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Addiction and Recovery Treatment Services

Access, Utilization, and Quality of Care 2016 - 2019

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Disclaimer: The conclusions in this report are those of the authors, and no official endorsement by the Virginia Commonwealth University School of Medicine or Virginia Department of Medical Assistance Services is intended or should be inferred.

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Executive Summary

To increase access to and quality of treatment and recovery services for Medicaid members with substance use disorders (SUD), Virginia implemented the Addiction and Recovery Treatment Services (ARTS) benefit in April 2017. On January 1, 2019, Virginia expanded Medicaid eligibility for adults with family incomes up to 138% of the federal poverty level, thereby increasing access to ARTS and other Medicaid benefits to more low-income Virginians.

The Department of Medical Assistance Services (DMAS) contracted with Virginia Commonwealth University School of Medicine to conduct an independent evaluation of the ARTS benefit. Prior evaluation reports showed large gains in access to and utilization of addiction treatment services among Medicaid members in the year following implementation of ARTS, as well as decreases in emergency department visits and acute inpatient stays related to SUD.

The objective of this report is to examine SUD treatment services utilization, access and quality of care among Medicaid members through calendar year 2019, the first year of Medicaid expansion. The report examines changes in prevalence, treatment, and utilization of ARTS between 2016 and 2019, which includes more than two years following implementation of the ARTS benefit in April 2017. The report also includes estimates of the quality of care for opioid use disorders (OUD) based on an analysis of episodes of outpatient treatment services for OUD; the patient experience with care based on a survey of Medicaid members who used ARTS for OUD treatment; comparisons with other states in OUD treatment; and an analysis of disparities in OUD treatment by race and other social factors.

The major findings of the report include the following:

As expected with increased enrollment, ARTS utilization increased dramatically in 2019, the first year of Medicaid expansion.

- In total, 96,000 Medicaid members had a SUD diagnosis in 2019, including about 42,000 members enrolled through Medicaid expansion. This represents a 62% increase in the number of Medicaid members with a SUD diagnosis from 2018, and double the number in 2016 (the year before ARTS implementation). This trend is consistent with experiences in other expansion states.

- There were 46,500 members who used ARTS in 2019, a 79% increase from 2018. Services that experienced especially large increases included Preferred Office-Based Opioid Treatment (OBOT), Outpatient Treatment Providers (OTPs), care coordination services at OBOT and OTP providers, and SUD residential treatment centers.

- More than 23,000 members received Medications for Opioid Use Disorder (MOUD) treatment in 2019, more than double the number receiving MOUD treatment in 2018. However, rates of MOUD did not increase substantially. Instead, members newly enrolled through Medicaid expansion account for most of the increase.

- Almost 3,500 members with SUD had a stay at a residential treatment center in 2019, 3.3 times the number of members with residential stays in 2018. The percent of members with SUD who had a stay at a residential treatment center in 2019 (3.6%) more than doubled from 2018 (1.8%).

Supply of addiction treatment providers continues to increase.

- In 2019, 1,133 practitioners in Virginia had federal authorization to prescribe buprenorphine, including 278 nurse practitioners and physician assistants. While the number of waivered prescribers has more than doubled since 2016, the overall number of prescribers in Virginia is low relative to neighboring states. In addition, only 40% of prescribers treated any Medicaid patients in 2019. Nurse practitioners were more likely than physicians to treat Medicaid members.[i]

- Almost 4,900 outpatient practitioners of all types billed for ARTS in 2019, a 31% increase from 2018, and quadruple the number of practitioners billing for addiction treatment services in 2016. The number of Preferred OBOT providers increased from 38 sites at the beginning of the ARTS benefit to 153 sites by September 2020.

Treatment rates for SUD and OUD continue to increase for base Medicaid eligibles.

- Among base Medicaid members (members not enrolled in Medicaid expansion), 47.4% of members with SUD received some type of treatment in 2019, compared to 44.4% in 2018 and 19.9% in 2016 (the year before ARTS).

- Among base Medicaid members with OUD, 65.9% received some type of treatment in 2019, compared to 61.1% in 2018 and 32.1% in 2016. This finding is critical because it suggests that even as a significant number of members joined the program, provider capcity was sufficient to maintain access for members during the period of growth.

- While utilization of all forms of MOUD treatment continued to increase in 2019, the use of methadone treatment increased the most, from 2.4% of members with OUD in 2016 to 18.5% in 2019. Increases in methadone treatment rates are the primary driver of increases in MOUD treatment rates between 2016 and 2019.

MOUD treatment increased among members in the 12 months after childbirth.

- Medicaid expansion allows more members to retain Medicaid health coverage following childbirth. The median number of months of Medicaid coverage in the 12 months following childbirth increased from 4 months in 2017 to 12 months in 2019.

- Following expansion, for pregnant members with diagnosed OUD, MOUD treatment rates increased in both the 12 months before birth and the 12 months following birth of the child. The length of time on MOUD treatment after childbirth increased between 2016 and 2019.

[i] Saunders H, Britton E, Cunningham P, Saxe-Walker L, Harrell A, Scialli A, Lowe J. Medicaid participation among Buprenorphine waivered prescribers. *Journal of Substance Use Treatment.* June, 2021. . https://doi.org/10.1016/j.jsat.2021.108513

OUD treatment for Medicaid members increased to a greater extent in Virginia after ARTS implementation (and before Medicaid expansion) than for Medicaid members in 10 other states.

- MOUD treatment rates among Medicaid members in Virginia were considerably lower in 2016 (33.6%) compared to other states participating in the Medicaid Outcomes Distributed Research Network (48.7%), a network of states conducting Medicaid SUD-related research. By 2018, MOUD treatment rates among Medicaid members in Virginia (55.0%) were comparable to other states (57.3%) in the research network, indicating a much greater relative increase in treatment rates in Virginia following implementation of ARTS in 2017. At the time of this report, post-expansion analysis was not yet available in all states.

- The use of counseling services by Virginia Medicaid members with OUD increased by 73% between 2016 and 2018, a dramatic increase compared to an 8% increase for Medicaid members in other states.

Emergency department visits for SUD and OUD increased in 2019, following a decrease seen immediately after implementation of ARTS in 2017.

- OUD-related emergency department (ED) visits decreased by 26% between 2016 and 2018, while all SUD-related ED visits decreased by 4%. By contrast, all other ED visits increased by 5% between 2016 and 2018.

- ED visits for SUD and OUD increased sharply in 2019, even for base Medicaid eligibles. Part of the increase reflects an overall increase in ED visits among Medicaid members, but it may also be related to an overall increase in drug overdoses and OUD-related ED visits in Virginia and nationally between 2018 and 2019.

More members are getting treatment following an ED visit or stay at a SUD residential treatment center.

- Most members with OUD are receiving some type of follow-up treatment within 30 days of discharge from SUD residential treatment centers (87%). MOUD treatment rates within 30 days of discharge increased from 40.1% in 2017 to 64.1% in 2019.

- Members receiving treatment within 30 days of an OUD-related ED visit increased from 38.2% in 2017 to 53.5% in 2019, mostly due to increases in MOUD and outpatient visits.

Members receiving care at Preferred OBOTs and OTPs were more likely to received MOUD.

- Out of about 8,000 episodes of outpatient treatment for OUD initiated between January 1, 2018, and June 30, 2019, more than half involved Preferred OBOT and OTP providers, while 47% of OUD treatment episodes occurred entirely at other outpatient providers.

- Rates of MOUD use were higher during episodes of treatment at Preferred OBOT and OTP providers (81% and 89%, respectively), compared to other outpatient providers (56%).

- While the American Society of Addiction Medicine (ASAM) recommends that MOUD treatment last at least six months, the median length of MOUD treatment during outpatient episodes was only four months, which was relatively consistent across different provider types.

- The use of urine drug screens, counseling services, and care coordination services were higher at Preferred OBOT and OTP providers compared to other outpatient providers.

Co-prescribing of opioid pain medication and benzodiazepines declined for members receiving treatment for OUD, but opioid prescribing is still high for those receiving methadone treatment.

- Between 2016 and 2018, the rate of co-prescribing for opioid pain medications and benzodiazepines declined for Medicaid members receiving MOUD treatment.

- For members receiving treatment at OTPs, 20.8% received a prescription for opioid pain medications during their episode of treatment, compared to 7.6% of those receiving treatment at Preferred OBOT and 13.1% at other outpatient providers. OTPs are not required to report methadone dispensing to the prescription drug monitoring program due to federal confidentiality regulation (42 CFR Part II).

- About 13% of members received a prescription for benzodiazepines during an episode of outpatient treatment for OUD, which was slightly lower at Preferred OBOT and OTP providers.

Most Medicaid members using ARTS for OUD report favorable experiences with their treatment.

- A survey of Medicaid members who used ARTS for OUD treatment showed that most had favorable experiences with their treatment, including communication with and trust in treatment providers, as well as their level of involvement with their treatment.

- Less favorable experiences with treatment were reported by those who were polysubstance users, had serious psychological distress, or reported fair or poor health. These members were also more likely to report inability to access care as quickly as desired.

- About 17% of survey respondents reported that they had stopped treatment in the past year against the advice of their doctor or counselor. Respondents who reported more favorable experiences with treatment providers were less likely to discontinue their treatment.

- Most survey respondents reported positive changes in their lives as a result of receiving treatment services, including greater confidence in not being dependent on drugs or alcohol, getting along better with family members, and improvements in their housing and employment situation.

Racial disparities in treatment rates persist

- Overall treatment rates for SUD are higher for Medicaid members who are White (56%) compared to Black (40%). While both Black and White members are about equally likely to initiate treatment following a diagnosis of OUD (about 44%), White members are more likely to have two or more additional treatment services compared with Black members.

- Similarly, Black members tend to have shorter episodes of outpatient treatment for OUD (median of 86 days) compared to White members (median of 99 days). Compared to White members, Black members with OUD are only slightly less likely to receive any MOUD treatment, but are more likely to use methadone treatment (versus buprenorphine) when they do receive MOUD.

- Based on the survey of members who used ARTS services, Black members have somewhat less favorable experiences with treatment providers compared to White members. However, less favorable patient experiences are more strongly associated among both Black and White members who have housing or food insecurity, are unemployed, and have less social support.

In sum, the combination of enhanced benefits through ARTS and expanded eligibility through Medicaid expansion resulted in a dramatic increase in the utilization of addiction treatment services by Virginia Medicaid members between 2016 and 2019. While diagnosed prevalence of SUD and OUD also increased, treatment rates among those with a diagnosis of SUD and OUD steadily increased between 2016 and 2019. Increases in MOUD treatment rates in Virginia outpaced those of other states, providing further evidence of the impact of ARTS on access to MOUD treatment services. The quality of MOUD treatment services continues to improve along with the utilization of Preferred OBOT and OTP providers for outpatient treatment, and most members receiving ARTS services report positive experiences with treatment.

Despite substantial evidence of improved access to and quality of addiction treatment services through the ARTS benefit, some gaps remain. Virginia has fewer buprenorphine waivered prescribers relative to the population compared with other states, such as West Virginia and Maryland. Co-prescribing of opioid pain medications – despite decreases – continues to be high for members receiving treatment at OTPs exempt from prescription drug monitoring programs (42 CFR Part 2). After a decrease following implementation of ARTS, ED visits related to SUD and OUD increased sharply in 2019, which is consistent with the statewide and national trend in drug overdoses in 2019. Finally, disparities between Black and White Medicaid members persist in SUD treatment rates, quality of care, and patient experiences with treatment. Lower rates of initiation and engagement with treatment following OUD diagnosis, as well as shorter episodes of treatment among Blacks compared to Whites, are of particular concern.

Introduction

Substance use disorders (SUD) – including dependence on or misuse of alcohol and other legal and illegal drugs – continue to be a major public health concern in the Commonwealth of Virginia and the U.S. overall. The number of fatal drug overdoses more than doubled in Virginia between 2007 and 2017, from 721 fatalities in 2007 to 1,526 in 2017.[1] After decreasing by 3% in 2018, fatal overdoses increased to 1,626 in 2019, a 9.4% increase between 2018 and 2019.[2] More than 80% of fatal drug overdoses in 2019 were due to prescription or illicit opioids, with heroin and fentanyl driving the increase in fatalities in recent years. While national and state efforts often focus on opioid use disorders (OUD), fatal overdoses due to cocaine and methamphetamines have also risen sharply in Virginia in recent years.

Many health officials are concerned that the COVID-19 pandemic will increase fatal drug overdoses and SUD in general due to the economic recession and high unemployment, psychological stresses arising from greater social isolation, and more restricted access to treatment providers. In Virginia, 5,134 emergency department visits were related to drug overdoses (fatal and nonfatal) between July and September, 2020, a 42% increase from the same three months in 2019.[3]

Aside from overdose fatalities, substance use disorders exact a much broader human and societal cost, affecting the economic and social well-being of families and entire communities, as well as individuals' ability to lead productive and fulfilling lives.[4] The National Institute of Drug Abuse estimated the annual national costs associated with misuse of alcohol, illicit drugs, and prescription drugs to be $520 billion, reflecting lost wages, foregone economic opportunities, and private and public sector spending to prevent and control substance use.[5] Social costs associated with SUD include family breakup and other declines in family and personal well-being, increased involvement with the criminal justice system, and placement of children in social services and foster care when their parents are experiencing severe disorders.[6]

Both nationally and in Virginia, Medicaid is more likely to cover members with SUD compared to private insurance. In Virginia, Medicaid members are more than twice as likely to report dependence or misuse of alcohol or illicit drugs (13%) compared to people with private insurance (6%).[7] Also, Virginia Medicaid members are 2.75 times more likely to report dependence or misuse of opioids compared to Virginians with private insurance. Importantly, Medicaid members with SUD are also more likely to receive addiction treatment for their diagnosis compared to people insured by private insurers.[8]

To increase access to SUD treatment services for its members, the Virginia Medicaid agency implemented the Addiction and Recovery Treatment Services (ARTS) benefit in April 2017. ARTS expanded coverage of many addiction treatment services for Medicaid members, including community-based services, short-term residential treatment and inpatient detoxification services. The Centers for Medicare and Medicaid Services (CMS) approved a Section 1115 Demonstration Waiver for SUD in December 2016 to allow federal Medicaid payment for addiction treatment services provided in inpatient and short-term residential facilities. ARTS also increased provider reimbursement rates for many existing services and introduced a new care delivery model, the Preferred Office-Based Opioid Treatment (OBOT) provider, which integrated medications for OUD with behavioral and physical health by incentivizing increased use of care coordination activities. The six Medicaid managed care organizations, which oversee medical and behavioral health benefits for all Medicaid members, administer SUD treatment services, offering a comprehensive care delivery system that further increases integration of addiction treatment services with other health services covered by Medicaid.

