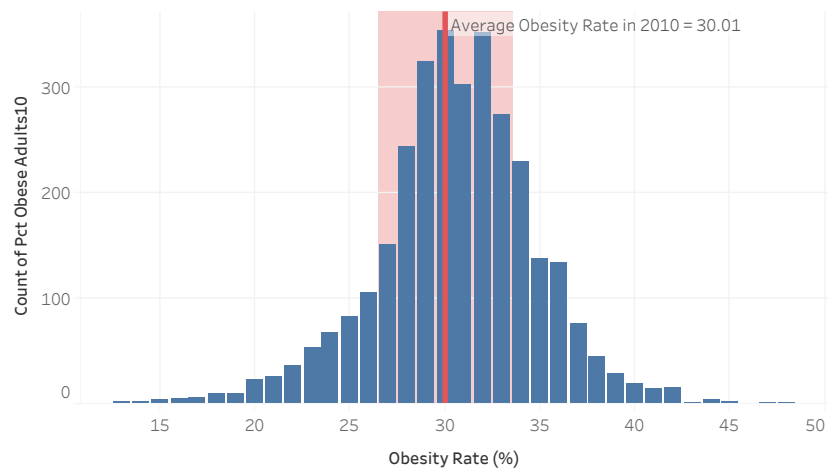## Adult Obesity Rates by County in 2010

Average Obesity Rate in 2010 = 30.01

Mapping Obesity Rates by County: 2010

Adult Obesity Rates by County in 2012

Average Obesity Rate in 2012: 27.92

Mapping Obesity 2012

Pct Obese Adults10

13.00 ▬▬▬▬ 63.00

Pct Obese Adults12

13.00 ▬▬▬▬ 63.00
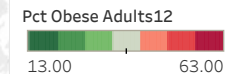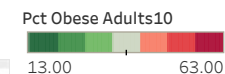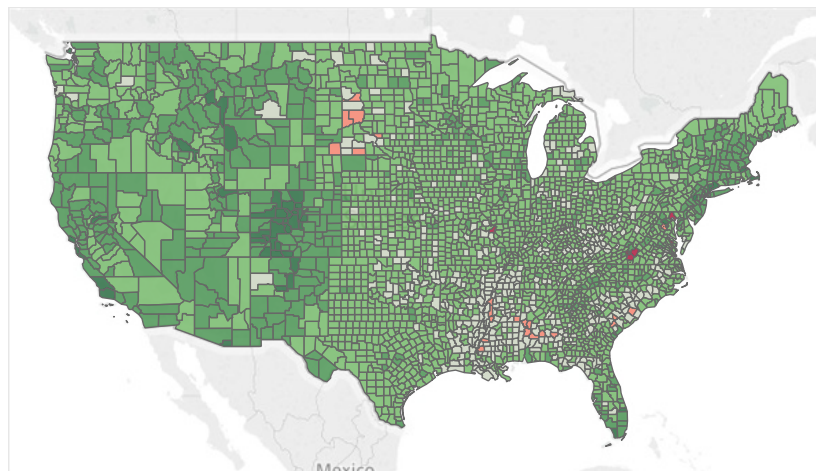
Both histogramss are roughly symmetric and unimodal with similar means, slightly decreasing from 30.01% in 2010 to 27.92% in 2012. Obesity rates in 2010 are noticeably more