

California Opioid Analysis

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GitHub Portfolio: <https://github.com/efedai/California-Opioid-Analysis.git>

Which Domain?

This analysis will belong in the Healthcare/Pharmaceutical domain.

References:

- 1) [Prescription Opioid Data | Drug Overdose | CDC Injury Center](#)- Prescription opioid data, referencing prescribing practices and overdose.
- 2) [Assessment of Racial/Ethnic and Income Disparities in the Prescription of Opioids and Other Controlled Medications in California | Health Disparities | JAMA Internal Medicine | JAMA Network](#)- evaluating racial/ethnic disparities regarding prescription of opioids.
- 3) [Evidence on Strategies for Addressing the Opioid Epidemic - Pain Management and the Opioid Epidemic - NCBI Bookshelf \(nih.gov\)](#)- referencing alternative strategies and/or alternative methods in dealing with opioid prescription.
- 4) [CMS Opioid Prescribing | CMS](#)- Opioid prescription orders/billed to Medicare/Medicaid.
- 5) [Opioid Crisis Statistics | HHS.gov](#)- Information regarding the growing Opioid concern in our country and vital statistics that verify the concern.
- 6) [Medicare Part D Opioid Prescribing Mapping Tool | CMS](#)- illustrating the number of opioid's prescribed and billed under the Medicare Part D plan.
- 7) [Overdose Death Rates | National Institute on Drug Abuse \(NIDA\)](#)- supporting document illustrating the increasing death due to overdose of opioids.
- 8) [Prescriber Information \(ct.gov\)](#)- example of how the state of Connecticut is attempting to limit improve regulatory status on the use of opioids particularly in children.
- 9) [Opioid overdose \(who.int\)](#)- Supporting document illustrating the world-wide concern of opioid overdose.
- 10) [Systematic Evaluation of State Policy Interventions Targeting the US Opioid Epidemic, 2007-2018 | Psychiatry and Behavioral Health | JAMA Network Open | JAMA Network](#)- evaluates 6 states policies to gain insight if the regulatory measures are helping reduce overdose mortality.

Which Data?

The dataset that I will be examining in this analysis will be coming from [CURES Statistics | State of California - Department of Justice - Office of the Attorney General](#) (Table 4). The data set consists of 7 columns (year, state, county, age group, run date/time, patient count, and population) and consists of 1740 rows. Additionally, I may also include analysis on additional data sets from the same location and date range regarding mortality rates due to overdose of opioids to gain additional insight into the topic.

Research Questions? Benefits? Why analyze this data?

In which regions are there increased numbers of opioids prescribed? Do these increased numbers subside in the same region in the state (north, east, west, south)? Between the years of 2015 to 2020 are the rates decreasing or increasing? In this analysis I will like to determine in which regions the prescribed opioids in relation to population will be exceeding 3 percent and these counties I will flag. I will also establish a classification model that correctly classifies flagged counties from those who are not. In this project I am going to begin by committing initially to any format and cleaning that is needed. Once this is complete I will begin EDA analysis to determine any key insight such as but not limited to; key relationship between variables, and interesting trends. In this research I also want to see if more than 50% of the counties in California will deliver less than 3 percent of prescribed opioids between the years of 2015 to 2020. I will also want to see a classification model that delivers an accuracy of 85% or better.

What Method?

In this analysis several methods will be employed such as Excel which is the original retrieval format platform my data was collected. I will also be using Python in a Jupyter Notebook environment to perform my analysis. This platform will be useful for my analysis in that its versatile platform not only allows me to fully evaluate the data but its abundant libraries help in expediting the analysis process saving precious time. Within this platform I will be able to reformat data as needed, navigate through my EDA process and establish a machine learning classification model.

Potential Issues?

Initial problems I may encounter may be formatting issues, handling of missing data, punctuations, data type corrections, and preparing data for machine learning analysis.

Concluding Remarks

In this analysis I would like to shed light and insight in the growing concern in our nation regarding overuse of Opioids. While Opioid use is by all means needed in many instances to aid in pain management such as major injury or surgery, but possibly seeking alternative routes when available should also be viewed in other instances. This is a worldwide issue, and rather than seeking to punish or outcast, I am in hopes that the insights in this analysis may serve the purpose of seeking to educate and help in finding alternative solutions to this disease our world is suffering from by determining where opportunities to improve in the beautiful state of California may be.