FINAL PROJECT 776 2020 Summer

Visualization for:

COVID-19 Daily New Cases in USA

Daily Deaths vs Daily New Cases

COVID-19 Deaths vs Influenza Cases

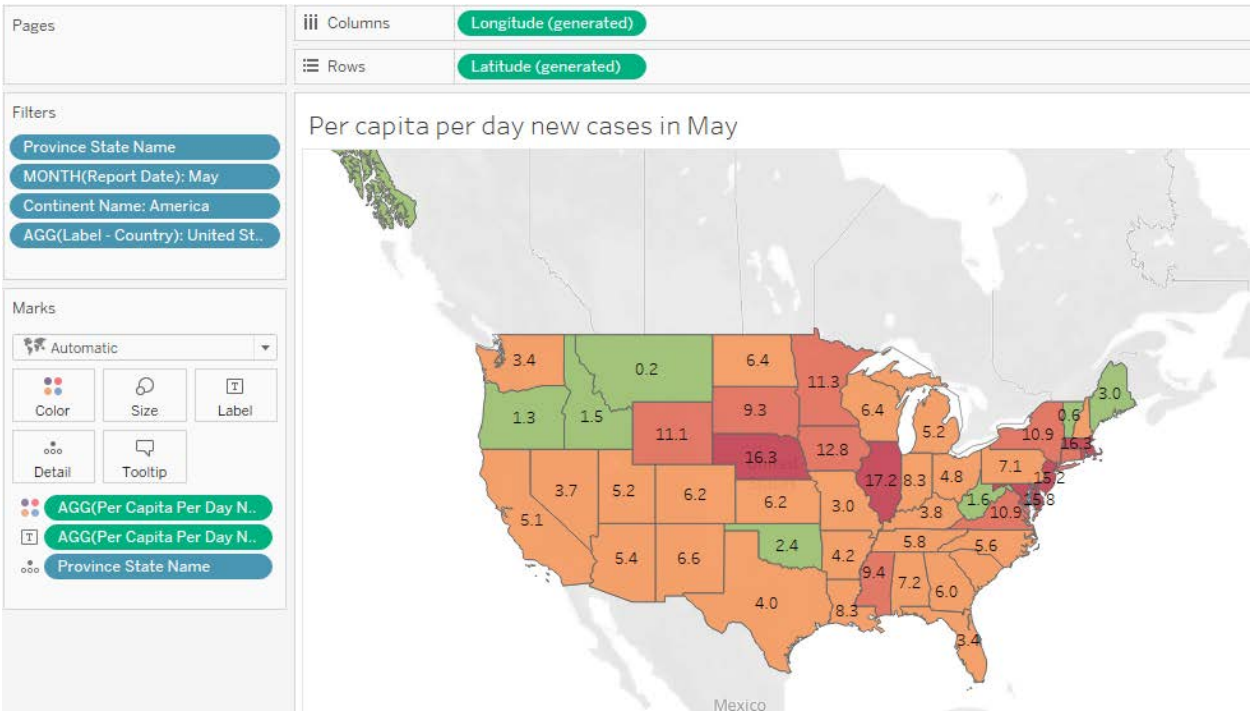
Suranjana Nag

Joe McDonald

Teri Shotwell

This report shows data relating to the new cases of the COVID-19 virus in the US. The data for new cases is covering May, June, July. The show the recent US spikes in new cases. The next set of data reviewed is new cases versus new deaths. The rate of new deaths has increased at a similar rate as the rate of new cases. Lastly overall cases of CIVID is compared to overall cases of Influenza. The data shows early in the influenza season there are much fewer COVID-19 cases than Influenza cases. COVID-19 surpassed the amount of Influenza cases and deaths.

