# OPIOD EPIDEMIC

The goal of this project is to identify the factors that affected the mortality during the OPIOD Epidemic. In the United States drug overdose was significant in young adults and was mainly because of opioids. These drugs are used as powerful pain relievers however, they also produce feelings of euphoria. This makes them highly addictive and prone to abuse. With the intake of more percentage of drugs it led to a drug overdose. Statistics say the problem started with the over prescription of legal pain medications, but this has recently intensified as people started mixing these drugs with heroin, fentanyl etc. Most of the pharmaceutical companies also stated that the pain killers are no harm to the human and made people believe that these are the best for quick relief. Thus, people purchased these medicines them and started getting addicted to these medicines.

The paper I chose to compare with the goal of the project is “**Increases in Drug and Opioid-Involved Overdose Deaths, United States, 2010–2015”.** From both the papers I summarize that with the opioid usage the mortality rate in the United States increased. This also led to problems like drug overdose, fatal car accidents, physical abuse etc. as people were so addicted that they lost control of what is right and wrong.

The statistics of demographics shows that the drug overdose was common amongst Americans which was 70% of the data and 12-17 % was among the Black Americans or Hispanic race. It also came to light that Veterans, who suffered from severe chronic pain because of their service, account for high number of opioid-related deaths. Their ratio is high compared to the rest of the population of the country. The study also showed that drug consumption was very common among the people with low income or below poverty line as compared to the other class of the society. Also, the numbers talk about the people with no education, consumed the drugs more often and were involved in the illegal activities which led to high fatalities.

The consumption of Opioid also led to other health diseases like high rates of hepatitis C, HIV, etc., HIV was mainly due to shared syringes. It was also observed that pregnant mothers who consumed drugs also passed the drug to the infants even before the birth and this led to serious issues like incidences of neonatal abstinence syndrome, or withdrawal symptoms experienced by newborns exposed to drugs while in the womb. The percentage recorded was highest from 1999 – 2018. Thus, this led to the increase of the mortality rates in the country. The analysis also correlated endemic to the minority physicians who is likely to serve the undeserved communities. There were many prescriptions from these physicians which led to the high mortality rate. The age also played an important role during the analysis. The consumption was more common among young adults and the overdose led to increased violence, injuries as they had no control on what they were doing. To reduce the endemic there were many programs started like educating patients on how to safely use and store the opioids, enforcing state laws on drugs, prescription monitoring programs, creating awareness about the risks of prescription opioids, and the cost of overdose on patients and families.

**The variables** **linked** to opioid endemic are racism, increased deaths in car accidents, physical abuse, mental issues, Deaths due to overdose of drugs, also neonatal deaths as pregnant women started consuming drugs which led to the complication during delivery. There were many car accidents due to excessive drinking and drug overdose. Age group was another factor from which we get to know that it was very common among the youngsters, unemployment due to crime rates committed by people, median household income where the individuals lost their jobs due to overdose and involving in violent activities, analysis of poverty as it was observed that people who were poor consumed more drugs compared to other class of the society. It was also found that education was inversely corelated to drug overdose. Less educated people were involved more in the illegal activities which led to the high rates of opioid deaths. The mentioned variables have affected people due to the addiction of the drug. Also, the pharmaceutical companies who claimed that the pain killers would not affect people was one of the major problems that led to the endemic.

# DATA DICTIONARY

The below are the variables I think are important from the opioid endemic datasets.

#### Drug Overdose Dataset - Cause of Death-County-2019.txt

The below variables help in merging the datasets and also gives information on the death rate with population of the country.

|  |  |
| --- | --- |
| **County** | **object** |
| **County Code** | **int64** |
| **State** | **object** |
| **Drug/Alcohol Induced Cause** | **object** |
| **Deaths** | **int64** |
| **Population** | **int64** |

#### County Health Rankings - County\_Health\_Ranking.csv

* 10 Variables that I think are important for analysis from the county\_health\_ranking.csv dataset as it

|  |  |
| --- | --- |
| **Premature death raw value** | **float64** |
| **Population** | **float64** |
| **Alcohol-impaired driving deaths raw value** | **float64** |
| **Violent crime raw value** | **float64** |
| **HIV prevalence raw value** | **float64** |
| **Drug overdose deaths raw value** | **float64** |
| **Firearm fatalities raw value** | **float64** |
| **Motor vehicle crash occupancy rate raw value** | **float64** |
| **Excessive drinking raw value** | **float64** |
| **Sexually transmitted infections raw value** | **float64** |
| **Injury deaths raw value** | **float64** |

#### County Opioid Dispensing Rates - 2019-Opioid\_Rate.csv

|  |  |
| --- | --- |
| **County** | **object** |
| **FIPS** | **int64** |
| **State** | **object** |
| **Opiod\_Dispensing\_Rate** | **float64** |

**Why I think the variables are important?**

From the above datasets we observe that County, State, FIPS code are common to all the datasets, this will help us to merge them. The other **variables Drug/Alcohol Induced Cause, Deaths, Population** will provide information as in what was the cause of death and what is the total count for deaths due to drugs and alcohol from the total population. This analysis will help us take necessary actions to reduce the intake of drugs from the first dataset.

In the second dataset I have chosen around 10 variables which I think are linked with opioid endemic and would be great for the goal of this project which is checking the mortality rate due to overdose of opiod. Below is the detail information regarding that.

**5-digit FIPS Code and County name** - The FIPS code will help in merging the datasets and give information regarding the county and each county is associated with the code.

**State Abbreviation – This data will help in merging and comparing with other datasets provide information state wise** where the drug usage was highest.

1. **Premature death raw value -** help us understand how many pregnant women consumed the drug and what was the percent of neonatal deaths due to the drug consumption/overdose.
2. **Violent crime raw value -** Due to the overdose people get violent and this helps in the analysis of the crime rate due to overdose.
3. **Drug overdose deaths raw value –** This variable helps finding deaths due to overdose from the total population.
4. **Motor vehicle crash occupancy rate raw value –** Whenever there is drug intake people are not in right state of mind and not alert while driving so with this data we could analyze the accidents due to overdose of drugs.
5. **Alcohol-impaired driving deaths raw value -** would give information on the percentage of deaths due to excessive alcohol consumption
6. **Firearm fatalities raw value** - During this endemic, firearm fatalities increased as people who had consumed drugs were not in the state of mind to keep the house safe and might have used the stove and forgot to turn it off.
7. **HIV prevalence -** Many people with opioid use disorder, who initially were prescribed oral drugs to treat pain, now inject prescribed or illegal opioids. High-risk injection practices such as needle-sharing are causing a surge in infectious diseases. Additionally, risky sexual behaviors associated with injection drug use have contributed to the spread of sexually transmitted infections.
8. **Population –** From this variable we can calculate the percentage of deaths from the total population
9. **Sexually transmitted infections raw value –** Due to the increase in the drug cases there were many syringes that were used without sterilizing, and this led to the increase in the mortality rate.
10. **Injury deaths raw value –** Drug overdose led to injury of people as they were not in the right state of mind and thus mortality rate increased.