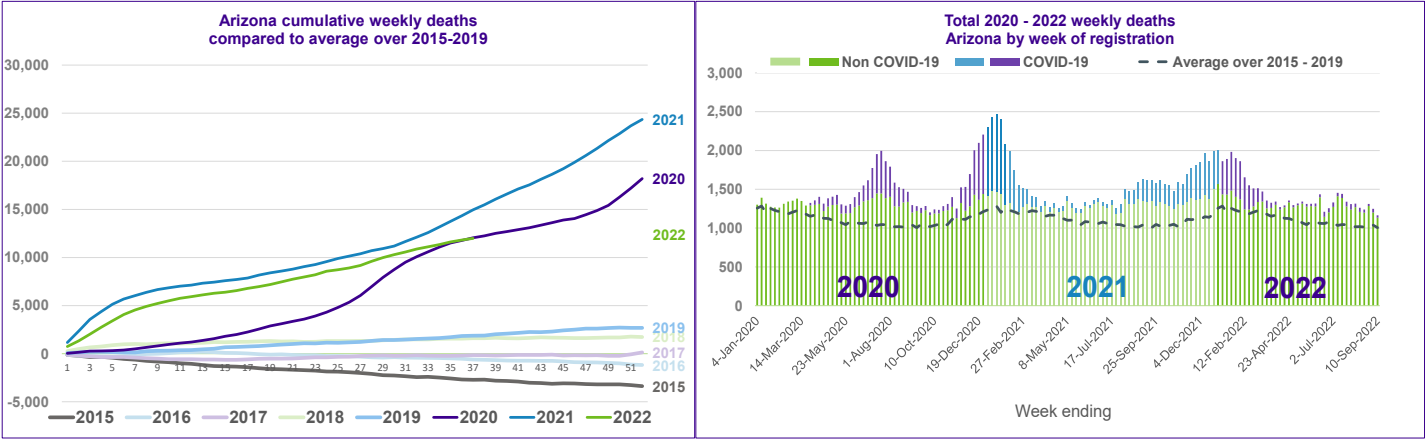
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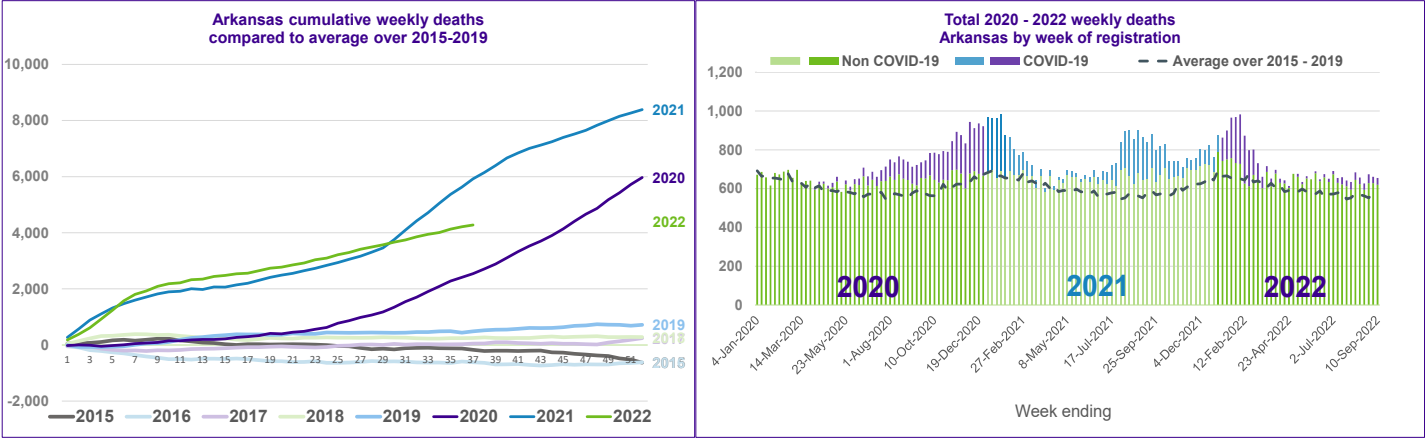
Alaska



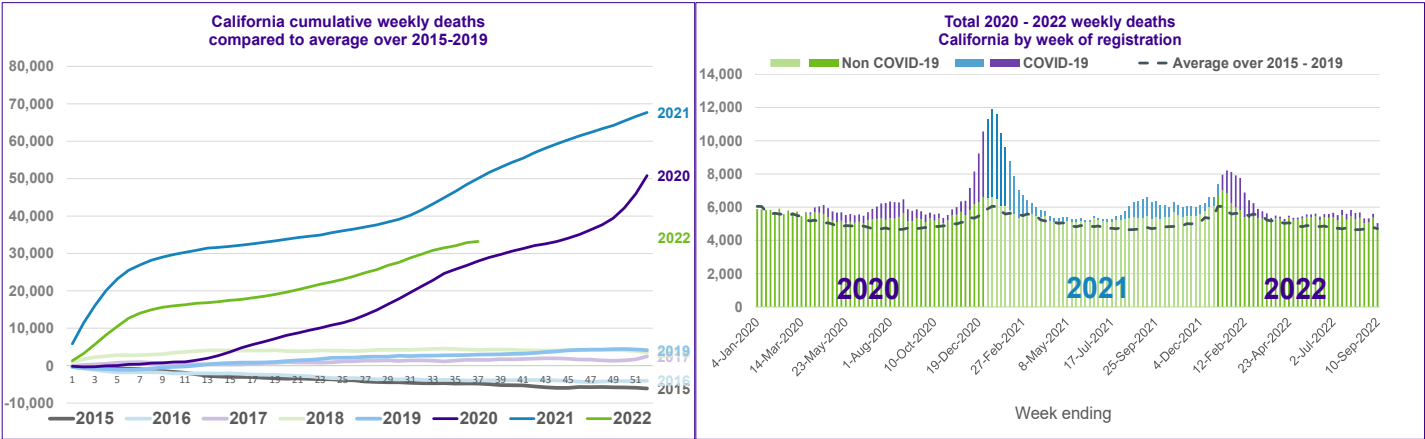
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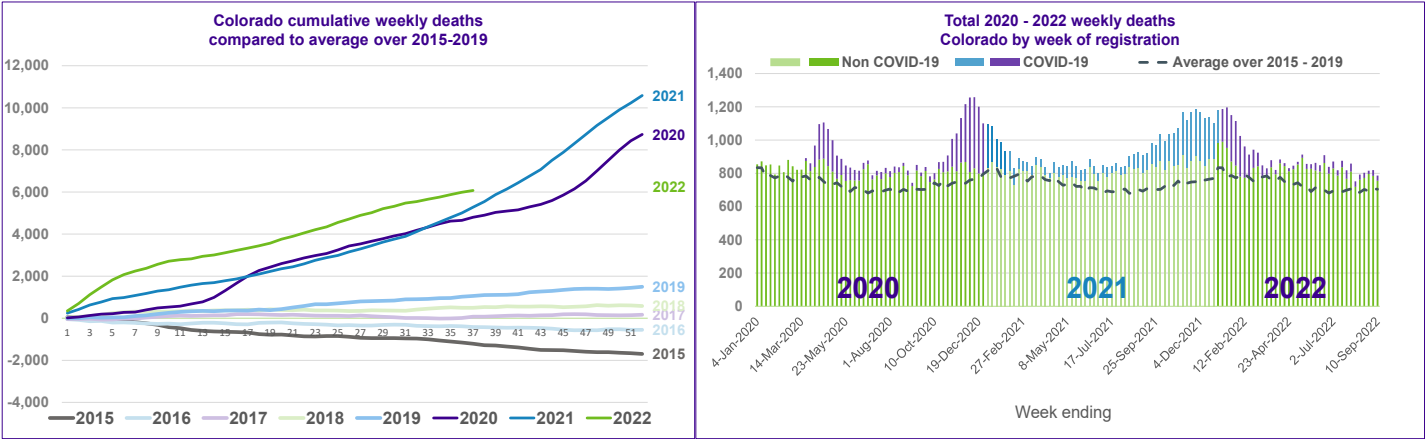
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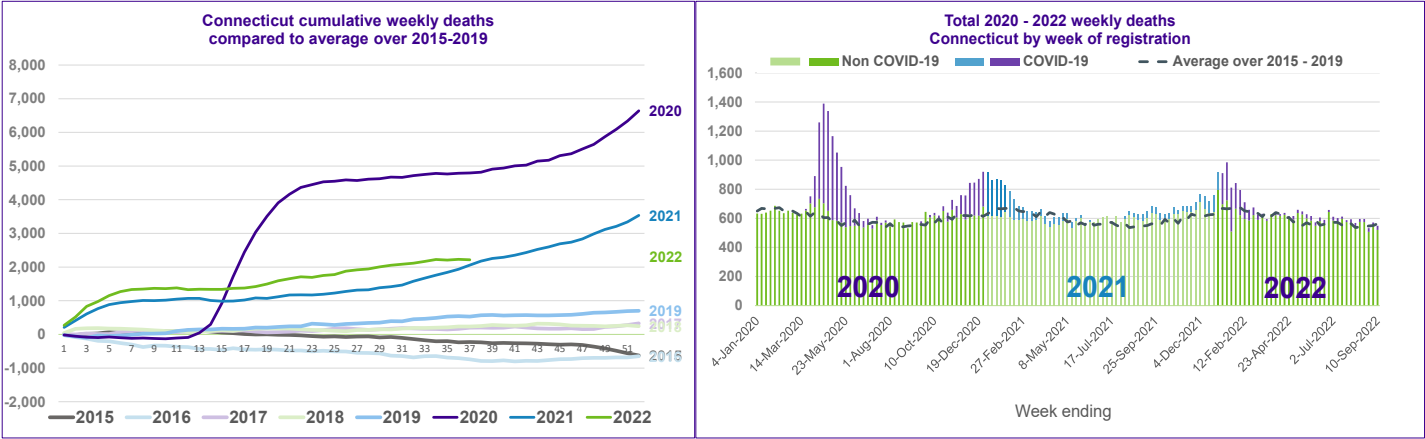
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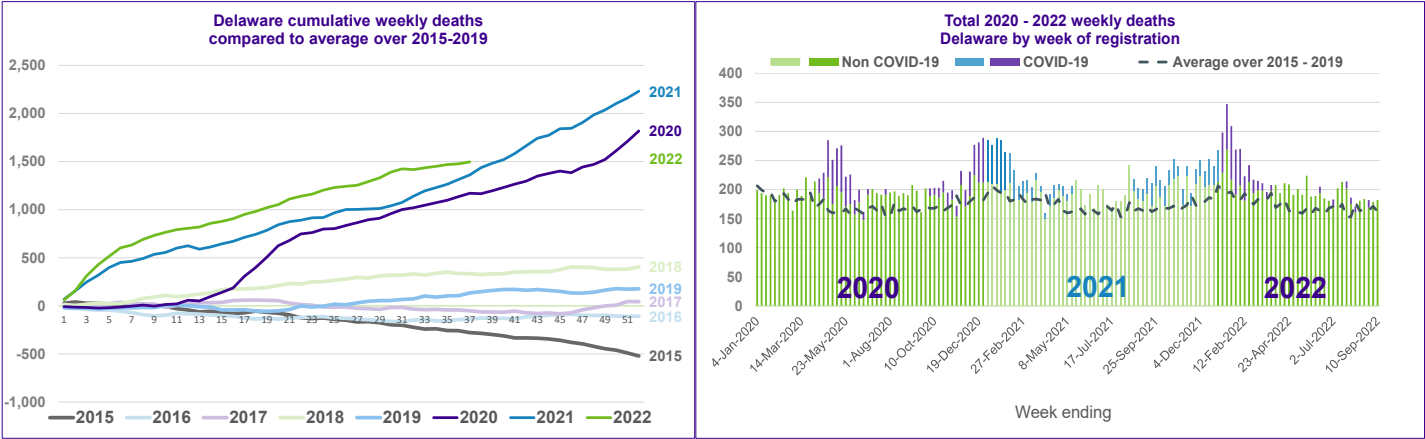
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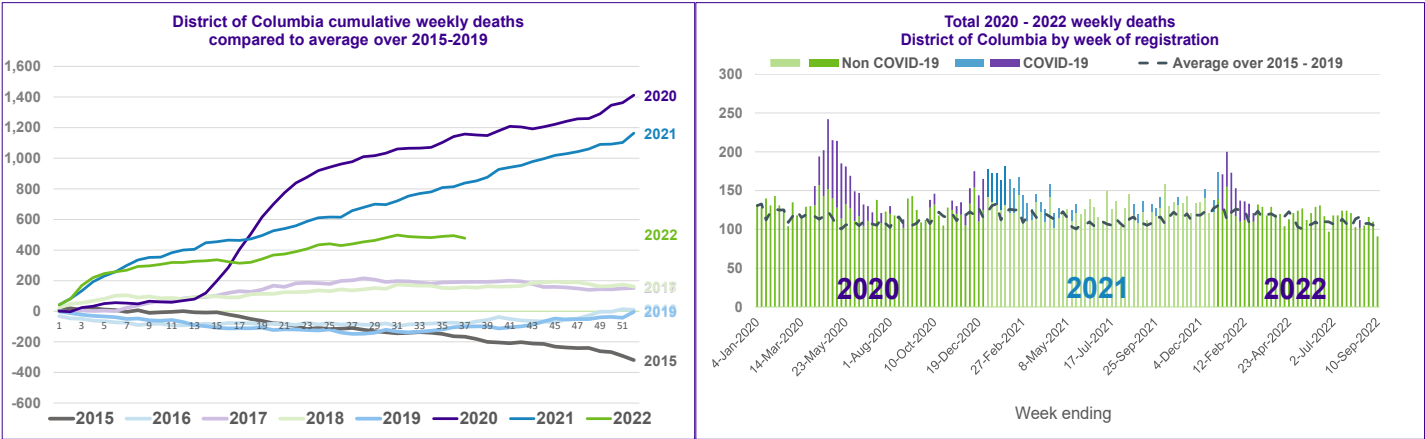
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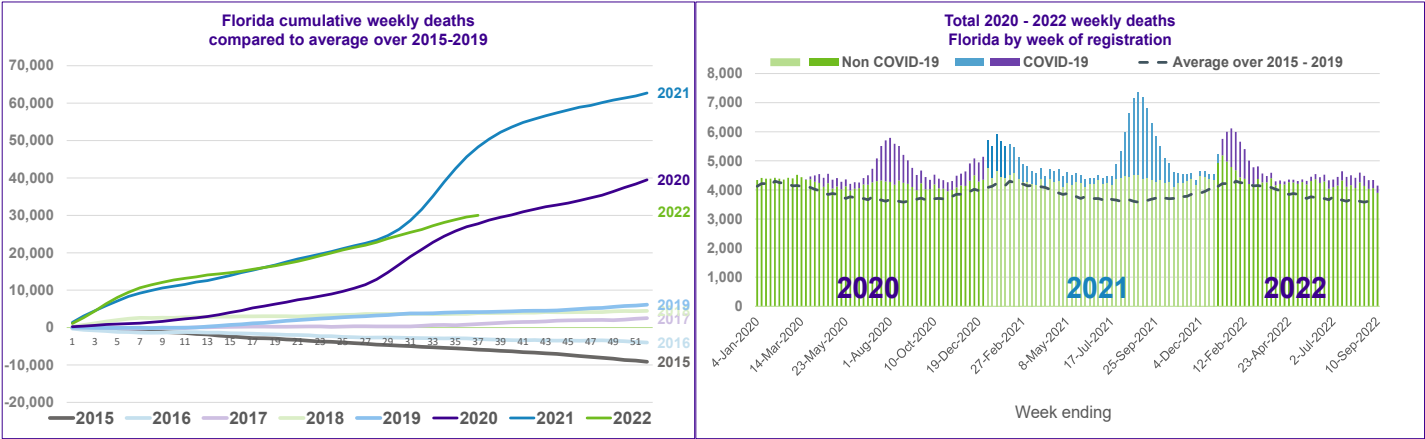
