U.S. Department of Health and Human Services
Assistant Secretary for Planning and Evaluation
Office of Disability, Aging and Long-Term Care Policy

USE OF MEDICATION-ASSISTED TREATMENT FOR OPIOID USE DISORDERS IN EMPLOYER-SPONSORED HEALTH INSURANCE:

FINAL REPORT

February 2019

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This report was prepared under contract #HHSP233201600023I between HHS's ASPE/DALTCP and Truven Health Analytics. For additional information about this subject, you can visit the DALTCP home page at https://aspe.hhs.gov/office-disability-aging-and-long-term-care-policy-daltcp or contact the ASPE Project Officers, Laurel Fuller and D.E.B. Potter, at HHS/ASPE/DALTCP, Room 424E, H.H. Humphrey Building, 200 Independence Avenue, S.W., Washington, D.C. 20201; Laurel.Fuller@hhs.gov.

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Use of Medication-Assisted Treatment For Opioid Use Disorders in Employer-Sponsored Health Insurance

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ABSTRACT

This project assessed changes in Opioid Use Disorder (OUD) treatment utilization and expenditures in the employer-sponsored private health insurance market at two timepoints, 2006-2007 and 2014-2015, that mark the periods before and after implementation of the Mental Health Parity and Addiction Equity Act, the Patient Protection and Affordable Care Act, and the introduction and expanded use of new opioid treatment medications. We used the Truven Health Analytics MarketScan® Commercial Claims and Encounters Database of private employer-sponsored health plans. We included employees, spouses, and dependents aged 12-64 years, required at least 10 out of 12 months of enrollment in each calendar year, and excluded capitated plans and plans without prescription drug claims. Employer-sponsored health plans paid for a much broader range of OUD treatment services, including medication-assisted treatment (MAT) at the second period. MAT use was similar in the two periods, with buprenorphine being the most common and naltrexone seeing a substantial increase in use. In 2014-2015, there was a shift in the types of services used during treatment episodes, with outpatient office visits having the highest frequency (56.2 percent) compared with other OUD services. Women with an OUD were significantly less likely than men with an OUD to receive MAT. The age group with the highest MAT use was 18-44-year-olds. There was a shift in 2014-2015 toward the insured member being more likely than spouses or dependents to receive MAT. Both insurers and enrollees paid more for substance use disorder treatment in the second period, and in 2014-2015, insurers paid a lower portion of total treatment costs. Treatment initiation, engagement, and retention all were positively associated with plan level of reimbursement. The association was strongest with treatment initiation and more modest with engagement and retention.

ACRONYMS

The following acronyms are mentioned in this report and/or appendices.

ACA	Patient Protection and Affordable Care Act
ASAM	American Society of Addiction Medicine
BH	Behavioral Health
CCAE	Commercial Claims and Encounters
CI	Confidence Interval
CPT	Current Procedural Terminology
DX	Diagnosis code
ED	Emergency Department
EMTALA	Emergency Medical Treatment and Labor Act
FDA	Food and Drug Administration
FIL	Buccal Film
FQHC	Federally Qualified Health Center
GER	Gluteal Extended Release
HCPCS	Healthcare Common Procedure Coding System
HEDIS	Healthcare Effectiveness Data and Information Set
ICD-9	International Classification of Diseases, Ninth Revision
ICD-10	International Classification of Diseases, Tenth Revision
IM	Intramuscular
MAT	Medication-Assisted Treatment
MHPAEA	Mental Health Parity and Addiction Equity Act
MM	Mucous Membrane
N/A	Not Available
NDC	National Drug Code
NQTL	Non-Quantitative Treatment Limit
NSDUH	National Survey on Drug Use and Health
OR	Odds Ratio
OTP	Opioid Treatment Program
OUD	Opioid Use Disorder
POS	Place Of Service

Rev	Revenue code
RHC	Rural Health Clinic
Rx	Prescription fill
SD	Standard Deviation
SL	Sublingual
SUD	Substance Use Disorder
TAB	Tablet
TMS	Transcranial Magnetic Stimulation
Tx	Treatment code