On January 1, 2019, Virginia expanded Medicaid eligibility for adults ages 19-64 with household incomes up to 138% of the federal poverty level. As of July, 2021, about 560,000 low-income Virginians were newly enrolled through Medicaid expansion.[9] Medicaid expansion increases access to ARTS for many low-income adults who had SUD prior to enrolling in Medicaid. Prior to Medicaid expansion, prevalence of SUD among the uninsured in Virginia (18%) was higher than for Medicaid members (13%).[10] Among Virginians who reported dependence or misuse of opioids prior to Medicaid expansion, more than half were uninsured.

Objectives of the report

The Department of Medical Assistance Services contracted with Virginia Commonwealth University School of Medicine to conduct an independent evaluation of the ARTS benefit. The evaluation is conducted by faculty and staff from the Department of Health Behavior and Policy.

This report examines SUD treatment prevalence, access, utilization, and quality of treatment between 2016 and 2019, which includes two full years following implementation of the ARTS benefit and the first full year of Medicaid expansion. This report updates and expands on prior reports that examined changes in access to and utilization of ARTS services in the year following the program's implementation.[11]

Prior reports showed substantial gains in the number of addiction treatment providers serving the Medicaid population, as well as large increases in the percentage of members with SUD receiving various types of treatment, including medications for opioid use disorder (MOUD). Moreover, there were significant decreases in hospital emergency department and acute inpatient use for members with SUD after ARTS relative to other Medicaid members, suggesting improved access to care.[12] In addition to increased access to treatment services through ARTS, substantial declines in opioid prescribing in Medicaid may have also contributed to improved outcomes among Medicaid members.[13]

This report shows that utilization of ARTS treatment services expanded rapidly in 2019 relative to 2018. While much of this change reflects increased enrollment through Medicaid as a result of Medicaid expansion, the findings show continued increases in utilization and treatment rates among base Medicaid eligibles – that is, members eligible for Medicaid based on criteria prior to 2019.

The report provides additional details on the quality of outpatient addiction treatment services that Medicaid members receive, including services received at Preferred OBOT programs. The report also assesses quality of care from the perspective of members who received ARTS services, based on a survey of Medicaid members who used ARTS services. The report assesses differences in OUD prevalence and MOUD treatment between Medicaid members in Virginia and Medicaid members in other states based on analysis from the Medicaid Outcomes Distributed Research Network (MODRN).[14] Virginia is a member of the network. Finally, we assess potential sources of disparities in treatment for SUD and OUD by race/ethnicity and geographic area, as well as social factors related to housing and food insecurity, unemployment, social isolation, and involvement with the criminal justice system, that may fuel such disparities.

Methodology

The findings in this report are based on a number of data sources, including Medicaid administrative claims, information on the supply of substance use treatment providers, and a survey of Medicaid members who used ARTS. For most estimates of diagnosed prevalence, treatment, and utilization of services based on Medicaid claims, we compare estimates of paid claims in 2016 (the year prior to ARTS

implementation) to 2017 (the year of ARTS implementation), 2018, and 2019. These estimates exclude claims for services during the study period that had not yet been submitted or paid at the time of the analysis, as well as unpaid claims and services not covered by Medicaid. Note that since ARTS was implemented in April, 2017, estimates of utilization for 2017 reflect the full range of ARTS benefits for only part of the year (from April to December). From January to March, 2017, utilization is based on Medicaid covered services prior to ARTS, similar to 2016.

As mentioned previously, a major policy change during the second full year of the ARTS benefit was expanded eligibility for Medicaid coverage, beginning January 2019. This policy resulted in more than 400,000 additional Medicaid members during 2019 compared to prior years, a change that also affects estimates of diagnosed prevalence and treatment for SUD. In addition, members with SUD enrolled through Medicaid expansion may differ from other members with SUD in ways that affect their utilization of services, such as differences in age, gender, race/ethnicity and health status.

The report includes members newly enrolled in Medicaid expansion in estimates of the number of members with diagnosed SUD and assessments of who used various treatment services during 2019. However, to ensure comparability with the years prior to Medicaid expansion, analyses that show *changes in rates of utilization and treatment* between the second year of ARTS and earlier years include only the base Medicaid population, that is, members enrolled in Medicaid through traditional eligibility criteria. For these analyses, we also include members enrolled through the Governor's Access Plan (GAP), even though most of these members were transitioned to full Medicaid coverage by March 2019. Prior to Medicaid expansion, GAP provided coverage for ARTS and other behavioral health services to people who did not qualify for full Medicaid benefits. Members with limited benefits, such as those receiving only emergency services or family planning, are excluded since they are not eligible for the ARTS benefit.

ARTS Member Survey

As part of the evaluation of the ARTS benefit, a survey of Medicaid members who were either diagnosed with an OUD or who had received ARTS was conducted. The purpose of the ARTS member survey was to obtain the patient perspective on the quality of treatment services they are receiving, the impact of treatment on their personal lives, and circumstances regarding their housing and food security, employment, living situation, social support, recent involvement with incarceration, types of substances used in the past year, and mental health comorbidities.

Survey respondents were randomly selected from Medicaid enrollment files based on their utilization of ARTS in the six months prior to the sample draw (identified through Medicaid claims data). To compare member experiences with different treatment providers, the sample was stratified based on utilization of Preferred OBOT providers, utilization of Outpatient Treatment Providers (OTP), and utilization of other outpatient treatment providers. Part of the sample also included members who had been diagnosed with OUD in the past year, but had no Medicaid claims indicating utilization of ARTS treatment services.

Survey questions were adapted from a number of sources, including the CAHPS Experience of Care & Health Outcomes (ECHO) Survey, a version of the CAHPS developed for assessing patient experience with behavioral health care,[15] and the National Survey of Drug Use and Health, conducted by the Substance Abuse and Mental Health Services Administration.[16] In addition, we obtained questions that ask patients to assess the impact of treatment on their lives from a survey of patients receiving services at Centers for Excellence treatment centers in Pennsylvania.[17] The survey was conducted by mail.

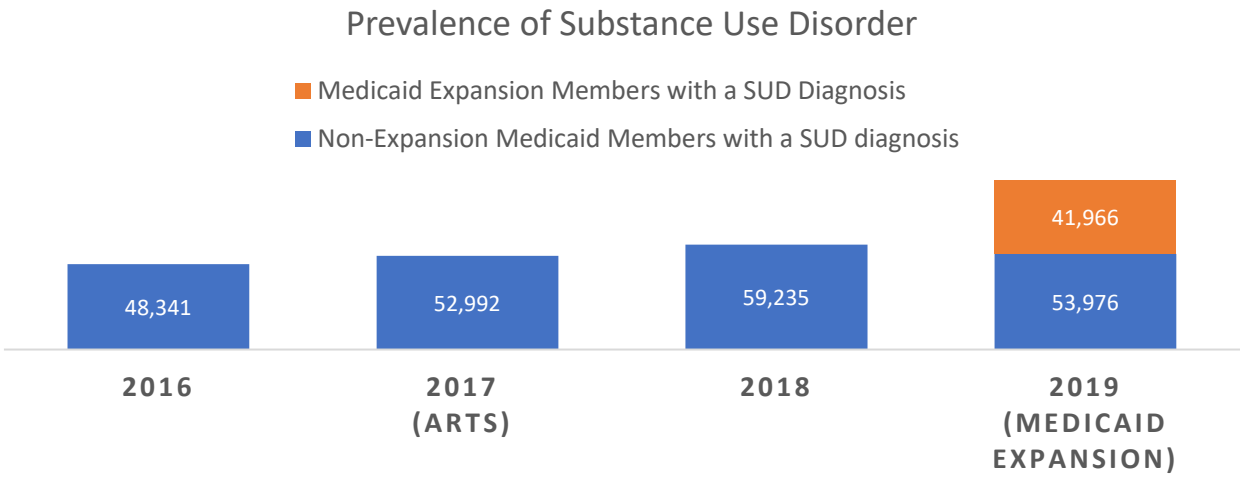
The results in this report represent approximately the first 1,100 completed surveys, conducted primarily from January through May, 2020. During this period, the response rate was about 20 percent. After a temporary pause due to COVID-19 pandemic restrictions, fielding of additional waves of the survey continued through June 2021, but was not available at the time of this report. A final sample of about 1,800 completed surveys is expected.

Medicaid Outcomes Distributed Research Network (MODRN).

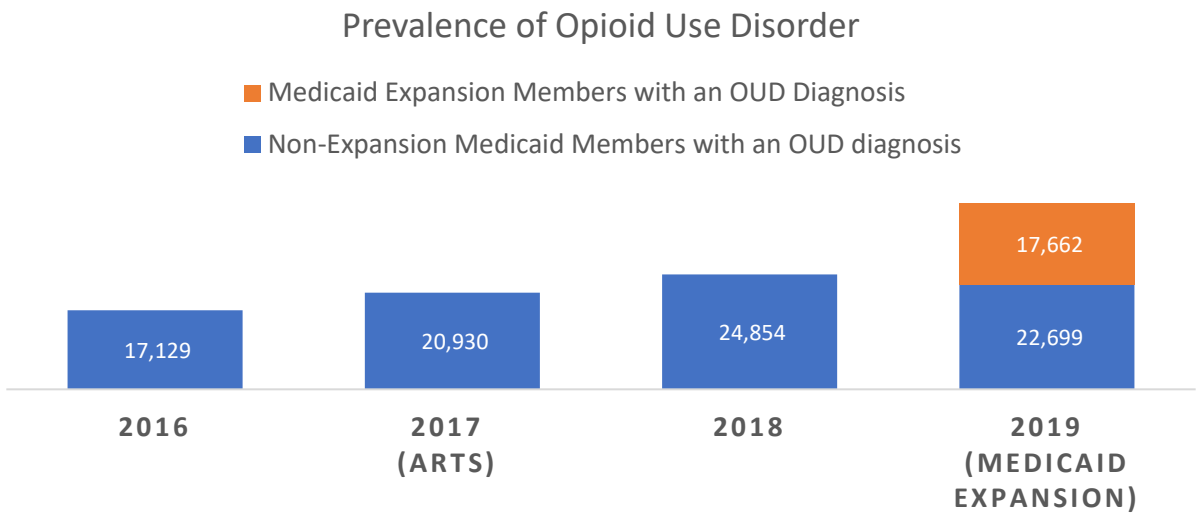
Comparisons between Virginia Medicaid members and Medicaid members in other states are based on analysis from the MODRN, a collaborative effort consisting of state-university partnerships across 13 states to facilitate learning among Medicaid agencies, and to profile the opioid epidemic among the Medicaid population.[18] MODRN employs a common data model to standardize estimates of OUD prevalence, treatment, and quality of care derived from state Medicaid claims and enrollment data. Measures of OUD treatment and quality are consistent with the American Society of Addiction Medicine (ASAM) guidelines, and include measures developed by the National Quality Forum and used by the Centers for Medicare and Medicaid Services for the purposes of evaluating state Medicaid programs. Analysis from the MODRN is funded by a grant from the National Institute on Drug Abuse.

Diagnosed Prevalence of Substance Use and Opioid Use Disorders

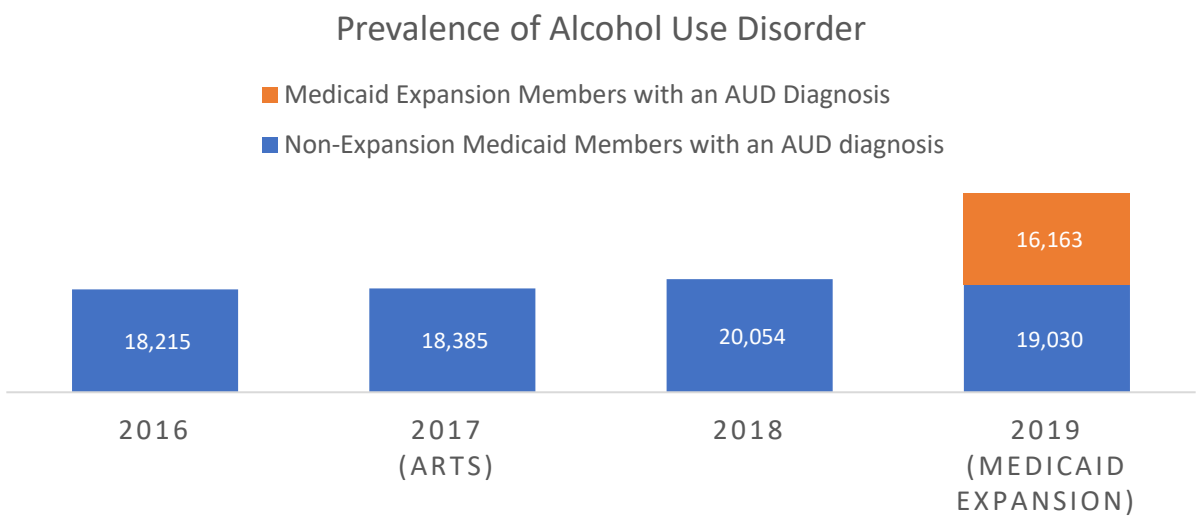
There were about 96,000 Medicaid members who had a diagnosis of SUD in 2019. This represents an increase of almost 37,000 members with diagnosed SUD from 2018, and about double the number since the year before ARTS (2016). Of those with SUD in 2019, about 42,000 (44%) had enrolled through Medicaid expansion. Although Medicaid expansion members exclude those who transitioned from the GAP program, it is likely that some Medicaid members with SUD had been enrolled in prior years through other eligibility categories.



