

BUPRENORPHINE UTILIZATION TRENDS IN MISSISSIPPI MEDICAID

BACKGROUND

As a result of the opioid crisis, opioid use disorder (OUD) and opioid related overdoses have increased substantially. Literature has found that between 21% and 29% of patients prescribed opioids for chronic pain misuse them and addiction rates range from 8% to 12%.¹ According to data reported by the CDC, opioid overdoses increased 30 percent from July 2016 through September 2017 in 52 areas across 45 states.² It is estimated 26,000 Mississippians 12 years and older suffered from OUD from 2015-2017.³ One of the focus areas for the U.S. Department of Health and Human Services (HHS) in combating the rise in misuse and abuse of opioids is improving access to treatment options for OUD.

Medication-assisted treatment (MAT) is the use of medicine in combination with behavioral therapies for the effective treatment of opioid use disorders. Currently there are three FDA approved drugs for the treatment of opioid dependence: buprenorphine, methadone, and naltrexone. Each option has its own unique characteristics and requirements related to prescribing. Methadone is a long-acting opioid agonist that is only available through specialized opioid treatment programs (OTP) due to serious side effects and potential for abuse. Naltrexone is a pure opioid antagonist that is available in a once daily oral tablet or a long acting injectable agent. Buprenorphine is an opioid partial agonist available alone or in combination with naloxone.⁴ Figure 1 displays Mississippi Medicaid's Universal Preferred Drug List (UPDL) for opiate dependence treatments. Also available on the Clinician Administered Drug and Device (CADD) list are injectable formulations of buprenorphine (Probuphine and Sublocade) and naltrexone (Vivitrol). Although Mississippi Medicaid will cover methadone for the treatment of OUD with the appropriate diagnosis, because of the shortage and stigma of methadone clinics, buprenorphine treatment is the primary alternative for many opiate-dependent patients. Methadone is listed on the PDL as non-preferred under the long-acting narcotic analgesic category.

Buprenorphine/naloxone (Suboxone) film and naltrexone tablets are preferred drugs under the opiate dependence treatments category on Medicaid's UPDL. For clinical reasons, single-agent buprenorphine is covered only for pregnant women. In 2016, the state removed a 24-month maximum length of coverage and limits on the number of times an individual could restart treatment. To further facilitate access to opioid use disorder treatment, requirements for prior authorization for buprenorphine and buprenorphine/naloxone were removed except for a

¹ Vowles KE, McEntee ML, Julnes PS, Frohe T, Ney JP, van der Goes DN. Rates of opioid misuse, abuse, and addiction in chronic pain: a systematic review and data synthesis. *Pain*. 2015;156(4):569-576. doi:10.1097/01.j.pain.0000460357.01998.f1.

² Vivolo-Kantor, AM, Seth, P, Gladden, RM, et al. *Vital Signs: Trends in Emergency Department Visits for Suspected Opioid Overdoses--United States, July 2016-September 2017*. Centers for Disease Control and Prevention

³ Substance Abuse and Mental Health Services Administration. Behavioral Health Barometer: Region 1, Volume 5: Indicators as measured through the 2017 National Survey on Drug Use and Health and the National Survey of Substance Abuse Treatment Services. HHS Publication No. SMA-19-Baro-17-R1. Rockville, MD: Substance Abuse and Mental Health Services Administration, 2019.

⁴ (FDA) Information about Medication-Assisted Treatment (MAT). <https://tinyurl.com/yxrbece7>. Accessed 11/5/2019.

diagnosis of opioid use disorder for individuals in fee-for-services plans as well as for those in managed care plans.

FIGURE 1- UPDL Opiate Dependence Treatments

 MISSISSIPPI DIVISION OF MEDICAID UNIVERSAL PREFERRED DRUG LIST (For All Medicaid, MSCAN and CHIP Beneficiaries)		EFFECTIVE 11/01/2019 Version 2019.1 Updated: 10-31-2019	
Conduent's SmartPA Pharmacy Application (SmartPA) is a proprietary electronic prior authorization system used for Medicaid fee for service claims. MSCAN plans may/may not have electronic PA functionality. However, they must adhere to Medicaid's PA criteria.			
THERAPEUTIC DRUG CLASS	PREFERRED AGENTS	NON-PREFERRED AGENTS	PA CRITERIA
OPIOATE DEPENDENCE TREATMENTS			
	DEPENDENCE		
	naltrexone tablets SUBOXONE FILM (buprenorphine/naloxone) ^{SmartPA}	buprenorphine tablets buprenorphine/naloxone film buprenorphine/naloxone tablets BUNAVAIL (buprenorphine/naloxone) LUCEMYRA (lofexidine) PROBUPHINE (buprenorphine) SUBLOCADE (buprenorphine) VIVITROL (naltrexone) ZUBSOLV (buprenorphine/naloxone)	<p>Buprenorphine/Naloxone and buprenorphine:</p> <p>Suboxone</p> <ul style="list-style-type: none"> Detailed buprenorphine/naloxone and buprenorphine provider summary found here <p>Non-Preferred Criteria:</p> <ul style="list-style-type: none"> Bunavail is preferred over Zubsolv and other generic forms of buprenorphine/naloxone <p>Bunavail</p> <p><i>NOTE: Bunavail is not indicated for induction therapy</i></p> <ul style="list-style-type: none"> History of Suboxone therapy within the past 6 months OR History of Bunavail therapy within the past 3 months AND All other buprenorphine/naloxone provider summary found here <p>Probuphine, Sublocade, Vivitrol - MANUAL PA</p>

DOM has available on its website the “Buprenorphine/Naloxone and Buprenorphine Therapy Coverage” provider summary sheet (Attachment A) available to facilitate providers in the prescribing of buprenorphine and buprenorphine/naloxone products.

