**Executive Summary**

According to the Center for Disease Control (CDC), prescription opioids were involved in nearly 24% of all opioid overdose deaths in 2020, which was a 16% increase in prescription opioid-involved deaths from 2019 to 2020.

The CDC categorizes prescription opioid overdose deaths into three sections:

1. Natural opioids: Pain medications like morphine and codeine.
2. Semi-synthetic opioids: Pain medications like oxycodone, hydrocodone, hydromorphone, and oxymorphone.
3. Methadone: A synthetic opioid used to treat pain, but it can also be provided through opioid treatment programs to treat opioid use disorders.

While there are various opioid addiction treatment options and methods available throughout the state, for the purpose of this project the following limitations were implemented to control the sample size and scope:

1. Equal opportunity for treatment - this project will only focus on the 14 counties with Medication Assisted Treatment Centers (MAT) governed by The Tennessee State Opioid Treatment, as these centers allow all Tennesseans the opportunity to receive treatment, irrespective of their socio-economic status.
2. Semi-synthetic opioids - this project will only focus on data related to Hydrocodone, Oxycodone, and Tramadol.
3. Calendar years – this project will only focus on observing data for the years 2019 and 2020.

**Motivation**

As a former Risk Analyst for 150 Medicated Treatment Centers (6 of which were located in the State of Tennessee) whereby patients experiencing addiction to prescription opioids were able to receive treatment for their addiction, I faced the unfortunate reality of processing the sudden death of countless patients due to opioid overdose.

Throughout my experience, I couldn't help but be haunted by the question of whether we did enough to help our patients, and if the medical care provided was merely a band-aid solution to larger external stressors that remained unknown to us.

In this capstone, I aim to offer valuable insights and ignite meaningful discussions about the underlying stressors or barriers to recovery that patients might encounter during their journey to overcome drug addiction. By shedding light on these issues, I hope to foster a more effective and compassionate approach to assisting individuals struggling with addiction.

**Question**

This presentation will answer the following questions:

1. What is a MAT Center?
2. What counties are the TN MAT Centers located in?
3. What is the income per capita by county in TN and where do the MAT centers county rank in comparison to the entire state?
4. What is the total amount of fatal prescription opioid overdoses in MAT Center counties?
5. What is the total amount of prescriptions written for Hydrocodone, Oxycodone and Tramadol in 2019 and 2020. Where there any changes for prescriptions written?
6. What is the count of fatal overdoses for Hydrocodone, Oxycodone and Tramadol in 2019 and 2020 per county?

**Minimum Viable Product (MVP)**

My intended audience would be a healthcare company that has a sector in treatment centers currently, or one that wants to expand their current services. This information could be used to help the company identify where patients are underserved or could benefit from a new/better company coming into the community and aiding those in real need. I intend to present my information using Python for cleaning and mapping, and Tableau for graphing and storytelling.

**Data Sources**

My data will come from the following sources:

* <https://www.cdc.gov/drugoverdose/deaths/index.html>
* <https://www.tn.gov/content/dam/tn/mentalhealth/documents/TN_OTP_Map_4-4-22.pdf>
* <https://www.tn.gov/health/health-program-areas/pdo/pdo/data-dashboard.html>
* <https://www.census.gov/quickfacts/fact/table/TN/INC110221>
* <https://fredaccount.stlouisfed.org/datalists/305336>

**Known Issues and Challenges**

* For this project, I will need to clean my census bureau for my defined years of 2019 -2020.
* I will have to clean the TN Department of Health’s data to my specific years, drugs, and prescriptions.