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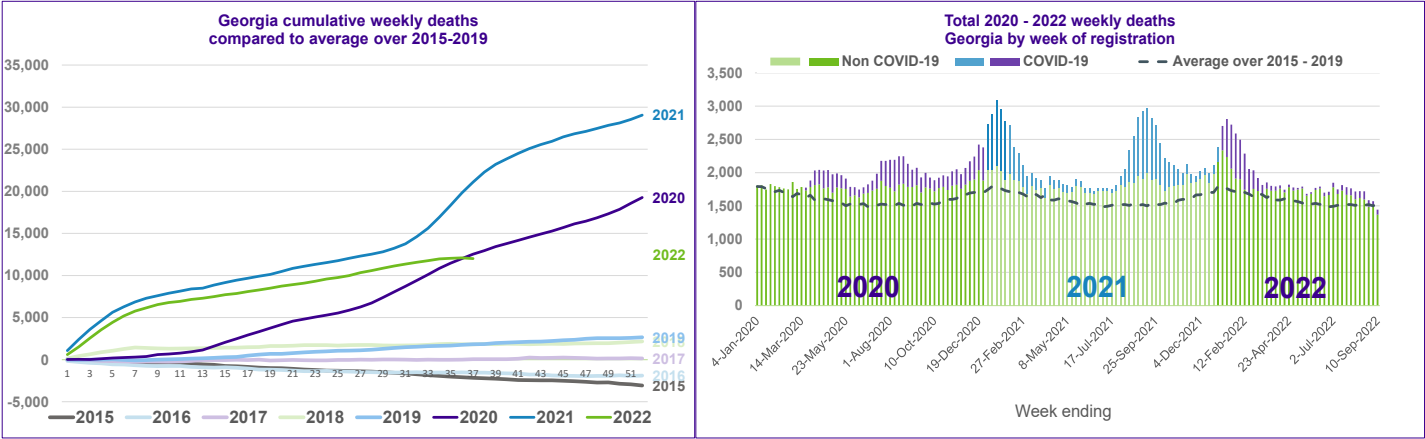
District of Columbia



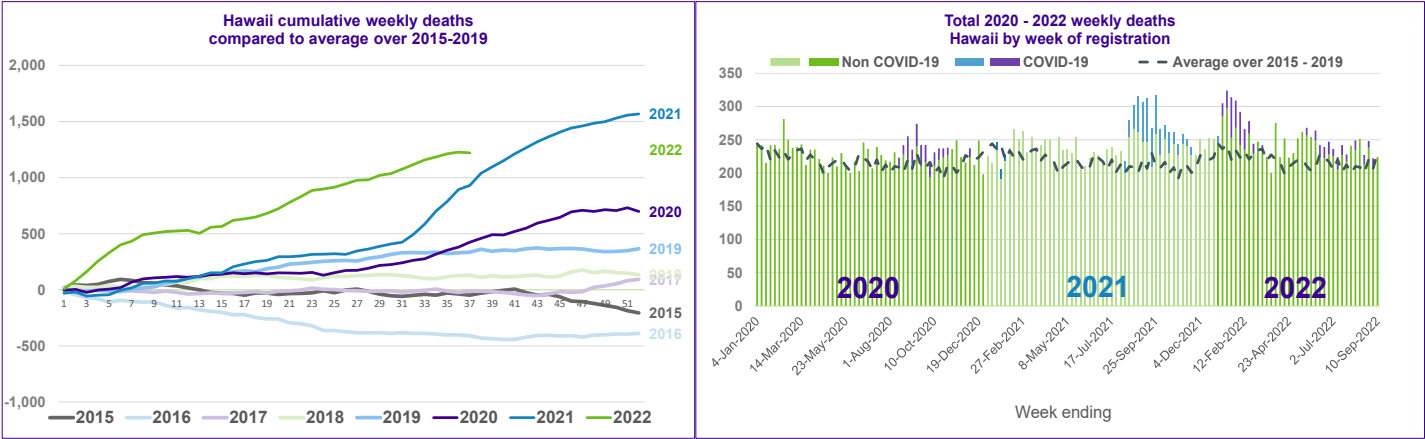
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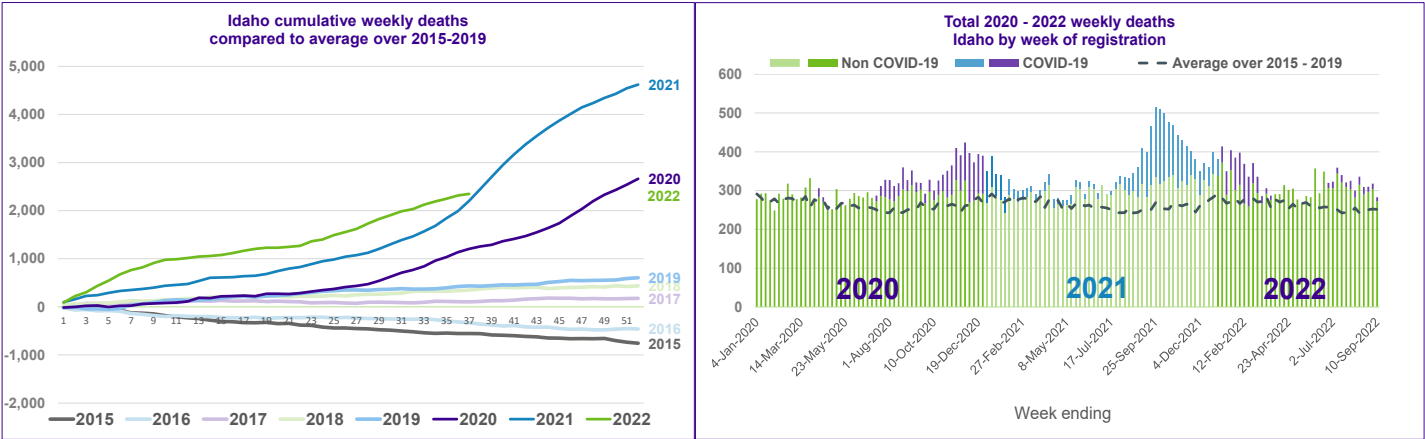
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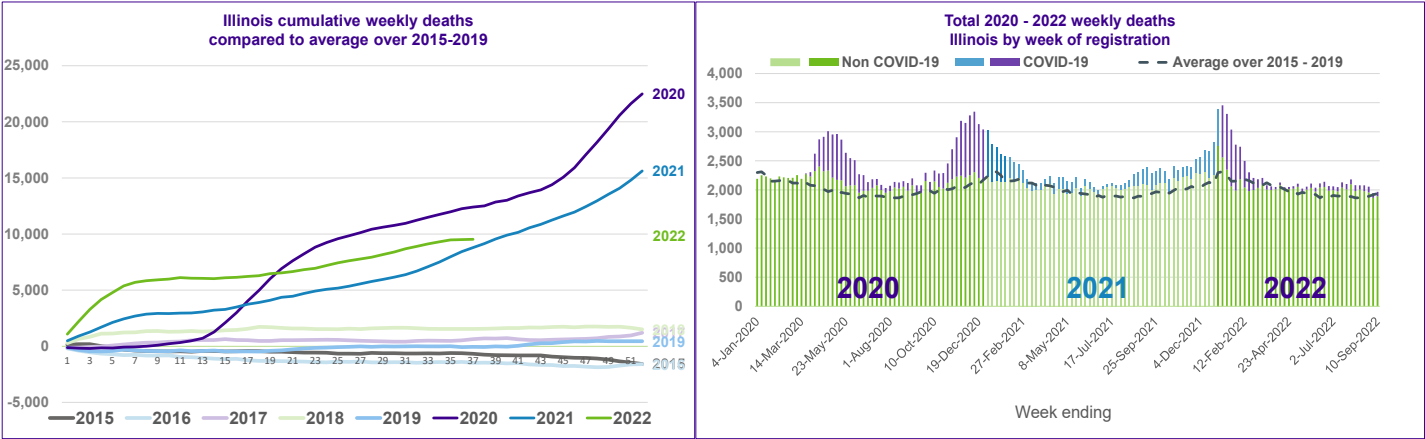
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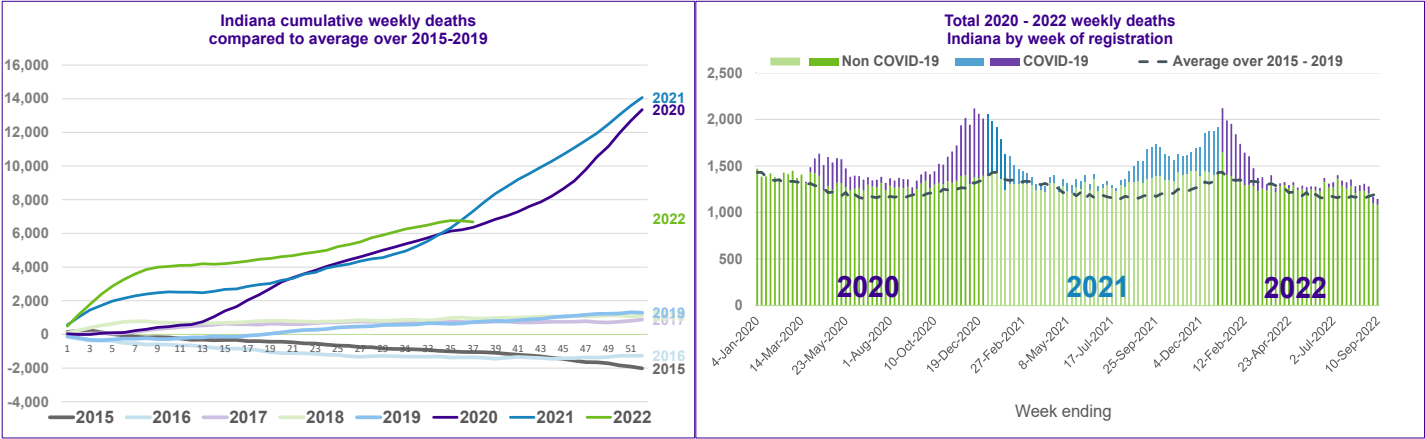
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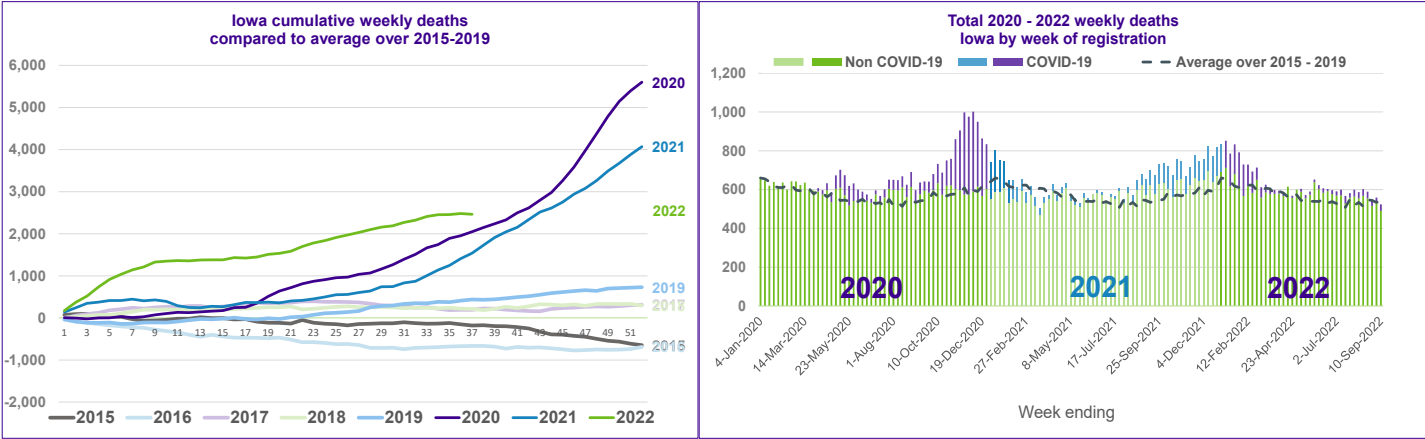