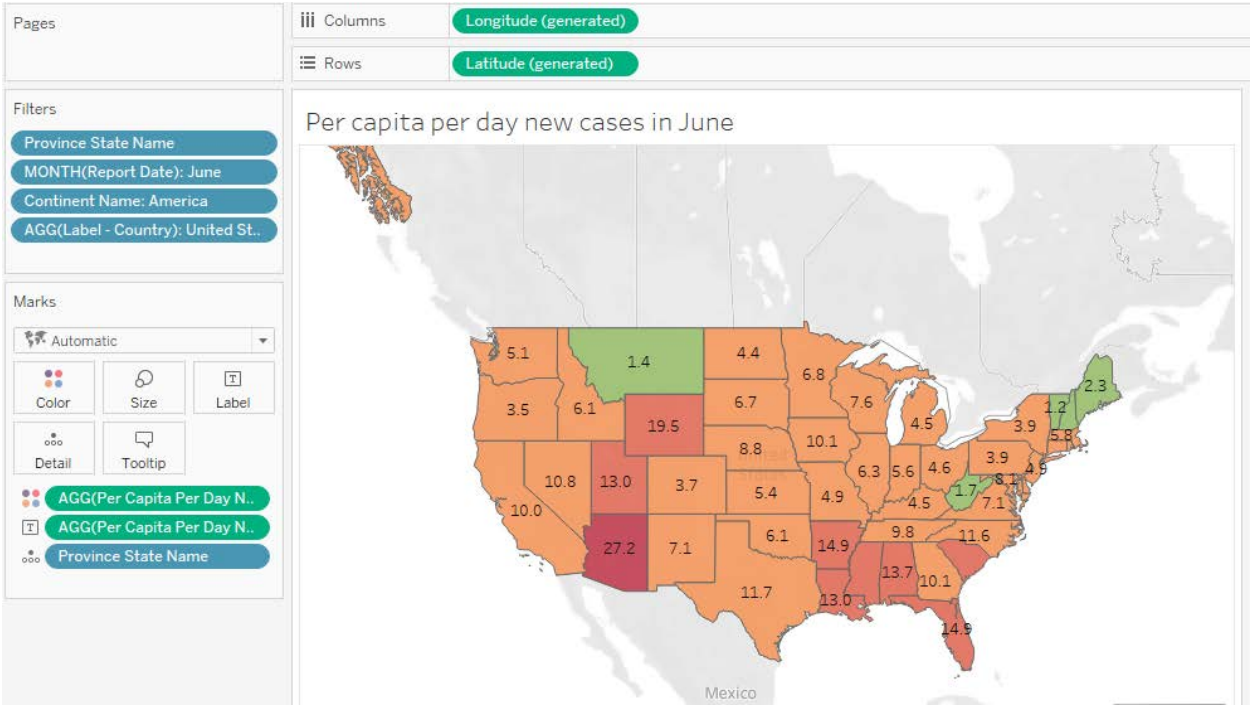
Per capita per day new cases in May



In the above picture, the new cases per capita per day in the month of May is shown for United States. Here we can see that in Montana, Idaho, Oregon, Oklahoma, West Virginia, Maine, Vermont were with per capita per day new cases in May was in the range of 0.2 to 3.0, highlighted in green. But the states like Massachusetts, New York, New jersey, Illinois, Nebraska, Maryland etc (shown in the red) had the higher per day per capita new cases which ranged from more than 10 to 18, compared to other states. And the rest of the states (in orange color) shows the per day per capita between 3.4 and less than 9, that means in the lower side.

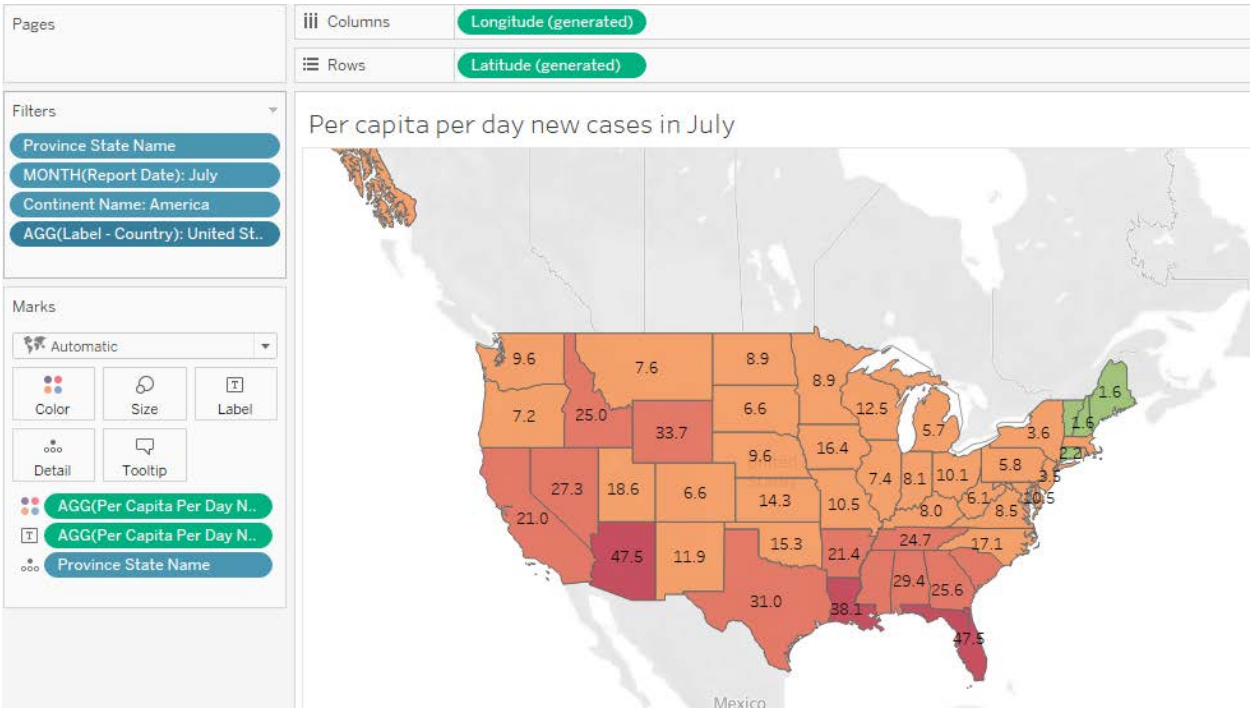
In the next picture shown below will show how this number will change in most of the states in June.

