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Predictors of medication utilization for opioid use disorder among Medicaid-insured HIV patients in New York

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Abstract

Background and Objectives: This paper investigates the prevalence and predictors for opioid use disorder (OUD) pharmacotherapy utilization for Medicaid-insured patients with HIV in New York.

Methods: We identified 5,621 patients with HIV and OUD in 2014 in the New York State Medicaid claims data. Claims were used to identify individual client medication for addiction treatment (MAT) utilization, demographic information, and other medical and psychiatric health conditions. Logistic regression analyses were performed to explore potential predictors of MAT service utilization among people with HIV and OUD.

Results: Of 5,621 identified patients with HIV and OUD, 3,647 (65%) received some type of MAT. 87% of treated patients received methadone while 10% received buprenorphine and 3% utilized both therapies.

Conclusions and Scientific Significance: A substantial number of patients with HIV and OUD did not receive MAT. Findings suggest that there are opportunities to improve OUD care for patients with HIV and OUD, particularly the young, blacks, individuals living outside of New York City, and among those with serious psychiatric conditions. This initial study suggests that additional research is needed to better understand how the gap in care affects this population.

Keywords

HIV; Opioid use disorder; Medication-Assisted Treatment; Methadone; Buprenorphine; Medicaid

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Contributors

SC and CN conceptualized study. SC prepared the first draft of the analysis. SC, SH, and MG conducted the statistical analysis. All authors contributed to the main contents and provided critical comments on the final draft. All authors approved the final manuscript.

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1. Introduction

Increases in opioid-related death rates are a growing public health concern and have created a growing demand for opioid use disorder (OUD) treatment services including MAT. Concurrently, HIV transmission through high-risk behaviors including injection drug use continues to account for a significant portion of new HIV infections even though the HIV/AIDS epidemic has recorded a significant decline in new diagnoses during the past decade¹.

About 50% of HIV patients have a history of substance use disorder (SUD)². The burden of triple diagnoses of HIV, mental health illnesses, and substance use is common among HIV patients and the compounded clinical manifestations result in worse health overall. SUD has been associated with poor outcomes in HIV patients. HIV patients with SUD are less likely to adhere to HIV medications³, less likely to have regular viral load testing⁴, and are more likely to be infected with Hepatitis C⁵.

Patients living with HIV often use opioid analgesics for chronic pain management, which in turn exposes them to OUD. Primary care providers for HIV patients report that approximately 30% of patients have chronic pain and over 20% received opioid analgesics; yet, few providers followed guideline concordant care for pain medications⁶. Patients with HIV and OUD have poor health outcomes including non-adherence to HIV medications as well as increased morbidity and mortality rates compared to patients with HIV who do not use drugs⁷.

HIV patients are less likely to receive substance use disorder treatments⁸. Despite the proven effectiveness, MAT utilization among HIV population is understudied. Understanding the overall treatment landscape in New York can provide relevant information on access to MAT that informs efforts in other states. This study explores MAT treatment prevalence in New York in 2014 for Medicaid patients with HIV and aims to examine if demographic characteristics are associated with receiving medication for addiction treatment (MAT).

2. Methods

2.1. Data source and study population

This study reviewed 2014 MAT utilization among New York Medicaid clients with diagnosed OUD and HIV using New York's Medicaid claims data. The study population included clients with Medicaid coverage who had at least one OUD diagnosis (304.0, 304.7, 305.5, 965.0) in 2014. Diagnosis codes for HIV, rate codes for AIDS hospice, HIV-related outpatient services or HIV special needs plans, ARV medication National Drug Codes (NDC), and procedure codes for testing of HIV viral quantification, phenotype or genotype were used to identify HIV patients⁹. Clients with coverage through both Medicaid and Medicare were excluded from the analysis since we were unable to access the entirety of their healthcare claims data. In total, 5,621 non-dually eligible patients with HIV and OUD diagnosis were identified in 2014.

2.2. Measures

MAT utilization was the primary outcome. MAT was defined if an individual had a claim with methadone maintenance therapy visit (using New York Medicaid specific billing codes), or if they filled at least one buprenorphine-naloxone prescription (NDC codes) for OUD treatment. We created a mutually exclusive category to examine the medication types: methadone, buprenorphine, and both. Prescriptions for naltrexone were too few to reliably include in the analyses. We extracted demographics (e.g. age, gender, race/ethnicity, and county of residence) from Medicaid eligibility data. Finally, medical and psychiatric health conditions (e.g. cardiovascular disease, diabetes, hypertension, renal failure, schizophrenia, bipolar disorder, and respiratory disease) were coded if the client had at least one inpatient stay or at least two outpatient claims with aforementioned diagnoses in any of the five available diagnosis fields in 2014.