There were over 40,000 members with diagnosed OUD in 2019, an increase of about 15,000 members with OUD in 2018, and more than double the number in 2016. Among those with an OUD diagnosis in 2019, 44% were enrolled through Medicaid expansion (excluding GAP members who transitioned to Medicaid expansion in 2019).



There were over 35,000 members with diagnosed alcohol use disorder (AUD) in 2019, an increase of about 15,000 from 2018, and almost double the number in 2016. Among those with AUD in 2019, 46% had enrolled in Medicaid expansion (excluding GAP members who transitioned to Medicaid expansion in 2019).



Diagnosed prevalence of other SUD among Medicaid members also increased between 2016 and 2019. In particular, prevalence of SUD related to methamphatimine use (identified as "other stimulants" in diagnosis codes) has more than tripled, from 2,169 members in 2016 to 9,544 members in 2019. Diagnosed prevalence of SUD related to cocaine and cannibinoids also doubled over the time period. Although opioids are still responsible for the vast majority of fatal overdoses, the rate of fatal overdoses due to methampheatimes and cocaine increased at a faster rate than fatal overdoses due to opioids between 2016 and 2019.[19]

Diagnosed prevalence of substance use disorders

	2016	2017	2018	2019	Percent change 2016-19
Any SUD	48,341	52,992	59,235	95,942	98.5%
OUD	17,129	20,930	24,854	40,361	135.6%
AUD	18,215	18,385	20,054	35,193	93.2%
Other stimulants[1]	2,169	2,822	4,250	9,544	340%
Cocaine	5,756	6,515	7,369	13,564	135.6%
Cannabinoids	13,325	14,034	15,710	26,905	101.9%

[1]Refers primarily to methamphetamines

Rate of diagnosed prevalence of SUD.

Of the 1.78 million people who were enrolled in Medicaid at some point during 2019, 5.4% had a diagnosed SUD of any type (see table on following page). The prevalence rate was highest for OUD (2.3%) followed by AUD (2.0%) and cannibinoids (1.5%). Despite increases in recent years, diagnosed prevalence of SUD due to methamphetamines and cocaine was less than one percent.

Prevalence of diagnosed SUD is higher for males (6.2%) compared to females (4.7%). Members in the 45-64 age group had by far the highest diagnosed prevalence compared to other ages, while adolescents (ages 12-17) had the lowest diagnosed prevalence. Variation in diagnosed OUD by demographic characteristics was similar, except that females have similar prevalence (2.3%). Males generally have higher rates of SUD diagnosis for cannibinoids and cocaine than females, although rates for methamphetmines are more similar by gender.

Among racial/ethnic groups, prevalence of diagnosed SUD is lower among members identifying as Black (4.8%), Hispanic (1.1%) and other racial/ethnic minorities (2.3%) compared to White members (6.3%). This differs from national data, which indicates that self-reported prevalence of SUD across racial and ethnic groups is more similar.[20] As treatment rates are also considerably lower for Black members and other racial/ethnic minorities (see below), it is possible that SUD is underdiagnosed for these groups.

Racial/ethnic variation in prevalence of diagnosed OUD is similar to overall SUD. Prevalence of SUD due to methamphetamine is higher for White members (0.8%) compared to Black members (0.2%), while SUD due to cocaine is higher for Black members (1.1%) compared to White members (0.6%).

Diagnosed prevalence of SUD and OUD is highest in the Southwest region (9.1% and 5.9% of Medicaid members, respectively) and lowest in the Northern region. However, diagnosed prevalence of cocaine abuse is highest in the Central and Tidewater regions (1% of Medicaid members for each region) and lowest in the Southwest region (0.3% percent of Medicaid members).

Co-occurrence of Substance Use Disorders with Physical and Mental Health Problems

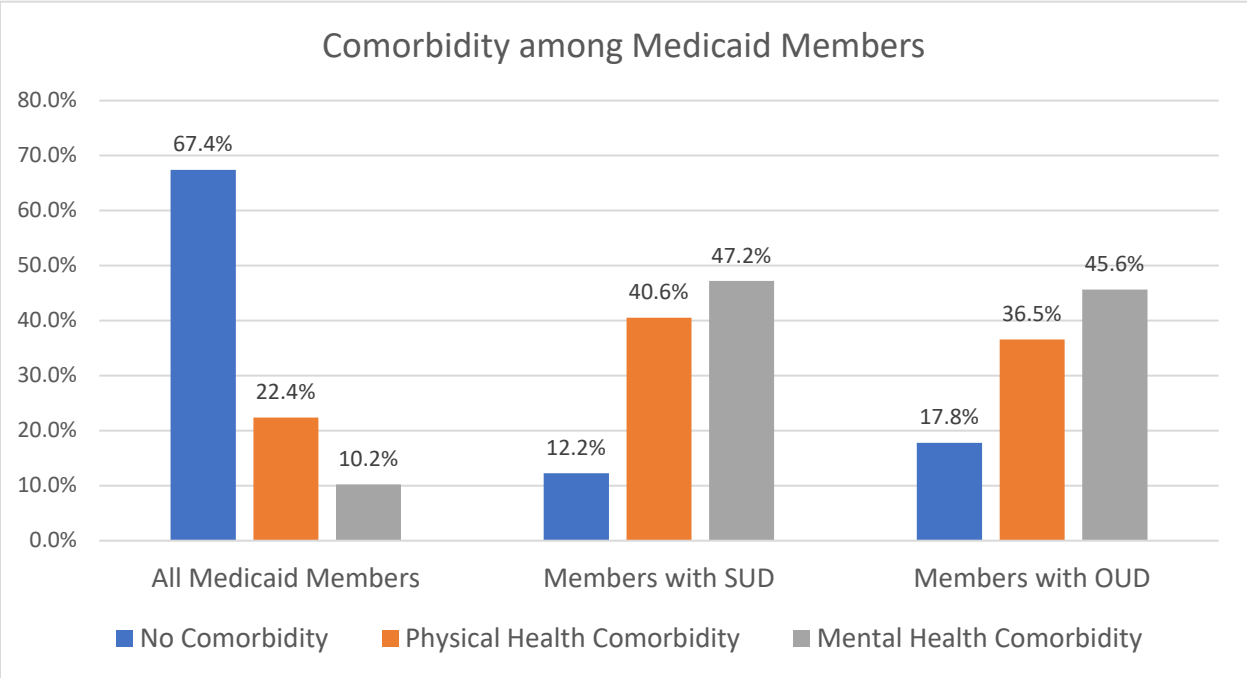
Substance use disorders are often accompanied by other co-occurring physical conditions and mental health disorders. These conditions may both contribute to addiction among members as well as complicate effective treatment of SUD.[21] We examine co-occurring conditions using the Elixhauser Comorbidity Index, one of the most widely used indicators of comorbidity in studies involving administrative data.[22] The index includes a list of 30 health conditions, including both chronic diseases, SUD and mental disorders.

Compared to all Medicaid members, those with SUD are more likely to have other comorbid conditions, including other mental health disorders. Among Medicaid members with SUD, 40.6% had a physical health comorbidity, while 47.2% had a mental health co-morbidity. Only 12.2% of members with SUD had no comorbidities based on the Elixhauser Index. Rates of comorbidities are also high among members with OUD and largely similar to those with any SUD.

Percent of Medicaid members (1.78 million) with diagnosed substance use disorders, 2019

Member Characteristics	Number of members	% Any SUD	% OUD	%AUD	% Meth-amphetamines	% Cocaine	% Cannabinoids
All members	1,784,433	5.4%	2.3%	2.0%	0.5%	0.8%	1.5%
Gender							
Female	1,004,168	4.7%	2.3%	1.3%	0.5%	0.6%	1.3%
Male	780,281	6.2%	2.3%	2.8%	0.6%	0.9%	1.8%
Race/Ethnicity							
Black	632,967	4.8%	1.4%	2.0%	0.2%	1.1%	1.7%
White	975,561	6.3%	3.1%	2.2%	0.8%	0.6%	1.5%
Hispanic	8.462	1.1%	0.2%	0.4%	0.0%	0.1%	0.5%
Other	167,482	2.3%	0.8%	1.0%	0.2%	0.3%	0.7%
Age							
12-17	229,227	1.2%	0.1%	0.2%	0.1%	0.03%	0.9%
18-44	584,969	8.9%	4.3%	2.4%	1.2%	1.2%	3.1%
45-64	292,500	11.9%	4.5%	6.0%	0.7%	2.1%	2.2%
65+	152,383	3.7%	1.2%	2.0%	0.0%	0.3%	0.3%
Region							
Central	446,624	5.6%	2.3%	2.1%	0.3%	1.0%	1.6%
Charlottesville	220,814	5.5%	1.9%	2.1%	0.7%	0.7%	1.4%
Northern	406,312	3.3%	1.2%	1.4%	0.2%	0.4%	1.0%
Roanoke	183,937	7.2%	3.3%	2.4%	1.3%	0.7%	1.7%
Southwest	125,010	9.1%	5.9%	2.1%	2.1%	0.3%	2.0%
Tidewater	401,347	5.2%	1.8%	2.2%	0.2%	1.0%	1.7%

Source: Paid Medicaid claims data from the Department of Medical Assistance Services.



Prevalence of SUD by Eligibility Category

Among the approximately 464,000 members enrolled in Medicaid expansion in 2019, 9% had a diagnosed SUD, while 3.8% had a diagnosed OUD (see table on following page). This is somewhat higher than for other nondisabled adults enrolled through traditional Medicaid (6.5% with SUD), but much lower than the prevalence among adults with disabilities (16.3%) and members previously enrolled in the GAP (39.9%).

Former Foster Care Youth (FFCY) are members who aged out of foster care under the responsibility of another state and are allowed to apply for Virginia Medicaid under an amendment to the 1115 Demonstration Waiver. There were 4,221 members who enrolled through a foster care eligibility category in 2019. About 5% have any SUD, and only 27 of these members (0.6%) had a diagnosed OUD in 2019.

Prevalence for other SUD diagnoses follow similar patterns. Compared to other nondisabled members, members enrolled through Medicaid expansion have somewhat higher diagnosed prevalence rates for OUD (3.8%), AUD (3.5%), methamphetamines (1.0%), cocaine (1.3%) and cannibinoids (2.5%). Former GAP members have the highest rates of diagnosed prevalence of each of these substances, consistent with the focus of the program on members with behavioral health problems.

Percent of members with SUD for adult Medicaid members, by eligibility group

	Number of members	% any SUD	% OUD	%AUD	% Meth-amphetamines	% Cocaine	% Cannabinoids
Medicaid expansion	463,687	9.0%	3.8%	3.5%	1.0%	1.3%	2.5%
Nondisabled adults	426,643	6.5%	3.2%	2.1%	0.7%	0.8%	1.7%
Disabled adults	139,525	16.3%	6.3%	7.0%	1.2%	2.9%	4.3%
Governor's Access Plan (GAP)[1]	18,713	39.9%	23.9%	14.0%	6.7%	7.4%	10.6%
Foster Care	4,221	4.9%	0.6%	0.8%	0.4%	0.2%	3.2%

[1]Members enrolled in GAP were transitioned to Medicaid expansion coverage in 2019, but are identified separately in this table

Characteristics of Medicaid expansion members with SUD

Expansion members with SUD differ somewhat from other adult nonelderly members. Compared to base Medicaid members, expansion members with SUD are more likely to be male (57.2%), other or unknown racial/ethnic groups (6.1%) and less likely to be in the 55-64 age group. Expansion members with SUD are also less likely to have a mental health co-morbidity (39%) than base Medicaid members with SUD, but slightly more likely to have other physical health comorbidities (45.7%).

Characteristics of Medicaid members ages 19-64 with substance use disorders, 2019

	Members enrolled through Medicaid expansion	Base Medicaid members
All members ages 19-64 with SUD	41,460	36,920
Percent of all members with SUD	9.2%	10.4%
Gender		
Female	42.8%	58.7%
Male	57.2%	41.3%
Race/Ethnicity		
White	64.6%	63.0%
Black	29.3%	35.0%
Hispanic	0.02%	0.1%
Other	6.1%	1.9%
Age		
19-25	12.5%	9.2%
26-34	27.9%	23.6%
35-54	44.9%	42.1%
55-64	14.6%	25.1%
Comorbidity		
No comorbidity	15.3%	9.1%
Mental health comorbidity	39.0%	53.6%
Other comorbidity	45.7%	37.2%

The Supply of Addiction Treatment Providers Increased After ARTS

A broad range of addiction treatment facilities and practitioners are available to Medicaid members along the continuum of care, as defined by the ASAM placement criteria.[23] These include hospital-based intensive inpatient facilities, residential treatment centers, and outpatient providers of varying types and treatment intensity. The ARTS benefit also introduced a new model of care delivery, the Preferred OBOT program that pays significantly higher reimbursement rates to qualified providers for medication-assisted treatment (including pharmacotherapy and behavioral health therapy) and coordination with other medical and social needs. Since ARTS was implemented in April 2017, Virginia has seen substantial increases across all types of addiction treatment providers and facilities that serve Medicaid members.