EXECUTIVE SUMMARY

Introduction

Drug overdose from illegal (e.g., heroin) and prescription (e.g., oxycodone, hydrocodone) opioids is now the leading cause of accidental death in the United States. Among a total of 52,404 deaths from a drug overdose in 2015, 63.1 percent involved opioids.[1] Federal policy initiatives and advancements in treatment for opioid use disorder (OUD) have expanded access to treatment by increasing the number of people with health insurance, requiring health insurance plans to cover substance use disorder (SUD) treatment at the same benefit level that physical health services are covered, and expanding medication-assisted treatment (MAT) options for OUD.

Consequently, private insurance has become a more prominent payer of SUD treatment services. Between 2004 and 2014, the share of the total spending for SUD treatment in the United States paid for by private insurance increased from 13 percent to 18 percent.[2] Among those with commercial insurance, professional charges (e.g., those for physician or psychologist who bill for services) for OUD treatment rose by more than ten-fold from 2011 to 2015 (from $71.66 million to $721.80 million). In 2014 opioid treatment programs (OTPs) were a covered service in 97 percent of private plans, and all health plans covered the treatment medication buprenorphine under the pharmacy benefit in 2010.[3]

Treatment options for OUD include individual or group counseling, medication, and support services to help with housing, employment, or other resources needed to sustain recovery.[4] Generally, both counseling and support services are recommended in conjunction with medication to maximize treatment success. Treatment may be offered in a variety of settings depending on the severity of the SUD and the availability of services. Alignment of treatment intensity with the severity and complexity of an individual's OUD has been shown to improve treatment outcomes.[5]

To understand SUD treatment patterns in private insurance, we used commercial insurance claims data to evaluate OUD treatment paid for by employer-sponsored health insurance plans before and after the implementation of the Mental Health Parity and Addiction Equity Act (MHPAEA) and the Patient Protection and Affordable Care Act (ACA) and the introduction of new forms of MAT. The sample of

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[1] Rudd RA, Seth P, David F, et al. Increases in drug and opioid-involved overdose deaths--United States, 2010-2015. Morbidity and Mortality Weekly Report Recommendations and Reports. 2016; 65(50-51): 1445-1452. https://www.cdc.gov/mmwr/volumes/65/wr/mm655051e1.htm.

[2] Substance Abuse and Mental Health Services Administration. Behavioral Health Spending and Use Accounts, 1986-2014. HHS Publication No. SMA-16-4975. Rockville, MD: Substance Abuse and Mental Health Services Administration; 2016.

[3] Reif S, Creedon TB, Horgan CM, et al. Commercial health plan coverage of selected treatments for opioid use disorders from 2003 to 2014. Journal of Psychoactive Drugs. 2017; 49(2): 102-110.

[4] Substance Abuse and Mental Health Services Administration. Treatment for Substance Use Disorders. 2016. https://www.samhsa.gov/treatment/substance-use-disorders.

[5] U.S. Department of Health and Human Services, Office of the Surgeon General. Early intervention, treatment, and management of substance use disorders. In: Facing Addiction in America: The Surgeon General's Report on Alcohol, Drugs, and Health. Washington, DC: U.S. Department of Health and Human Services; 2016: 6-1-6-71. https://addiction.surgeongeneral.gov/.

plans included primarily large health plans, but also included small plans. This study expands on the existing literature by examining both the receipt of MAT and other OUD services and settings (i.e., detoxification, psychotherapy) among the population with private insurance.

Objectives

This project assessed changes in OUD treatment utilization and expenditures in the employer-sponsored private health insurance market at two timepoints, 2006-2007 and 2014-2015, that mark the periods before and after implementation of the MHPAEA, the ACA, the introduction and expanded use of new opioid treatment medications, and other initiatives to expand SUD treatment access. It is not an evaluation of any specific law or event, but rather an investigation of: (1) whether access to treatment among those with private insurance improved over time; and (2) any remaining treatment gaps--for example, lack of coverage for specific types of services--and access barriers--for example, high out-of-pocket costs. We organized the analyses around understanding changes in the types of services plans covered, the volume and types of services individuals received, and the associated spending by plans and individuals.

