An estimated 2.7 million people were reported suffering from TEDS MOUD Attendance at self-medication for Opioid Use Disorder (MOUD), like buprenorphine, methadone, or naltrexone as part of the treatment plan. Outcome: Completion of treatment – All parts of the treatment plan or program were completed. Attendance at self-help groups: use of self-help groups within 30 days before discharge (any attendance frequency counts).

Data Overview:
- D:
- CDC: http://www.cdc.gov/opioids/data/index.html

**Background:**
- An estimated 2.7 million people were reported suffering from Opioid Use Disorder (OUD) in the year 2020.
- Nearly 75% of drug overdose-related deaths were attributed to opioids, killing nearly 69,000 in 2020.
- Medication for Opioid Use Disorder (MOUD), like buprenorphine, methadone, and naltrexone are currently the gold standard for treatment.
- Longer-term treatment retention on MOUD is associated with improved mortality; however, a large proportion of patients discontinue prematurely within the first few months.

**Objective:**
To investigate if self-help group improves MOUD treatment retention.

**Study Design:**
- DATA: Treatment Episode Dataset – Discharges (2015-17)
- Treatment: MOUD - methadone, buprenorphine, or naltrexone as part of the treatment plan.
- Outcome: Completion of treatment – All parts of the treatment plan or program were completed.
- Attendance at self-help groups: use of self-help groups within 30 days before discharge (any attendance frequency counts).

**ML Assisted Causal Inference Framework:**

**Step 1: Association Model**
- Machine learning techniques
- Explore associations that exist with treatment completion

**Step 2: Causal Model**
- Outcome Model using Machine learning techniques
- Treatment Model using Machine learning techniques
- Select variables with feature importance >0.02 from both models
- Select confounders and outcome predictor using OAENet
- Calculate Average treatment effect and Robust McNemar’s Score

**Result:**
- ML models for predicting treatment retention show that the self-help group is a strong predictor, and it is positively associated with improving treatment retention.
- We selected confounders using Outcome Adaptive Elastic Net and used propensity score based Nearest Neighbor matching technique, which provided ATT = 0.202.
- Robust McNemar’s test p-value = 0.0105, which suggested self-help groups cause improvement of MOUD treatment retention.

**Conclusion:**
- Our finding informs a critical policy for MOUD treatment retention.
- Self-help group utilization rates are low and vary across census divisions, ranging from 3% to 40%.
- Policymakers should take necessary action to integrate bimodal treatment (MOUD + self-help groups) to ensure improvement in treatment retention.

**Limitation:**
- Data lacked detailed information about specific types of self-help groups being used as a part of recovery programs.
- Data also lacked information about the severity of the patient’s condition and about the specific MOUD received by them.

**Contact Information:**

**References:**
- Data Overview (Opioids) CDC. Retrieved April 17, 2023, https://www.cdc.gov/opioids/data/index.html