In October of 2019, the Mississippi State Department of Health’s Morbidity Report focused on buprenorphine prescription practices in Mississippi from 2012-2017 using data accessed through the Mississippi Prescription Drug Monitoring Program (PDMP) (Attachment B).⁵ The report noted:

- In Mississippi, the number of buprenorphine prescriptions has increased by 58% from 2012 to 2017.
- Only one out of every five prescriptions were long-term buprenorphine prescriptions (30-day supply or more)

⁵ Mississippi State Department of Health. Mississippi Morbidity Report. Bridging the Treatment Gap: Buprenorphine Prescription Practices in Mississippi, 2012-2017. Volume 35, Number 2; October 2019.

The findings from the Mississippi State Department of Health's (MSDH) report prompted MS-DUR to run similar analyses in the Medicaid population to assess buprenorphine prescribing trends in Medicaid specifically.

METHODS

A retrospective database analysis of Mississippi Medicaid beneficiaries was conducted using pharmacy claims for single agent buprenorphine and buprenorphine-naloxone combination products from January 1, 2012 to August 31, 2019. Claims for Butrans, Belbucca, and Buprenex products indicated for pain management were excluded from this analysis. The number of prescription fills, unique prescriptions, and long-term prescription fills each year were calculated for the entire study period. The number of unique prescriptions was assessed by calculating the number of prescriptions with unique prescription numbers each year. Long-term prescription fills were defined as prescription fills having a days supply of ≥ 30 days. Moreover, the number of unique prescriptions each year was stratified by gender (male or female), age group (≤ 24 years, 25-34 years, 35-44 years, 45-54 years, 55-64 years, and ≥ 65 years), and whether the prescription was issued by a Mississippi-based (MS-based) provider and are shown in Table 1.

Additionally, drug utilization since January 1, 2018 until August 31, 2019 was assessed to capture the current trends in buprenorphine use among beneficiaries enrolled in Mississippi Medicaid. Total number of prescription fills and beneficiaries utilizing buprenorphine were assessed, stratifying for gender and type of drug used (single agent buprenorphine or buprenorphine-naloxone combination). Number of prescription fills were further stratified by duration of each fill (≤ 3 days, 4-7 days, 8-29 days, 30 days, or >30 days) based on the days supply for each fill. See Table 2.

Moreover, buprenorphine prescription rates per 100 Medicaid eligible population was calculated at a county level (based on the beneficiary's county of residence), and is represented on Figure 2's map of Mississippi. Number of Medicaid eligible beneficiaries in each county was calculated as total number of beneficiaries with at least one month of Medicaid eligibility between January 2018 and August 2019. Furthermore, number of unique MS-based providers prescribing buprenorphine was also calculated and referenced at a county level in Figure 3.

RESULTS

TABLE 1. Buprenorphine Prescriptions in Mississippi Medicaid ** January 1, 2012 - August 31, 2019 (across all plans)

Characteristics	2012	2013	2014	2015	2016	2017	2018	2019 †	Change
Rx and Fills	No (%)	2012-2018*							
Unique Rx ^a	4,444	5,910	5,607	6,706	7,256	9,251	11,293	8,872	154%
Total Rx Fills	4,984	6,750	6,349	7,448	7,936	9,977	12,056	9,467	142%
Rx fills for 30 or more days	3,522 (71%)	5,027 (74%)	4,274 (67%)	5,007 (67%)	5,545 (70%)	6,753 (68%)	7,865 (65%)	6,254 (66%)	123%
Total days of supply	135,952	182,428	163,367	190,784	207,980	259,126	310,121	237,336	128%
Gender									
Female	3,466 (78%)	4,515 (75%)	4,224 (75%)	5,047 (75%)	5,427 (75%)	7,026 (76%)	8,715 (77%)	6,822 (77%)	151%
Male	978 (22%)	1,395 (25%)	1,383 (25%)	1,659 (25%)	1,829 (25%)	2,225 (24%)	2,578 (23%)	2,050 (23%)	164%
Age Group									
≤ 24 years	400 (9%)	556 (10%)	425 (8%)	483 (7%)	366 (5%)	380 (4%)	412 (4%)	268 (3%)	3%
25 - 34 years	2,342 (53%)	3,098 (52%)	2,771 (49%)	3,129 (47%)	3,199 (44%)	3,877 (42%)	4,073 (36%)	3,247 (37%)	74%
35 - 44 years	997 (22%)	1,370 (23%)	1,568 (28%)	1,972 (29%)	2,478 (34%)	3,209 (35%)	4,024 (36%)	3,042 (34%)	304%
45 - 54 years	500 (11%)	592 (10%)	557 (10%)	743 (11%)	754 (11%)	1,158 (12%)	1,715 (15%)	1,254 (14%)	243%
55 - 64 years	205 (5%)	294 (5%)	286 (5%)	379 (6%)	459 (6%)	627 (7%)	1,068 (9%)	1,058 (12%)	421%
≥ 65 years	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (0%)	3 (0%)	
Rx Issued by MS Providers									
	4,059 (91%)	5,162 (87%)	4,857 (87%)	5,588 (83%)	5,941 (82%)	7,739 (84%)	9,595 (85%)	7,372 (83%)	136%

† Numbers for 2019 are through August 2019.