Per capita per day new cases in June



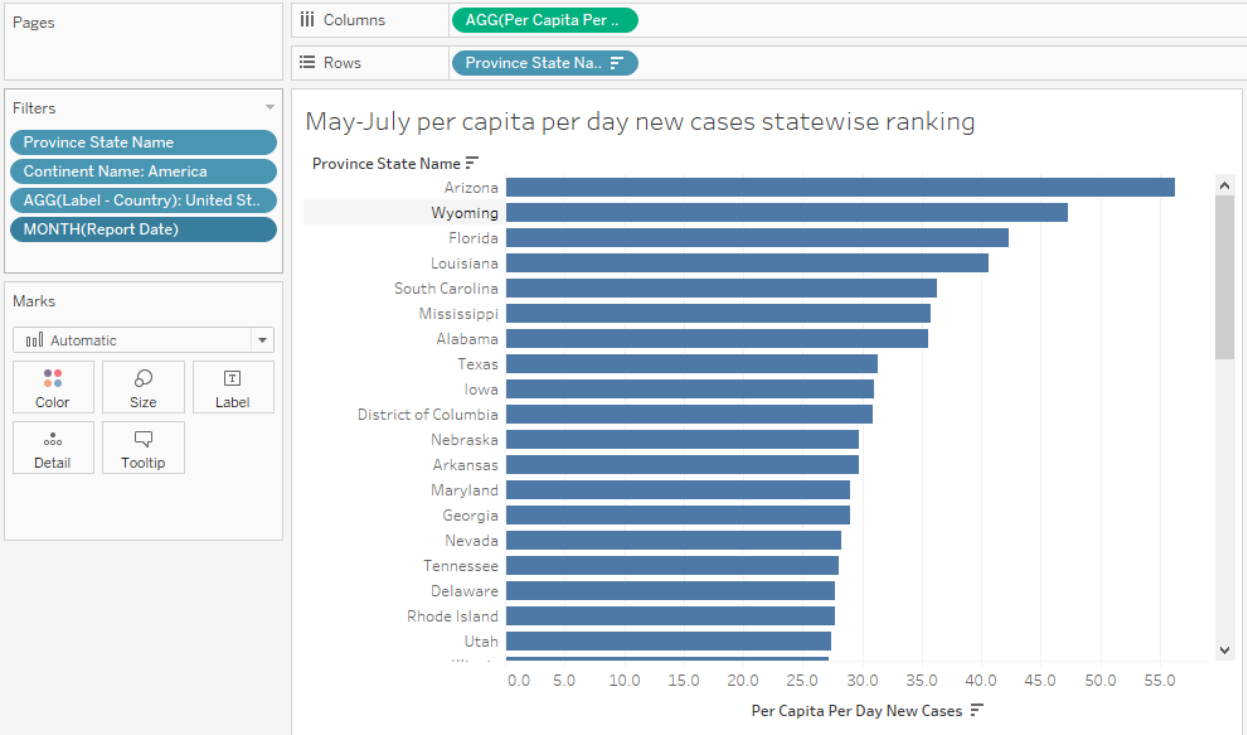
In the picture above with the per day per capita new case data shows a few major shifts in the number in the month of June. The states like Massachusetts, New York, New Jersey, Maryland, Illinois etc had controlled the daily spread in much better way compare to other states and that reflects in their number which changed to well within 3.9 to 8. Whereas in some states we found a way higher per day per capita cases than in May, and one of those states is Arizona. Even the states like Florida, Utah, Louisiana, Wyoming saw a great spike in the new number per day per capita.

Per capita per day new cases in July



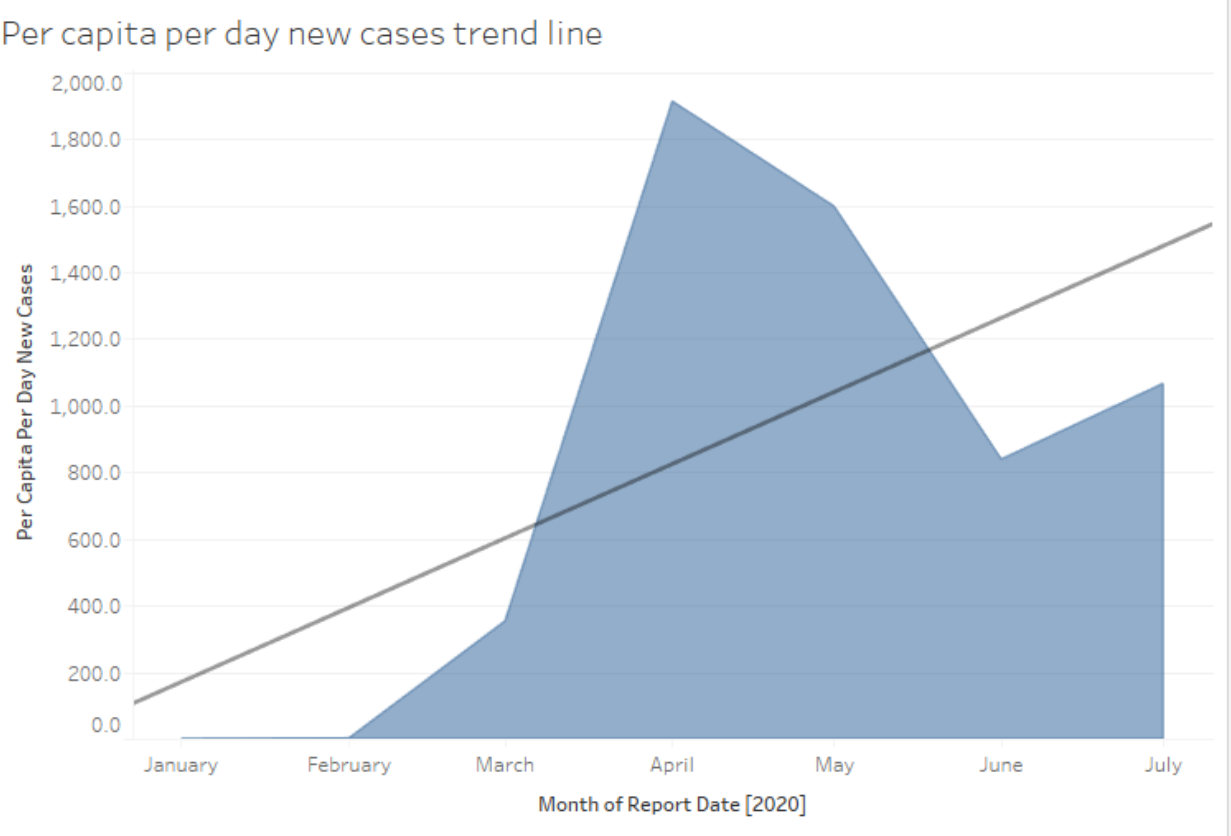
As per the above per capita per day data visualization report which is made based on the month July, a larger visible spike is found higher than ever before, almost in every state with very few exceptions. Only Maine, New Hampshire, Vermont, Connecticut have shown reasonably controlled daily spread. Many states like California, Texas, Florida, Arizona, Idaho, Wyoming, Tennessee, South Carolina, Georgia experienced a massive spike in the per day case.

