Teen pregnancy and childbearing bring substantial social and economic costs through immediate and long-term impacts on teen parents and their children. According to the [CDC’s website](http://www.cdc.gov/teenpregnancy/about/):

* In 2010, teen pregnancy and childbirth accounted for at least $9.4 billion in costs to U.S. taxpayers for increased health care and foster care, increased incarceration rates among children of teen parents, and lost tax revenue because of lower educational attainment and income among teen mothers.
* Pregnancy and birth are significant contributors to high school dropout rates among girls. Only about 50% of teen mothers receive a high school diploma by 22 years of age, whereas approximately 90% of women who do not give birth during adolescence graduate from high school.
* The children of teenage mothers are more likely to have lower school achievement and to drop out of high school, have more health problems, be incarcerated at some time during adolescence, give birth as a teenager, and face unemployment as a young adult.

These effects continue for the teen mother and her child even after adjusting for those factors that increased the teenager’s risk for pregnancy, such as growing up in poverty, having parents with low levels of education, growing up in a single-parent family, and having poor performance in school.

Understandably then, lowering teenage fertility rates (TFRs) is of great public health importance.

**Data**

TFRs (# of births per 1000 female teens) for each race in each state from 2003-2015 were obtained from the CDC’s data base query system “[WONDER](http://wonder.cdc.gov/natality.html).” Note that some counts were “suppressed” because they were too small, in order to protect patient confidentiality. For these cells, the number of teen pregnancies was *estimated* using the race-and-year-specific teen fertility rate from the U.S. Census Division the state belonged to. Counts of teen births and the corresponding TFRs that were estimated are indicated with a “1” in the “Estimated” column.

**Visualization tasks**

Using these data, create a dashboard that answers the following questions:

1. How have TFRs changed over time, both on the state-by-state level and overall?
2. Are there racial gaps in the TFRs? How have any gaps changed over time?
3. Which states have the best TFRs, and which states have the worst?
4. (Challenge question #1): Which states have improved the most from 2003 to 2015?
5. (Challenge question #2): Which states have the most racial disparity in TFRs?

Try employing at least one dashboard action (filter or highlight).

**IMPORTANT DATA NOTE: you are dealing with rates here! Take caution accordingly!**