*Change has been calculated using 2012 and 2018 numbers, since we do not have complete data for 2019

**Rx fills for both buprenorphine and buprenorphine-naloxone were considered for the analysis; Claims for Butrans, Belbucca, and Buprenex were excluded from the analysis

^aUnique Rx calculated based on prescription numbers for the claims

Over the seven year period between 2012 and 2018, prescription claims for buprenorphine products in Mississippi Medicaid have consistently increased. (Table 1)

- Unique Rx (prescriptions with different prescription numbers) increased 154% and Total Rx Fills increased 142% between 2012 and 2018 in Mississippi Medicaid.
- Comparing the same period reported in the MSDH report (2012-2017), Unique Rxs increased 108% and Total Rx Fills increased 100% in Mississippi Medicaid compared to a 58% and 59% increase, respectively, reported in the MSDH report.
 - Medicaid has made multiple updates to their criteria for prescribing buprenorphine products in efforts to increase beneficiary access to MAT. The increased proportion of buprenorphine claims in Mississippi Medicaid can partially be attributed to these changes in prescribing criteria for buprenorphine products and related provider education that has occurred over time. One of the significant changes occurred at the end of 2016 when the DUR Board recommended the removal of maximum length and restart limits. The impact of these changes can be seen in the 27.5% increase in number of Unique Rxs from 2016 to 2017 alone.
- The proportion of prescription fills for 30 or more days in Medicaid has consistently ranged between 65-70% annually. This proportion is much higher than the approximately 20% reported in the MSDH report. The financial situation of patients, cost of treatment and available insurance coverage can all present impediments to MAT therapy.
- Factors that may have contributed to the findings of Medicaid's days supply compared to the shorter duration (< 30 days) noted in the MSDH Mortality Report could include the following:
 - Lack of financial barriers for prescription coverage. Medicaid provided coverage for five medications per month until July 1, 2019 when coverage increased to six medications per month.
 - Medicaid has preferred as well as non-preferred buprenorphine products on its UPDL and does not have any restrictions on length of coverage. This could be a major factor contributing to a higher proportion of prescription fills in Medicaid for 30 or more days when compared to the numbers cited in the MSDH report.
- Other factors noted in the MSDH report influencing treatment duration include minimizing the risk of buprenorphine diversion or misuse and the availability of concomitant behavioral therapies and social support for patients. The potential for short-term buprenorphine prescription as cited in the MSDH report could also be attributed, in part, due to the diversion of this drug for self-medication of withdrawal symptoms or self-weaning from illicit opioid use. Provider comfort in prescribing buprenorphine products for extended period without monitoring patients for treatment compliance or addiction relapse was another potential reason noted in MSDH's report, though the proportion of beneficiaries with \geq 30 days supply was greater in Medicaid.
- Females were approximately 3 times more likely than men to receive buprenorphine prescriptions in Medicaid. This stands to reason because second to children, women are the most likely recipients of Medicaid benefits.

- Buprenorphine prescriptions increased substantially for all age groups, except for beneficiaries age < 25 years. Beneficiaries between ages 35 and 64 years had the largest increase (300%).

To examine current prescribing trends more closely, buprenorphine product utilization was assessed between January 2018 and August 2019 in Mississippi Medicaid. Analysis was broken down by gender, drug type, and days supply per claim (Table 2).