May-July per capita per day new cases state wise ranking



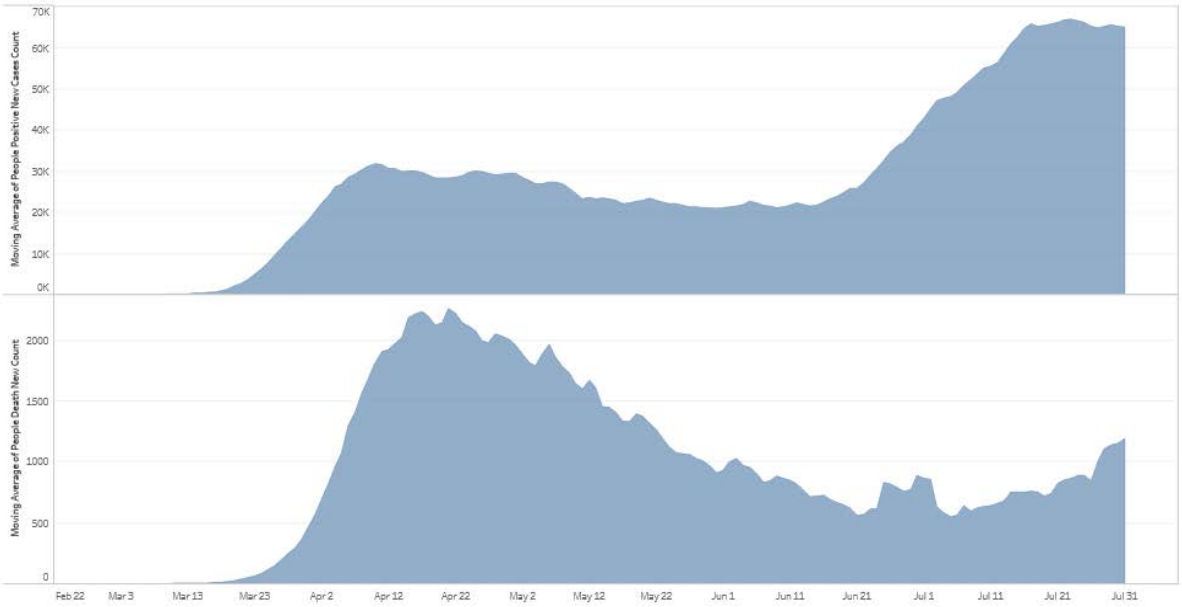
The above visualization shows the state wise ranking on per capita per day on May-July and finds Arizona, Wyoming, Florida, Louisiana, South Carolina as the top 5 in this ranking.

Per capita per day new cases trend line



Trend line that is used in tableau to predict the continuation of a certain trend, is used here make the prediction on per capita per day new cases. In the data visualization, it shows a sharp spike throughout March and April followed by a downfall in May. But again, had spike in July and the data trend is also up based on the continuation of the data.