Medicaid addiction treatment providers before and after ARTS implementation

Addiction Provider Type	# of Providers before ARTS	# of Providers as of Sept. 2020
Inpatient Detox (ASAM 4.0)	N/A	103
Residential Treatment (ASAM 3.1, 3.3, 3.5, 3.7)	4	106
Partial Hospitalization Programs (ASAM 2.5)	N/A	22
Intensive Outpatient Programs (ASAM 2.1)	49	136
Opioid Treatment Programs	6	39
Preferred Office-Based Opioid Treatment Providers	N/A	158

Source: Department of Medical Assistance Services

ARTS Continuum of Care

Medically Managed Intensive Inpatient Programs (ASAM Level 4)
Also referred to as inpatient detoxification, ASAM level 4 facilities provide medically directed acute withdrawal management along with other intensive medical and psychiatric services. Services in Virginia are provided in an acute care general hospital.

Short-term Residential Treatment Services (ASAM Level 3)
ASAM level 3 facilities provide a range of intensities of treatment services in a structured setting staffed 24 hours daily. Service level intensity (identified by ASAM levels 3.1, 3.3, 3.5, and 3.7) varies depending on the severity of the addiction problem and the patient's other medical, emotional or behavioral needs. Medicaid coverage of limited group home/residential services prior to ARTS was available only to pregnant members and adolescents and was limited by federal restrictions on payment for institutions for mental diseases (IMD).[ii] The Section 1115 Demonstration Waiver requested federal authority to waive these IMD limitations and expand access to these services at facilities with more than 16 beds.

[ii]CMS defines Institutions for Mental Diseases as hospitals, nursing facilities, or other institutions of more than 16 beds that are primarily engaged in providing diagnosis, treatment, or care of persons with mental diseases, including medical attention, nursing care and related services.

The number of providers serving Medicaid members increased from four providers before ARTS to 106 providers by 2019. This additional coverage is an objective of the Section 1115 Demonstration Waiver permitting federal Medicaid payment for these services in facilities with greater than 16 beds. ARTS also expanded coverage of short-term residential treatment services to include all members. In addition, ARTS substantially increased reimbursement for the group home level residential treatment services (ASAM Level 3.1).

Partial Hospitalization and Intensive Outpatient Programs (ASAM Level 2)
ASAM level 2 programs provide a higher level of treatment intensity for patients whose conditions are less stable than for patients receiving outpatient treatment, and involve a team of counselors, psychologists, physicians, and other credentialed addiction treatment providers. Intensive outpatient programs (ASAM level 2.1) provide an average of 9-19 hours per week of treatment, while partial hospitalization programs provide 20 hours or more of treatment per week.[iii]

Medicaid coverage of partial hospitalization services began with the ARTS program, and there are now 22 such providers. While Medicaid covered intensive outpatient programs prior to ARTS, Medicaid payment for these services increased substantially through ARTS. The number of intensive outpatient Medicaid providers increased from 49 before ARTS to 136 currently.

Opioid Treatment Programs
Opioid Treatment Programs (OTP) are the sole providers of methadone treatment for patients with OUD. Regulated by both federal and state agencies, OTPs directly administer MOUD treatment, including methadone and buprenorphine, to patients on a daily basis, and include care coordination and other services. While Virginia Medicaid previously covered methadone and buprenorphine treatment at OTPs , ARTS increased reimbursement rates for the service. In addition, OTPs are now allowed to bill for other services similar to Preferred OBOTs , such as care coordination services. The number of OTPs participating in Medicaid has increased from six clinics prior to ARTS, to all licensed OTPs in Virginia, totalling 39 clinics.

Preferred Office-Based Opioid Treatment Programs
To expand access to high-quality treatment for OUD in the community, ARTS initiated Preferred OBOT programs. Comprised of Community Services Boards, Federally Qualified Health Centers, private outpatient addiction treatment centers, private psychiatric clinics, and primary care clinics, Preferred OBOTs are incentivized to provide high-quality evidenced-based medications for OUD through higher rates for individual and group opioid counseling, a monthly rate for care coordination of addiction treatment services with other medical and social needs, and other services such as peer recovery support services. Providers must be certified as Preferred OBOTs by meeting staffing and facility requirements set by DMAS. The number of Preferred OBOT providers has increased from 38 sites at the beginning of ARTS (April 2017) to 158 sites at the time of this report.

Other Outpatient Providers (ASAM Level 1)

[iii] For more details on defintions of ARTS service providers, see Virginia Law Administrative Code https://law.lis.virginia.gov/admincode/title12/agency30/chapter130/section5020/

Many other licensed practitioners provide outpatient addiction treatment services to Medicaid members, including counselors, social workers, psychologists, physicians who specialize in addiction disorders, as well as primary care physicians. In 2019, there were 4,888 practitioners who billed Medicaid for outpatient services related to SUD. This reflects a 457% increase in the number of practitioners billing for addiction treatment services in 2016, the year prior to ARTS. The increases were largest for physicians and nurse practitioners.

Similarly, there were more than 2,200 practitioners who billed Medicaid for outpatient services related to the treatment of OUD, a 400% increase since 2016.

Practitioners Billing Medicaid for Outpatient Addiction Treatment Services

	2016	2017 (ARTS)	2018	2019 (Medicaid Expansion)
Substance use disorder (SUD) Outpatient Practitioners				
Total	1,068	2,800	3,729	4,880
Physicians	250	1,429	1,879	2,388
Nurse practitioners	19	167	270	414
Counselors and social workers	300	427	703	1,015
Other	500	789	954	1,227
Opioid use disorder (OUD) Outpatient Practitioners				
Total	562	1,286	1,726	2,232
Physicians	126	544	800	957
Nurse practitioners	9	60	106	165
Counselors and social workers	141	243	354	587
Other	287	447	514	621

Source: Paid Medicaid claims data from the Department of Medical Assistance Services.
Note: Outpatient practitioners refer to ASAM Level 1 practices, which are defined as outpatient services that consist of less than 9 hours of treatment per week.

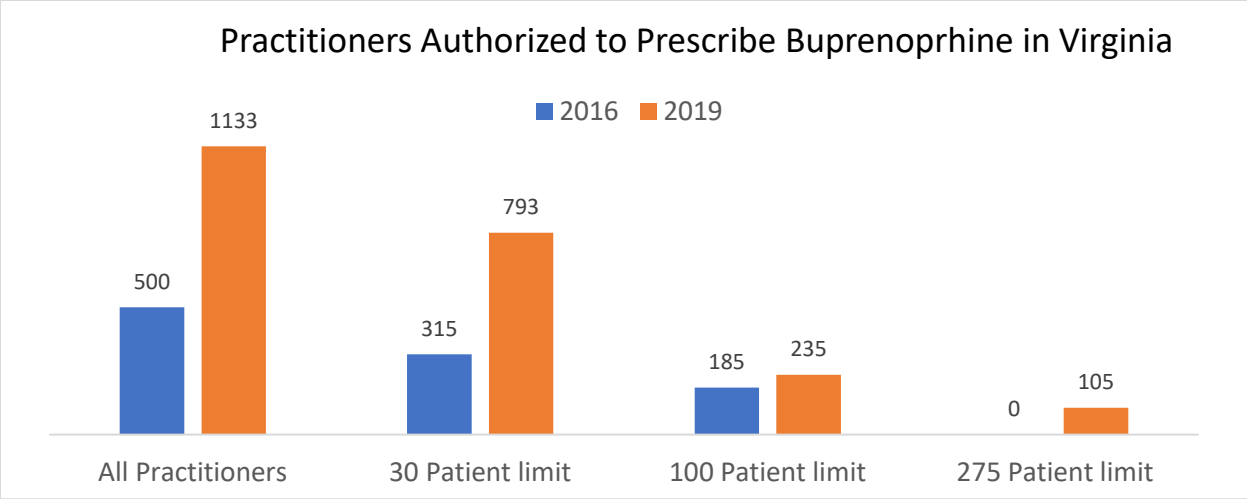
Buprenorphine waivered prescribers

There are three Food and Drug Administration (FDA) approved medications for treatment of OUD: methadone, naltrexone, and buprenorphine. Under federal requirements, methadone can only be dispensed in specially licensed clinics for the treatment of OUD. In Virginia these are the 39 licensed OTPs. Because buprenorphine treatment for OUD does not require that medication be administered at OTPs, it allows for greater access to MOUD treatment in a wider variety of treatment settings, provider types, and specialties. Virginia Medicaid has promoted the prioritization of patient choice in the selection of evidence-based medication for treatment of OUD. The agency pursued a targeted effort in 2017 to increase access to buprenorphine treatment through newly implemented Preferred OBOTs – an integrated care model that receives enhanced reimbursement for OUD treatment. More recently, DMAS eliminated the need for prior authorization for buprenorphine prescribing by practitioners in MCO

networks. Prior to ARTS implementation, DMAS and the Virginia Department of Health (VDH) conducted sessions to train and encourage more practitioners to become buprenorphine prescribers and also coordinated buprenorphine waiver trainings at no cost to practitioners.

Overall, the number of buprenorphine waivered prescribers in Virginia has more than doubled, from 500 in 2016 to 1,133 in 2019, a 127% increase.[24] Geographic coverage of the state also increased between 2016 and 2019, from 71 counties that had at least one buprenorphine prescriber in 2016 (53%) to 91 counties with at least one prescriber in 2019 (68% of counties). Still, 42 counties or independent cities in Virginia had no waivered prescribers as of 2019.

About half of the increase in waivered prescribers between 2016 and 2019 reflects 278 nurse practitioners and physician assistants who received waivers following the passage of the federal Comprehensive Addiction and Recovery Act (CARA) of 2016. Also of significance in Virginia, the Board of Medicine amended the law to allow nurse practitioners with five or more years of experience to apply to practice independently from a supervising physician, further increasing the supply of buprenorphine-waivered prescribers in Virginia who were able to serve Mediciad members.



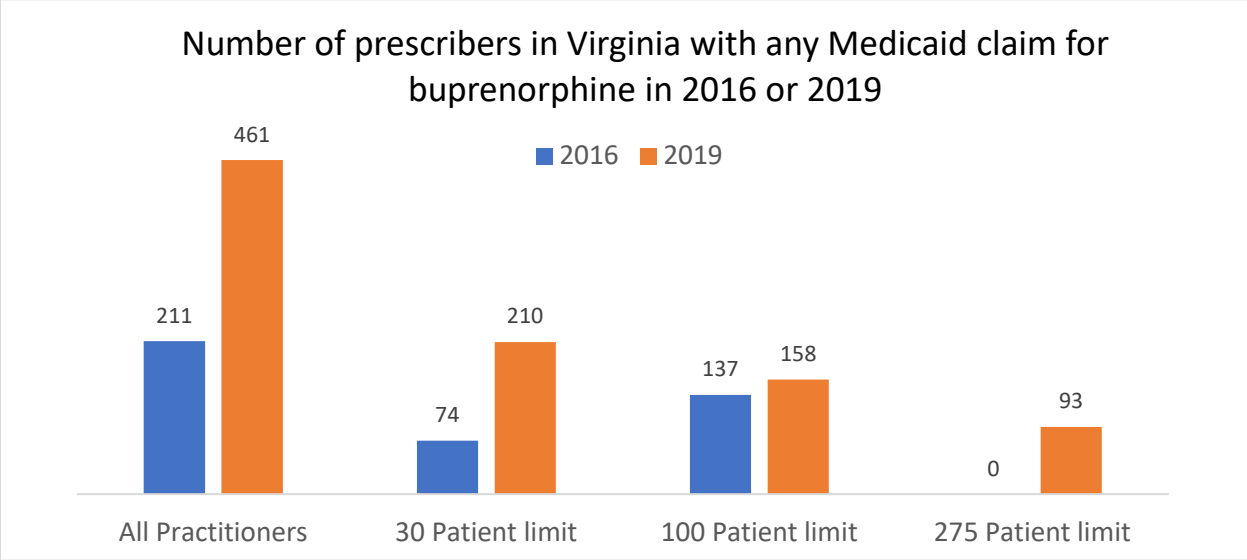
Additionally, the total prescribing capacity has increased because physicians may now apply to treat up to 275 patients at a time, in contrast to previous limits of up to 30 or 100 patients in 2016. Thus, the total prescribing capacity based on patient limits has increased by 173%, from 27,950 patients in 2016 to 76,165 patients in 2019. However, prescribers rarely treat patients up to their full capacity. Research from other states has shown that the monthly patient census was only four patients for 30-patient waivered prescribers, and 43 patients for 100-patient prescribers.[25]

Despite the increase in the number of prescribers, overall supply of prescribers is relatively low compared to most other states in the South Atlantic region. Virginia has 13.8 prescribers per 100,000 people in the state, which is less than half of the number in West Virginia (32.8 prescribers per 100,000 people) and Maryland (35.2 prescribers per 100,000 people). Among South Atlantic states, only Georgia has fewer prescribers than Virginia relative to the population (10.3 prescribers per 100,000 people in Georgia).