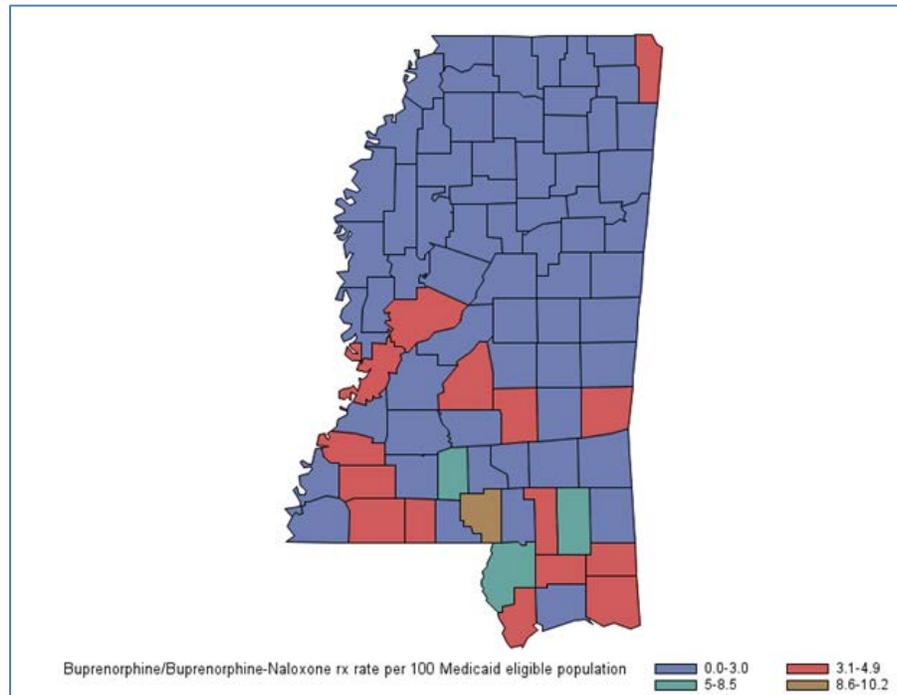
TABLE 2. Prescription Claims and Beneficiaries by Gender and Drug Type between January 1, 2018 - Aug 31, 2019								
Gender	Drug Type	Days supply per claim					Total # of claims	# of unique beneficiaries
		≤ 3 days	4 - 7 days	8 - 29 days	30 days	> 30 days		
Female	Buprenorphine	52 (0.3%)	136 (0.8%)	712 (4.3%)	744 (4.5%)	14 (0.1%)	1,658 (10.0%)	339
	Buprenorphine-Naloxone	248 (1.5%)	1,360 (8.2%)	3,346 (20.2%)	9,889 (59.6%)	83 (0.5%)	14,926 (90.0%)	1,432
Male	Buprenorphine	3 (0.1%)	2 (0.0%)	78 (1.6%)	64 (1.3%)	1 (0.0%)	148 (3.0%)	31
	Buprenorphine-Naloxone	64 (1.3%)	382 (7.7%)	1,021 (20.7%)	3,304 (66.9%)	20 (0.4%)	4,791 (97.0%)	466

Note - Rx fills for both buprenorphine and buprenorphine-naloxone were considered for the analysis; Claims for Butrans, Belbucca, and Buprenex were excluded from the analysis

- Consistent with the trend reported in Table 1, 77.1% of claims were for females.
- Buprenorphine single agent products are only approved for use in pregnancy.
- 339 females received buprenorphine products during the analysis period.
- 65.6% of claims (n=14,119) during the analysis period were for ≥ 30 days supply.
- Overall 10.4% of claims (n=2247) were for 7 days or less.

MS-DUR conducted a geographical analysis of beneficiaries prescribed buprenorphine products based on the county of residence for each beneficiary. Buprenorphine prescription rates per 100 Medicaid eligible population were calculated at a county level and represented on a map of Mississippi (Figure 2). Denominator was the number of eligible beneficiaries in each county - calculated as the total number of beneficiaries in each county with at least one month of Medicaid eligibility between January 2018 and August 2019. Numerator was the number of buprenorphine prescriptions in each county during the study period. A map of Mississippi identifying each county can be found in Attachment C of this report.