spread variable than those in 2012, evident by more extreme values for the minimum and maximum (ranging from ~12%-50% in 2010) compared to those in 2012 (~21% - 35%). This is also evident in the confidence intervals overlaid on the histograms, in which the interval for 2010 is much wider. This suggests that while many counties are decreasing obesity rates, there are a similar number that are increasing rates.
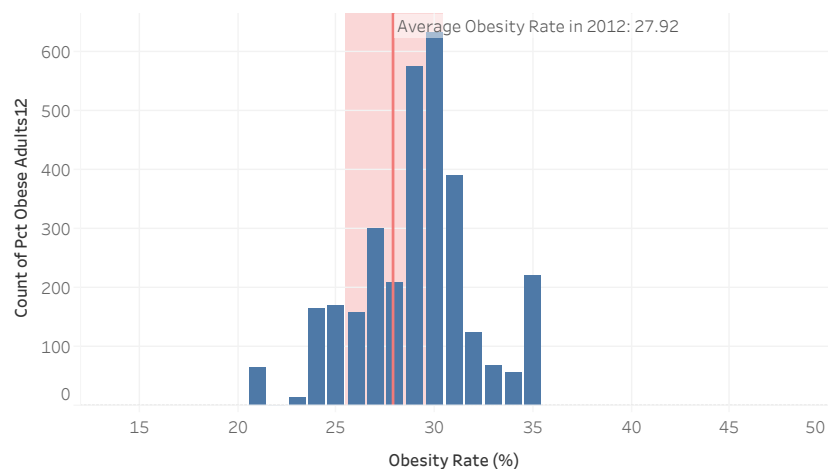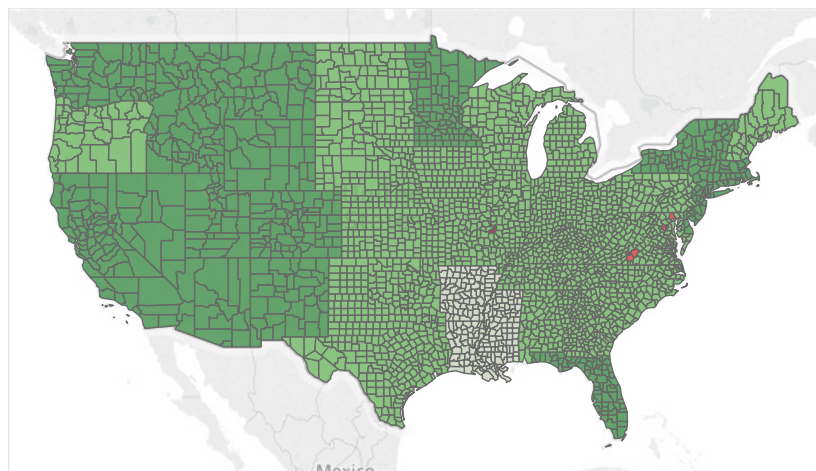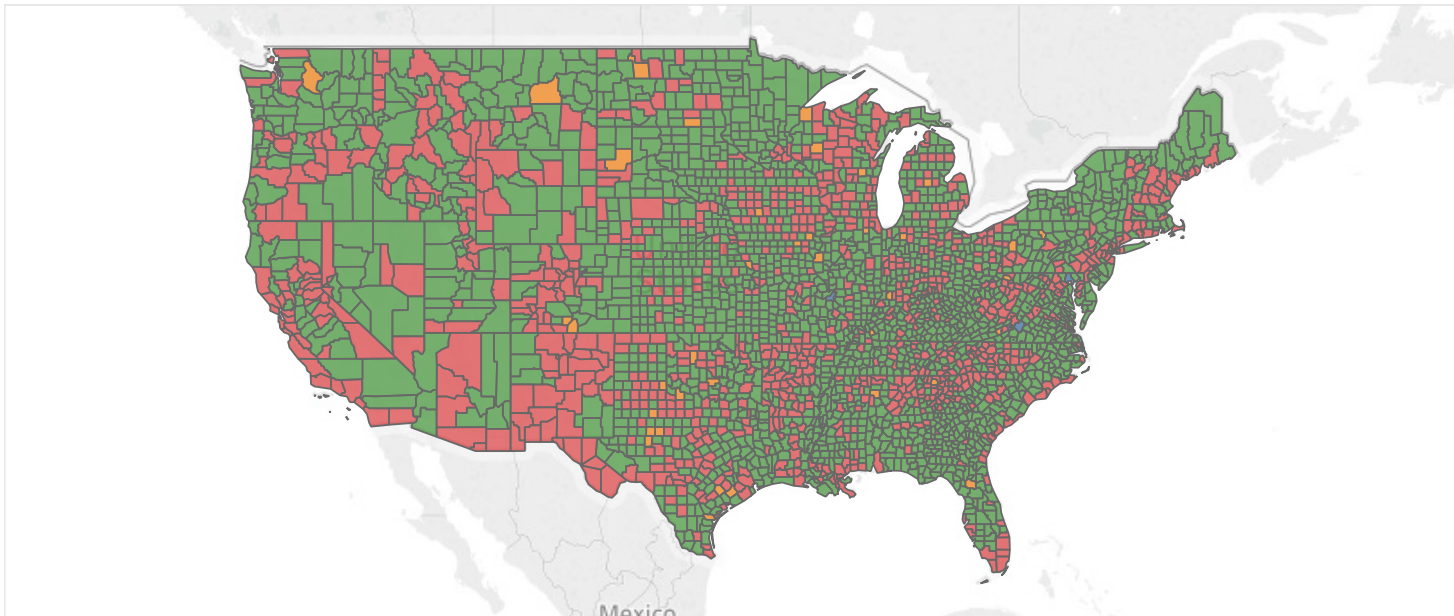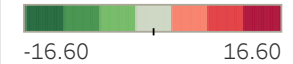
Mapping Obesity Difference between 2010 and 2012

