# **Opioid Usage In Tennessee**

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**Motivation**

With a strong academic and professional background in healthcare, coupled with a profound personal passion for medicine, it was essential for me to select a topic related to this field. Reflecting on significant medical issues in Tennessee, the growing opioid epidemic emerged as a pressing concern. Consequently, I decided to delve into research focused on the data surrounding this epidemic in the state of Tennessee. The primary objective of this project is to analyze the data collected from 2013 to 2023. Specifically, the goal of this capstone is to determine: 1. What trends can be observed in the prescription of controlled substances over this period? 2. Which five drugs or categories have demonstrated notable changes in prescription volumes? 3. Which county has experienced the highest overall rates of substance abuse over the past decade in Tennessee?

**The Data**

The data used in this Capstone project was obtained from the Tennessee Drug Overdose Data Dashboard. The state of Tennessee collected this data in conjunction with state-level information and data from the Controlled Substance Monitoring Database (CSMD). The dataset covers a span of ten years and is divided into three categories: overall prescription drug data, fatal overdose data, and non-fatal overdose data, which includes both inpatient and outpatient cases. The data is available in .xlsx format.

**Technologies**

The data for this project was obtained from an .xlsx file sourced from the [Tennessee Drug Overdose Data Dashboard](https://www.tn.gov/health/health-program-areas/pdo/pdo/data-dashboard.html). Initially, I viewed the data in Excel, where I performed some cleaning before importing it into Python 3. Next, I converted the cleaned data into a CSV file and imported it into Python. Once the data was in a Jupyter notebook, I analyzed it to ensure I had sufficient information to address the questions I developed for this topic and to evaluate my hypothesis. Finally, after cleaning and analyzing the data, I used Power BI to create visualizations and dashboards.

**Obstacles**

**There were three main obstacles that I encountered while working with this data.**

1. **Some of the data has duplicate components which were altering the true value counts of the prescription drugs. To rectify these issues the duplicate data was removed from the Excel files.**
2. **The geographic data was not usable enough to use for any type of map visualizations which is something that I would have liked to include in this capstone project.**
3. **Although the final data set had around 10,000 rows in each file, there were only about 200 or less rows of demographic data, which did not make it beneficial in my overall analysis.**

**Capstone Dashboard**

[**https://app.powerbi.com/groups/me/reports/7b2f603e-5cad-4b84-ac2d-c8382e6a311e/ReportSectiona0519b7ce424d578cf59**](https://app.powerbi.com/groups/me/reports/7b2f603e-5cad-4b84-ac2d-c8382e6a311e/ReportSectiona0519b7ce424d578cf59)