US Moving Average of Daily New Cases vs Daily New Deaths



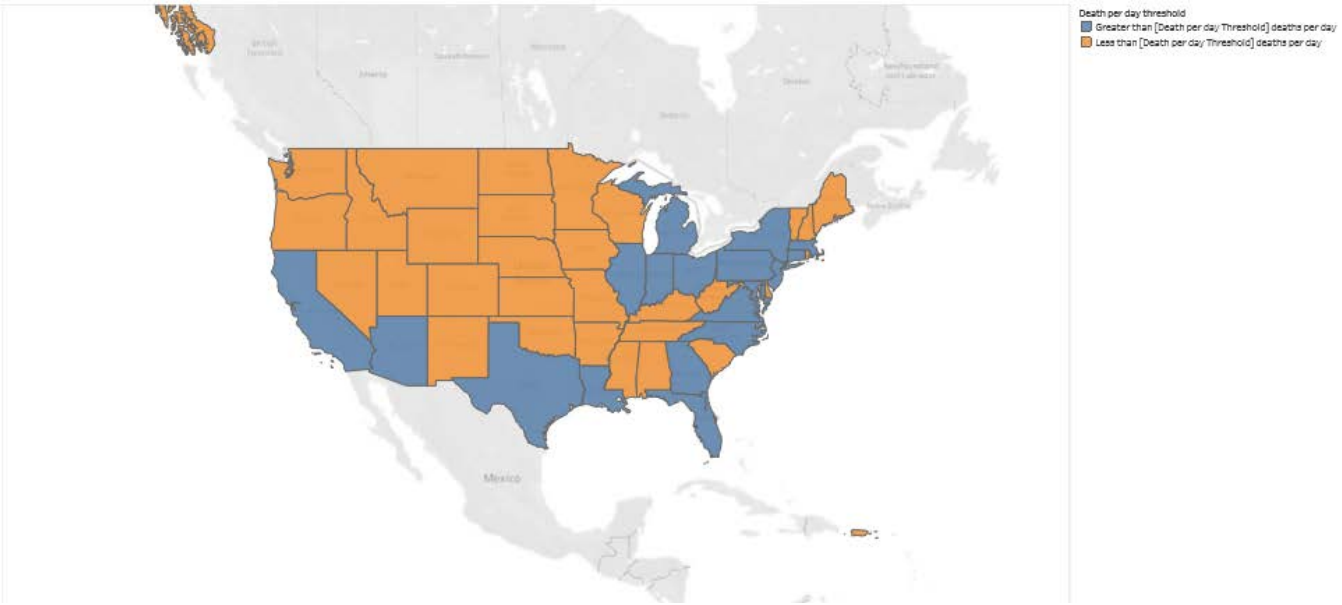
The plots display the moving average of positive new cases vs the moving average of new deaths counted daily. The daily average is calculated for the months of March, April, May, June, and July.

As cases go up and deaths decrease it indicates lower mortality rate. The data does not explain the decrease in mortality rates. The decrease is likely due to increased testing, better understanding of the virus, better hospital preparedness, and better virus containment procedures.

Moving Daily Average of New Cases per Deaths

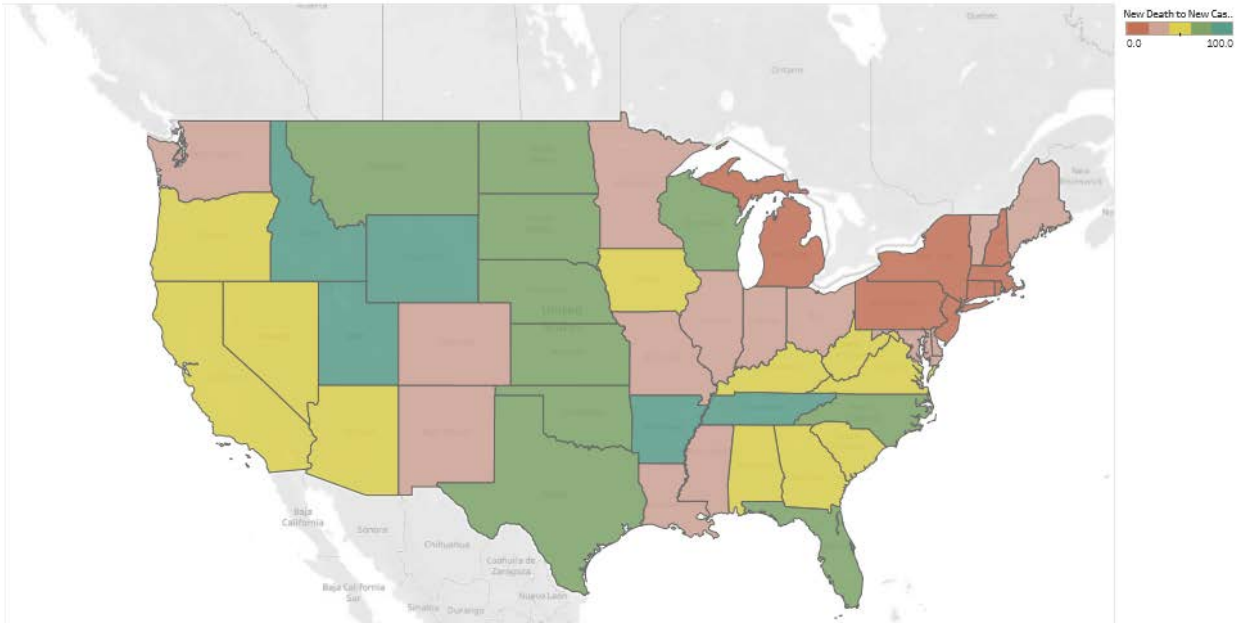
This plot shows the moving average of the ratio of new cases for each new death per day. The ratio shows for every person that died today X many new people contracted the virus. Therefore, the higher the number, the lower the mortality rate.