FIGURE 2- Prescription Rates per 100 Medicaid Eligible Population by County

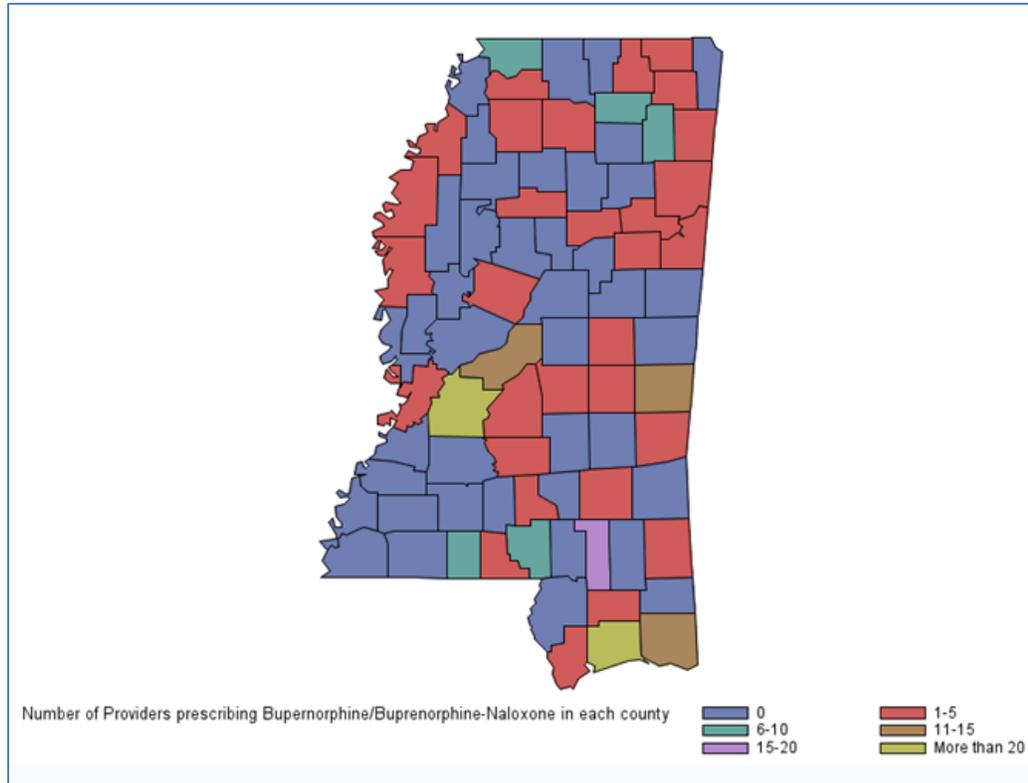


- Buprenorphine prescription rates appear higher along the southern and coastal counties.
- **Marion** County had the highest rate, followed **Lawrence, Pearl River, and Perry** counties.

Access to providers authorized to prescribe buprenorphine products and who are Medicaid providers has long been considered a limitation to utilization. In order to be able to prescribe buprenorphine products, a provider must obtain a waiver from the Drug Enforcement Agency (DEA).⁶ According to data published on the Substance Abuse and Mental Health Services Administration (SAMHSA) website, there are 228 providers in Mississippi listed who are authorized to prescribe buprenorphine products as of November 2019. This number may be an underestimation of providers authorized to prescribe buprenorphine products because providers can opt to be excluded from SAMHSA’s publicly available list of providers. Figure 3 displays a map of Mississippi of providers associated with buprenorphine claims for Medicaid beneficiaries between January 2018 and August 2019.

⁶Drug Enforcement Administration: DEA Requirements for DATA Waived Physicians (DWP)
https://www.deadiversion.usdoj.gov/pubs/docs/dwp_buprenorphine.htm

FIGURE 3 – Number of Providers Prescribing Buprenorphine Products by County



- Approximately half of the counties in Mississippi did not have a provider who prescribed buprenorphine to a Medicaid beneficiary between January 2018 and August 2019.
- Hinds and Harrison counties had the most providers prescribe buprenorphine products followed by Forrest, Madison, Lauderdale, Jackson, Desoto, Lee, Union, Marion, and Pike counties.
- Based on data presented in Table 1, approximately 85% of prescriptions for buprenorphine products are written by providers in the state of Mississippi.

CONCLUSIONS

The prescribing of buprenorphine products has increased significantly among Medicaid beneficiaries since 2012. The increase among Medicaid beneficiaries is greater than the increase reported in the MSDH's recent Morbidity Report on buprenorphine use across the state. The 154% increase in prescribing of buprenorphine products can be attributed to many factors including efforts by DOM to reduce opioid use disorder and increase beneficiary access to MAT. Approximately 30-35% of buprenorphine claims are for < 30 days. Successful outcomes with MAT have been related to long-term maintenance treatment.⁷ With buprenorphine products available on Medicaid's UPDL, short-term (< 30 days) therapy due to coverage or cost concerns should not be an issue. Another issue that may impact beneficiary access to buprenorphine products is the availability of authorized prescribers who are Medicaid providers.

RECOMMENDATIONS

1. MS-DUR should work with DOM to develop a provider education targeting providers currently prescribing buprenorphine products to:
 - inform providers of buprenorphine product utilization among Medicaid beneficiaries;
 - encourage long-term (30 days supply) prescribing for buprenorphine products.
2. MS-DUR should work with DOM to develop a provider bulletin to be distributed to provider member organizations to:
 - educate providers on the importance of MAT in combating opioid use disorder;
 - increase awareness in not only the need but how more Medicaid providers can obtain SAMHSA* certification as an Opioid Treatment Program and authorized to prescribe buprenorphine products.

**SAMHSA= Substance Abuse and Mental Health Services Administration. In the United States, the treatment of opioid dependence with medications is governed by the Certification of Opioid Treatment Programs, 42 Code of Federal Regulations (CFR) 8. This regulation created a system to accredit and certify opioid treatment programs (OTPs). OTPs provide medication-assisted treatment (MAT) for people diagnosed with an opioid-use disorder. MAT patients also must receive counseling, which can include different forms of behavioral therapy.*

3. Collaborate with MSDH to improve access to MAT across the state of Mississippi.

⁷Bart G. Maintenance medication for opiate addiction: the foundation of recovery. *J Addict Dis.* 2012;31(3):207-225. doi:10.1080/10550887.2012.694598

ATTACHMENT A

Buprenorphine/Naloxone and Buprenorphine



THERAPY COVERAGE Provider Summary Sheet

START (first prescription fill in 90 days)

Induction and Stabilization Phase	Months 1 - 2  Up to 24mg/day**	Maintenance Phase	Months 3 and after  Up to 16mg/day **
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** Maximum daily doses shown are for use of Suboxone®, the preferred product. If Zubsolv® or Bunavail® are approved for use, equivalent dosing limits will apply. Refer to the Uniform Preferred Drug List for criteria regarding use of non-preferred products.
<http://www.medicaid.ms.gov/providers/pharmacy/preferred-drug-list>

- Buprenorphine/naloxone and buprenorphine are only approved for opioid dependence ICD-10 codes that must be found in medical claims or written on prescription and entered by pharmacist with prescription claim (F11.1xx, F11.2xx, F11.90, F19.20 or F19.21).
- Buprenorphine is only approved for use during pregnancy. Appropriate ICD-10 codes must be found in medical claims or written on prescription and entered by pharmacist with prescription claim. Appropriate codes can be found at: <https://medicaid.ms.gov/wp-content/uploads/2018/09/ICD-10-codes-for-POS-claims-and-SMART-PAs-8.20.18.pdf>
- All buprenorphine/naloxone and buprenorphine prescribers must have current XDEA number.