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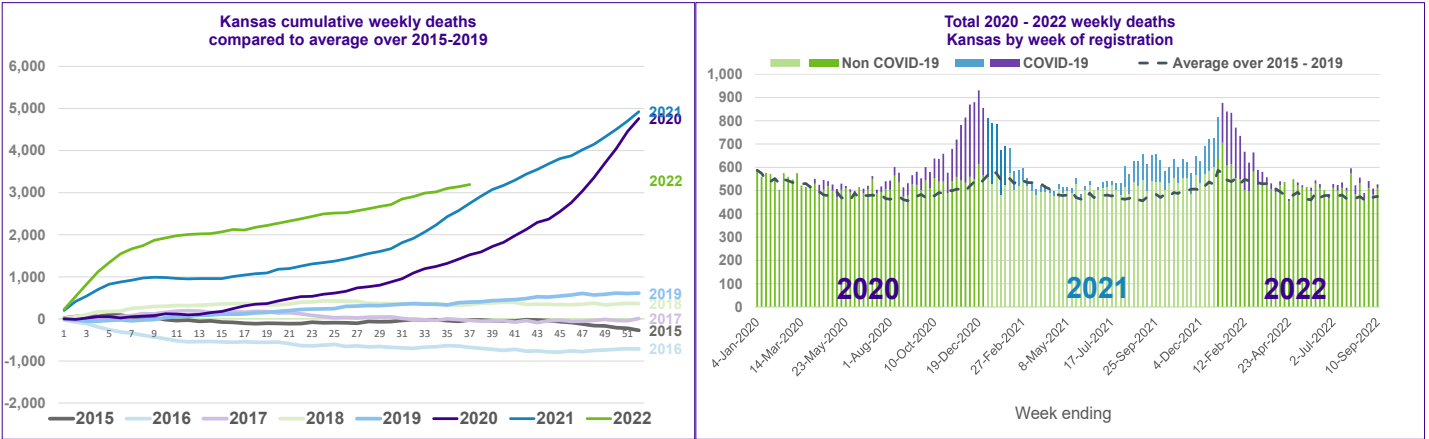
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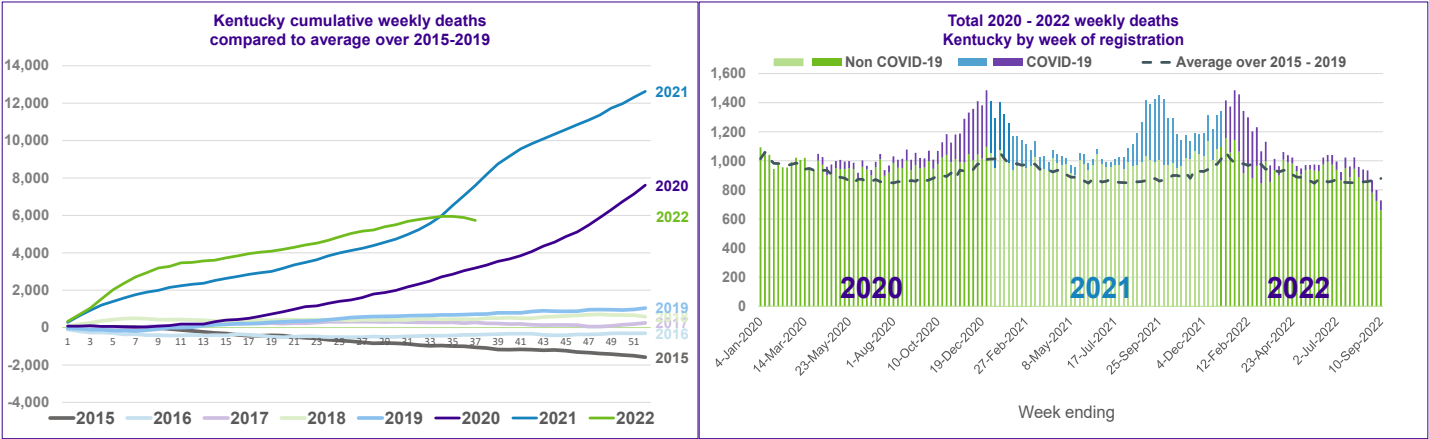
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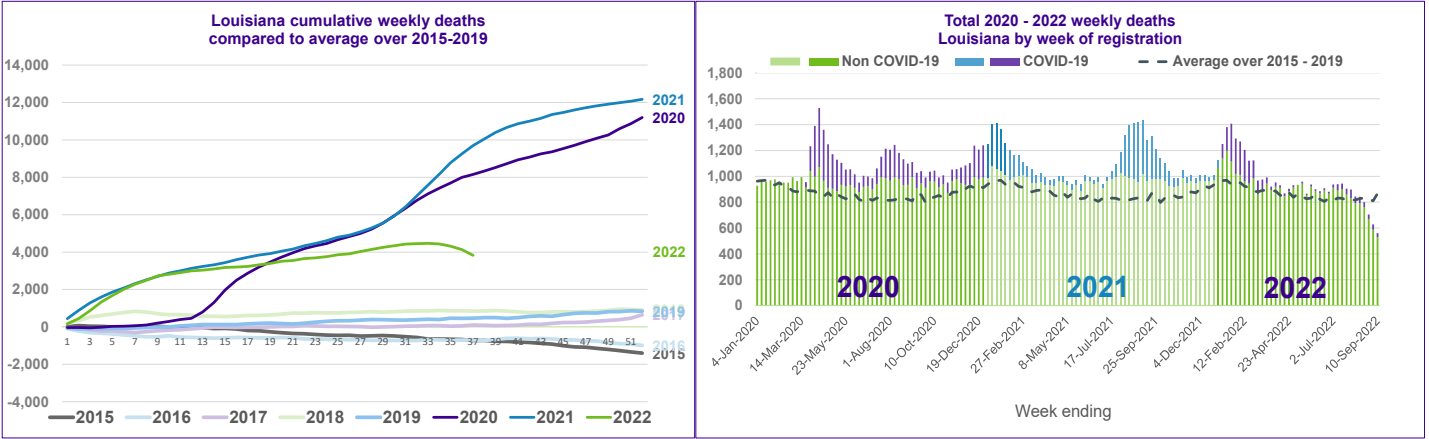
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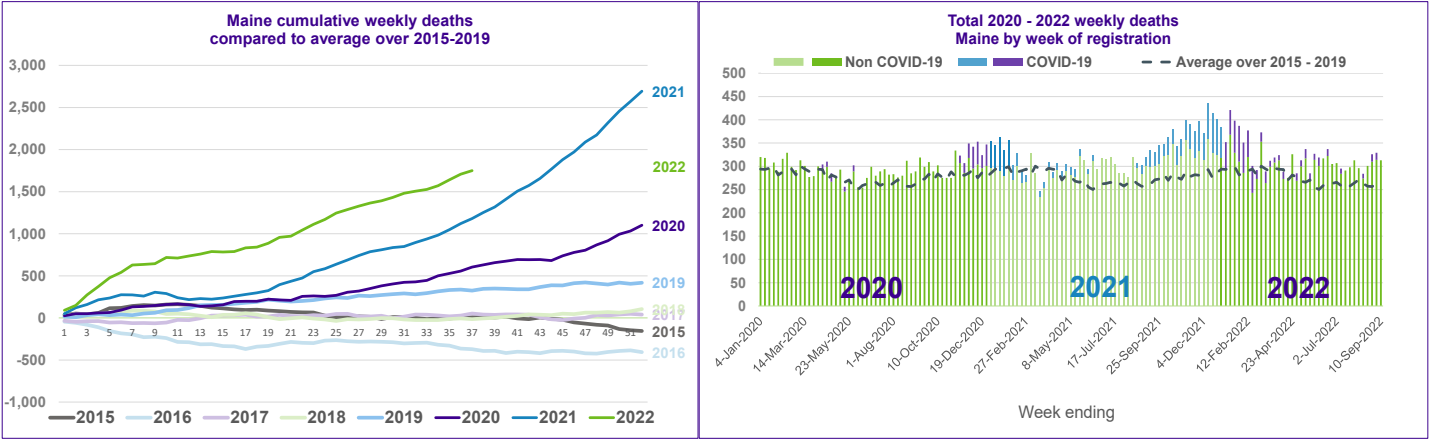
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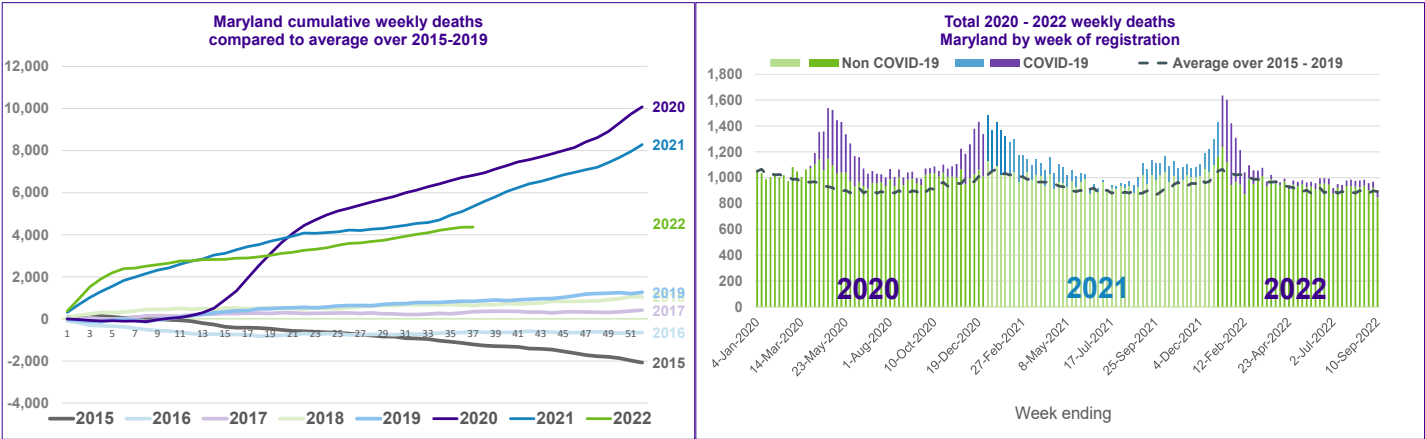
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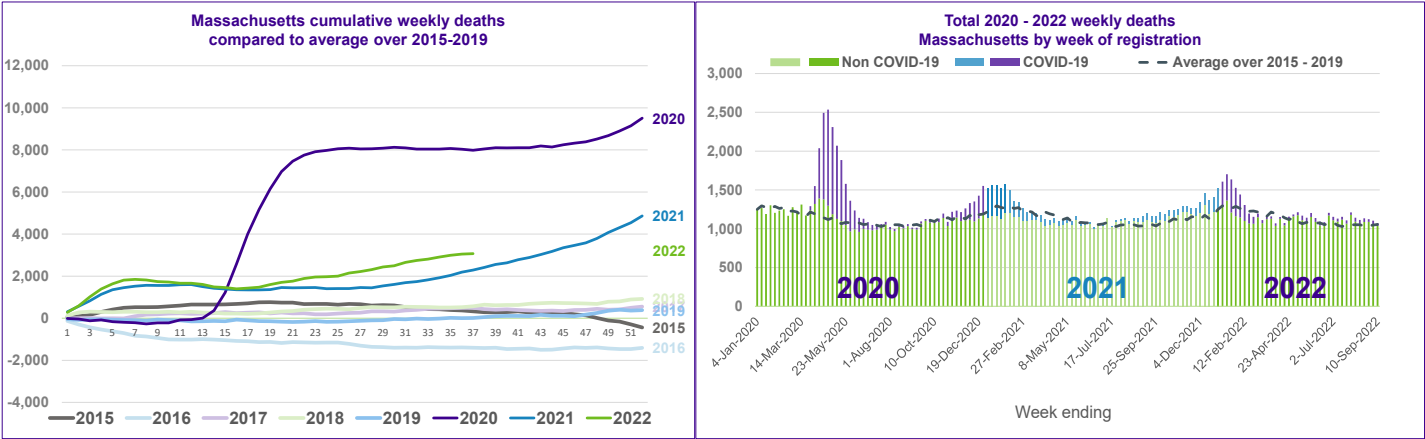
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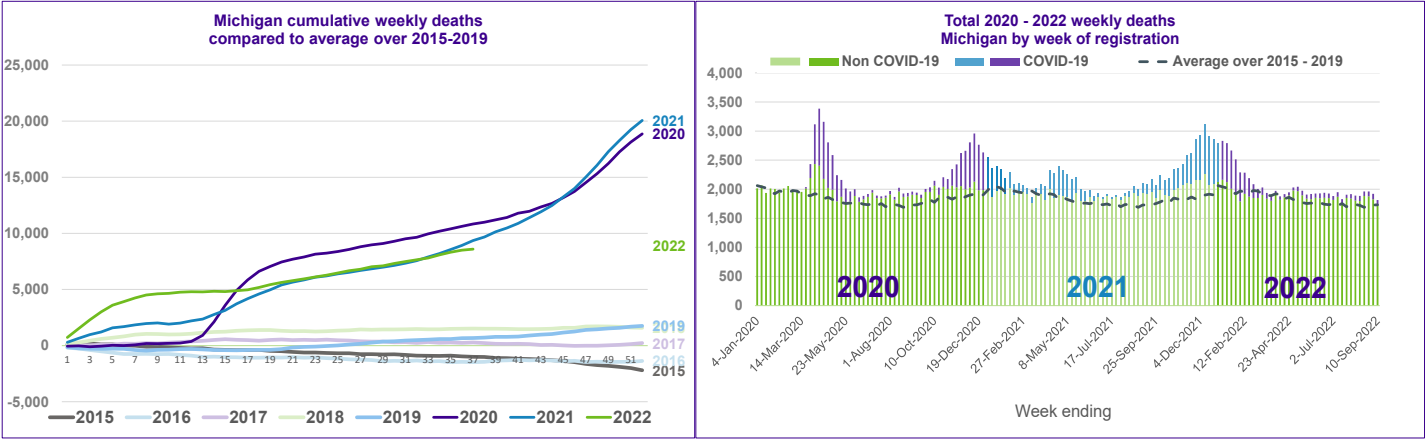