Deaths per day by State Threshold



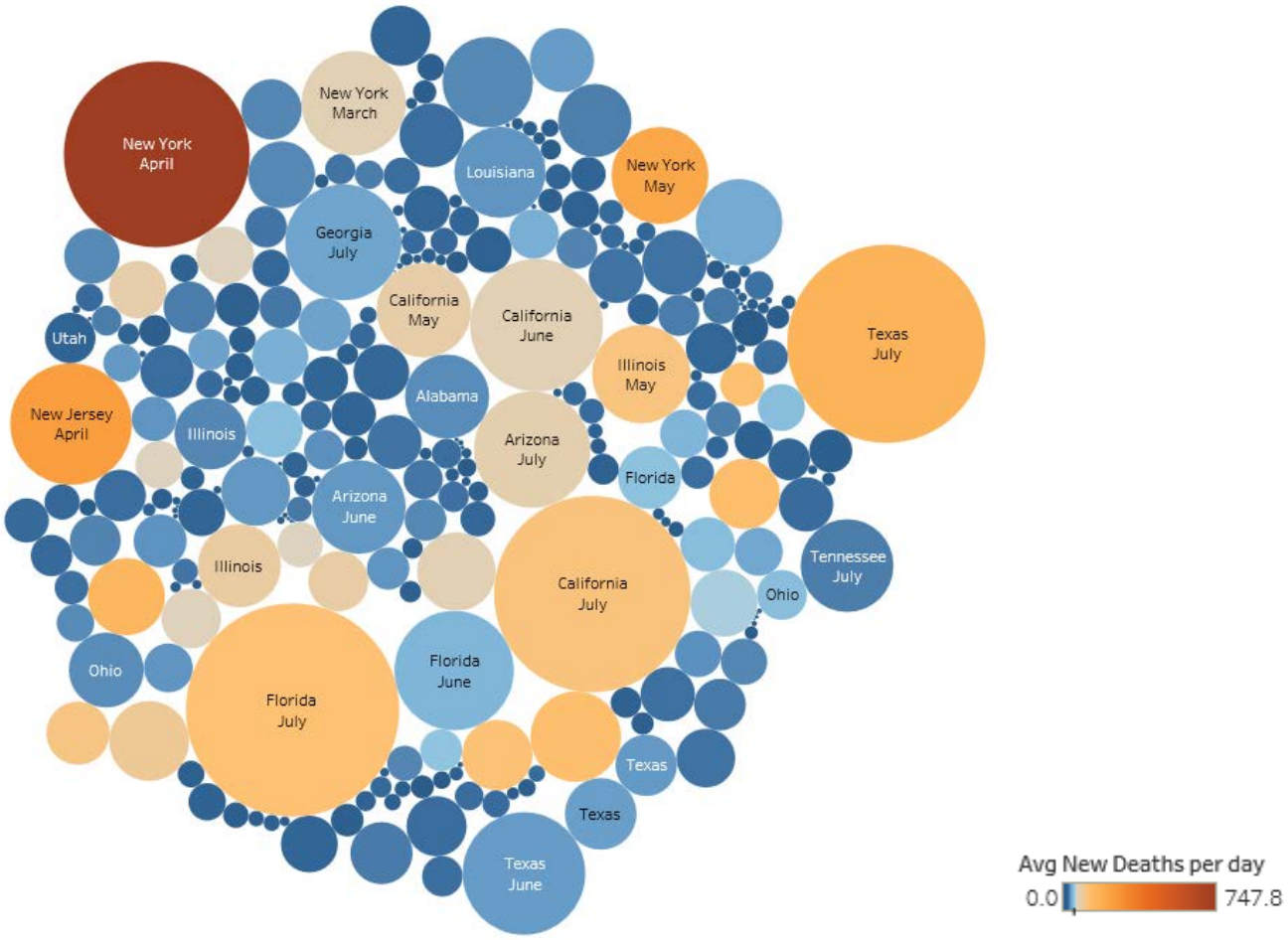
This plot shows states that are above and below the threshold set at 10 for avg deaths per day.

