**Final report Team 8 –**

**Opioid shipments Florida and opioid deaths Florida, Texas, Washington**

**Part I – For Nick**

**https://www.overleaf.com/project/6189ad3e5ad679da0f6e2c46**

1. Motivation for the project

The United States has had an opioid addiction crisis since the early 2000s, initially caused by an over-prescription and over-use of painkillers and then perpetuated by illegal drug use of other opioids such as fentanyl.

Policymakers in many states have tried to address these problems by implementing new legislation that tries to limit who can prescribe opioids and by trying to control the flow of opioids from other countries.

This project is motivated by the need to evaluate the effects of such policies, so other states may follow successful examples and forego trying to implement policies that have proven unsuccessful in other states.

1. Motivation for the research design being used

Our team is using the data from three states (Florida, Texas and Washington) for our analysis. All three states have data from before they implemented policy changes (in 2007 and 2008) aimed to reduce the impact of opioid addiction and data from several years after the policy took effect.

We will focus on the data for opioid overdose related deaths for all three states and opioid shipment data for the state of Florida, as the other states do not have enough data available for analysis of drug shipments over the whole timeframe.

Each of our target states will be compared to three different states that will function as controls. They were chosen:

1. For their known statistics on drug overdose mortality rate in 2005:

<https://www.cdc.gov/nchs/pressroom/sosmap/drug_poisoning_mortality/drug_poisoning.htm>

**Florida** had an age-adjusted overdose death rate of 13.5.

Arizona (rate: 14.1), Louisiana (rate: 14.7), and Colorado (rate: 12.7) all had similar age-adjusted mortality rates as Florida and are in relative geographical proximity.

**Texas** had an age-adjusted overdose death rate of 8.5.

Wisconsin (rate: 9.3), Mississippi (rate: 8.8), and Kansas (rate: 9.1) all had similar age-adjusted mortality rates as Florida and are in relative geographical proximity.

**Washington** had an age-adjusted overdose death rate of 13.

Oklahoma (rate: 13.8), Arizona (rate: 14.1), and Colorado (rate: 12.7) all had similar age-adjusted mortality rates as Florida and are in relative geographical proximity.

We aimed to include at least one state with an age-adjusted opioid mortality rate above the target state and at least one state with a mortality rate below the target state.

1. For the fact that they did not implement legislation to limit opioid prescription until after our observation period had ended (2014):

<https://ballotpedia.org/Opioid_prescription_limits_and_policies_by_state>

Arizona implemented new policy on October 24, 2016,

Colorado implemented new policy on August 1, 2017,

Kansas has not implemented any policy changes thus far,

Louisiana implemented new policy on June 12, 2017

Mississippi has not implemented any policy changes thus far,

Oklahoma implemented new policy on May 2, 2018

Wisconsin has not implemented any policy changes thus far.

1. Details of the data used and how different datasets have been related to one another

Since our final plot’s metrics are calculated per capita, we need another dataset that includes information about population for each county in each state. We downloaded this dataset from: <https://urldefense.com/v3/__http://Census.gov__;!!OToaGQ!6efKOCd1I6x8GrQkrOtL9p43O7hmImrdAbUPGypskBI4AfSKO-lQoLG6cJTu3jPAfj7tMQ$>, and it contains intercensal estimates of population.

To be more specific, each dataset contains 10 years of data for each county, and the county\_name column also includes its state name. In order to merge the population dataset with the overdose death one, a little string manipulation needs to be performed on the county\_name column so that it can match the primary key from the overdose death dataset. After merging, the overdose death dataset will contain the “population” for each observation, so that we can easily calculate overdose death per capita.

1. Summary statistics
2. Analysis
3. Interpretation of analysis

**Part II – For Policymaker**

1. Motivation for the project
2. Overview of the data being used
3. Analysis (presented for a non-statistician)
4. Interpretation of that analysis (again, laying out strengths and weaknesses

without using statistical jargon)