Specifically, we analyzed the following:

1. **Coverage**. The coverage analyses examined whether a higher percentage of plans paid for treatment and whether there were changes in the types of services paid for--that is, whether plans paid for a broader range of services. We did not have information on which services were covered by the plans, therefore, we approximated coverage by reporting what services plans paid for.

2. **Utilization**. The utilization analyses examined whether a higher percentage of members with an OUD received any treatment or specific types of services including MAT and psychosocial therapy, whether those in treatment used services more frequently, and how treatment episodes compared in terms of the average length of treatment, the types of services received during an episode, and whether there were differences in the characteristics of members who received MAT compared with those who did not.

3. **Spending**. The spending analyses examined total spending disaggregated by insurer and out-of-pocket spending, spending per user, and spending per unit of service for different types of services. Further, we investigated whether initiation, engagement, and retention in treatment was influenced by the relative share of treatment costs paid by insurers and individuals.

Methods

Data. We used the Truven Health Analytics MarketScan® Commercial Claims and Encounters (CCAE) Database for calendar years 2006, 2007, 2014, and 2015. The Marketscan CCAE Database contains private insurance claims from approximately 150 large employers for employees, their dependents, and early retirees. It is the largest commercial convenience sample in the United States.

Study population. We included private employer-sponsored health plan members, which included employees, spouses, and dependents aged 12-64 years. We excluded enrollees under age 12 years because of the low prevalence of OUD and enrollees over age 64 because of Medicare eligibility and the possibility of having secondary insurance. We required at least 10 out of 12 months of enrollment in each calendar year to capture a complete or nearly complete treatment picture for each individual. We excluded plans without prescription drug claims because of the importance of having complete service records for each enrollee and the need to capture use of MAT. And we excluded claims covered by capitated plans that did not include reimbursement information.

We restricted the enrollee-level analyses to enrollees with OUD, as defined below, and we restricted the plan-level analyses to plans with at least ten enrollees with OUD. For the analyses of the relationship between insurer level of reimbursement and treatment initiation and engagement, we further restricted the sample of plans to exclude plans with fewer than ten treatment episodes, plans with fewer than ten people, and individuals below the 25th and above the 99th percentile of total costs.

Study periods. We examined two study periods over a 10-year timeframe--2006-2007 and 2014-2015--before and after important federal policy changes and changes in the availability and accessibility of OUD treatment. We selected 2-year periods so that we would have enough enrollees with OUD and sufficient volume of less commonly used service types to report detailed service use.

Analytic files. We constructed several analytic files to allow us to report on utilization and spending from the perspectives of what plans paid for, what services individuals used, the composition of treatment episodes, and costs to insurers and enrollees. These included the source claims-level analytic files, which included all inpatient admissions, outpatient services, and prescription drug fills and an individual-level file which included summary variables on service use and spending; demographic and health plan characteristics, and mental and physical health conditions. We aggregated the individual-level file to the plan-level in order to report the percentage of plans that paid for particular OUD services.

Variable definitions. We constructed variables to define OUD, characterize the sample and health plans, and to define service types and utilization rates, number of treatment episodes, and financial variables. Below we describe how we defined each of these variables.

- *Opioid use disorder*. As described, the analytic data files included members with OUD defined on the basis of either having an OUD diagnosis or receiving OUD treatment, presuming that individuals receiving treatment qualified for an OUD diagnosis even if the diagnostic code was missing from the claims record. Specifically, individuals were classified as having OUD and included in the analytic files if they: (1) had two or more outpatient visits on different days or one inpatient stay with an OUD diagnosis in any claims field; (2) had an MAT prescription fill; or (3) had an MAT administration procedure code.