Opiate use restriction:

- Beneficiaries cannot fill a prescription for more than 5 day supply of opiate within last 30 days while on buprenorphine/naloxone therapy.
- Cumulative maximum of 10 days of opiate treatment within last 60 days while on buprenorphine/naloxone therapy.
- Medicaid claims are electronically reviewed for opiate use. Physicians and pharmacists are encouraged to use Prescription Monitoring Program (PMP) to monitor opiate use paid for by cash or other payers.

Trouble Shooting Rejections:

- **Claim denied no diagnoses for opioid dependence or no diagnosis for pregnancy (buprenorphine use) found**
Solution: Physician should write diagnosis code on prescription and pharmacy should enter diagnosis code on pharmacy claim and call Medicaid PA unit if claim is still rejected for lack of diagnosis.
- **Beneficiary has claim for > 5 days of opiate use**
Solution: Manual PA required from physician for appeal with medical justification for continuing treatment while taking opioids.
- **Beneficiary has more than 10 days total opiate supply during last 60 days while on therapy**
Solution: Manual PA required from physician for appeal with medical justification for continuing treatment while taking opioids.

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Copies of this Summary Sheet are available at:

<https://medicaid.ms.gov/providers/pharmacy/pharmacy-resources/>



Mississippi State Department of Health

Mississippi Morbidity Report

Epidemiology Update

Volume 35, Number 2

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Bridging the Treatment Gap: Buprenorphine Prescription Practices in Mississippi, 2012-2017

Currently, the Food and Drug Administration (FDA) has approved three medications for the pharmacotherapy of opioid use disorder (OUD): methadone, buprenorphine, and naltrexone. Methadone and buprenorphine are widely-used, first-line treatment options for OUD, while naltrexone is rarely used. Medication-assisted treatment (MAT) with methadone and buprenorphine are highly effective for OUD detoxification and maintenance therapy.¹ Yet access to these medications is challenging for patients suffering from opioid addiction due to a shortage of treatment programs and prescribers. Because of its serious side effects and high potential for misuse/diversion, methadone is only disseminated within specialized Opioid Treatment Programs (OTP), known as methadone clinics. Unlike methadone, buprenorphine has a better drug-safety profile, lower risk for overdose, and could be used in office-based settings.²

Regulations on Prescriptions

During the last two decades two legislative measures addressing the shortage of opioid-substitutional treatments have been introduced. In 2000, Congress passed the Drug Addiction Treatment Act (DATA) of 2000 allowing all physicians to treat opioid dependency with narcotics (except for methadone) in office-based settings.³ In 2002, FDA approved buprenorphine for such use. The Comprehensive Addiction and Recovery Act (CARA) of 2016 extended the privilege of prescribing buprenorphine in office-based settings to nurse practitioners and physician assistants.⁴ Buprenorphine practitioners are required, however, to obtain a waiver from the Drug Enforcement Agency (DEA), complete a course of training (8 hours for physicians and 24 hours for nurse practitioners/physician assistants), and keep records available for DEA inspections. It is important to note that such a buprenorphine waiver is not required in case of an emergency; any clinician may administer (but not prescribe) buprenorphine to patients with acute withdrawal symptoms for up to 72 hours (the 'three day' rule).

Barriers to Treatment

Although the goal of these legislative measures is to increase the availability of opioid-substitution treatments, few health care providers have taken advantage of the opportunity to treat patients in office-based settings. As of April 2019, only 65,207 clinicians had a buprenorphine waiver nationwide. In 2017, an estimated 42.3% of all counties across the nation had no practitioners licensed to prescribe buprenorphine.⁵

According to national-level research, the major concerns that keep physicians from pursuing office-based opioid-substitution treatments include insufficient training to diagnose and treat opioid use disorders,

Key Messages

- In Mississippi, the number of buprenorphine prescriptions has increased by 58%, from 50,318 in 2012 to 79,657 in 2017. The total days of supply nearly doubled from 1.5 million to 2.7 million days; however, only one out of every five were long-term buprenorphine prescriptions (30-day supply).
- The uptrend in buprenorphine prescriptions may be due to a parallel increase in both the prevalence of patients with opioid use disorder and the number of buprenorphine prescribers.
- The low number of long-term buprenorphine prescriptions is a barrier to successful addiction treatment in our state; however, the exact reasons for this shortfall are unclear.
- To address this treatment barrier, the Mississippi medical community should invest in training programs and educational outreach designed to standardize the delivery of buprenorphine therapy.