New Deaths to New Cases Ratio by State

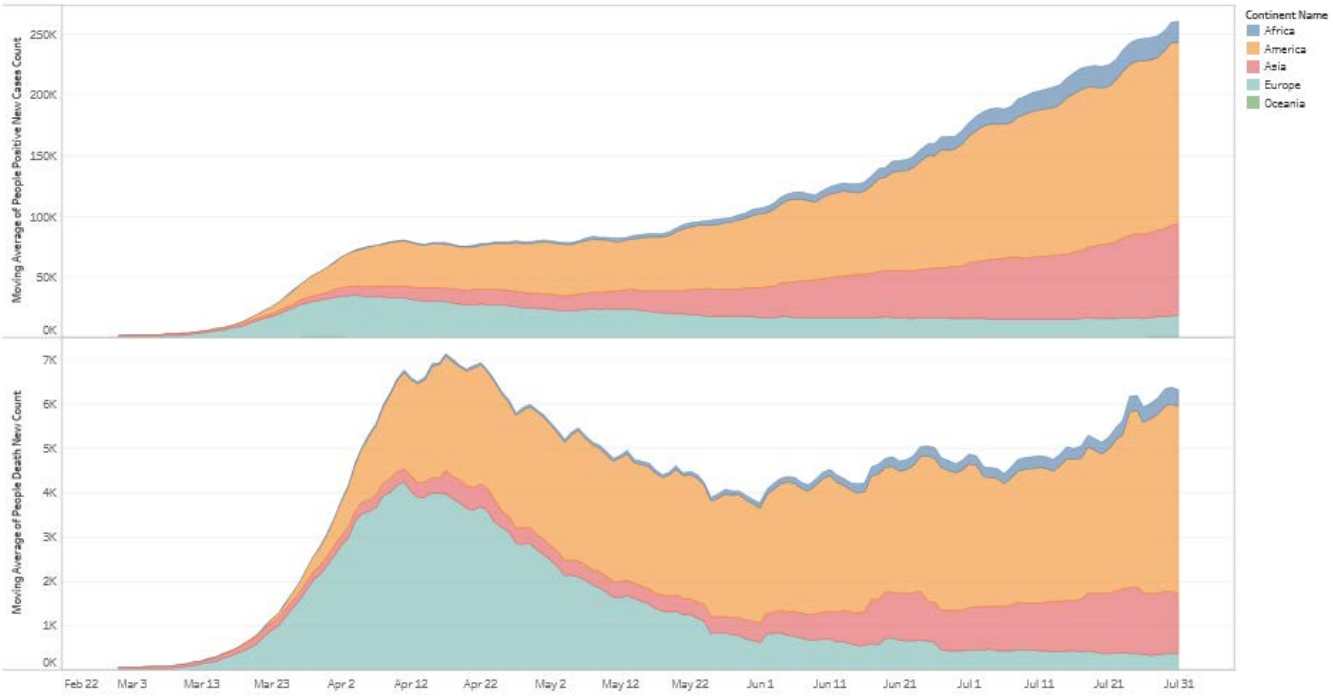


This plot is a heat map of new cases to new deaths ratio.

Average Deaths vs Cases per Day by Month and State



Worldwide Moving Average of Daily New Cases vs Daily New Deaths By Continent



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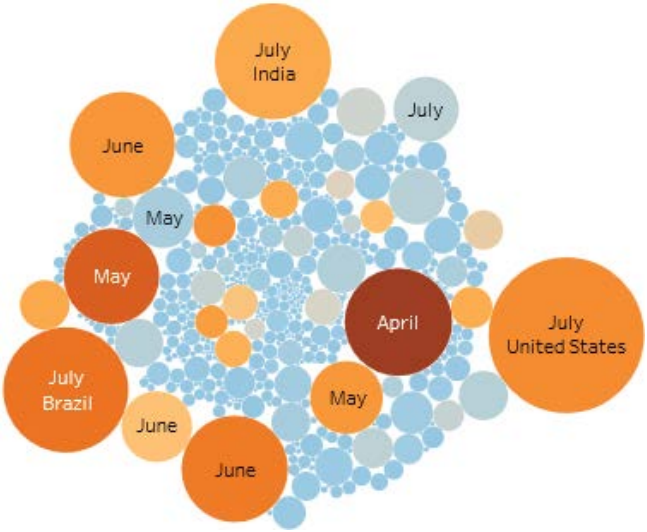
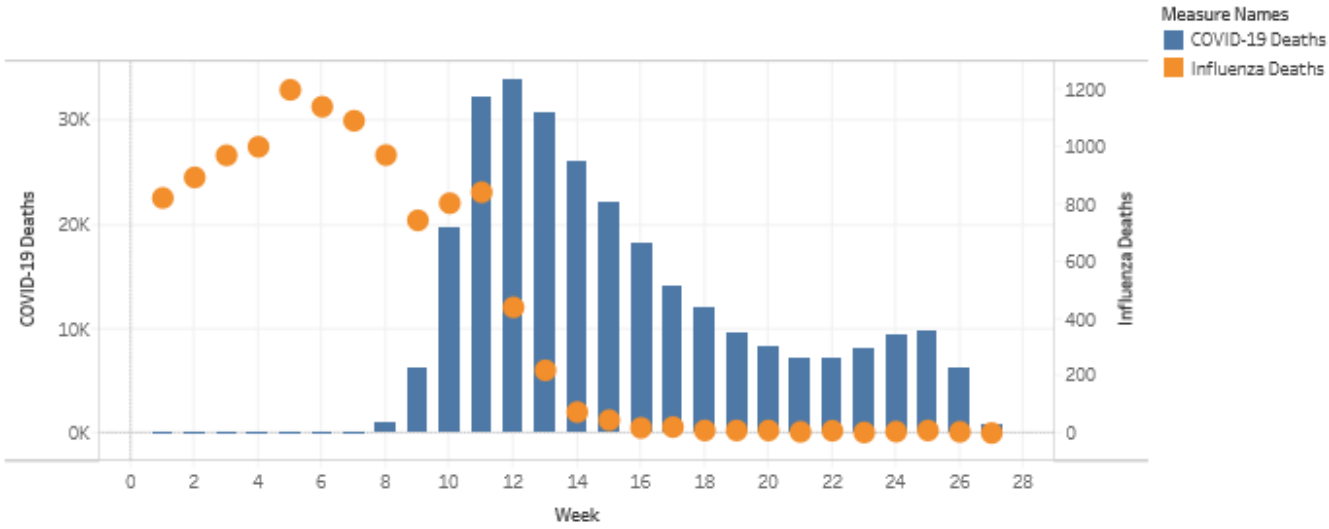
Average Deaths vs Cases by Month and Country

