MAT Clinics

Standardized Measure of OUD Treatment Adherence

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MATClinics Context

- Est. 2016 with mission to provide high-quality/low-cost addiction treatment
- Office-Based Opioid Treatment (OBOT) — physician office environment
- Five locations in Maryland (eight by end of 2021)
- Services
  - Buprenorphine (typically Suboxone) prescribed for opioid use disorder
  - Medications for alcohol use disorder/cocaine use disorder as well
  - Counseling (individual/group/intensive outpatient)
  - Psychiatry
  - Case Management
- Payers: Medicare/Medicaid/CareFirst
Problem: Distinguish program adherence between OUD patients at scale
Opioid addiction is a chronic, relapsing disorder

- Most patients discontinue treatment for opioid use disorder
- Many patients follow a repeating cycle of readmission and discontinuation
  - Vulnerability may last a lifetime
- Most patients continue using drugs during or after treatment
  - 48% - 75% of patients continue daily or weekly drug use (Marsden et al., 2009; Termorshuizen et al., 2005)
- Providers may not always be the best at predicting patient outcomes (Symons et al., 2019)
OUD Intra-Treatment Measurement

Standardized and validated measures of patient stability/adherence are missing

As a result:

1. Treatment resources are not optimally allocated/targeted (70% of MATClinics patients are stable and visit monthly or less frequently)
2. Lack of standardization leads to inconsistent treatment
   a. Particularly concerning in time-constrained environments with mid-level providers
3. Difficult to identify dynamic (longitudinal) changes in trend
   a. Cross-sectional endpoints may mask important trend changes
   b. Text based toxicology lab results are difficult to interpret longitudinally
Solution

MATClinics utilized predictive analytics to develop a validated modeling framework to predict “Treatment Adherence” at a patient’s next appointment.
OUD Treatment Adherence: Data

Data from multi-location OBOT setting:

- >3,000 unique patients
- >50,000 appointments
- Data types: urine drug samples (buprenorphine, opioids, cocaine, amphetamines, etc.), appointment records

Treatment Adherence at next appointment (prediction target):

- Opioid negative urine sample
- Norbuprenorphine positive urine sample
- No evidence of buprenorphine adulteration
MATClinics produced a dashboard to help its staff and providers recognize which patients need more attention & resources.
Longitudinal Dashboard
Healthcare in the US prevents competition based on price.

Behavioral health providers should be judged on standardized quality measures.
Portability

Input variables used in our model are collected by all OUD treatment programs

- Toxicology results (standard OUD panel)
- Appointment records

Every treatment provider that prescribes buprenorphine to treat OUD can deploy this method

- At the very least, our results demonstrate the bottom of the range of what is possible
  - Other methodologies might be superior
  - Payers/Employers should expect all treatment providers to quantify the stability of each patient at each appointment
Quality comparison across programs

**Program Evaluation:**
Is the MATClinics’ profile demonstrative of high-quality treatment?

Could be used to compare treatment efficacy
What’s left to do?

- **Expect more from treatment providers** — An objective, validated, standardized, portable outcome measure for OUD treatment should set the floor on expectations.
- **Encourage research that compares outcomes between programs** — Some programs will be more effective than others. Let’s try to understand what works best to improve outcomes.
- **Remember retention** — Program-level scores could be manipulated unless retention is incorporated into program comparisons.
- **Engage with a payer to look at claims** — If our scores are correlated with overall healthcare spend (we think they are), the scores could help payers anticipate poor health outcomes and higher individual costs in a much more generalizable way.
Contact

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