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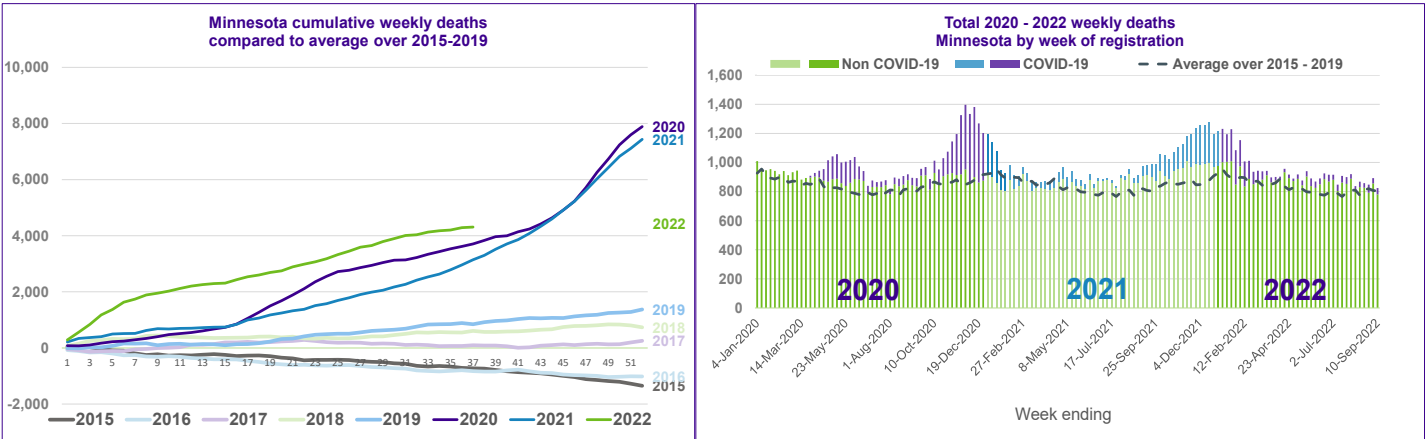
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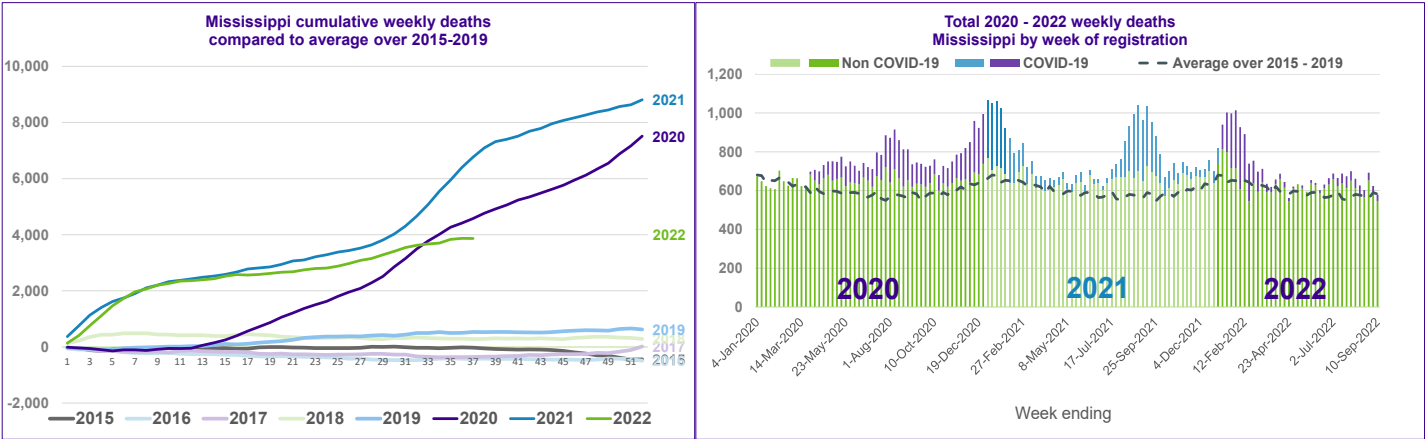
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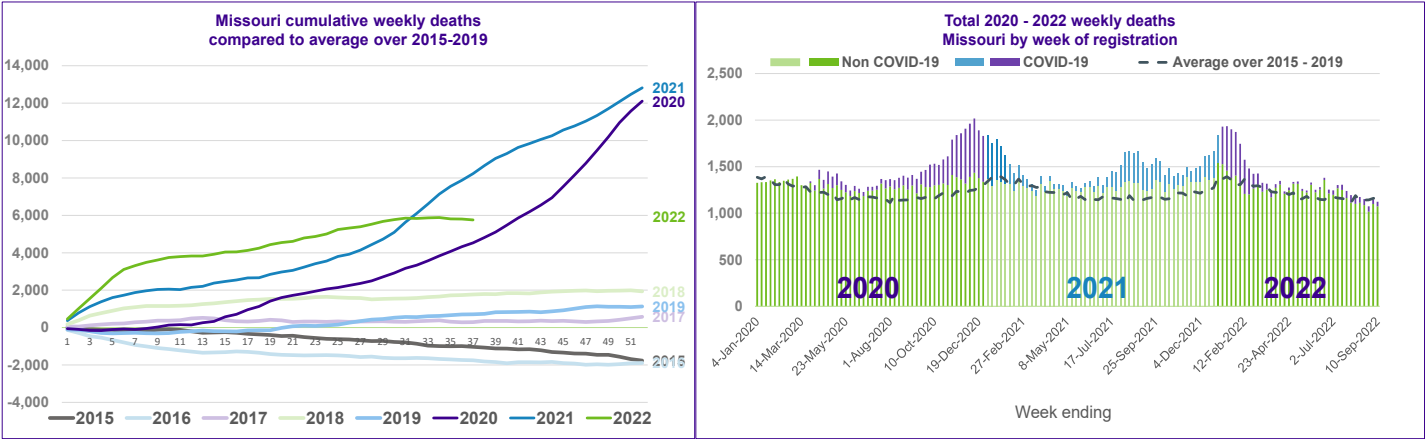
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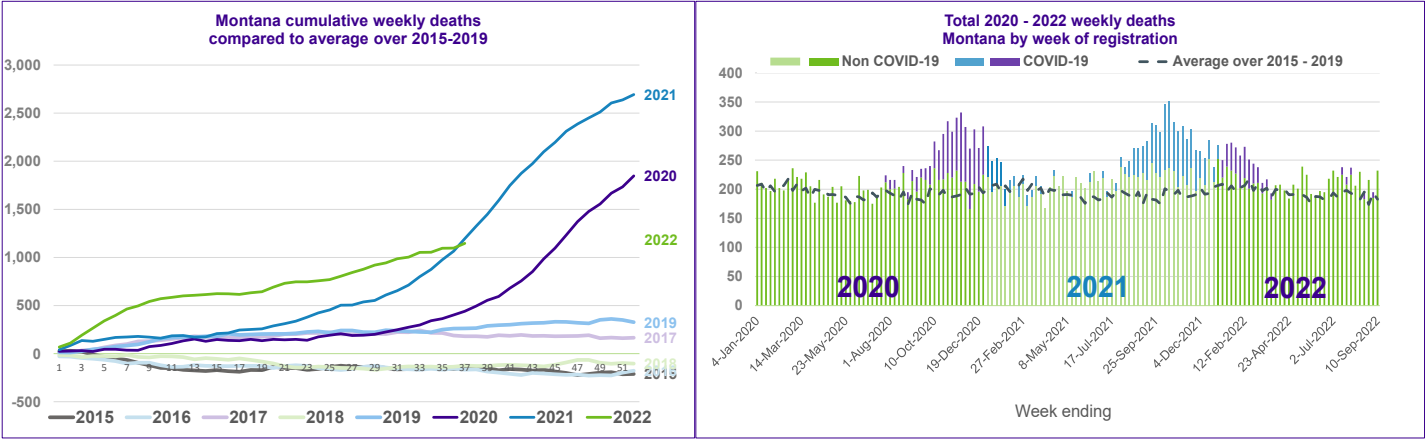
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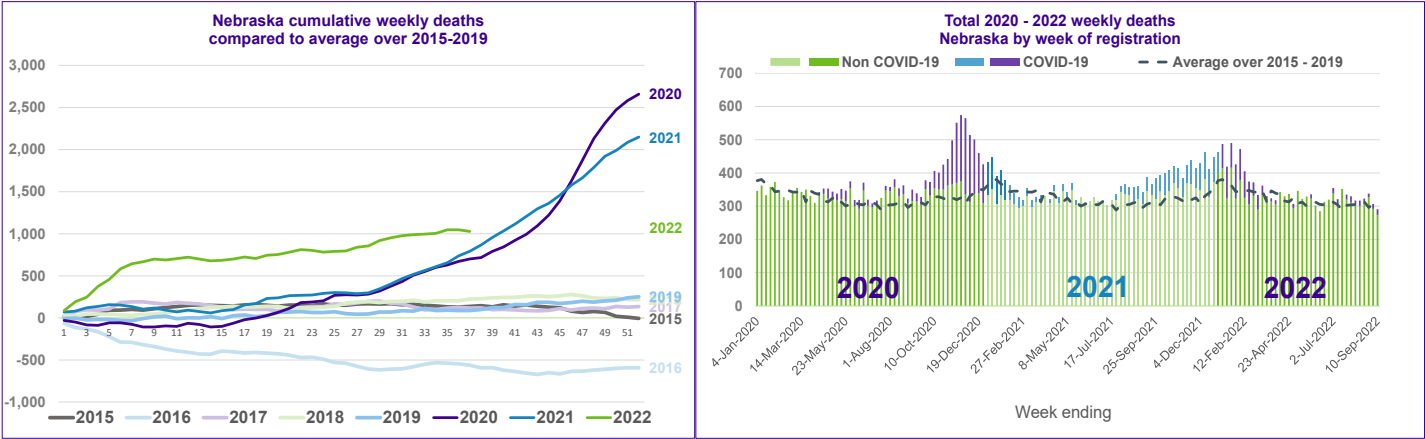
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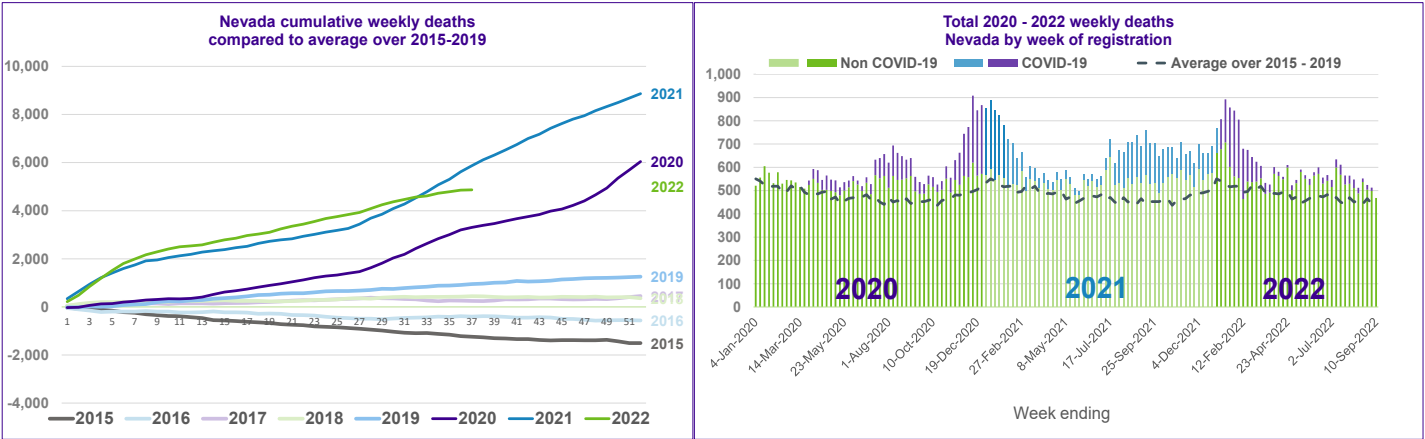