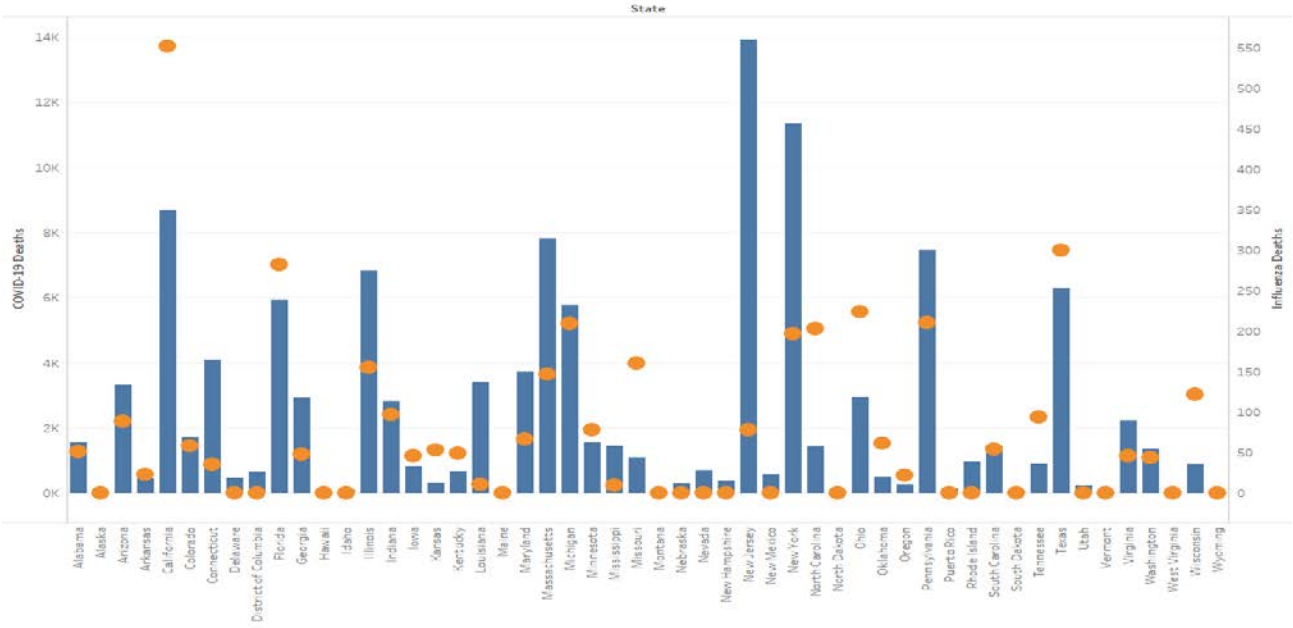


COVID-19 and Influenza Deaths by Week



This plot shows the number of US COVID-19 deaths vs Influenza deaths. The Influenza season begins before the initial cases of COVID-19 which accounts for the early higher numbers of Influenza deaths. As the Influenza season continues the numbers of cases drastically decrease and as COVID-19 spreads the deaths drastically increase. Currently there are 283,588 COVID=19 deaths compared to 11,400 Influenza deaths.

COVID-19 and Influenza Deaths by State



This plot shows the number of COVID-19 deaths vs Influenza deaths by State. About half the states show a higher or roughly the same amount of COVID-19 vs Influenza deaths. A little under half the states reported a significantly higher amount of COVID-19 deaths.

These reports displayed new COVID cases during May, June, July and their steady increase. The next set of reports displayed new cases versus new death rates. They also show a steady incline of both new cases and new deaths. The last set of graphs shows the Influenza death rate by week and state.

Data Sources

The data source used in this project is taken from COVID-19 Data Platform which ingests and aggregates data across public sources, including The New York Times, European Centre for Disease Prevention and Control, and the COVID Tracking Project. The platform then curates them into standardized data models that can be reliably used to make data-driven decisions, whether through visualizations or automated processes. The COVID-19 Data Platform is an open data service for developers and available as open APIs utilizing technologies in Salesforce, MuleSoft, and Tableau.

COVID-19 activity data from above platform can be directly downloaded or accessed through a Web Data Connector from data.world, a platform for data that enables users to post, search, and collaborate on data sets on a large and meaningful scale. The data.world provides direct download (tableau hyper file or csv file) as well as direct link which can be accessed through tableau web connector.

- Hyper File: Direct Download
- CSV File: Link for Web Data Connector

Other sources for datasets

- https://www.cdc.gov/
- https://www.tableau.com/about/blog/2020/5/next-evolution-covid-19-data
- https://apps.who.int/gho/data/node.main.171?lang=en
- https://public.tableau.com/en-us/s/covid-19-viz-gallery
- https://public.tableau.com/profile/covid.19.data.resource.hub#!/