Project Name: Statewide Trends in Mortality

Project Type: **Explorable Explanation**

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Beginning in assignment A2 for INFO 474, and continuing into A3, I used data supplied by the National Center for Health Statistics (NCHS). These data are given at:

https://catalog.data.gov/dataset/age-adjusted-death-rates-for-the-top-10-leading-causes-of-death-united-states-2013

The data gives absolute counts, and rates (given as a number per 100,000 population) for seventeen causes of death in the United States for the years 1999 to 2015. In assignment A2, I drilled down into a sole cause of death: suicide. While using scatterplots and a choropleth map, I detected a trend suggesting that more rural states had higher rates of suicide. Using population density information for the various states from Wikipedia, I was able to show a statistically significant, positive correlation between decreasing population density, and higher rates of suicide. The findings suggest that isolation may be a causative factor in suicide.

In A3, I again used the same NCHS dataset and a choropleth map drawn in D3. For the assignment, I color coded each state with red on a sequential scale, and mapped the scale to increasing rates of death from heart disease. The initial year, 1999, shows noticeably higher rates of death from heart disease in the south, and industrial midwest. In the south, one might expect to have (or have had) a higher rate of smoking as a habit. In the midwest, one might expect to have higher levels of industrial pollution. I suggested these as a cause, but the most interesting finding from the map was that heart disease trends downward as a cause of death for each year in the study, and this downtrend applies to almost every state in each year. The final numbers from 2015 are far better than sixteen years earlier. It may be possible to discover other insights with this NCHS data.

I propose to continue to use the same NCHS data, and map each of the seventeen causes of death given in the data in the same way I did for heart disease in assignment A3. The final product will have pushbuttons (or a pulldown selector) for the type of mortality to explore (suicide, heart disease, accident, etc.) As well, it will have pushbuttons of a pulldown selector for the year to examine. My plan is to improve the visual appeal of the A3 presentation by framing the map and the controls in separate containers. Also, I would like to introduce a two-second, animated change when the user modifies either the cause of death, or the year to be viewed. I still want to use a sequential color scale for each cause of death to examine, but for variety, I propose to use a different color scheme for each cause. Because the distribution of death rates is different for each cause of death, it will likely be necessary to adjust the legend, and scale shown at the top of the map.