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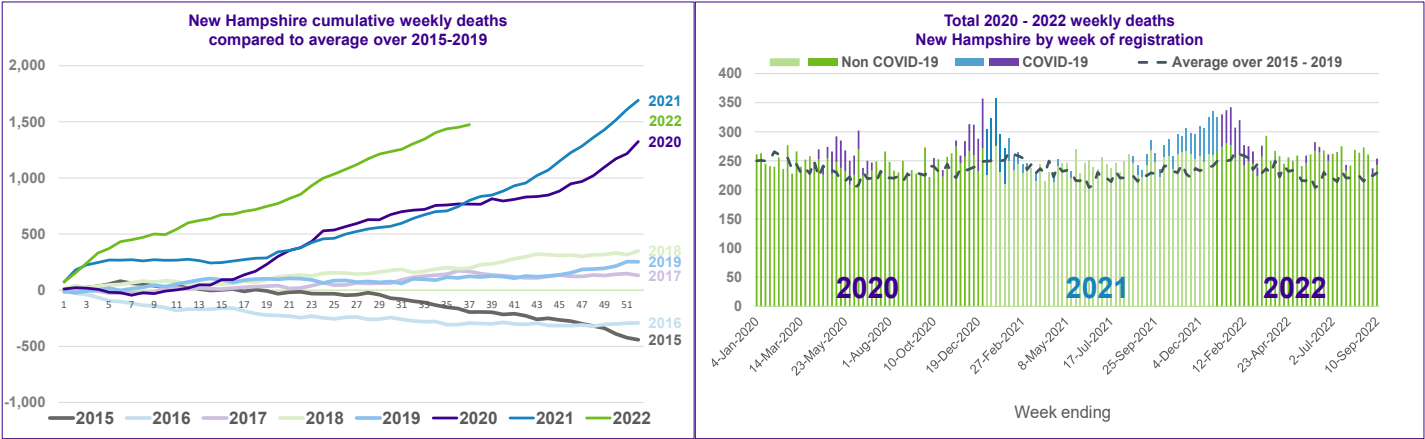
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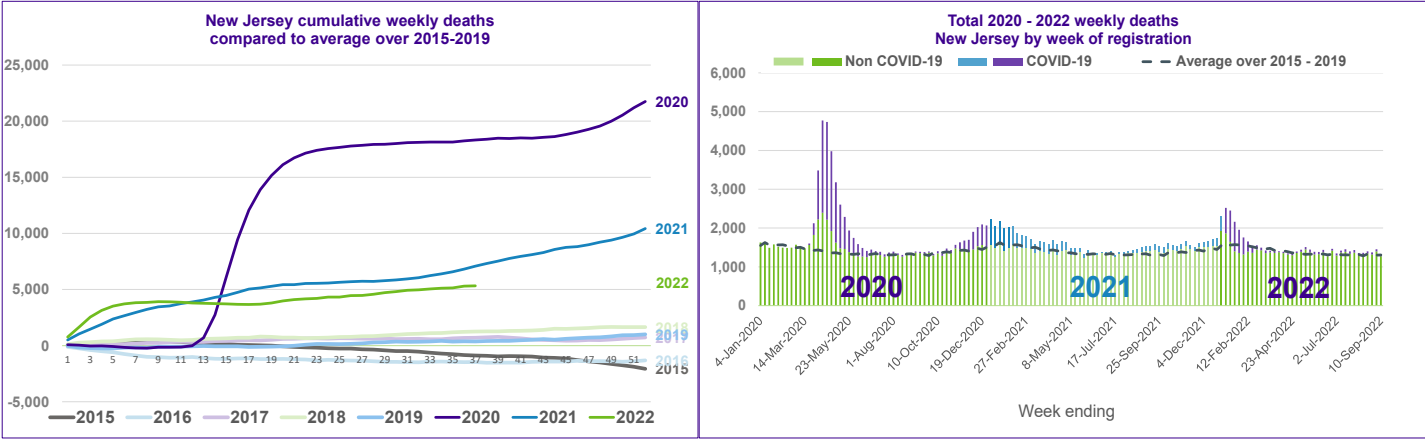
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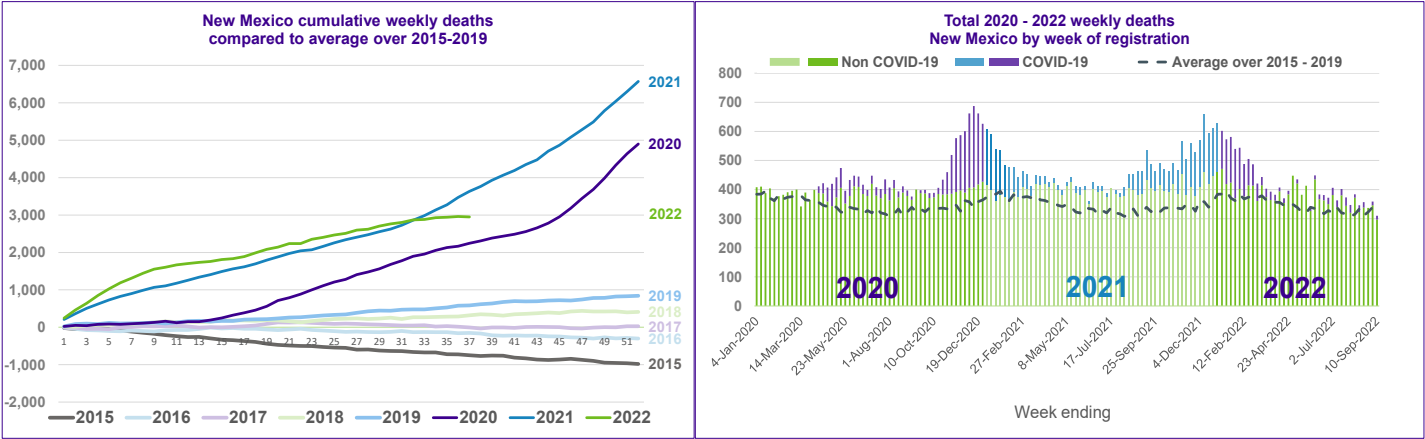
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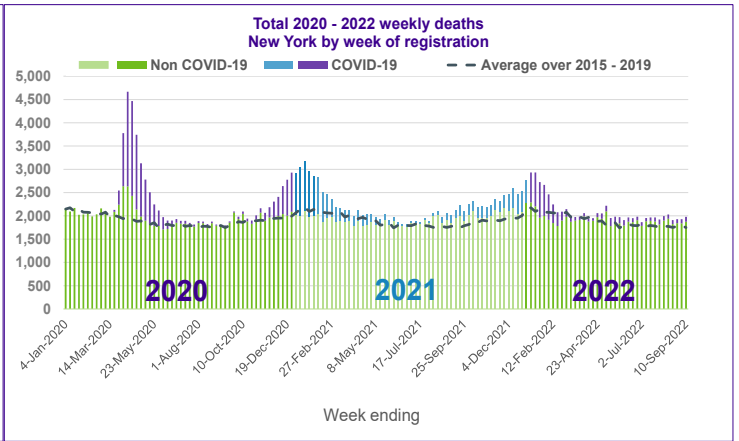
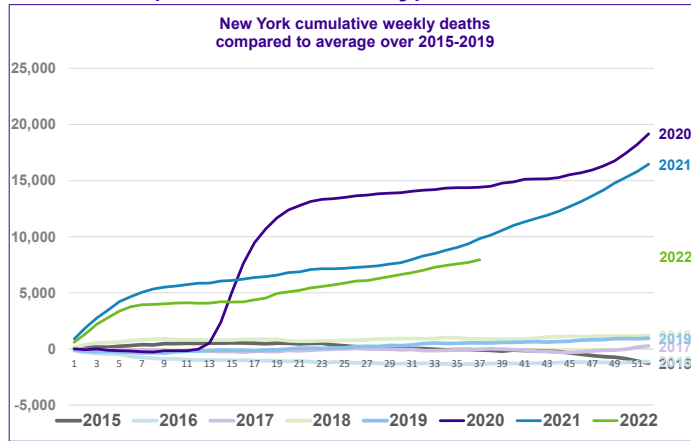
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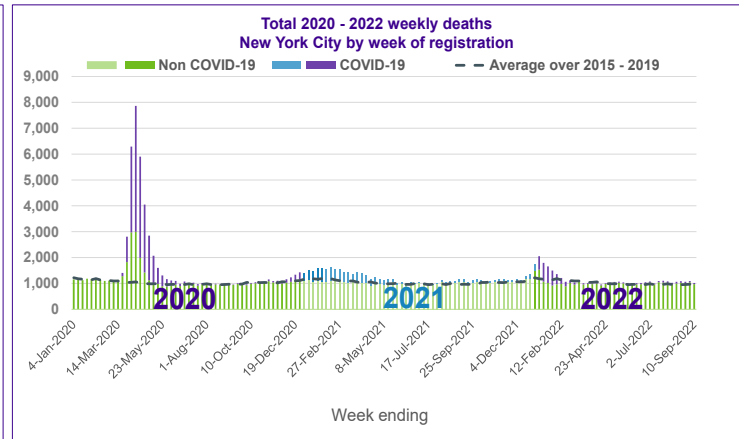
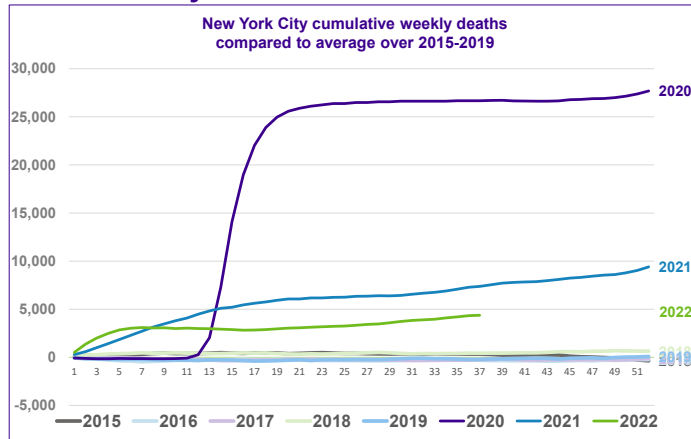
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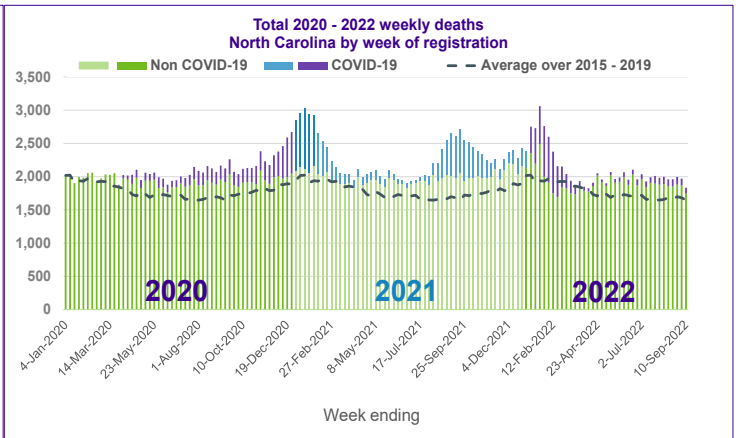
