

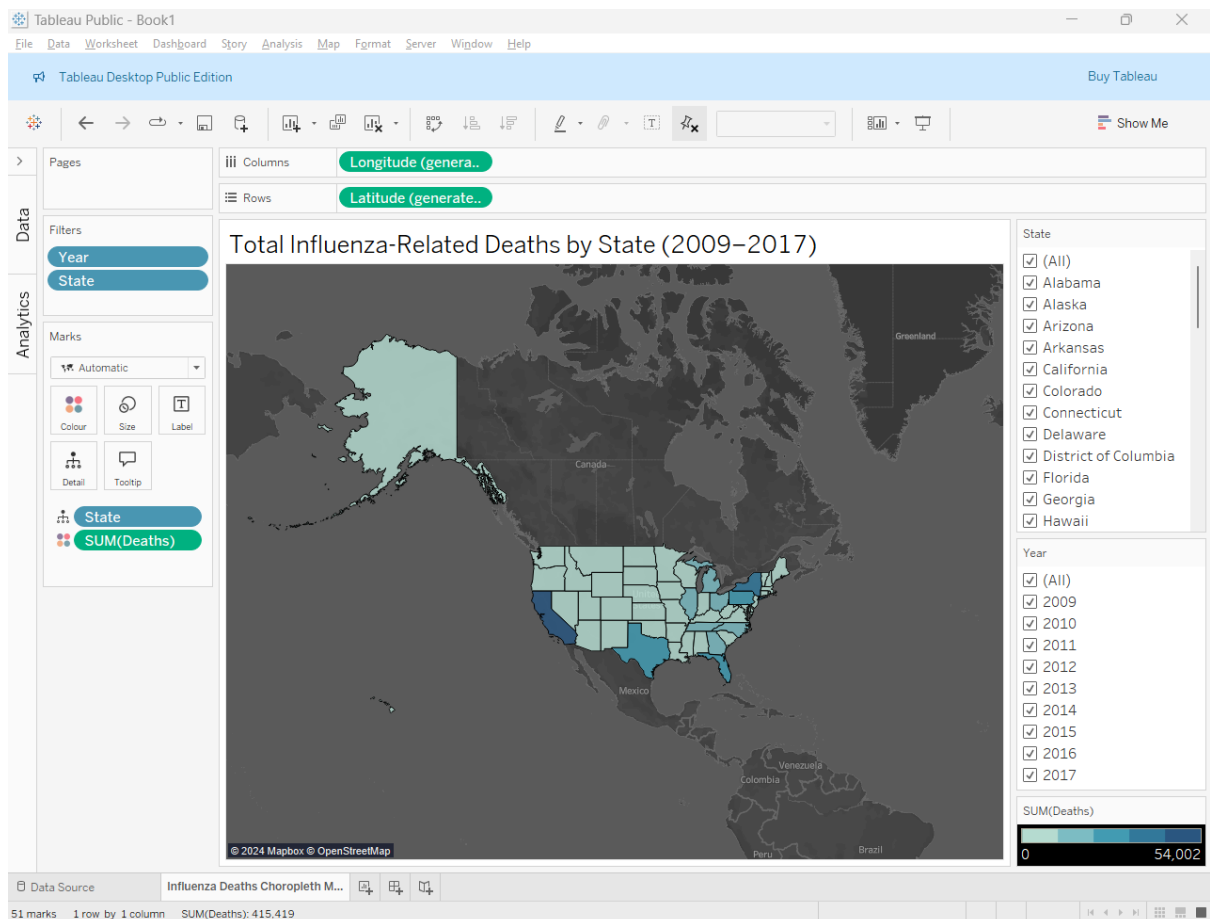
# Spatial Analysis.

Paul Maden.

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## Q1. Create a map of influenza deaths by state, using state as the spatial boundary:

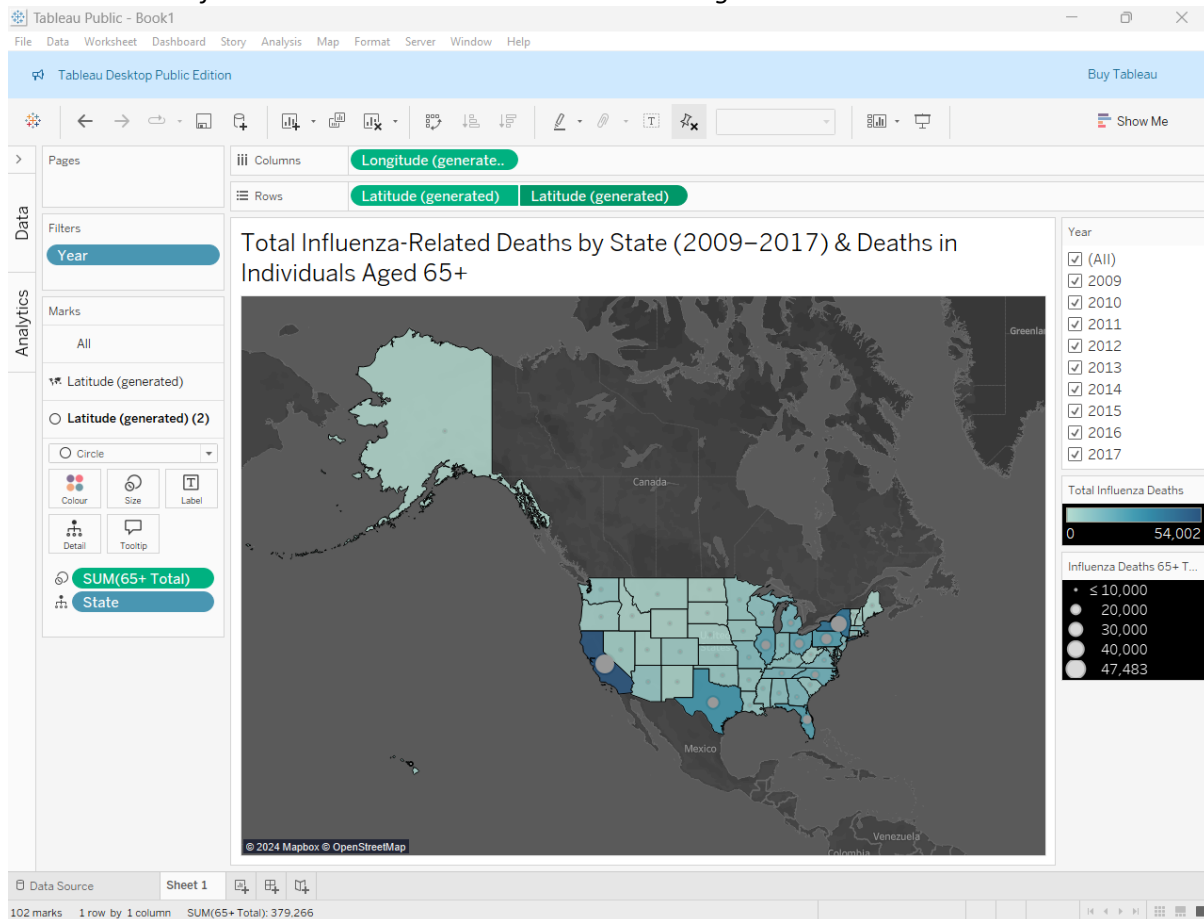
- This choropleth map shows the *Geographical Distribution of Influenza-Related Deaths in the U.S. from 2009 to 2017*:



- The choropleth map highlights how death counts vary across different states, with darker shades representing higher numbers of deaths.
  - Geographical Clusters of Higher Death Rates: Some regions, particularly southern states like Texas and Florida, appear to have higher numbers of deaths (darker shades).
  - Lower Death Counts in Northern States: States like Alaska and other sparsely populated northern states have lighter colours, indicating fewer influenza-related deaths during the selected period.
  - Colour Choice: I used light to dark blue, as it is easy on the eyes and provides a clear gradient from low to high. I used a dark background with 22% Washout to compliment the 5 step blue colours.
  - Dynamic Filtering Capability: The map includes filters for both state and year, allowing the user to drill down into specific years or states.

