The project requires you to examine differences in staffing needs across each of the individual states. As such, you'll need to visualize a comparison of each state. In your new document, discuss the geographic (spatial) aspects of your project:

What question(s) or project goal(s) relate to this spatial aspect? Did you address any of them in your previous analysis?

The following questions are what we are aiming to answer:
- Which states have the most vulnerable populations?
  - In the previous analysis, we focused on a subset of the multitude of vulnerable populations: people 65 years of age and older. We were able to identify how many people were 65 years and older in each state thanks to the US Census data.
- What is the influenza mortality rate of those in the vulnerable population in each state?
  - Again, we are only focusing on those 65 years and older, even though the CDC does provide us the mortality rates of those under 65 as well. We were able to do a comparison of both groups and found that those 65 years and older were about ten times more at risk of influenza death.

Our goal is to determine which states need more resources (e.g., additional medical staff) to reduce the influenza mortality rates for those 65 years and older. After determining which states had the most 65+ years old residents and their mortality rates in the previous analysis, next is to figure out which states would benefit the most from the additional medical staff. A state may have a high population of 65+ residents but may have a low death rate due to already having enough medical staff and resources. Effort should be focused on states that would benefit the most (e.g., reduced death rate) from the deployment. This information can be obtained through the CDC Influenza Visits data set as it includes the number of providers in each state.

List at least one way in which visualizing the data by states might help.

Visualizing the data would be easier to understand and be more impactful. For example, the mortality rate of those under 65 years old is 0.01%, which those 65+ years old is 0.11% (overall across the US). These are very low numbers on their own, but comparatively, there is a ten times difference – a bubble graph or density map of these would show a better picture than reading the numbers alone.

Another data point to visualize is the difference between the amount of 65+ years old, the mortality rate, and number of providers to show the disparities across each state.

What would you be visualizing (or comparing) across each state?

We will be visualizing a few things: the density of 65+ years old residents, the mortality rate of those 65+ years and older, and the number of providers currently in each state.

Identify any other questions you had from the previous Achievement that weren't answered by your analysis and discuss how visualizations may assist you in answering them.

- How many providers are already in each state?
  - How many providers are in states with the most 65+ years old and high mortality rates?

For the two questions above, visualizing the number of providers compared to number of 65+ years old and mortality rates will help illustrate the disparities and where best to allocate the medical staff.

- Are some states more affected than others during certain time(s) of the year? If so, when does it start, and when does it end for those states?

The United States is a huge country with differing climate, socioeconomic, access to resources, and of course influenza outbreak needs. What may be urgent in California may not be urgent in North Carolina on the other side of the country during the same time period. If we can visualize the data by month, we can determine which states need the most resources during which month(s) of the year.

- Does the overall socio-economic status of the state affect the vaccination rate of those 65+ years and older (which subsequently increases their mortality rate)?

This is going off of the belief that poorer states have less access to the influenza vaccine, which in turn lead to higher risk of influenza deaths, especially for those in the vulnerable population (in our case, just the 65+ years old). Doing a visual comparison between the socio-economic status of each state, vaccination rate, and mortality rate of those 65+ years and older will give us another layer to consider when deciding how to best allocate resources.