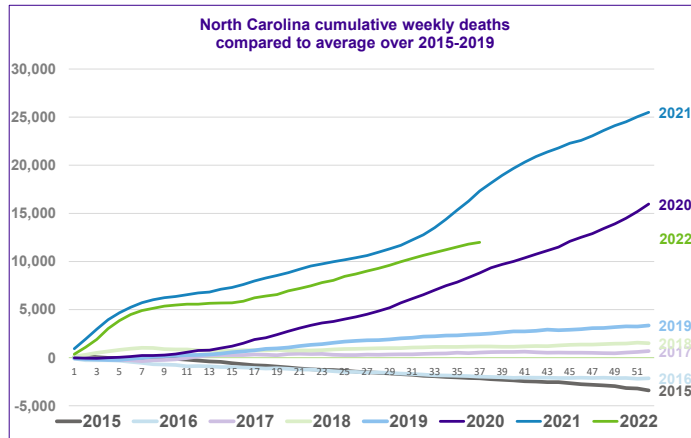
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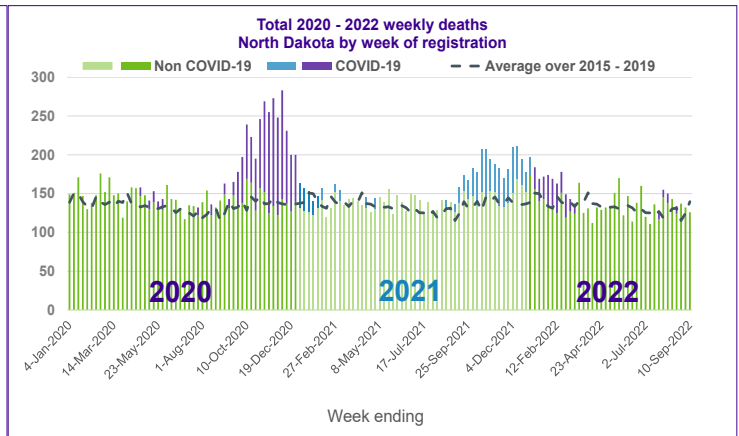
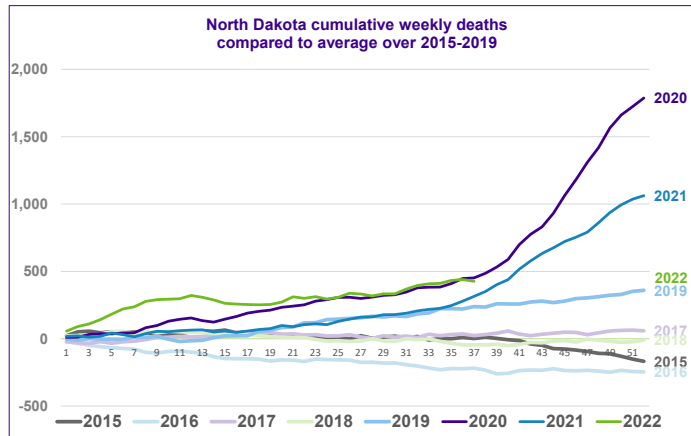
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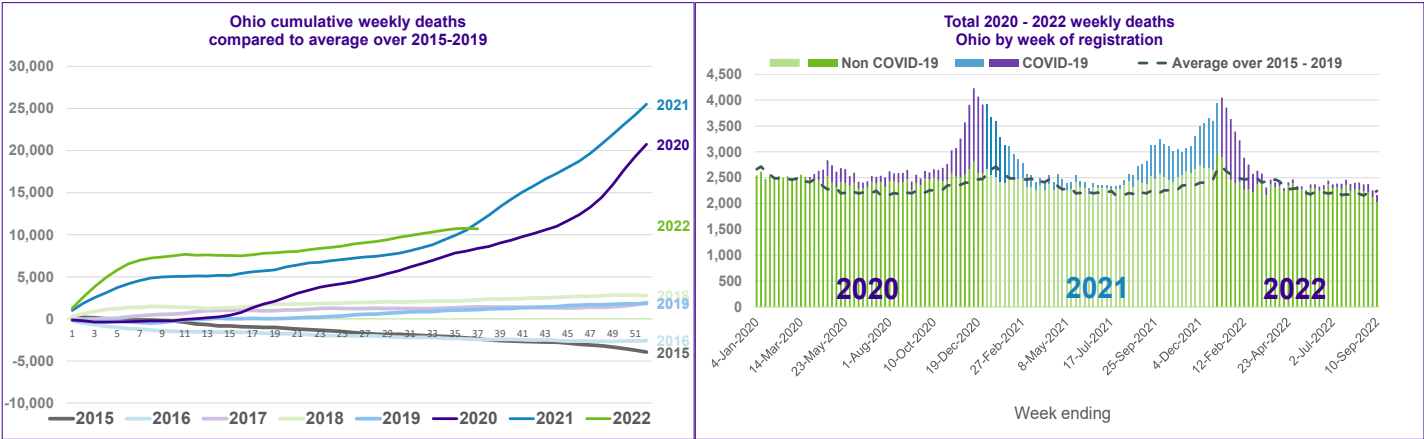
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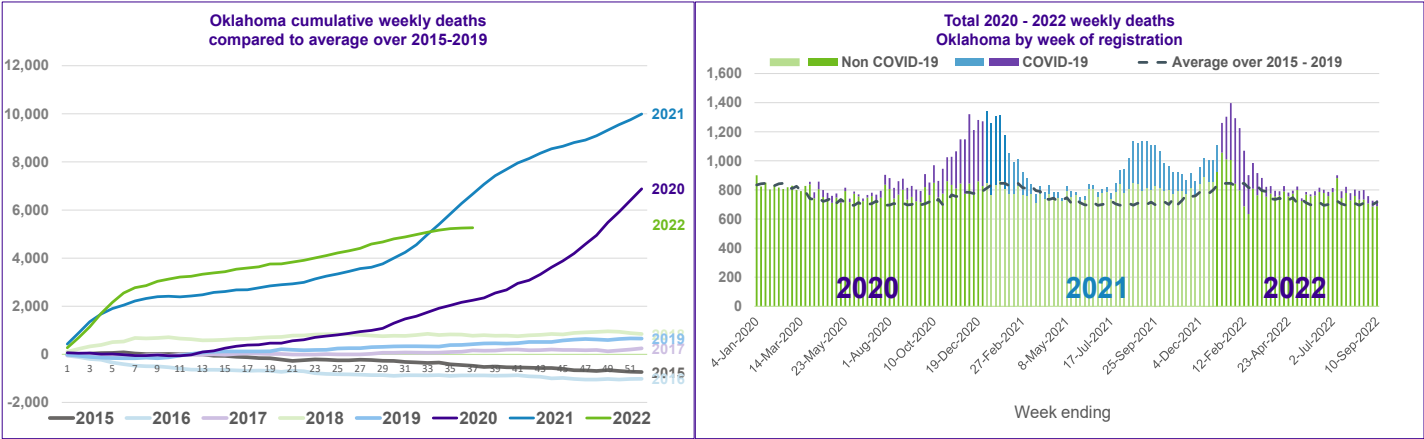
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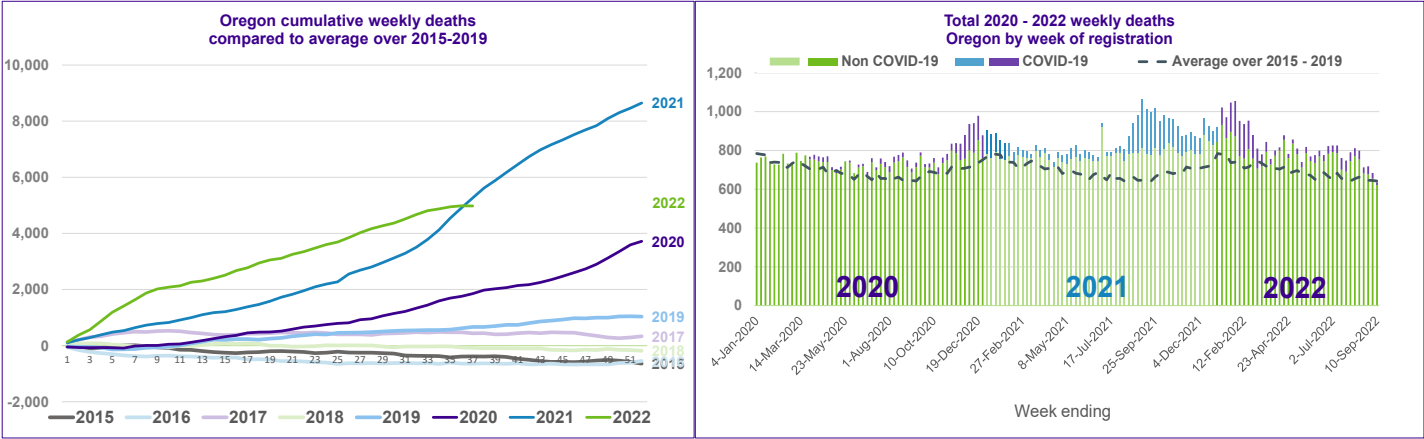
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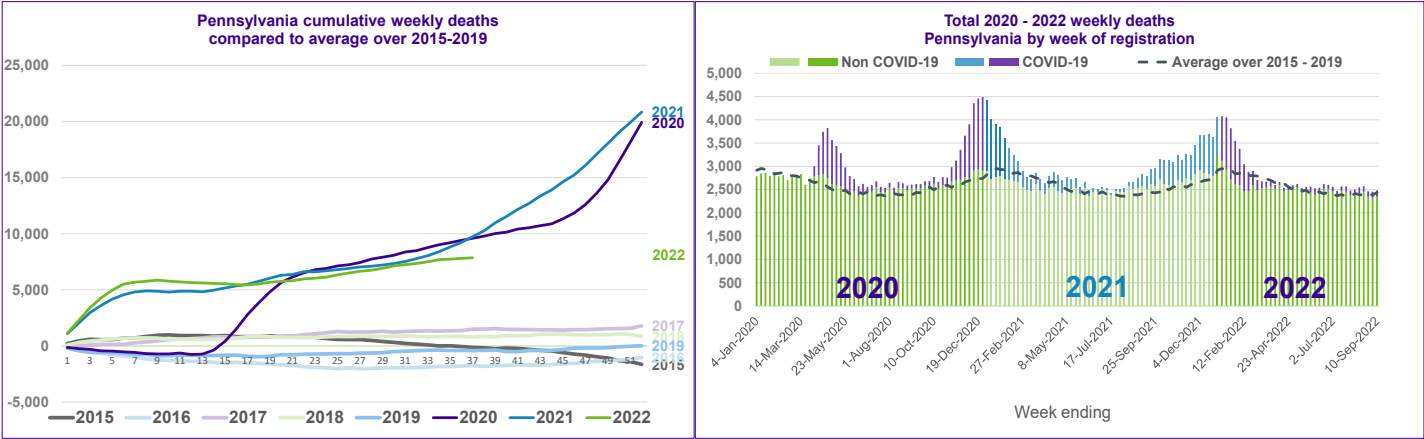
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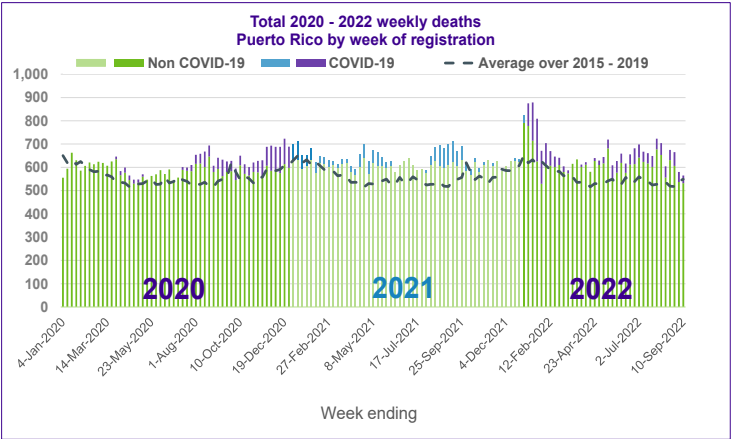