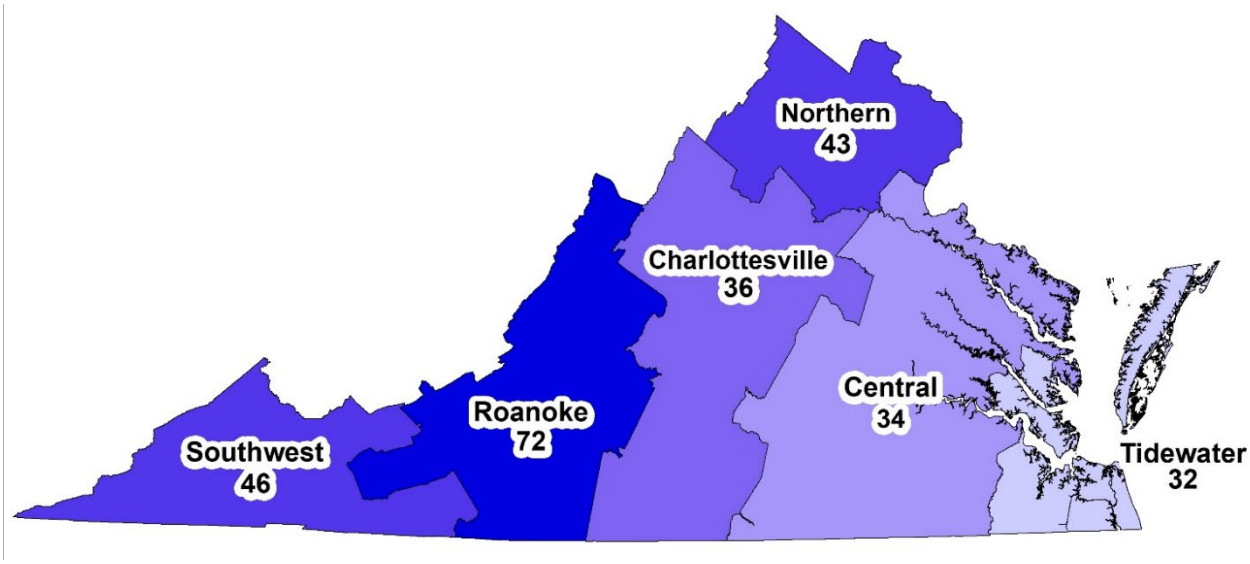
In addition, not all prescribers treat Medicaid recipients. Based on linkage of waivered prescribers to Medicaid medical and pharmacy claims data, 461 practitioners (about 40% of the total number of waivered prescribers) treated Medicaid recipients in 2019, a rate that is unchanged since before ARTS.[26]

Nevertheless, the number of prescribers treating Medicaid patients has more than doubled, reflecting the overall increase in waivered prescribers.

Regionally, the relative number of prescribers treating Medicaid patients is highest in the Roanoke region (72 Medicaid prescribers per 100,000 Medicaid members), and lowest in the Tidewater (32 Medicaid prescribers per 100,000 members), Central (34 Medicaid prescribers per 100,000 members), and Charlottesville regions (36 Medicaid prescribers per 100,000 people).



Number of Physicians Authorized to Prescribe Buprenorphine Who Treated Medicaid Patients, per 100,000 Medicaid Members



Medicaid Members Treated for Substance Use Disorders

Coverage of SUD services provided by ARTS is based on the ASAM National Practice Guidelines, which comprise a continuum of care from Early Intervention/Screening, Brief Intervention, and Referral to Treatment (SBIRT / Level 0.5) to medically managed intensive inpatient services (Level 4).[27] ARTS also emphasizes evidence-based treatment for OUD, which combines pharmacotherapy and counseling. In July 2017, DMAS added peer recovery support services, which facilitate recovery from SUD, as covered services through ARTS. Care coordination services provided by Preferred OBOT and Opioid Treatment Programs facilitate integration of addiction treatment services with physical health and social service needs.

In 2019, the second year of ARTS, about 48,000 members – half of those diagnosed with SUD – received some type of treatment for SUD. About 28,000 members received treatment for an OUD, comprising 68.9% of those with a diagnosed OUD.

SUD and OUD treatment rates, by member characteristics, 2019

Member Characteristics	SUD treatment rate[1]	OUD treatment rate[1]
All members	50.0%	68.9%
Gender		
Male	48.9%	69.2%
Female	51.2%	68.7%
Race/Ethnicity		
White	55.5%	71.5%
Black	39.8%	60.8%
Hispanic	47.9%	70.6%
Other	44.7%	62.3%
Age		
12-17	36.6%	33.0%
18-44	56.6%	76.8%
45-64	46.1%	61.1%
65 years and higher	21.6%	28.2%
Comorbidity		
No comorbidity	71.6%	80.2%
Mental health comorbidity	51.4%	66.6%
Other comorbidity	41.9%	66.3%

[1]Reflects the percentage of members with SUD (or OUD) who received any ARTS treatment services for that condition. Note: Services include those performed in an OBOT or Opioid Treatment Program setting, psychotherapy or counseling, physician evaluation or management, intensive outpatient, partial hospitalization, residential treatment, medically managed intensive inpatient services and pharmacotherapy.

Treatment rates for SUD tend to be highest among those in the 18-44 age group, individuals identifying as White, and those with no comorbidities. Variation in treatment rates for OUD are generally similar. SUD treatment rates among Black members (38%) are considerably lower than for White members (55%). Treatment rates for Hispanics (51%) and other racial/ethnic groups (46%) are also lower than for White members.

Among members enrolled in Medicaid expansion, 53.4% received treatment for a diagnosed SUD, while 72.8% received treatment for a diagnosed OUD – similar to the treatment rates for nondisabled adults who qualify through pre-expansion income eligibility levels. Treatment rates are highest for members formerly enrolled in the GAP program. Only about 5% percent with SUD who were enrolled through foster care programs received any treatment, while there were too few foster care members with OUD to estimate a treatment rate.

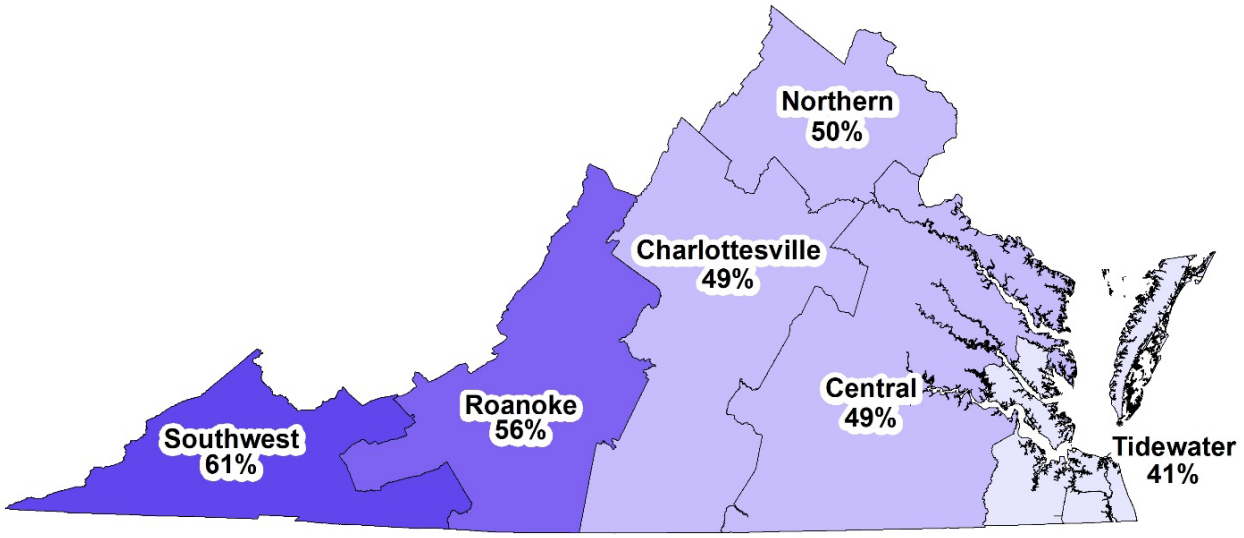
SUD and OUD treatment rates for Medicaid members, by eligibility group

	SUD treatment rate[1]	OUD treatment rate[2]
Medicaid expansion	53.4%	72.8%
Nondisabled adults	52.7%	72.8%
Disabled adults	42.7%	57.1%
Governor's Access Plan (GAP)[3]	72.4%	81.6%
Foster Care	4.9%	Not reportable

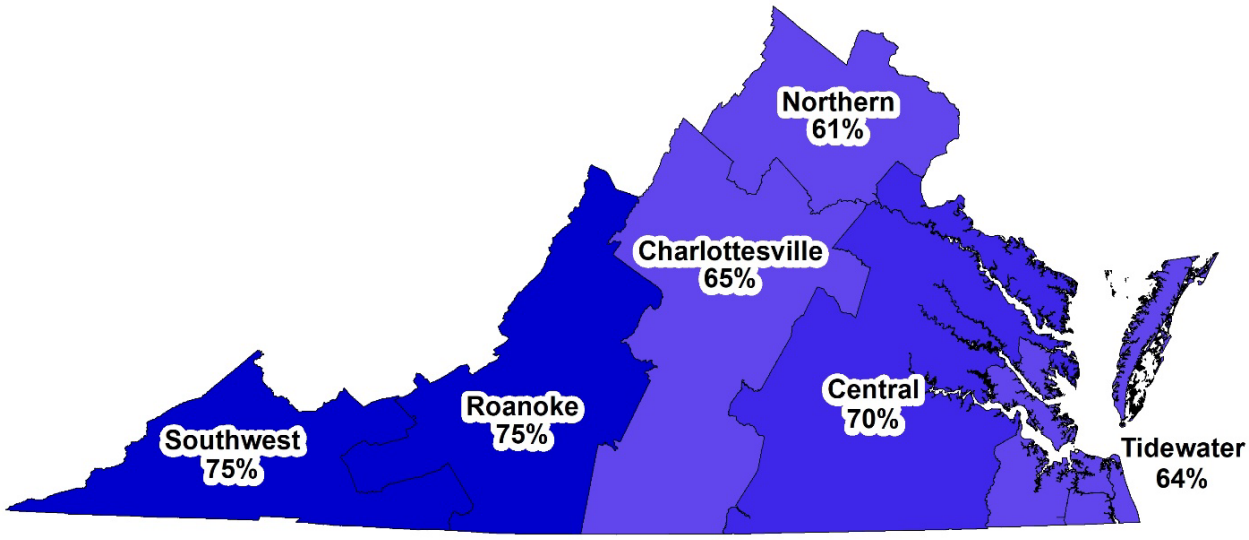
[1]Reflects the percentage of members with SUD (or OUD) who received any ARTS treatment services for that condition. Note: Services include those performed in an OBOT or Opioid Treatment Program setting, psychotherapy or counseling, physician evaluation or management, intensive outpatient, partial hospitalization, residential treatment, medically managed intensive inpatient services and pharmacotherapy.
[3]Members enrolled in GAP were transitioned to Medicaid expansion coverage in 2019 but are identified separately in this table

Among Virginia regions, the Southwest and Roanoke regions have the highest treatment rates for SUD (61% and 56%, respectively), and the Tidewater region has the lowest treatment rates (41%). Similar regional patterns were observed for OUD treatment rates.

SUD treatment rates for members in 2019, all members



OUD treatment rates for members in 2019, all members



Treatment Rates Continue to Increase in 2019

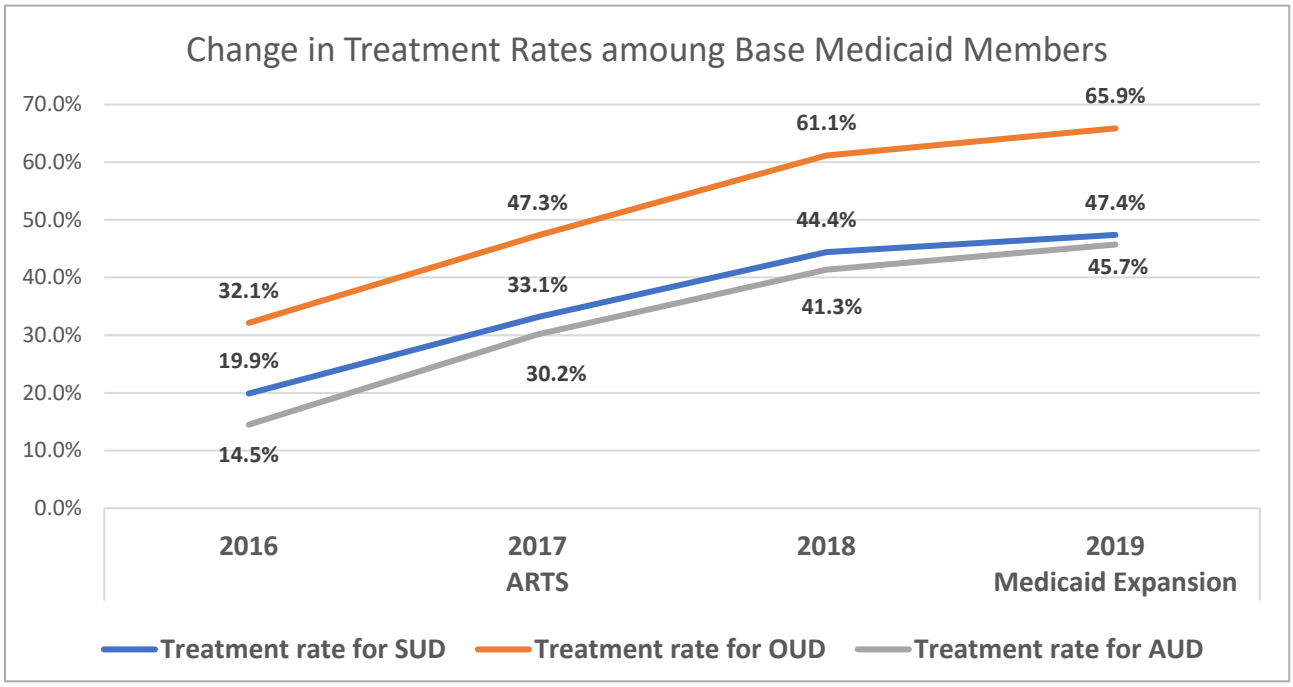
Prior ARTS evaluation reports showed large increases in treatment rates for SUD in the first two years following implementation of ARTS.[28] Despite the increase in members with SUD in 2019 due to Medicaid expansion, treatment rates continued to increase between 2018 and 2019. Among members with any diagnosed SUD who did not enroll through Medicaid expansion, treatment rates increased from 44.4% in 2018 to 47.4% in 2019. Since the year before ARTS (2016), SUD treatment rates have increased 138% as of 2019. Treatment rates for OUD and AUD also increased between 2018 and 2019. Overall, OUD treatment rates have increased by more than 100% since 2016, while AUD treatment rates have increased 215%.