- *Service categories*. We classified all OUD treatment services into specific service categories using standard billing codes. We defined the following service categories: inpatient treatment, residential services, intensive outpatient or partial hospitalization services, emergency department visits, outpatient visits, psychotherapy, peer support, case management, and outpatient detoxification. Use of MAT was captured through the prescription claims codes for buprenorphine and naltrexone, as well as service administration codes, which are used to bill for

MAT administration--for example, giving a Vivitrol injection or administering methadone in an OTP.

- *Utilization*. We created binary variables indicating whether the member used each service type. We then computed the number of times that each respective service was used and computed a 12-month utilization rate for each service.

- *Coverage*. For each included plan, we created binary variables indicating whether any OUD service and each respective OUD service was received by a health plan enrollee.

- *Financial variables*. We computed variables to reflect insurer and individual (plan enrollee) spending. These included total payment, insurance payment, and out-of-pocket payment. Out-of-pocket payments included deductibles, co-payments, and co-insurance. They did not include the cost of insurance premiums.

- *Treatment initiation, engagement, and retention*. We defined whether each treatment episode met the Healthcare Effectiveness Data and Information Set treatment initiation and engagement criteria.[6] Additionally, we categorized treatment episode length into 30, 90, and 180+ days to capture varying lengths of treatment.

This project investigated changes in OUD treatment coverage, utilization, and expenditures in the private health insurance market before (2006-2007) and after (2014-2015) phased implementation of the MHPAEA and the ACA and the emergence of new Food and Drug Administration (FDA)-approved MATs. The coverage analyses examined the percentage of plans paying for any OUD treatment and specific types of treatment. The utilization analyses examined overall treatment use, use of specific service types, and patterns of MAT use by individuals. The spending analyses examined total spending for OUD treatment, cost-sharing between insurers and members, and the impact of cost-sharing on OUD treatment initiation, engagement, and retention.

Results

Coverage. We found that a higher percentage of plans paid for OUD treatment at the second period, and they paid for a much broader range of services, including MAT (Figure ES1). Notably, a higher percentage of plans paid for intensive outpatient treatment, outpatient office visits, and psychotherapy. This increase may have resulted from health plans adjusting their coverage requirements in accordance with the MHPAEA and the ACA, health plans recognizing the need to increase services given the increasing rates of OUD, or an emphasis on providing support services in conjunction with MAT.[7] Although there was a substantial increase in residential treatment, still only 13 percent of plans paid for this type of treatment in 2014-2015. The general trend of increasing the range of services paid for suggests improved adherence to American Society of Addiction Medicine (ASAM) criteria; however, the

[6] National Committee for Quality Assurance. Initiation and Engagement of Alcohol and Other Drug Dependence Treatment. Available from http://www.ncqa.org/report-cards/health-plans/state-of-health-care-quality/2016-table-of-contents/alcoholtreatment.

[7] Dufour R, Joshi AV, Pasquale MK, et al. The prevalence of diagnosed opioid abuse in commercial and Medicare managed care populations. Pain Practice. 2014; 14(3): E106-E115.

continued lower coverage of higher-intensity services--residential, intensive outpatient, and partial hospitalization--reflects a lack of coverage for higher-intensity services.