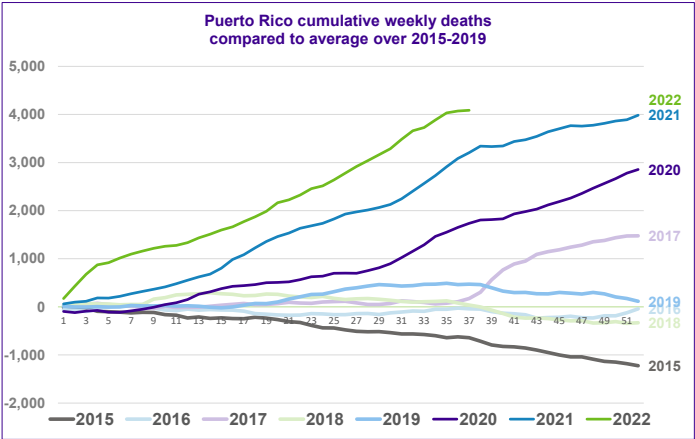
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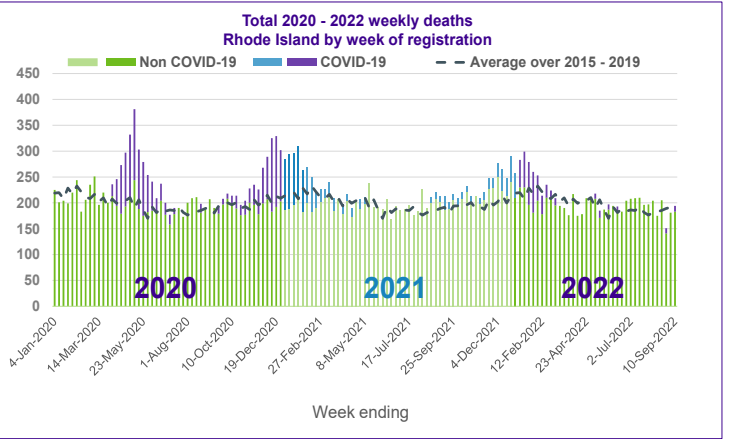
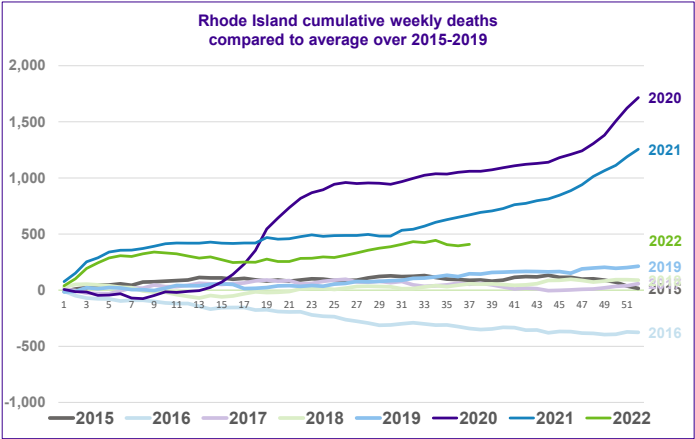
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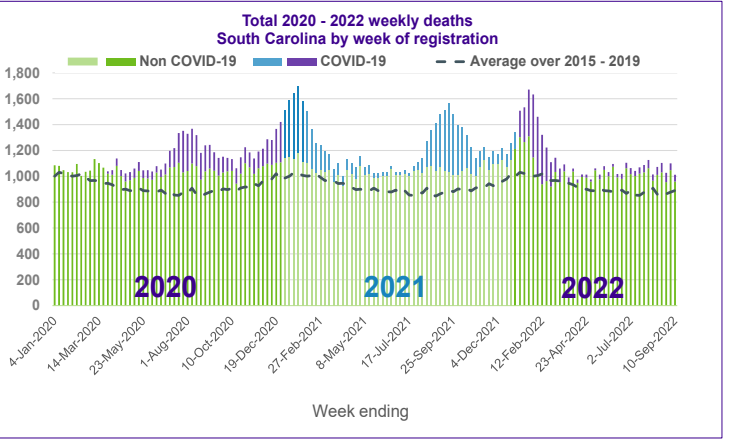
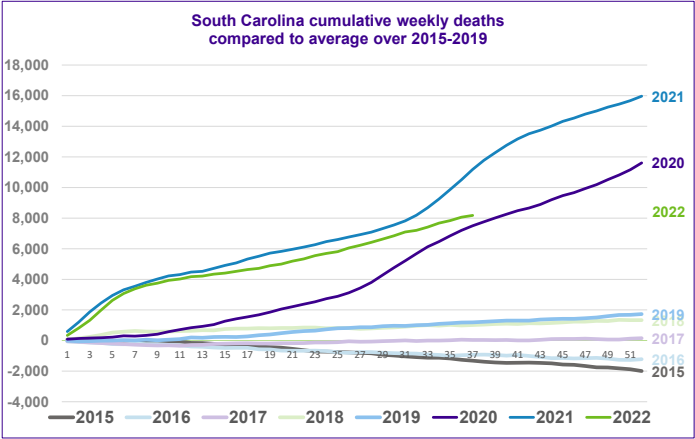
Puerto Rico



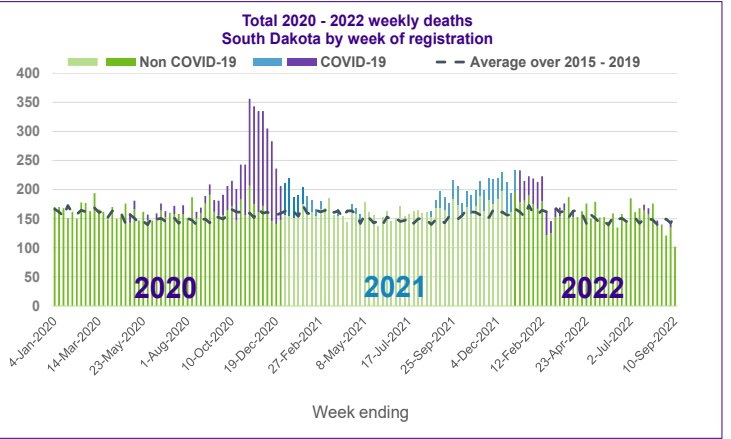
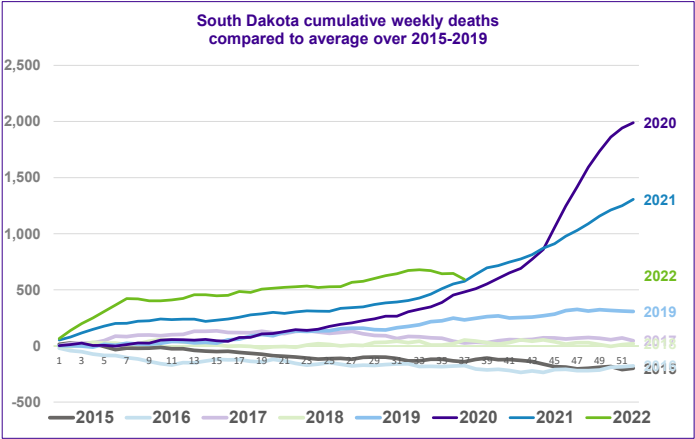
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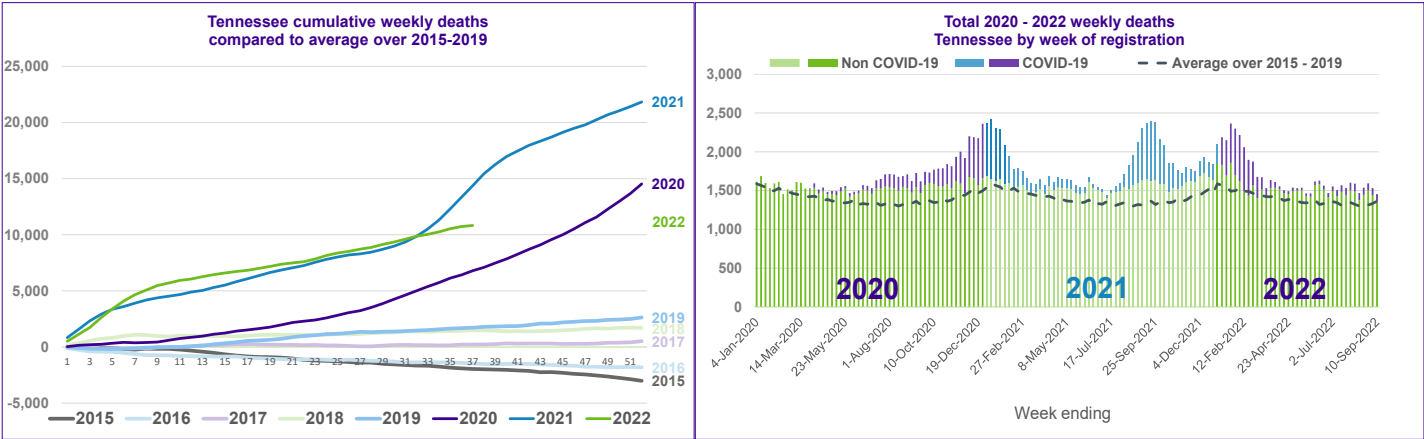
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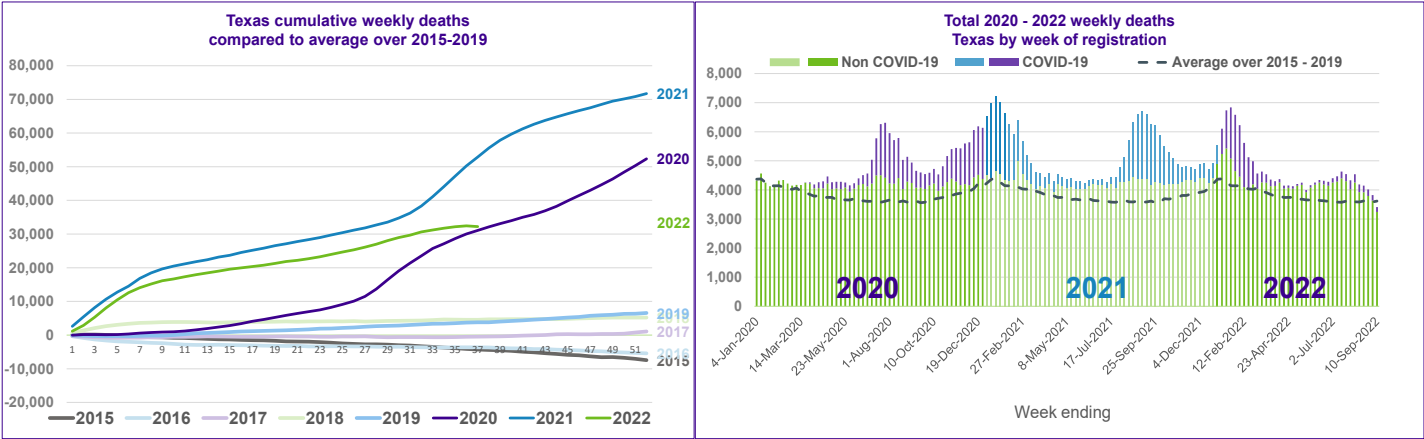