Changes in treatment rates for substance use disorders among base Medicaid members.[1]

	2016	2017 (ARTS)	2018	2019 (Medicaid Expansion)	Percentage change in treatment rate since before ARTS
Treatment rate for any substance use disorder	19.9%	33.1%	44.4%	47.4%	138.3%
Treatment rate for opioid use disorder	32.1%	47.3%	61.1%	65.9%	104.9%
Treatment rate for alcohol use disorder	14.5%	30.2%	41.3%	45.7%	215.4%

[1]Members enrolled through Medicaid expansion are excluded to maintain comparability with prior years

Note: Services include those performed in an OBOT or Opioid Treatment Program setting, psychotherapy or counseling, physician evaluation or management, intensive outpatient, partial hospitalization, residential treatment, medically managed intensive inpatient services and pharmacotherapy.



Service Utilization by ASAM Levels of Care for Substance Use Disorders

Use of services in 2019 increased greatly across all ASAM levels of care, as might be expected given the increase in members through Medicaid expansion. In 2019, 46,520 members used a treatment service categorized within an ASAM level of care, a 79% increase from 2018, and a 172% increase since 2017 (the first year of ARTS). There were increases in utilization across all levels of services, but increases between 2018 and 2019 were especially notable for early screening and interventions, residential treatment services (ASAM 3), the use of OTP and Preferred OBOT providers, and the use of care coordination services at Preferred OBOTs.

- Screening, Brief Intervention, and Referral to Treatment (SBIRT/ASAM Level 0.5) is used to screen for SUD in any health care setting, including primary care settings. In 2019, 2,288 members had screenings for SUD, a 359% increase from 2017, with much of the increase occurring between 2018 and 2019.

- In 2019, 9,558 members received services through Preferred OBOT or OTPs . This is more than 2.6 times the number of members using Preferred OBOT and OTP services in 2018, and 15 times the number in 2017.

- Outpatient services (ASAM Level 1), such as psychotherapy or physician evaluations, are by far the most frequently used services. In 2019, about 34,000 members with a primary diagnosis of a SUD had psychotherapy or a physician evaluation, an 84% increase from 2018, and a 179% increase from 2017.

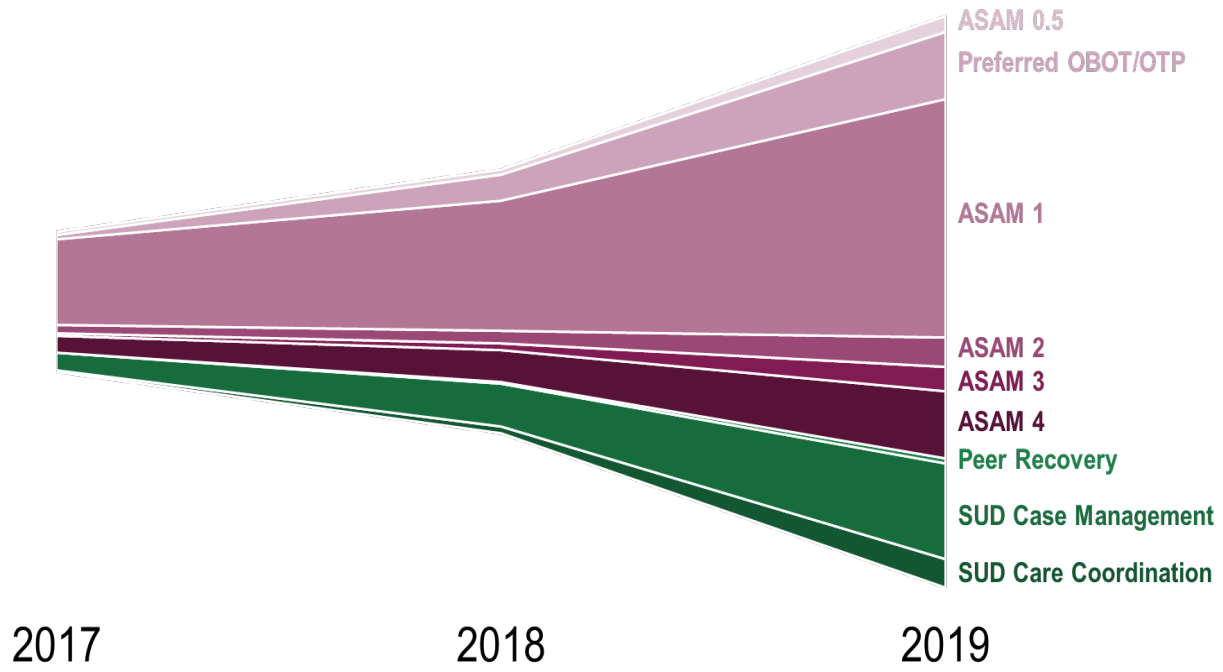
- ASAM Level 2 includes partial hospitalization and intensive outpatient services. In 2019, 4,096 members used these services, a 267% increase since 2017.

- ARTS added coverage for short-term residential treatment services (ASAM Level 3) and medically managed inpatient services (ASAM Level 4), which was made possible by a Section 1115 Demonstration Waiver for SUD that permits federal Medicaid payments for residential facilities with greater than 16 beds. Use of residential treatment services increased greatly in 2019, from 1,049 members who used such services in 2018 to 3,483 using residential treatment in 2019. Also, 9,569 members used medically managed inpatient services for SUD, more than double the number using these services in 2018.

- ARTS also covered new services, including peer recovery support services, case management and care coordination for substance use. In 2019, 4,048 members received care coordination services at Preferred OBOTs and OTP providers, almost quadruple the number receiving these services in 2018. Also, 13,604 members used substance use case management services, more than double the number from 2018. Although the use of peer recovery support services has increased greatly between 2017 and 2019, there is still relatively little billing for peer recovery support services.

Members who used ARTS services for substance use disorders from 2017 to 2019

	2017	2018	2019	Percentage change, 2017 to 2019
Members who had any ASAM level of service	17,120	25,923	46,520	172%
ASAM Level 0.5, Early Intervention	498	710	2,288	359%
Preferred Office-Based Opioid Treatment/ Outpatient Treatment Providers	630	3,686	9,558	1417%
ASAM Level 1, Outpatient Services	12,208	18,498	34,077	179%
ASAM Level 2, Intensive Outpatient/Partial Hospitalization	1,115	1,807	4,096	267%
ASAM Level 3, Residential/Inpatient Services	388	1,049	3,483	798%
ASAM Level 4, Medically Managed Intensive Inpatient Services	2,350	4,441	9,569	307%
Peer Recovery Support Services	67	320	775	1057%
Substance Use Case Management	2,483	6,038	13,604	448%
Substance Use Care Coordination at Preferred OBOTs and OTPs	209	1,024	4,048	1837%



Use of Medications for Opioid Use Disorders

Medications for opioid use disorder (MOUD) include the use of buprenorphine, methadone and naltrexone as part of evidence-based care. This method is considered the gold standard of care for treating OUD. In 2019, more than 23,000 members received MOUD treatment, more than double the number who received MOUD treatment in 2018. Overall, the number of Medicaid members receiving MOUD treatment has increased by 286% since 2016, the year prior to ARTS implementation.

Buprenorphine treatment was the most common form of MOUD treatment in 2019, accounting for 56% (about 13,000 members) of those receiving such treatment. However, methadone treatment has increased dramatically since the ARTS program began – from just 419 members receiving methadone treatment in 2016 to 7,945 members receiving treatment in 2019. The number of members treated by naltrexone also increased greatly between 2016 and 2019.

Medicaid members with OUD who received MOUD treatment

	2016	2017 (ARTS)	2018	2019 (Medicaid Expansion)	% Change 2016 to 2019
Members who received any MOUD	6,031	8,233	11,806	23,257	286%
Members who received buprenorphine treatment	4,972	6,089	7,212	13,099	163%
Members who received methadone treatment	419	1,325	3,544	7,945	1796%
Members who received naltrexone or other medication treatment	686	968	1,496	3,238	372%

Among base Medicaid members, MOUD treatment rates (that is, the percent of members with diagnosed OUD who receive MOUD treatment) have continued to increase, from 47.5% in 2018 to 53.1% in 2019. Overall, MOUD treatment rates among base eligibles have increased by 50% between 2016 and 2019.

The increase in MOUD treatment rates was driven primarily by increases in methadone treatment rates, from 2.4% of base Medicaid members with OUD in 2016 prior to ARTS to 18.5% by 2019 (a 655% increase). Although the number of members receiving buprenorphine increased steadily between 2016 and 2019, the percent of members with OUD receiving buprenorphine has remained steady at about 30% throughout the period. The percent of members with OUD receiving naltrexone treatment increased from 4% in 2016 to 7.1% in 2019.

MOUD treatment rates among base Medicaid members with OUD.[1]

Base Medicaid members with OUD receiving MOUD	2016	2017 (ARTS)	2018	2019 (Medicaid Expansion)	% Change 2016 to 2019
Percent who received any MOUD for opioid use disorder	35.2%	39.3%	47.5%	53.1%	50.7%
Percent received any buprenorphine treatment	29.0%	29.1%	29.0%	30.0%	3.3%
Percent received any methadone treatment	2.4%	6.3%	14.3%	18.5%	655.3%
Percent received naltrexone or other medication treatment	4.0%	4.6%	6.0%	7.1%	78.3%

[1]Members enrolled through Medicaid expansion are excluded to maintain comparability with prior years

Emergency Department Use Related to Substance Use Disorders

Previous ARTS evaluation reports have shown a substantial decrease in utilization of emergency departments (EDs) related to SUD.[29] A difference-in-difference analysis of acute hospital use for Medicaid members with SUD and OUD following ARTS implementation accounted for general changes in ED utilization, as well as changes in characteristics of members with SUD. [30] The results showed that following implementation of the ARTS benefit, the likelihood of having an ED visit decreased by 9.4 percentage points (a 21.1% relative decrease) among members with OUD, compared to 0.9 percentage points among beneficiaries with no SUD. Similarly, the likelihood of having an inpatient hospitalization declined among members with an OUD.

These early trends are reflected in the table below. Between 2016 and 2018, SUD and OUD-related ED visits decreased, while ED visits for all other conditions increased. OUD-related visits decreased the most – from 34.8 visits per 100 persons with OUD in 2016 to 25.9 visits in 2018 – a 25.5% decrease. By contrast, non-SUD related ED visits ***increased*** from 66.3 visits per 100 persons in 2016 to 69.6 visits in 2018, a 5% increase in utilization.

Number of emergency department visits per 100 base Medicaid members[1]

	2016	2017	2018	2019	Percentage change 2016-2019
All ED visits per 100 Medicaid members	66.2	63.3	69.3	74.2	12.1%
Non-SUD related ED visits per 100 Medicaid members	66.3	63.7	69.6	74.2	11.9%
SUD-related ED visits per 100 Medicaid members with SUD	62.9	52.2	60.1	73.5	16.9%
OUD-related ED visits per 100 Medicaid members with OUD	34.8	24.2	25.9	33.3	-4.3%

[1]Members enrolled in Medicaid expansion in 2019 are excluded in order to maintain comparability with prior years.

ED utilization increased sharply in 2019 overall as well as for members with SUD and OUD. SUD-related ED visits increased from 60.1 visits per 100 persons with SUD in 2018 to 73.5 visits, a 22% increase. OUD-related ED visits increased from 25.9 visits per 100 persons with OUD in 2018 to 33.3 visits, a 28.6% increase. Despite the increase between 2018 and 2019, there was still a 4.3% overall decrease in OUD-related ED visits between 2016 and 2019.

While the increase in SUD and OUD-related ED visits between 2018 and 2019 may be related in part to the more general increase in ED utilization, the trend is also consistent with the statewide and national increase in fatal drug overdoses and ED-related drug overdoses during this period. Between 2018 and

2019, the number of fatal drug overdoses increased by 9.4% in Virginia, from 1,486 deaths in 2018 to 1,626 deaths in 2019.[31] All drug-related overdoses (fatal and nonfatal) at EDs also increased, from 13,388 ED-related drug overdoses in 2018 to 14,542 overdoses in 2019.[32]

In sum, while the decrease in SUD and OUD-related ED visits following ARTS implementation indicated increased access to treatment, these early gains may have been offset by an apparent worsening of the prevalence of overdoses among all residents in Virginia in 2019, which is consistent with national trends.[33] It should also be noted that the impacts of COVID-19 on mental health and ED utilization is not shown in this report.

Drug overdoses in Virginia, 2016-2019

	2016	2017	2018	2019	Percentage change 2018-2019
All fatal drug overdoses[1]	1,428	1,537	1,486	1,626	9.4%
All ED-related drug overdoses (fatal and nonfatal) [2]	14,481	14,550	13,388	14,542	8.6%

[1]Virginia Department of Health. Fatal Drug Overdose Quarterly Report: 1rst quarter 2020
[2]Virginia Department of Health. Emergency Department Visits for Unintentional Drug Overdoses.

Transitions Following Emergency Department Visits and Stays in Residential Treatment

Follow-up within 30 Days of an ED Visit Related to SUD or OUD.

It is important that patients with an ED visit related to SUD either obtain treatment or continue with ongoing treatment in order to avoid overdoses, relapses, or return visits to EDs. EDs are also increasingly becoming key points of entry into the addiction treatment system, either by referring patients to residential treatment or other providers, or by starting patients on MOUD. Prior research has found that MOUD treatment initiated in the ED increased engagement in addiction treatment services within 30 days and reduced self-reported illicit drug use, compared to those who were not started on this treatment while at the hospital.[34] Some hospitals in the Commonwealth – such as Carilion Memorial Hospital in Roanoke – have started to initiate pharmacotherapy treatment in the ED for people presenting with an opioid overdose or withdrawal symptoms, and then connected patients to outpatient treatment.[35] Such programs – known as ED-Bridge programs – are also being heavily promoted in other states.[36]

Treatment within seven or 30 days of an ED visit is a commonly used threshold.[37] Among Virginia Medicaid members who had an ED visit with a principal diagnosis of a SUD, receipt of some type of ARTS addiction treatment services has increased since ARTS implementation. Use of pharmacotherapy within 30 days of an ED visit increased from 5.6% in 2017 after ARTS implementation, to 12.2% by 2019. Use of outpatient, residential treatment and medically managed inpatient treatment has also increased. Nevertheless, 41.1% of members with a SUD-related ED visit still had no treatment services within 30 days of the visit in 2019.