2.3. Analysis

Descriptive statistics were used to characterize MAT utilization among HIV patients with at least one OUD diagnosis in 2014. Characteristics and MAT utilization were assessed using Chi-square tests. Univariate and multivariate logistic regression analyses were performed to understand the association between MAT service utilization among people with OUD and HIV. We controlled for age, gender, race/ethnicity (non-Hispanic white, non-Hispanic black, Hispanic, Other/Unknown), place of residence in the New York State (New York City or rest of the state), comorbidities such as cardiovascular disease, diabetes, hypertension, renal failure, schizophrenia, bipolar, and respiratory diseases. All statistical analyses were conducted using SAS 9.4 and STATA M.P.13.1.

3. Results

Of 5,621 identified patients with documented HIV and OUD, 3,647 (64.9%) received some type of MAT in 2014. Of those who utilized MAT, 87% of treated patients received only methadone maintenance therapy, 10% received only buprenorphine treatment, and 3% received both therapies. Most of the study sample were older than 45 years old (79.4%), male (63%), lived in New York City (90.3%), and was Hispanic (47.6%). Younger patients represented the smallest subset of patients to receive MAT, with only 26% of 18 to 34 year olds receiving it. Patients in the older age groups (35–44 (AOR=2.26; 95% CI= 1.73–2.95), 45–54 (AOR=3.13; 95% CI= 2.46–3.97), 55+ (AOR=5.13; 95% CI= 3.98–6.60)) were more likely to receive MAT compared to patients in the youngest age group (18–34). Non-Hispanic blacks (Adjusted Odds Ratio [AOR]=0.38; 95% Confidence Interval [CI]= 0.30–0.47) and clients living outside NYC (AOR=0.50; 95% CI= 0.40–0.59) were significantly less likely to receive treatment compared to non-Hispanic white clients living in NYC, after adjusting for covariates. The odds of patients with severe mental disorders such as schizophrenia (AOR=0.70; 95% CI=0.58–0.86) and/or bipolar (AOR=0.76; 95% CI= 0.63–0.91) of receiving MAT were lower compared to those without these diagnoses. Patients with cardiovascular diseases (AOR=0.88; 95% CI= 0.73–0.94) were also less likely to receive MAT.

4. Discussion

This study demonstrates that MAT are underutilized among Medicaid-insured HIV patients living in New York. About 65% of patients diagnosed with HIV received at least one OUD MAT in 2014. Most patients who received treatment were on methadone (85%).

We found that age, race/ethnicity, and geographical region were associated with likelihood of receiving MAT. Specifically, younger adults, blacks, and individuals living outside New York City were less likely to receive MAT. These results support past findings that demonstrated black-white disparities in receipt of MAT care. Studies have reported that blacks and Hispanics were less likely to receive addiction treatment, but in our study, only blacks were less likely to acquire MAT. One explanation for this difference is the known presence of methadone maintenance therapy programs in Hispanic communities in New York City¹⁰. The availability of addiction treatment systems is a significant factor affecting treatment uptake. Historically, there have been a low number of physicians who prescribe buprenorphine and serve in low-income areas¹¹. In New York City, the availability of buprenorphine has been unevenly distributed, with the greatest access in areas with high incomes and a high percentage of White residents¹⁰.

We found that mental health comorbidities can decrease HIV patients' odds of receiving MAT. Integrating OUD, mental illnesses, and HIV care can be complex in terms of coordinating and accessing appropriate care. More research is needed in this area to study how to improve evidence-based care like HAART and MAT adherence for these most vulnerable patients who have HIV, mental illnesses, and OUD.

This is the first study to focus on the receipt of MAT among HIV patients diagnosed with OUD. Addressing the opioid epidemic is a public health priority in the United States. Understanding the pattern of MAT among patients diagnosed with HIV and OUD is an important step in developing future treatment strategies. This is especially pertinent to the Medicaid population as most individuals who have HIV and/or SUD have an income below poverty, and individuals who have both HIV and SUD have a higher morbidity and mortality rate when compared to individuals who solely have HIV^{12,13}. Populations that are marginalized often face multiple barriers to treatment which necessitates a better understanding of their complex healthcare experiences in order to increase their access.

Our analysis has several limitations. First, it is a cross-sectional study, which can be beneficial for assessing the prevalence, but it prevents us from making a causal inference from the findings. It is especially helpful since it helps to generate further hypotheses in the midst of an opioid epidemic. In addition, patients who have not received MAT may have received other types of treatment, such as psychotherapies or other behavioral and/or cognitive therapies. Defining treatment utilization as filling one or more buprenorphine-naloxone prescriptions can be overestimating the prevalence of treatment uptake. Despite these limitations, the study provides insights into disparities in receipt of MAT among vulnerable patients and suggests further exploration on how to best optimize our current strategies in reaching potential patients who can benefit from MAT at a population-level.