Obesity Differences
- * (blue)
- BETTER (green)
- SAME (orange)
- WORSE (red)

**Obesity Differences (Num..**

-16.60 ———— 16.60

Both maps are helpful in determining how obesity changed between 2010 and 2012, but the second map using numerical values as opposed to categories is more helpful. The map based on the categories of "Better", "Same", or "Worse" makes it appear as if every county has significantly changed in obesity rates, since it will only show "Same" if the rate is exactly the same. Minor fluctuations are to be expected and the lack of yellow on the map doesn't account for counties whose obesity increased or decreased only slightly. However, the numerical map uses a wider range of colors, making it apparents that many counties have maintained their obesity rate from 2010 to 2012. This second map also makes it possible to tell the magnitude of change, showing counties with the greatest increase or decline in rate.

Mapping Obesity Differences from 2010 to 2012
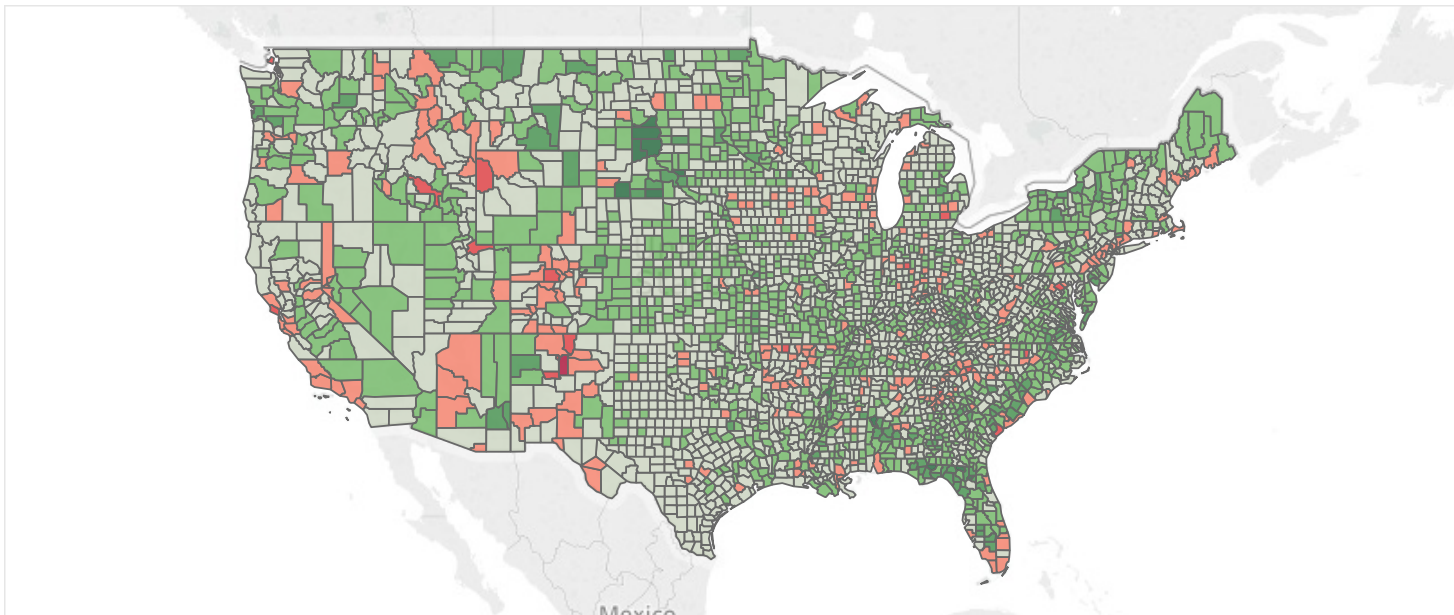
Adult Obesity Rate v. Adult Diabetes Rate in 2010
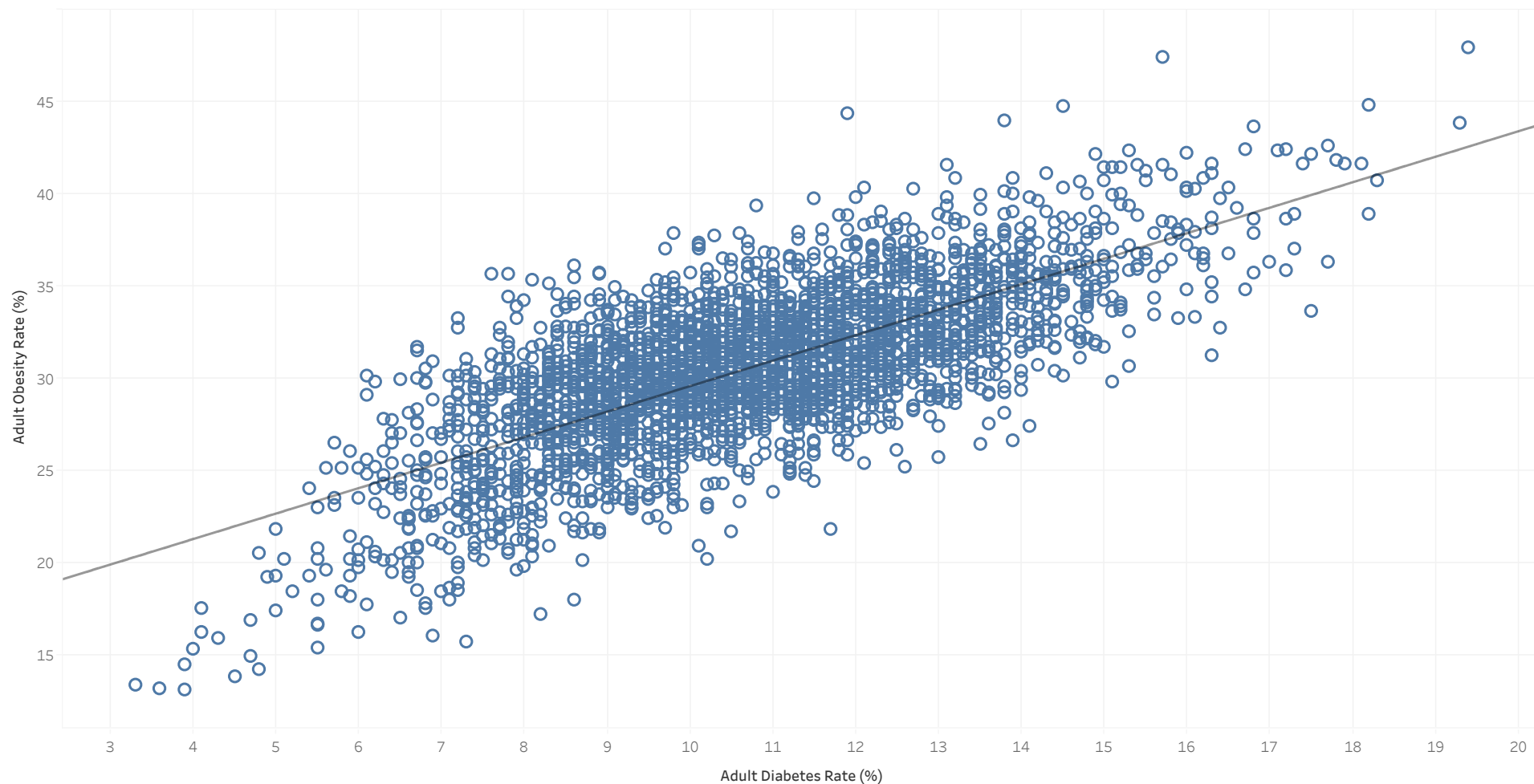
Visually, there is an obviousp moderately strong, positive, linear relationship between Adult Obesity rate and Diabetes rate in 2010. To confirm, a linear trendline was added to the scatterplot. The trendline confirms our intuition: there is a significant linear relationship (P < 0.0001) between adult obesity rates and diabetes rate. In fact, R^2 describes that 52.5% of the variation in obesity rates can be explained by diabetes rates. Presumably, people who struggle with maintaining healthier waits are more susceptible to develop diabetes.