intrusive DEA regulations, the stigma associated with treating drug-dependent patients, the potential for drug diversion or misuse, and lack of psychological and social support for patients.⁶ Another serious constraint is the DEA regulation that caps the number of patients buprenorphine prescribers can see, limiting them to no more than 30 patients during the first year after receiving a waiver and no more than 100 patients after that.⁷ Payment issues such as low reimbursement rates by Medicaid have further hindered efforts to expand office-based opioid-substitution treatments.⁸

Data and Objectives

The Mississippi Prescription Drug Monitoring Program (PDMP) collects data on prescriptions for all controlled substances in the state. This data source contains information on prescription dosage and days of supply, patient demographics and place of residence, and locations of prescribers and dispensing pharmacies. Because methadone clinics are excluded from reporting requirements, methadone prescriptions for opioid use disorders are not reported to the state PDMP. As a result, a comprehensive assessment of opioid-substitution treatments in Mississippi is not possible at this time. The scope of this report is limited, therefore, to the evaluation of buprenorphine prescription practices, an increasingly popular method of opioid-substitution treatment.

Methods

Included in this report are buprenorphine prescriptions dispensed to state residents by Mississippi and non-Mississippi providers between 2012 and 2017. For this study, we evaluated the number of unique prescriptions as well as the number of refills. The number of unique prescriptions was obtained using the unique prescription number generated by the dispensing pharmacy. Prescriptions for buprenorphine formulations used as an opioid analgesic (e.g., buprenorphine patches) were excluded from the analysis.

Buprenorphine Prescribing in Mississippi (Table)

The number of buprenorphine prescriptions issued in Mississippi increased by 58%, from 50,318 in 2012 to 79,657 in 2017. Following a rapid increase from 2012 to 2015, the number of buprenorphine prescriptions plateaued between 2016 and 2017. Moving in direct proportion with the number of prescriptions, the total days of supply nearly doubled, growing from 1,463,903 days in 2012 to 2,682,518 days in 2017. Unlike the number of prescriptions, the total days of buprenorphine supply continued to increase steadily throughout the study period due to an increasing number of buprenorphine prescription refills. The number of long-term prescription fills (30-day supply), however, was low. The proportion of such long-term prescriptions remained stable during the study period, accounting for only about one-fifth of all buprenorphine prescription fills each year.

Demographics

The demographic analysis revealed that men were more likely than women to be treated with buprenorphine. On average, 59% of all buprenorphine prescriptions each year were dispensed to men. Buprenorphine prescriptions increased for all age groups, except for patients younger than 25 years. The rate of increase, however, varied by age group. The proportion of patients between 25 and 34 years decreased; such patients accounted for 42% of all buprenorphine prescriptions in 2012 but only 32% in 2017. By comparison, the proportion of patients 35 years of age and older increased.

Prescribers of Buprenorphine in Mississippi

As of April 2019, the number of buprenorphine practitioners in Mississippi is 207 according to publicly available data from the Substance Abuse and Mental Health Services Administration (SAMHSA)

Table. Buprenorphine Prescriptions in Mississippi, 2012-2017

Characteristics	2012	2013	2014	2015	2016	2017	Change
Rx and Fills	No (%)	2012-2017					
Unique Rx	50,318	58,996	66,350	75,368	79,353	79,657	58%
Total Rx Fills	144,047	167,885	191,451	212,020	210,500	229,181	59%
Rx fills for 30 days*	28,359 (20%)	31,959 (19%)	34,478 (18%)	38,515 (18%)	40,165 (19%)	46,982 (21%)	66%
Total days of supply	1,463,903	1,729,806	1,961,184	2,214,407	2,353,675	2,682,518	83%
Gender							
Female	20,652 (41%)	24,445 (41%)	27,172 (41%)	30,994 (41%)	32,797 (41%)	34,241 (43%)	66%
Male	29,655 (59%)	34,512 (59%)	39,066 (59%)	44,196 (59%)	46,457 (59%)	45,314 (57%)	53%
unknown	11 (0%)	39 (0%)	112 (0%)	178 (0%)	99 (0%)	102 (0%)	
Age Group							
≤ 24 years	3,803 (8%)	4,069 (7%)	3,653 (6%)	3,599 (5%)	3,088 (4%)	2,366 (3%)	-38%
25-34 years	21,187 (42%)	24,395 (42%)	27,318 (41%)	29,238 (39%)	27,646 (35%)	25,658 (32%)	21%
35 - 44 years	14,035 (28%)	17,207 (29%)	19,903 (30%)	23,598 (31%)	26,382 (33%)	27,520 (35%)	96%
45 - 54 years	7,670 (15%)	8,985 (15%)	9,970 (14%)	11,786 (16%)	13,247 (17%)	13,580 (17%)	77%
55 - 64 years	3,025 (6%)	3,614 (6%)	4,502 (7%)	5,901 (8%)	7,347 (9%)	8,383 (10%)	177%
≥ 65 years	598 (1%)	726 (1%)	1,004 (2%)	1,246 (1%)	1,643 (2%)	2,150 (3%)	260%
Rx Issued by MS Providers							
	42,705 (85%)	39,848 (82%)	53,687 (81%)	58,648 (79%)	61,002 (78%)	61,829 (78%)	45%
MS DATA-Waived Newly Certified Practitioners							
With 30 Patients	14	10	8	17	23	48	
With 100 Patients	6	11	13	5	13	7	

*During the study period, the number of prescriptions for more than 30 days was negligible.