Follow-up after ED visit with a primary diagnosis of SUD[1]

	2017 (April 1 or after)	2018	2019
Total number of emergency department visits with a primary diagnosis of SUD	4,849	7,313	16,054
Service use within 30 days of the ED visit with primary Dx of SUD			
Pharmacotherapy	5.5%	7.5%	12.1%
Outpatient at OBOT, OTP or other provider	30.6%	43.6%	45.8%
Intensive outpatient or partial hospitalization	0.6%	2.0%	2.5%
Residential treatment	2.0%	4.3%	5.8%
Medically managed intensive inpatient	15.5%	19.4%	24.2%
Any of the above	41.0%	53.0%	58.5%

[1]Includes ED visits for which there were no overnight hospital stays, a principal diagnosis of SUD and the member did not disenroll from Medicaid in the month after the visit.

Trends in ARTS service utilization are similar for members with an ED visit with a primary diagnosis of OUD. Use of pharmacotherapy, outpatient, and residential treatment increased considerably between 2017 and 2019. Despite these gains, many members were still not receiving any ARTS services in the 30 days following ED visits in 2019 – only 26.9% received pharmacotherapy (MOUD treatment), while slightly more than half received any treatment services within 30 days of the visit.

Follow-up after ED visit with a primary diagnosis of OUD[1]

	2017 (April 1 or after)	2018	2019
Total number of emergency department visits with a primary diagnosis of OUD	760	945	2,081
Service use within 30 days of the ED visit with primary Dx of OUD			
MOUD treatment	10.9%	16.7%	26.9%
Outpatient at OBOT, OTP or other provider	26.7%	32.2%	40.9%
Intensive outpatient or partial hospitalization	1.0%	3.2%	3.5%
Residential treatment	2.5%	6.3%	5.7%
Medically managed intensive inpatient	11.8%	9.7%	12.6%
Any of the above	38.2%	44.1%	53.5%

[1]Includes ED visits for which there were no overnight hospital stays, a principal diagnosis of SUD and the member did not disenroll from Medicaid in the month after the visits.

Services Received Following Discharge from Residential Treatment Centers

For members with SUD who require short-term residential treatment (ASAM Levels 3) and inpatient acute care settings (ASAM Level 4), it is important that treatment continues following discharge from these facilities. Otherwise, lack of follow-up care may increase the risk of relapse and readmission to high-intensity service utilization, including acute hospital utilization.

Most members receive some type of treatment service within 30 days of being discharged from residential treatment services, and the percent of members receiving any treatment has increased since ARTS implementation. Among all residential stays involving SUD, most follow-up services are for some type of outpatient or intensive outpatient services. The percent receiving any treatment services increased from 68.6% in 2017 to 79.1% in 2019.

Among residential treatment stays for OUD, the percent receiving any treatment service increased from 77.1% in 2017 to 87.3% in 2019, with almost all of the increase occurring between 2018 and 2019. MOUD treatment rates within 30 days of discharge increased from 40.4% in 2017 to 64.1% in 2019.

Follow-up after discharge from residential treatment center (ASAM 3), primary diagnosis of any SUD[1]

	2017 (April 1 or after)	2018	2019
Total number of stays in a residential treatment center (ASAM 3) with primary Dx of SUD	590	2,399	5,996
Service use within 30 days of discharge from a treatment center (ASAM 3) with a primary diagnosis of any SUD			
Pharmacotherapy[1]	26.4%	33.8%	45.0%
Outpatient at OBOT, OTP or other provider	48.6%	38.3%	46.9%
Intensive outpatient or partial hospitalization	20.7%	33.3%	34.9%
Lower level of residential treatment	10.0%	12.6%	11.9%
Any of the above	68.6%	70.9%	79.1%

[1]Includes any pharmacotherapy obtained during the index ASAM 3 stay.

Follow-up after discharge from residential treatment center (ASAM 3), primary diagnosis of OUD[1]

	2017 (April 1 or after)	2018	2019
Total number of stays in a residential treatment center (ASAM 3) with primary Dx of OUD	223	1,050	2,692
Service use within 30 days of discharge from a treatment center (ASAM 3) with a primary diagnosis of OUD			
MOUD[1]	40.4%	47.0%	64.1%
Outpatient at OBOT, OTP or other provider	53.8%	41.5%	50.3%
Intensive outpatient or partial hospitalization	22.0%	32.2%	38.9%
Lower level of residential treatment	12.1%	13.5%	13.4%
Any of the above	77.1%	76.5%	87.3%

[1]Includes any MOUD obtained during the index ASAM 3 stay.

Treatment for OUD among Members Before and After Childbirth

Increase in postpartum Medicaid coverage following Medicaid expansion.

Most pregnant members enrolled in Medicaid have historically been covered through Medicaid due to their pregnancy, which limits eligibility to pregnant individuals with family incomes up to 133% of the federal poverty level. The FAMIS MOMS program uses Title XXI (Children's Health Insurance Program) to cover pregnant individuals who are not Medicaid eligible and whose family incomes are up to 205% of the federal poverty level. Eligibility for Medicaid coverage through these programs ends at the end of the month following the 60th day of the end of the pregnancy. Unless individuals can continue with their Medicaid coverage by qualifying for another eligibility group after this 60 day period, they will no longer be covered by Medicaid, thereby increasing the risk that they will lack access to care for health problems they experience during the postpartum period, including SUD. Recently passed state legislation will expand eligibility through 12 months following child birth in 2021.

Addressing the postpartum coverage gap is crucial for members with OUD, as both prior research and Virginia Medicaid claims data indicate that opioid-related drug overdoses are more likely to occur in the postpartum period, especially in the 6 to 12 month period after birth.[38] Among Virginia Medicaid members with live deliveries between July 2016 and June 2019, there were 54 opioid-related overdoses in the 12 months **prior to delivery**, with the highest rate of overdoses (5.4 per 10,000 Medicaid members who gave birth) occurring 10-12 months prior to birth. There were twice as many opioid-related overdoses in the **12 months after delivery**, with the highest rate occurring in the 10 to 12 month period after birth (5.2 overdoses per 10,000 members enrolled in full Medicaid coverage).

Medicaid enrollment and opioid-related overdoses in the 12 months before and after delivery: Medicaid menbers with live delivieries between July 2016 through June 2019.

	Members enrolled in full Medicaid coverage in the time period before and after live delivery[1]	Opioid-related overdoses (rate per 10,000 members enrolled in full Medicaid)
Time period prior to birth		
10-12 months prior to birth	36,288	21 (5.8)
7-9 months	64,081	12 (1.9)
4-6 months	76,947	12 (1.6)
3 months to birth	89,294	9 (1.0)
Time period after birth		
Birth to 3 months after birth	90,706	35 (3.9)
4-6 months	55,400	21 (3.8)
7-9 months	56,511	23 (4.1)
10-12 months	59,651	31 (5.2)

[1]Includes members with live deliveries who were enrolled in full Medicaid coverage in the specified time period before and after delivery.

Medicaid expansion addresses the postpartum coverage gap by allowing more members with family incomes up to 138% of poverty to continue with Medicaid coverage following the end of the pregnancy. Medicaid coverage for individuals in the prenatal period may also increase because Medicaid expansion allows more individuals to qualify for Medicaid coverage before they become pregnant.

The table below shows the average number of months that Medicaid members had full Medicaid coverage in the 12 months before birth, and the 12 months following birth of the child. It should be noted that estimates for 2019 – the year of Medicaid expansion – include only the first six months. The average number of months with Medicaid coverage in the prenatal period increased from 6.6 months in 2016 to 7 months in 2019. The median number of months of prenatal coverage remained steady at 8 months.

Number of months on full Medicaid coverage in the 12 months before and after delivery for the mother.

	2016[1]	2017	2018	2019[2]
All members with deliveries	18,724	36,691	35,640	16,332
Medicaid coverage in the 12 months before delivery				
Average number of months of coverage	6.6	6.7	6.8	7.0
Median number of months of coverage	8	8	8	8
Medicaid coverage in the 12 months after delivery				
Average number of months of coverage	6.0	6.2	7.4	7.9
Median number of months of coverage	4	4	9	12

Postpartum Medicaid coverage increased to a much greater extent, and most of this gain is likely due to increased eligibility through Medicaid expansion. The average number of months of Medicaid coverage in the year after birth increased from 6 months in 2016 to 7.9 months in 2019, with most of the increase occurring in 2018 and 2019. The increase is even greater when observing median number of months of postpartum Medicaid coverage – from 4 months in 2016 to 12 months in 2019. Further analysis showed that postpartum coverage increased steadily during the four quarters of 2018 – that is, postpartum coverage increased the most in the third and fourth quarter of 2018 as members' postpartum period increasingly overlapped with the beginning of Medicaid expansion (findings not shown).

Increase in OUD treatment in the year before and after delivery.

In 2017, the ARTS program expanded treatment services available to Medicaid members, including pregnant individuals covered by Medicaid in the prenatal and postpartum period. Medicaid expansion further increased access to treatment by increasing the time before and after birth that individuals are covered by Medicaid, especially in the postpartum period.

Diagnosed SUD, OUD, and MOUD treatment rates among individuals in the 12 months before and after childbirth.

	2016-2017 (18 months)	2017-2018 (24 months)	2018-2019 (18 months)
Number of members with live deliveries	55,415	72,331	51,972
Number with any SUD diagnosis			
12 months before delivery	3,529	5,037	3,873
12 months after delivery	2,849	4,215	3,354
Number with any OUD diagnosis			
12 months before delivery	1,234	1,678	1,260
12 months after delivery	1,283	1,896	1,485
MOUD treatment in 12 months prior to delivery			
Percent with any MOUD treatment	52.4%	57.0%	62.1%
Average number of months with any MOUD treatment before delivery	5.0	5.1	5.4
MOUD treatment in 12 months after delivery			
Percent with any MOUD treatment	69.5%	71.0%	74.5%
Average number of months with any MOUD treatment after delivery	5.9	6.4	7.0

MOUD treatment rates increased in the 2 year period before and after childbirth between 2016 and 2019 (two-year averages are computed due to small numbers of members with OUD diagnoses). Among members with an OUD diagnosis in the 12 months prior to delivery, MOUD treatment rates increased from 52.4% in 2016-17 to 62.1% in 2018-19. Among those receiving MOUD treatment, the average number of months with any MOUD in the 12 months prior to delivery increased from 5 months in 2016-17 to 5.4 months by 2018-19.

MOUD treatment rates are higher in the 12 months after delivery than the 12 months prior to delivery. Among members with an OUD diagnosis in the 12 months following delivery, the percent receiving MOUD treatment increased from 69.5% in 2016-17 to 74.5% in 2018-19. Among those receiving MOUD treatment, the number of months of MOUD treatment increased from 5.9 months in 2016-17 to 7 months by 2018-19.

Discontinuation of MOUD treatment following delivery has been identified as a potential risk factor for relapse and overdose,[39] although there is little research on the rate at which treatment is discontinued. Among members enrolled in Medicaid in 2018-19, most who had MOUD treatment in the 12 months prior to delivery continued with MOUD treatment at some point in the 12 months after delivery (85%), which was a slight increase from the 2016-17 period.

Continuation of MOUD treatment following delivery

	2016 - 2017	2018 - 2019
Percent of members with MOUD treatment in 12 months after delivery		
Among member with any OUD diagnosis in 12 months before delivery	55.7%	66.4%
Among members with MOUD treatment in 12 months before delivery	82.8%	85.0%

Neonatal Abstinence Syndrome

Opioid use and treatment with opioid agonist therapy during pregnancy can result in symptoms of drug withdrawal among newborns, known as neonatal abstinence syndrome (NAS), which can lead to additional neonatal health problems and greater use of high cost health services for newborns. NAS incidence among newborns covered by Medicaid has increased somewhat, from 2.6% of newborns diagnosed with NAS in the last six months of 2016 to 3.3% in the first six months of 2019.

Diagnoses of Neonatal Abstinence Syndrome among Medicaid covered newborns.

	2016 (July-December)	2017	2018	2019 (January-June)
All newborns	19,036	37,292	36,263	16,612
NAS diagnoses (percent)[1]	491 (2.6%)	1094 (2.9%)	1149 (3.2%)	543 (3.3%)
Of births with NAS diagnoses, percent to mothers with OUD diagnosis and MOUD treatment in 12 months prior to birth				
No SUD or OUD diagnosis of mother in prenatal period	36.9%	40.6%	36.0%	29.5%
No OUD diagnosis of mother in prenatal period	56.8%	61.7%	59.4%	50.0%
OUD diagnosis, no MOUD treatment	22.2%	17.6%	14.2%	12.2%
Had MOUD treatment	21.0%	20.7%	26.4%	37.8%

[1]Includes NAS diagnoses in the 12 months after birth.

Increased incidence of NAS among newborns is likely related to increases in MOUD treatment of the mother in the prenatal period, potentially as a result of greater screening of newborns among mothers known to be receiving treatment. Prior research has shown that NAS diagnosis is higher among newborns whose mothers were receiving MOUD treatment in the prenatal period compared to both mothers who had untreated OUD, as well as mothers with no OUD diagnosis.[40] Given this, it is difficult

to ascertain whether increases in MOUD treatment due to ARTS is related to less actual incidence of NAS.

