**Raveena Arasikere Rakesh:**

**Task M2.1**: Prepare a 1-page summary of what was discovered in these two paper. Significant outcomes, i.e., which variables/determinants are linked to opioid endemic.

**Reference papers** : https://www.mayoclinic.org/diseases-conditions/prescription-drug-abuse/in-depth/how-opioid-addiction-occurs/art-20360372

# <https://www.ncbi.nlm.nih.gov/books/NBK458653/> -Evidence on Strategies for Addressing the Opioid Epidemic

# <https://link.springer.com/article/10.1007/s40265-017-0846-6> -Correlation of Opioid Mortality with Prescriptions and Social Determinants: A Cross-sectional Study of Medicare Enrollees

Based on the study, opioid in takers are prone addiction. Such deep level of addiction that withdrawal from it can be a hard task. Studies say that at least 2 million people have the opioid use disorder, and even if the country decides to escalate the treatment procedure it is only more likely to increase. This kind of future prediction is possible through data-science, one can study the numbers for example, how many doctors prescribed the drugs that induced such high levels of pleasure which in-turn resulted in addiction, how did the patients react to it? Were they cured or was the disease incurable or did it result in some side effect such as addiction? All these questions can be answerable with clear analysis of the data which can be collected from various sources. Once an individual is addicted to that level of pleasure, they are most likely to get addicted to the illegal drugs such as heroin. Data-science, Machine-learning, and study of these results in various parts of the country from counties to cities to states to entire country, can be helpful in preventing this. Referencing from the above two mentioned papers we can see a lot of factors that were discovered during the study and then could be resolved through data-science.

For example, according to the study some of the factors that influence the opioid epidemic along with their significant outcomes are,

* 0.012% of the opioid prescribed **population** dies from overdose issues. This number can be further used to analyze how it can play an important role in addressing this issue. A clear study can further analyze how these numbers have varied over time and how they can influence the mortality rate.
* Classifying the cause of mortality based on the **prescribed drug** can further improve in understanding which drugs are causing the overdose problem and how can this be addressed and resolved.
* We gather the data based on **age, income, race, gender, population density and number of doctors who prescribe opioid drugs in a particular coun**ty. This information can be analyzed using data science and machine learning and develop a better algorithm to predict how the opioid mortality varies across various categories.
* We can hypothesize some deductions like as the population increases so does the opioid mortality rate and then verify if this assumption was true or false by performing some testing operations.
* The **production** of these opioid drugs might also need to be administer because the same chemical used in the production of opioid can be illegally used to produce some other illegal drugs such as heroin.