** Source: Substance Abuse and Mental Health Services Administration

(<https://www.samhsa.gov/medication-assisted-treatment/practitioner-program-data/treatment-practitioner-locator>). Between 2012 and 2017, the number of newly certified prescribers reached 120. As compared to 2012, there were more than three times more newly certified buprenorphine prescribers in 2017. These numbers could be underestimated, however, because buprenorphine practitioners could opt to be excluded from SAMHSA's publicly available list of buprenorphine providers.

Not all buprenorphine prescriptions during the study period were issued by Mississippi providers. On average during each year of the study, around one-fifth of all buprenorphine prescriptions were written by non-state health care practitioners. In fact, providers in Memphis, TN issued 7% of all buprenorphine prescriptions to Mississippi residents in 2017. During the same year, the highest percentage of prescriptions written by Mississippi providers were in Jackson (10%), followed by Hattiesburg (7%), Biloxi (6%), New Albany (5%), and Vicksburg (4%). These top five prescribers' locations accounted for one-third

(33%) of all buprenorphine prescriptions dispensed in Mississippi during 2017.

Discussion

In six years, prescriptions for buprenorphine nearly doubled in Mississippi. Although the exact causality is difficult to establish, this may be due to an increasing prevalence of opioid use disorders. Findings from health care data support such a claim. Between 2014 and 2017 in Mississippi, the rate of opioid-related hospitalizations rose by 26% and the rate of opioid-related emergency department visits spiked by 45%.⁹ It is also possible that health care providers treat patients with OUD more frequently as a result of the ongoing campaign aimed at opioid-harm reduction. Finally, another contributing factor for the uptrend in buprenorphine prescribing may be the increase in the number of buprenorphine prescribers in the state. Even though small, the increase in buprenorphine practitioners is encouraging because reducing opioid-related morbidity and mortality is not possible without available, accessible, and affordable treatments for patients with substance dependency.

Successful outcomes are also dependent on treatment duration and retention in therapy. Preventing relapse is best achieved with a long-term opioid-substitution treatment.¹⁰ In contrast, short-term buprenorphine prescriptions (less than 30 days) are most likely indicated for emergency treatment of patients with acute opioid withdrawal symptoms. Our analysis revealed, however, that the majority (80%) of buprenorphine prescriptions fills were issued for less than 30 days. The information contained within PDMP data does not allow us to establish the causes for such short duration of treatment.

There could be several factors contributing to this high volume of short-term buprenorphine prescriptions. Currently, there is no consensus regarding the optimal duration of buprenorphine treatment or established guidelines governing the frequency of treatment monitoring.¹¹ Physicians may feel uncomfortable prescribing buprenorphine for an extended period without monitoring patients for treatment compliance or addiction relapse. Therefore, buprenorphine prescribers in Mississippi may prefer issuing prescriptions with short-duration to minimize the risk of buprenorphine diversion or misuse. Additional factors influencing treatment duration are the availability of concomitant behavioral therapies and social support for such patients. Likewise, the treatment duration may be influenced by the financial situation of each individual patient, cost of treatment, and available insurance coverage. The high cost of buprenorphine prescriptions may also be a barrier to sustained long-term treatment options. The National Institute on Drug Abuse, for instance, estimates that the average cost of buprenorphine treatment is about \$115 per week or \$5,980 per year.¹² Lastly, the high volume of short-term buprenorphine prescriptions may be due, in part, to the diversion of this drug for self-medication of withdrawal symptoms or self-weaning from illicit opioid use.^{13,14}

There is no easy solution for providing comprehensive and sustained medical care for patients suffering from opioid addiction. Moreover, therapies, such as methadone replacement therapy, are controversial issues that face political and community suspicion and pushback. Mississippi experiences additional difficulties such as high unemployment rates, economically depressed communities, high levels of uninsured patients, a shortage of health care providers, and limited access to medical care. All these factors have led to an underdeveloped opioid treatment infrastructure in our state. According to SAMHSA, for example, there are only five methadone clinics in the state (<https://dpt2.samhsa.gov/treatment/directory.aspx>). Because of this shortage and stigmatization of methadone clinics, buprenorphine treatment is the only alternative for many opioid-dependent patients. In addition, treatment with buprenorphine is safer than methadone and the office-based treatment is more convenient for working patients. Therefore, augmenting the office-based buprenorphine prescribing practices, especially in rural and underserved areas, is crucial for our state.

To address treatment challenges within remote locations, several states have implemented nonconventional but promising models of care. Examples of such practices include establishing structures for connecting addiction-treatment specialists with distant locations (Vermont's Hub and Spoke model), engaging nurse practitioners and physician assistants to deliver MAT in community health centers, enhancing existing telemedicine services, and initiating buprenorphine treatment during emergency department visits for overdoses. With this report, we hope to stimulate the search for innovative solutions aimed at enhancing the state's addiction treatment capacity and encourage more clinicians to join the efforts of the few dedicated buprenorphine practitioners in Mississippi.

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ATTACHMENT C