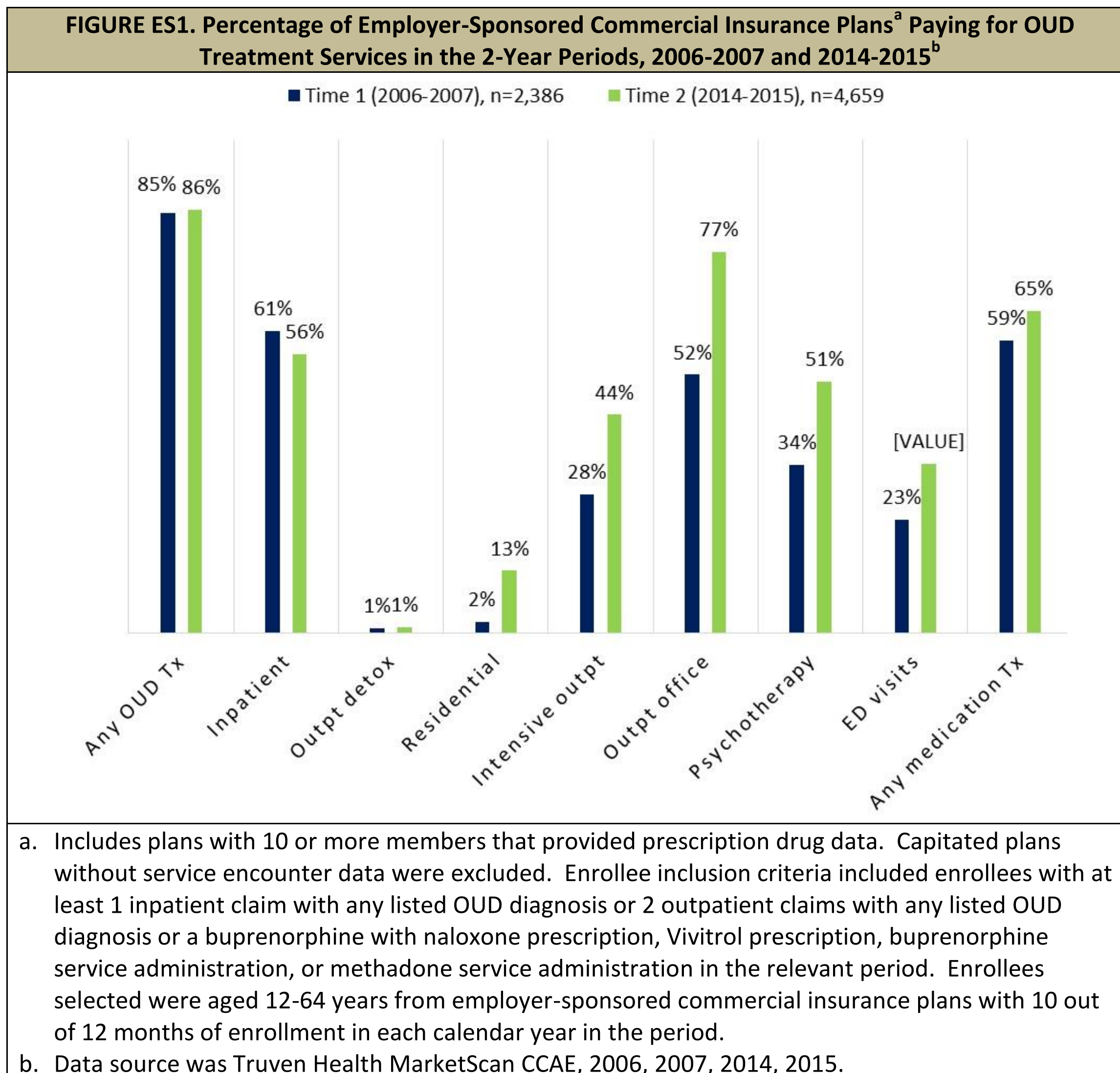


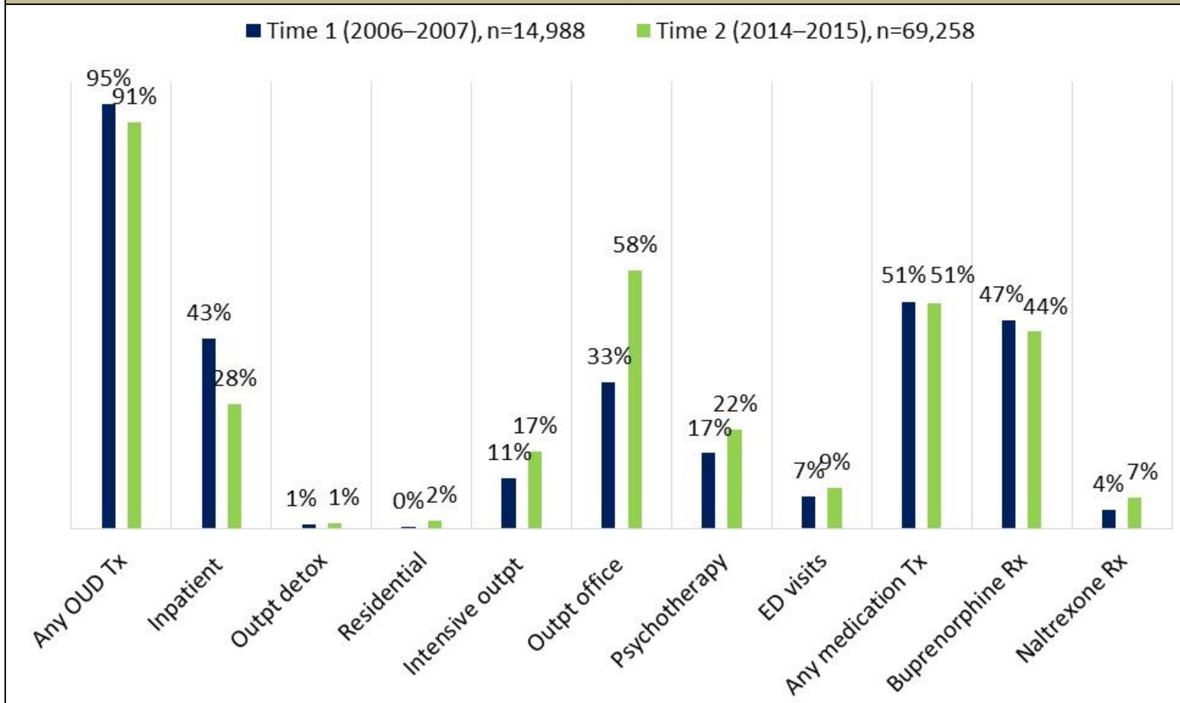
FIGURE ES1. Percentage of Employer-Sponsored Commercial Insurance Plans[a] Paying for OUD Treatment Services in the 2-Year Periods, 2006-2007 and 2014-2015[b]

a. Includes plans with 10 or more members that provided prescription drug data. Capitated plans without service encounter data were excluded. Enrollee inclusion criteria included enrollees with at least 1 inpatient claim with any listed OUD diagnosis or 2 outpatient claims with any listed OUD diagnosis or a buprenorphine with naloxone prescription, Vivitrol prescription, buprenorphine service administration, or methadone service administration in the relevant period. Enrollees selected were aged 12-64 years from employer-sponsored commercial insurance plans with 10 out of 12 months of enrollment in each calendar year in the period.
b. Data source was Truven Health MarketScan CCAE, 2006, 2007, 2014, 2015.

Utilization. We found that members in OUD treatment used intensive outpatient treatment, outpatient office visits, and psychotherapy more frequently compared with other OUD services and settings in 2014-2015 (Figure ES2). Overall MAT use was similar in the two time periods, with buprenorphine being the most common and naltrexone seeing a substantial increase in use. These findings reflect a long-term trend in the field of behavioral health, shifting away from long-term inpatient and residential stays toward placing more emphasis on effective medication treatment and community-based care.[8]

[8] Mark TL, Yee T, Levit KR, et al. Insurance financing increased for mental health conditions but not for substance use disorders, 1986-2014. Health Affairs (Millwood). 2016; 35(6): 958-965.

FIGURE ES2. Percentage of Employer-Sponsored Health Plan Enrollees[a] with OUD Who Accessed OUD Services, 2006-2007 and 2014-2015[b]



a. Member-level N refers to the total number of enrollees who were included in each of our cohorts using our population definition criteria. The population inclusion criteria included having at least 1 inpatient claim with any listed OUD diagnosis or 2 outpatient claims with any listed OUD diagnosis or having a buprenorphine with naloxone prescription, Vivitrol prescription, buprenorphine service administration, or methadone service administration in the relevant period. Enrollees selected were aged 12-64 years from employer-sponsored commercial insurance plans with 10 out of 12 months of enrollment in each calendar year in the period. Capitated plans without service encounter data and plans without prescription drug data were excluded.
b. Data source was Truven Health MarketScan CCAE, 2006, 2007, 2014, 2015.