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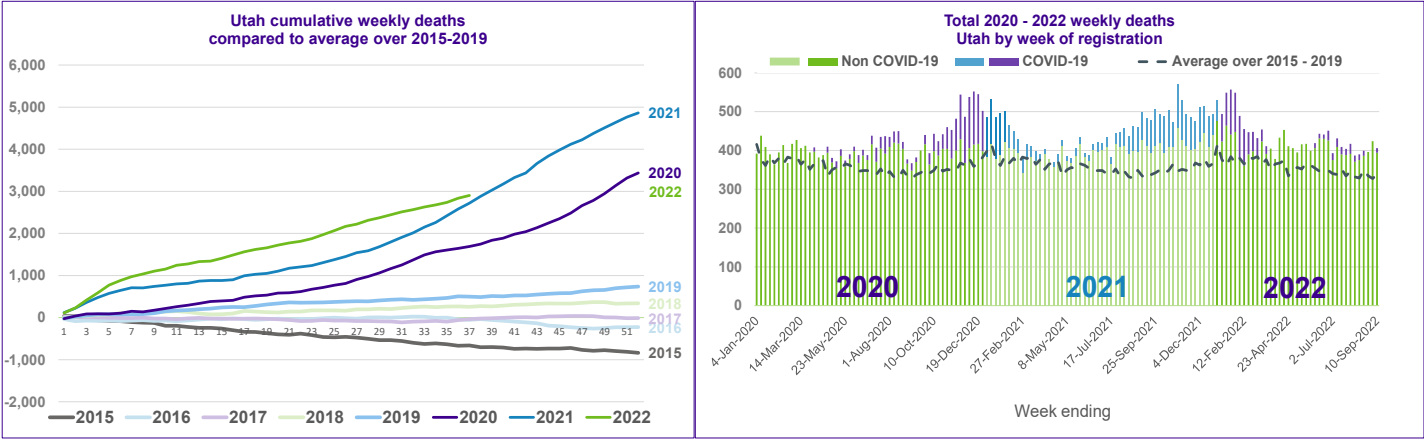
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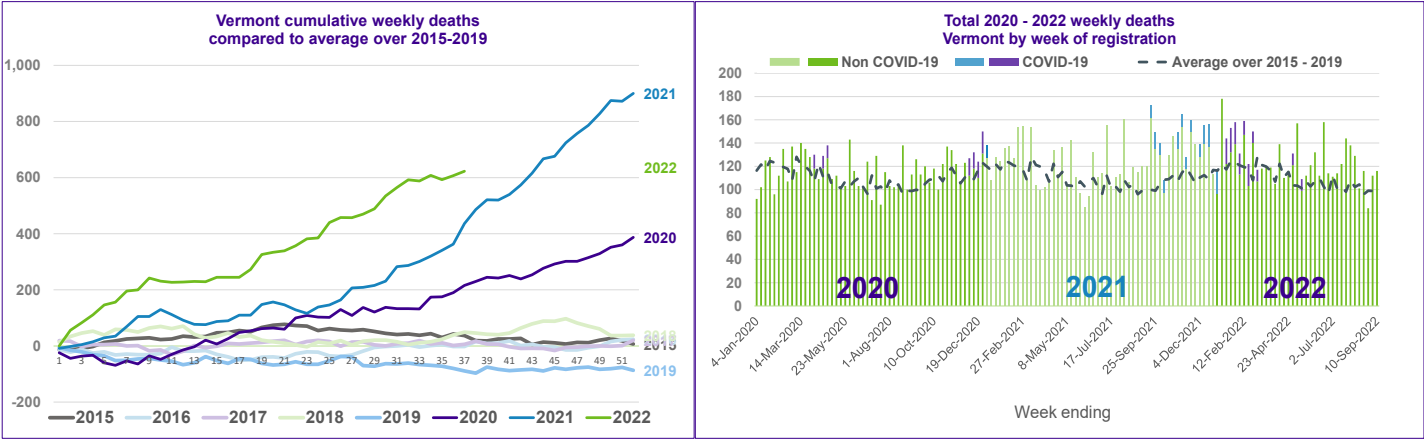
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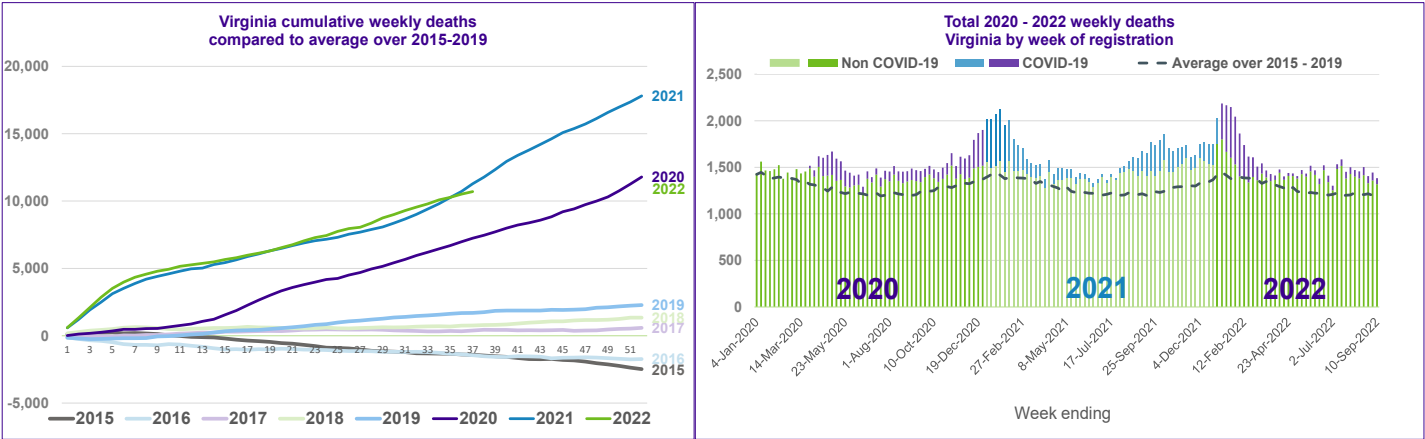
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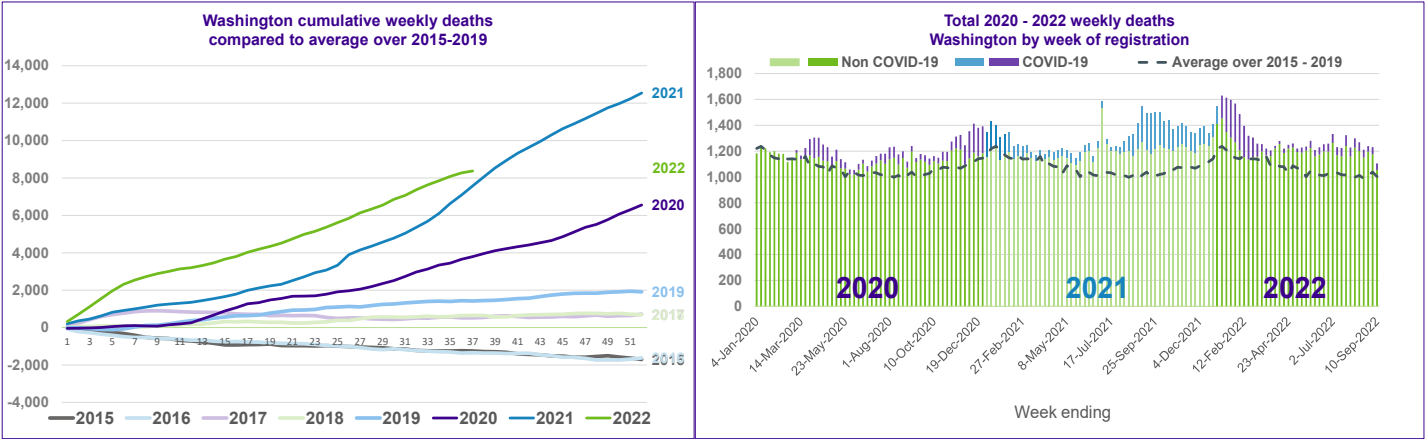
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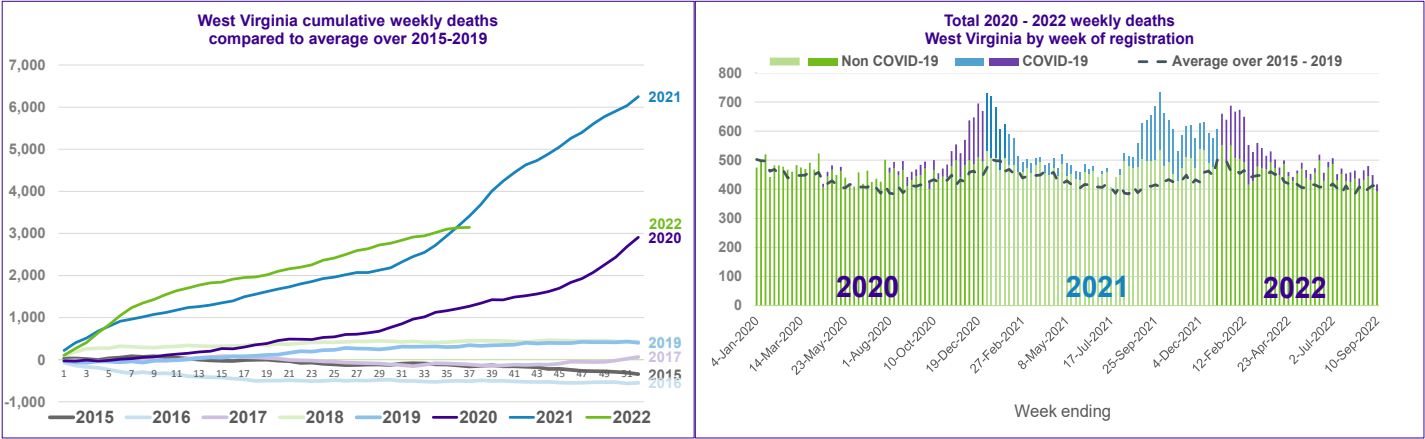
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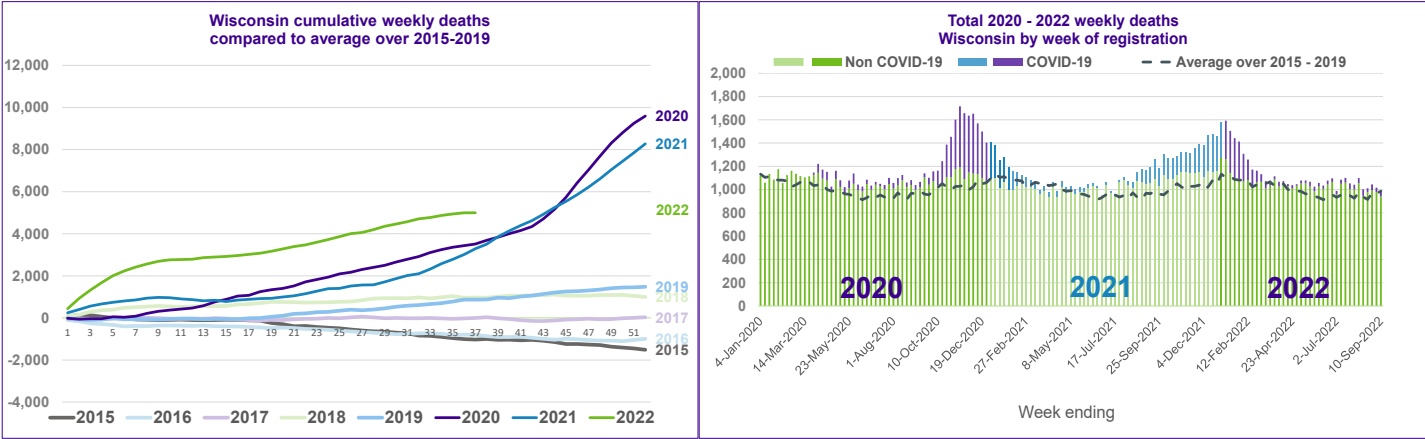
Washington



West Virginia



Wisconsin



Wyoming