## Q2. Create a Combination (dual axis) map of influenza deaths by state, using state as the spatial boundary:

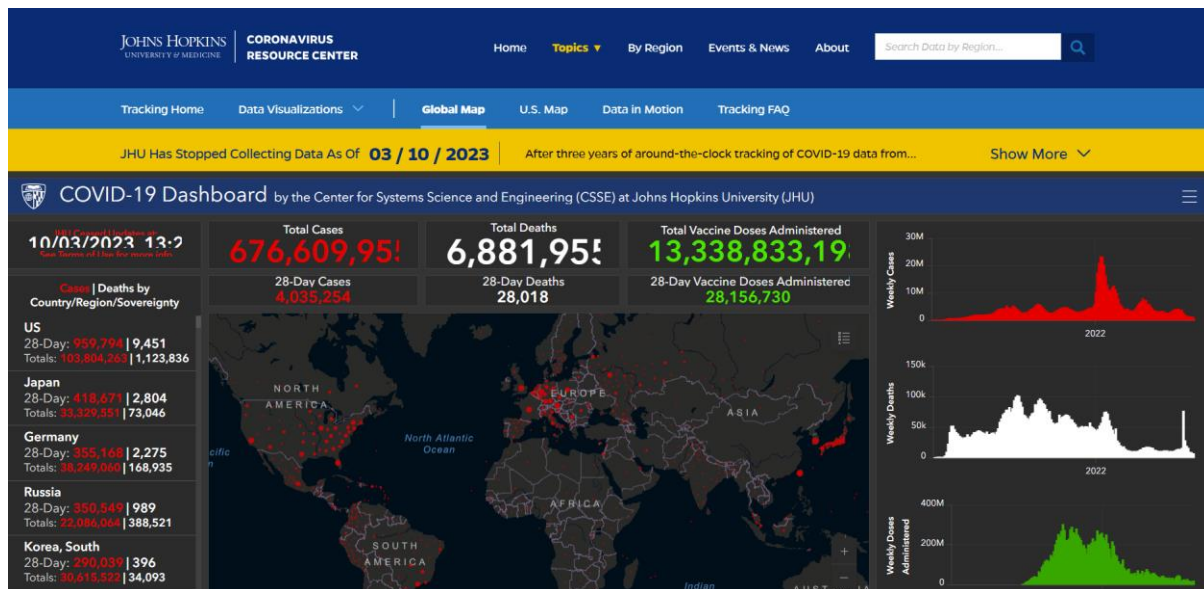
- This combination map shows the *Geographical Distribution of Influenza-Related Deaths in the U.S. from 2009 to 2017 & Death in Individuals Aged +65*:



- This combination map includes deaths among individuals Aged 65+:
  - The second layer of the map (using ***circles***) provides additional detail about influenza-related deaths specifically for individuals aged 65 *and above*. The size of the circles represents the number of deaths in this age group, with the legend showing the numerical range vs circle size.
  - Larger circles in states like *California* and *Florida* indicate a higher number of deaths among elderly individuals, showing a clear positive correlation between higher death rates in those aged 65+ and the overall total state death counts. This suggests that states with a larger elderly population affected by influenza tend to experience the highest total death tolls, with the elderly contributing significantly to these figures during the observed time.
  - The period 2009–2017 shows cumulative data, but patterns could indicate that more populous states have seen a consistent increase in death counts over time, especially as the aging population grows.

Overall, the map suggests a positive correlation between higher overall deaths and higher deaths in the 65+ age group, especially in larger, more populous states. Spatially, southern and coastal states seem to bear the greatest burden of influenza-related deaths, while northern and midwestern states exhibit lower death rates.

## Further Style guide considerations on future project maps:



- This COVID-19 Dashboard map (another health-related map project) from Johns Hopkins provides clear and immediate information through both *visual elements and key metrics* prominently displayed on the interface.
  - The *global map* uses red dots to represent the number of COVID-19 cases in various regions, making it easy to spot geographic hotspots. Larger dots indicate higher case counts, drawing immediate attention to countries or regions that are experiencing the greatest impact. This design allows viewers to quickly identify the severity of the pandemic globally, with hotspots like the United States, India, and parts of Europe standing out. This can be another way my map could have been produced moving forward in the project.
  - Additionally, at the top of the dashboard, critical global statistics are shown in large, bold numbers, providing immediate insight into the *total number of cases, deaths, and vaccine doses administered* worldwide.
  - The use of contrasting colours (red for cases and deaths, green for vaccinations) helps differentiate between the statistics, making it easy for viewers to grasp the status of the pandemic immediately.
  - Graphs on the right side of the dashboard provide visual trends over time for cases, deaths, and vaccinations, allowing users to quickly understand the trajectory of the pandemic in different regions.

[COVID-19 Map - Johns Hopkins Coronavirus Resource Center \(jhu.edu\)](#) [COVID-19 Map - Johns Hopkins Coronavirus Resource Center \(jhu.edu\)](#)

### Map Tableau Link:

[https://public.tableau.com/views/TotalInfluenza-RelatedDeathsbyState20092017DeathsInIndividualsAged65/Influenzadeathsmat?:language=en-GB&publish=yes&:sid=&:redirect=auth&:display\\_count=n&:origin=viz\\_share\\_link](https://public.tableau.com/views/TotalInfluenza-RelatedDeathsbyState20092017DeathsInIndividualsAged65/Influenzadeathsmat?:language=en-GB&publish=yes&:sid=&:redirect=auth&:display_count=n&:origin=viz_share_link)