In 2006-2007, the types of services received during an episode of treatment with the highest frequency included receiving any MAT (54.6 percent) and buprenorphine prescription fills/service administration (50.7 percent). In 2014-2015, there was a shift in the types of services used during treatment episodes, with outpatient office visits having the highest frequency (56.2 percent) compared with other OUD services. Private health plan management strategies of prior authorization and step therapy may partly explain why our findings revealed decreases in the percentage of episodes that included any MAT and buprenorphine prescription fills between the time periods.

The decrease in the percentage of episodes that included any MAT and buprenorphine prescription fills between the time periods may reflect a shortage of waivered physicians qualified to prescribe buprenorphine.

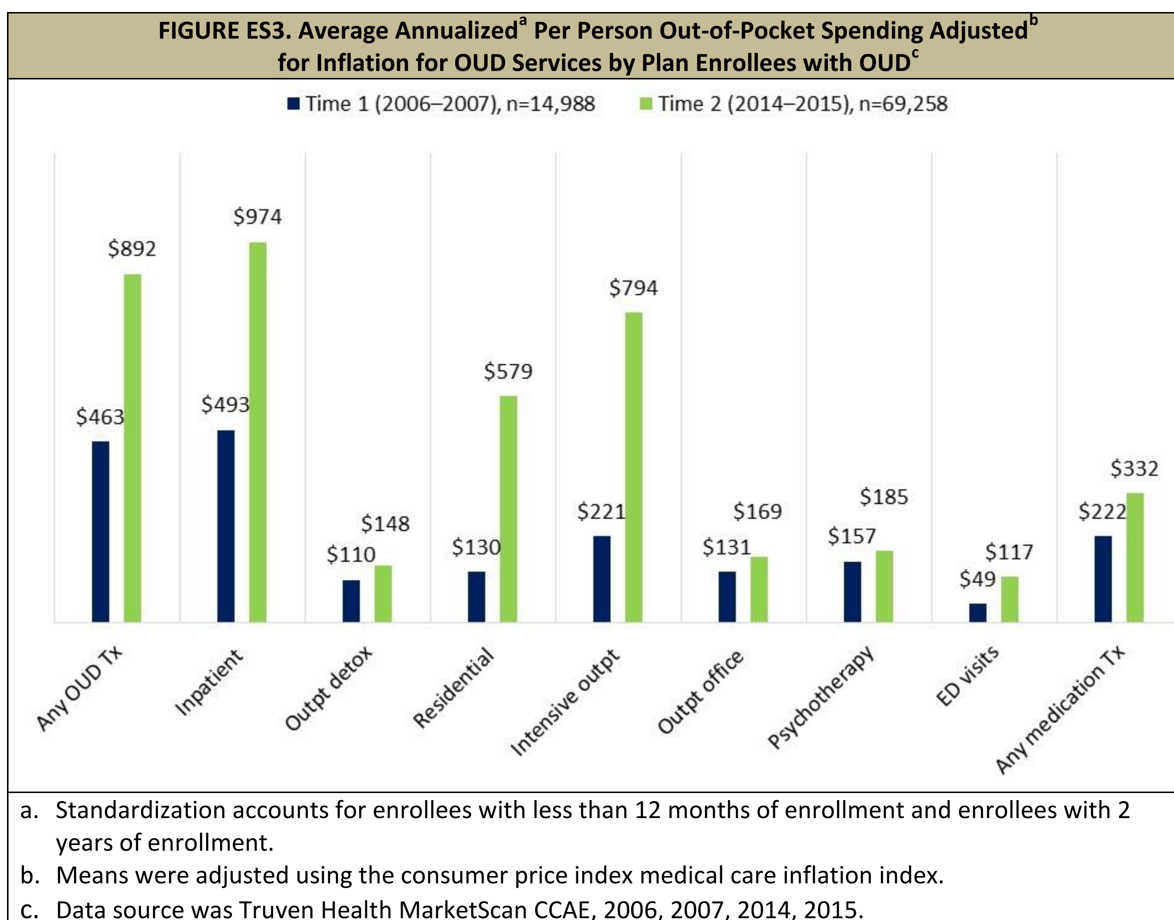
Women with an OUD were significantly less likely than men with an OUD to receive MAT in both periods. The age group with the highest MAT use was 18-44-year-olds, in which the differences were more pronounced in 2014-2015. There was a shift in 2014-2015 toward the insured member being more likely than spouses or dependents to receive MAT. This finding may reflect greater recognition of