5. Conclusion

To our knowledge, this is the first large study to examine the prevalence and predictors for receipt of MAT among Medicaid-insured patients with HIV and OUD. In New York State, a substantial number of HIV patients on Medicaid with OUD did not receive MAT in 2014. The findings highlight the underuse of MAT and speak to the need for greater attention to coordinating OUD treatment among the young, African Americans, individuals living outside of New York City, and among those with serious psychiatric conditions. The study highlights the need for added efforts to provide MAT for these subpopulations. Future studies should further examine why access to treatment disproportionately affected certain communities and build interventions to integrate MAT and HIV treatment to improve equitable care for all patients with OUD and HIV.

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Table 1.
Demographic characteristics and factors predicting MAT usage of HIV patients with OUD diagnosis in 2014

| Overall | MAT Meth: 3,180 (87.2) Bup: 467 (12.8) Both: 97 (2.7) | No MAT | Unadjusted Odds Ratio | P-value | Adjusted Odds Ratio | P-value |
|-------------------------------|--|-----------------|---------------------------|---------|---------------------------|---------|
| (n=5,621) n (%) | (n=3,647) n (%) | (n=1,974) n (%) | (95% Confidence Interval) | | (95% Confidence Interval) | |
| <i>Age Category</i> | | | | | | |
| 18–34 | 143 (3.9) | 235 (11.9) | Ref | | Ref | |
| 35–44 | 451 (12.4) | 332 (16.8) | 2.23 (1.74–2.87) | <.001 | 2.26 (1.73–2.95) | <.001 |
| 45–54 | 1,592 (43.7) | 874 (44.3) | 2.99 (2.39–3.74) | <.001 | 3.13 (2.46–3.97) | <.001 |
| 55 & Above | 1,461 (40.1) | 533 (27.0) | 4.50 (3.58–5.67) | <.001 | 5.13 (3.98–6.60) | <.001 |
| <i>Gender</i> | | | | | | |
| Male | 2,313 (63.4) | 1,231 (62.4) | Ref | | Ref | |
| Female | 1,334 (36.6) | 743 (37.6) | 0.96 (0.85–1.07) | 0.431 | 1.11 (0.98–1.25) | 0.101 |
| <i>Race</i> | | | | | | |
| Non-Hispanic White | 386 (10.6) | 218 (11.1) | Ref | | Ref | |
| Non-Hispanic Black | 975 (26.8) | 909 (46.1) | 0.61 (0.50–0.73) | <.001 | 0.38 (0.30–0.47) | <.001 |
| Hispanic | 2,025 (55.6) | 650 (33.0) | 1.76 (1.46–2.12) | <.001 | 1.19 (0.96–1.47) | 0.106 |
| Other/Unknown | 258 (7.1) | 195 (9.9) | 0.75 (0.58–0.96) | 0.022 | 0.54 (0.42–0.71) | <.001 |
| <i>New York State Regions</i> | | | | | | |
| Rest of the State | 262 (7.2) | 285 (14.4) | Ref | | Ref | |
| New York City | 3,385 (92.8) | 1,689 (85.6) | 0.46 (0.38–0.55) | <.001 | 0.50 (0.40–0.59) | <.001 |
| <i>Comorbidity</i> | | | | | | |
| Cardiovascular Disease | 1,638 (44.9) | 936 (47.4) | 0.84 (0.75–0.94) | 0.003 | 0.88 (0.73–0.94) | 0.047 |
| Diabetes | 735 (20.2) | 338 (17.1) | 1.22 (1.06–1.41) | 0.006 | 1.05 (0.90–1.23) | 0.507 |
| Hypertension | 1,617 (44.3) | 808 (40.9) | 1.15 (1.03–1.28) | 0.014 | 1.12 (0.98–1.29) | 0.084 |
| Renal Failure | 271 (7.4) | 122 (6.2) | 1.22 (0.98–1.52) | 0.080 | 1.12 (0.88–1.42) | 0.369 |
| Schizophrenia | 283 (7.8) | 240 (12.2) | 0.61 (0.51–0.73) | <.001 | 0.70 (0.58–0.86) | 0.001 |
| Bipolar | 374 (10.3) | 291 (14.7) | 0.66 (0.56–0.78) | <.001 | 0.76 (0.63–0.91) | 0.003 |
| Respiratory Disease | 1,021 (28.0) | 577 (29.2) | 0.94 (0.83–1.06) | 0.327 | 0.87 (0.76–1.00) | 0.055 |

Notes: HIV = human immunodeficiency virus; OUD = opioid use disorder; MAT = medication for addiction treatment