Opioid Death Analysis

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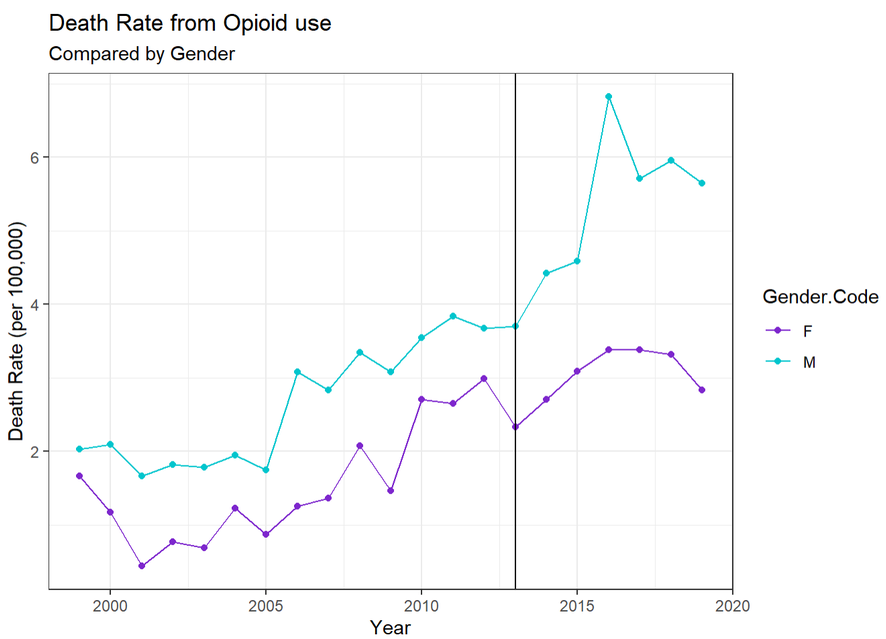
For our final project, my group and I decided to use opioid death data, sourced from CDC Wonder. We each produced a death rate graph, compared by the different demographics: age, race, gender and region. We tasked ourselves with observing the trends and seeing if they follow suit with the uprise of synthetic opioids. I analyzed gender for my individual portion and created interesting conclusive graphs.

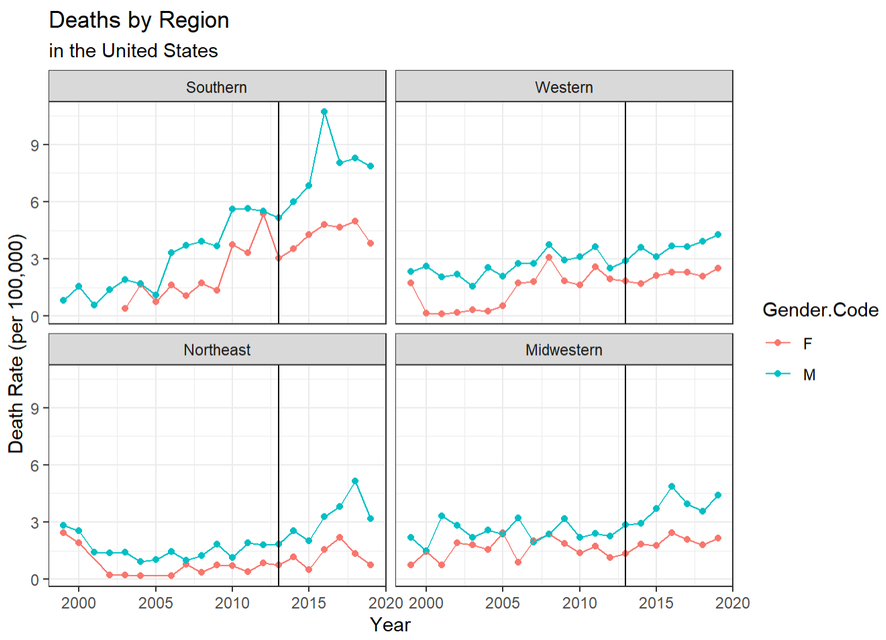
Does opioid use and addiction differ by gender? Prior to starting this analysis, my hypothesis was there will be more opioid-related deaths for males than women. This was more or less a prediction, from my experiences, I've noticed that men tend to be more prone to addictive substances than women. I've seen this mostly with cigarettes and I figured the opioid addiction crisis might be similar in this manner. To determine whether my hypothesis was true or false, and to see if the rise of synthetic opioids affected the gender demographic, I created a death rate graph compared by gender from 1999-2019, which we used in our presentation.



This graph shows us males consistently have a higher opioid-related death rate than women from 1999 to 2019. This follows suit with my hypothesis. Now, the question becomes why is this the case? Men are more likely to become addicts than women. Men and women have biological and sociological differences which affect their addiction, ultimately affecting their death rate. According to addictioncenter.com, "11.5% of males over 12 have a substance use disorder, compared to 6.4% of females." That difference tells the story for why men are dying at higher rates from opioid abuse than women, more susceptibility to addiction.

In 2013 the synthetic opioid uprise began. This uprise is reflected in the gender graph above. We can see a meaningful increase in male and female deaths right around 2013. Interestingly though, in 2015, when the synthetic opioid rise was still in its prime, we see a increase in male death rates but not female death rates. This means that the synthetic opioid rise is not telling the full story in death increases amongst gender.

I thought it would be interesting to see the differences in gender deaths compared by regions:



We did not use this in our presentation, but instead, we looked at the overall death rate compared by regions. We can see, in the south, there is the highest death rate and also the highest spike in death rate from 2013. From Matt's analysis, we know that the south was hit the hardest. In the other regions, the gap between males and females are smaller than the gap in the south.

In conclusion these trends have been very interesting to examine. Males are dying from opioid at a higher rate than women due to them being more susceptible to addiction. Furthermore, the 2013 uprise in synthetic opioids affected the death rate males a lot, due to them being the primary users.