the impact of the opioid epidemic and lower stigma associated with receiving treatment among employed individuals.

Spending. In 2006-2007, insurers paid 84 percent of the total treatment costs. This fell to 79 percent in 2014-2015. The most substantial cost shifts were for more intensive services, that is, inpatient and residential services. However, insurers began paying a larger portion of MAT costs (from 78 percent to 81 percent) and intensive outpatient/partial hospitalization costs (from 84 percent to 85 percent).

Out-of-pocket spending for all OUD services and settings increased between the time periods (Figure ES3). The largest increase in cost per user was for intensive outpatient or partial hospitalization, which went from $221 (inflation-adjusted) in Time 1 to $794 in Time 2. Among all types of OUD services and settings, inpatient services accounted for the highest out-of-pocket costs per user for both time periods. However, less intensive services--outpatient office visits and psychotherapy--saw only modest increases.

FIGURE ES3. Average Annualized[a] Per Person Out-of-Pocket Spending Adjusted[b] for Inflation for OUD Services by Plan Enrollees with OUD[c]



a. Standardization accounts for enrollees with less than 12 months of enrollment and enrollees with 2 years of enrollment.
b. Means were adjusted using the consumer price index medical care inflation index.
c. Data source was Truven Health MarketScan CCAE, 2006, 2007, 2014, 2015.

We used the plan level of reimbursement to assess the association between coverage level and treatment initiation, engagement, and retention at 30, 90, and 180+ days. Each treatment outcome was positively associated with plan level of reimbursement. The association was strongest with treatment initiation and more modest with the engagement and retention indicators. This finding suggests that plan level of reimbursement more strongly influenced whether patients began treatment than whether they persisted in treatment. This may relate to deductible requirements that could be a barrier to initiating treatment.

In terms of cost per unit of service, adjusting for inflation, most services types increased in cost. The most substantial increase was for residential services which increased by 160.5 percent. The per unit costs for outpatient office visits and methadone administration fell over time.

The observed increases in total spending by private insurance aligns with national spending trends for SUD which report that private insurance accounted for 18 percent of total SUD spending in 2014, up from 13 percent in 2007.[9]

Conclusion

These findings highlight how the MHPAEA and the ACA as well as new FDA-approved MAT expanded OUD treatment coverage, utilization, and expenditures in the private health insurance market between 2006-2007 and 2014-2015. Overall, our findings reflect expanded availability, greater use of OUD treatment services, and higher payments to service providers for enrollees in large employer-sponsored health plans. The trend toward increasing the range of service types paid for suggests improved adherence to ASAM treatment criteria and reflects a long-term trend in behavioral health, shifting away from long-term inpatient and residential stays toward a greater emphasis on medication treatment and community-based care.

However, there remain significant barriers to treatment access. The higher cost and lower insurance reimbursement for inpatient care and lower utilization of residential services reflects a lack of availability of higher-intensity services which may be needed for more severe cases of OUD, particularly during treatment initiation before patients can be transitioned successfully to outpatient treatment. Further, only half of those who could potentially benefit from MAT received it, and access to MAT was even lower for women and enrollees below or above the 18-44 year age range. It is critical to ensure widespread availability of MAT and access to the range of service types including higher-intensity services.

[9] Mark TL, Yee T, Levit KR, et al. Insurance financing increased for mental health conditions but not for substance use disorders, 1986-2014. Health Affairs (Millwood). 2016; 35(6): 958-965.