Nevertheless, it is noteworthy that an increasing number of births with NAS diagnoses are to members who received some diagnosis or treatment for MOUD in the 12 months prior to delivery. In 2017, 61.7% of births with NAS diagnoses were to members who had no OUD diagnosis or treatment in the 12 months prior to delivery. By 2019, about half of births with NAS diagnosis were to members with no OUD diagnosis or treatment in the 12 months before delivery. Still, that half of births with NAS diagnosis are to members who have no recent OUD diagnostic or treatment history suggests that there are still substantial gaps in the diagnosis and treatment of pregnant members with OUD.

Quality of Treatment for Opioid Use Disorder

Treatment of OUD in the ARTS program was based on ASAM's National Practice Guidelines.[41] Along with guidelines for MOUD treatment, ASAM recommends a number of practices in combination with MOUD treatment, such as regular toxicology testing, assessment of and referral for psychosocial needs, testing for HIV and hepatitis C, and prescribing of naloxone. ASAM also recommends against the prescribing of opioid pain medications or benzodiazepine medications during MOUD treatment. Although ASAM does not specify a minimum length of MOUD treatment, six months of continuous treatment has frequently been used as a minimum threshold, although many clinicians recommend even longer treatment periods.

As mentioned previously, Virginia Medicaid is promoting and incentivizing high quality treatment through a new model of care, the Preferred OBOT programs, of which there are now over 150 throughout the Commonwealth. Similar standards of care are also being promoted at the 39 Outpatient Treatment Programs that dispense Methadone and buprenorphine for OUD treatment. Treatment of OUD may also be provided by other outpatient practitioners who are part of MCO networks, such as private psychiatric or primary care practices.

To examine quality of care, we identified episodes of treatment for OUD at outpatient providers. An outpatient "episode" of treatment is defined as a single continuous period of outpatient treatment for OUD, beginning with the first claim for MOUD or other outpatient treatment for OUD with no other claim in the prior 90 days, and ending with the last claim for outpatient or MOUD treatment after which there are no additional treatment claims for at least 90 days. Episodes were also required to meet two other criteria: (1) the member had continuous Medicaid enrollment in the 90 days before and after the index claim, with no more than a 14 day break; (2) there are at least two claims for ARTS services in the episode (that is, episodes comprised of only a single claim are excluded). Based on this definition, we identified all episodes of outpatient treatment that began between January 1, 2018 and June 30, 2019.

In the analysis of the episodes of outpatient treatment, we further distinguish between episodes that largely occurred at Preferred OBOT providers, OTP providers, and other outpatient providers of OUD treatment. These distinctions are made based on the treatment received in the first 60 days of treatment. Therefore, Preferred OBOT episodes include those in which claims during the first 60 days occurred at Preferred OBOT providers, and there were no claims for OTP providers. OTP episodes include those in which claims during the first 60 days include only those for Methadone treatment or other claims for OTP providers, and no other claims for Preferred OBOT or other outpatient treatment providers. Episodes at other outpatient treatment providers are defined based on claims for the outpatient treatment for OUD at providers other than Preferred OBOTs and OTPs during the first 60 days of treatment. As there is often switching between treatment providers among patients, it should be noted that these definitions are intended to reflect the primary source of treatment during the first 60 days, although treatment received during an episode may reflect that of multiple providers.

Overall length of treatment.

There were 8,053 outpatient treatment episodes for OUD that began between January 1, 2018 and June 30, 2019. About one-fourth of these episodes began at Preferred OBOT providers (25.6%), while 27.2% of episodes began at OTP providers. Almost half of outpatient episodes began at outpatient providers other than Preferred OBOTs and OTPs.

The median length of the episode was 93 days, or just over 3 months. However, there was wide variation in the length of the episode. While 25% of episodes lasted 38 days or less, 25% lasted 242 days or longer. Episodes at OTPs lasted substantially longer (median of 136 days) than episodes at Preferred OBOT providers (median of 78 days), while the median length at other outpatient providers was 92 days.

Episodes of outpatient care for OUD for episodes that began between 1/1/18 and 6/30/19.

		Primary source of treatment in first 60 days		
	All Episodes	Preferred OBOT[1]	OTP/ Methadone clinic[2]	Other outpatient[3]
Number of episodes[+]	**8,053**	**2,063**	**2,192**	**3,798**
Median number of days in treatment	93	78	136	92
25th and 75th percentile values for length of treatment	38-242	35-191	49-296	37-236
Percent with any MOUD treatment	71.5%	80.8%	89.1%	56.2%
Any Buprenorphine	48.4%	77.9%	13.5%	52.5%
Any Methadone	23.8%	2.2%	78.9%	3.7%
Any Naltrexone	1.4%	2.3%	0.5%	1.3%
Median number of months with any MOUD treatment, among those with MOUD	4	3	4	4
25th and 75th percentile values for months on MOUD treatment	2-9	2-6	2-9	2-10
Percent with any claim for Naloxone	17.3%	30.5%	6.4%	16.5%

[+]Episodes are defined as a continuous period of outpatient or MOUD treatment for OUD with at least 2 claims for ARTS services. The index claim for an episode reflects the first claim for outpatient or MOUD after a 90 day period or longer with no such treatment. The end of an episode is defined as the last claim for which there were no additional claims for outpatient or MOUD treatment for at least 90 days. Members are required to be continuously enrolled in Medicaid for 90 days before and after the index claim, with no longer than a 14 day break.

[1]Had Preferred OBOT, but no OTP provider claims in first 60 days.

[2]Had OTP provider claims and no Preferred OBOT or other outpatient provider claims, or had Methadone treatment only in first 60 days.

[3]Had no Preferred OBOT, OTP, or Methadone claims in first 60 days.

MOUD treatment

Among all outpatient episodes of treatment for OUD, 71.5% involved the use of some type of MOUD, including buprenorphine (48.4%), methadone (23.8%) or naltrexone (1.4%). MOUD treatment was more frequently used at Preferred OBOT and OTP providers (80.8% and 89.1%, respectively) compared to other outpatient treatment providers (56.2%). As expected, Methadone was much more frequently used at OTP providers compared to Buprenorphine, while Buprenorphine treatment (vs naltrexone) was used at Preferred OBOT and other outpatient providers.

Among those who received MOUD treatment, the median length of treatment was 4 months, based on the consecutive number of months during the episode in which there were any claims for any type of MOUD treatment. Length of MOUD treatment varied considerably, lasting only 2 months or less for 25% of episodes, and 9 months or longer for another 25 percent of episodes. Length of MOUD treatment was somewhat longer for those receiving MOUD treatment at OTP providers (median of 4 months) compared to those receiving treatment at Preferred OBOT (median of 3 months).

Naloxone was prescribed during 17.3% of episodes, with higher prescribing rates during Preferred OBOT episodes (30.5%) compared to OTP (6.4%) and other outpatient episodes (16.5%).

Use of counseling or psychotherapy for treatment of OUD.

Counseling or psychotherapy for the treatment of OUD was used for 61.5% of episodes. Counseling/psychotherapy was used more often at OTP providers (78.8%), compared to 67.2% of episodes at Preferred OBOT providers, and 48.3% for other outpatient providers. Among episodes involving counseling or psychotherapy, the median number of visits was 6, or about 2 visits per month based on the median length of treatment. The number of visits was somewhat lower at Preferred OBOT providers compared to OTP and other outpatient providers.

Claims for urine drug screens (UDS)

At least one claim for UDS occurred for 80.9% of episodes, with episodes at Preferred OBOTs having a higher percentage of any UDS claim (88.7%) compared to OTP (74.9%) and episodes at other outpatient providers (80.2%). Among episodes with a UDS claim, the median number of UDS claims was 6, averaging about 2 per month. The number of UDS claims (for episodes with any) was somewhat lower at other outpatient providers compare to Preferred OBOT and OTP.

Other services received during the episode

More than one-third of episodes (36.9%) involved at least one claim for care coordination services. Rates of care coordination were higher for episodes that began at Preferred OBOT and OTP providers (40.8% and 50.1%, respectively) than episodes that began at other outpatient providers (27.3%). Claims for peer recovery services were rare, involving only 2.9% of episodes.

Use of psychotherapy, counseling, urine drug screens, and other services

		Primary source of treatment in first 60 days		
	All Episodes	Preferred OBOT[1]	OTP/ Methadone clinic[2]	Other outpatient[3]
Number of episodes[+]	**8,053**	**2,063**	**2,192**	**3,798**
Percent with any claim for psychotherapy, counseling related to OUD	61.5%	67.2%	78.8%	48.3%
Median number of claims for psychotherapy or counseling, among those with at least one claim	6	5	7	7
Percent with any claim for UDS during episode	80.9%	88.7%	74.9%	80.2%
Median number of UDS claims during episode, among those with any those with at least one claim	6	6	6	5
Percent with any care coordination claim	36.9%	40.8%	50.1%	27.3%
Percent with any peer recovery support service claims	2.9%	6.6%	0.2%	2.4%

[+]Episodes are defined as a continuous period of outpatient or MOUD treatment for OUD with at least 2 claims for ARTS services. The index claim for an episode reflects the first claim for outpatient or MOUD after a 90 day period or longer with no such treatment. The end of an episode is defined as the last claim for which there were no additional claims for outpatient or MOUD treatment for at least 90 days. Members are required to be continuously enrolled in Medicaid for 90 days before and after the index claim, with no longer than a 14 day break.
[1]Had Preferred OBOT, but no OTP provider claims in first 60 days.
[2]Had OTP provider claims and no Preferred OBOT or other outpatient provider claims, or had Methadone treatment only in first 60 days.
[3]Had no Preferred OBOT, OTP, or Methadone claims in first 60 days.

Co-prescribing of opioids and benzodiazepines

Members received at least one prescription for opioid pain medications during 13.8% of episodes. However, opioid prescribing was considerably higher during episodes of treatment at OTP providers (20.8%) compared to 7.6% during episodes at Preferred OBOT providers and 13.1% at other outpatient providers. Higher opioid co-prescribing rates at OTP providers may reflect in part the fact that Methadone treatment is not reported on Virginia's Prescription Drug Monitoring Program (PDMP), a database that allows physicians and other providers to check for the use of controlled substances by their patients. Therefore, some practitioners may be prescribing opioids to patients without knowing that they are receiving Methadone treatment for OUD, combined with screening practices for opioid use by some OTPs. Benzodiazepines are prescribed for 13.1% of episodes, with higher prescribing rates (15.4%) occurring during episodes at other outpatient providers.

Co-prescribing of prescription opioids and benzodiazepines during an episode of treatment for OUD.

	All episodes	Primary source of treatment in first 60 days		
		Preferred OBOT[1]	OTP/Methadone clinic[2]	Other outpatient[3]
Number of episodes[+]	**8,053**	**2,063**	**2,192**	**3,798**
Percent with any opioid prescription during episode	13.8%	7.6%	20.8%	13.1%
Percent with any prescription for benzodiazepines during episode	13.1%	11.9%	10.3%	15.4%

[+]Episodes are defined as a continuous period of outpatient or MOUD treatment for OUD with at least 2 claims for ARTS services. The index claim for an episode reflects the first claim for outpatient or MOUD after a 90 day period or longer with no such treatment. The end of an episode is defined as the last claim for which there were no additional claims for outpatient or MOUD treatment for at least 90 days. Members are required to be continuously enrolled in Medicaid for 90 days before and after the index claim, with no longer than a 14 day break.

[1]Had Preferred OBOT, but no OTP provider claims in first 60 days.

[2]Had OTP provider claims and no Preferred OBOT or other outpatient provider claims, or had Methadone treatment only in first 60 days.

[3]Had no Preferred OBOT, OTP, or Methadone claims in first 60 days.

Comparison of OUD Prevalence and Treatment with States Participating in the Medicaid Outcomes Distributed Research Network (MODRN)

Comparisons with other states are important for understanding whether changes in treatment for SUD and OUD observed for Virginia may reflect more general trends nationally, as well as how Virginia Medicaid compares with other states on measures of treatment utilization and quality. Cross-state comparisons of service utilization using administrative claims data have historically been challenging, since definitions of services, billing codes, and data structures often differ across state Medicaid agencies.

To enhance cross-state comparisons, VCU and DMAS participate in the MODRN, a collaboration of state-university partnerships through AcademyHealth established for the purpose of comparing state Medicaid programs on key measures of SUD and OUD treatment access and quality of care based on a common data model.[42] Funded by a grant from the National Institute on Drug Abuse, MODRN currently includes 13 states (DE, KY, MD, MA, ME, MI, NC, OH, PA, UT, VA, WV, WI). The analysis below includes results from 11 states in the MODRN (including Virginia) that account for over 16 million Medicaid enrollees (about one-fourth of enrollees nationally) as well as 6 of the 10 states with the highest drug overdose rates.

In this chapter, we compare Virginia Medicaid members on selected measures of OUD prevalence, MOUD treatment, and MOUD quality of care developed through the MODRN. Estimates for Virginia may differ to some extent from comparable measures reported in previous sections of this report due to differences in the definition of measures and sample inclusion criteria. For example, the MODRN analysis is restricted to members ages 12-64, with 6 months or more of continuous enrollment, and excludes dual Medicare/Medicaid eligibles.

Diagnosed prevalence of MOUD.

Diagnosed prevalence of OUD is considerably lower among Virginia Medicaid members compared to members in other MODRN states. Some of this difference may reflect the somewhat higher rate of prevalence among members enrolled in Medicaid expansion: most other states in MODRN had expanded Medicaid prior to 2019. The difference may also reflect the high overdose and prevalence rates in many of the MODRN states, relative to Virginia.[43] Both Virginia and the other MODRN states observed small increases in diagnosed prevalence of OUD between 2016 and 2018.

Diagnosed prevalence of OUD among Virginia Medicaid members ages 12-64 compared to Medicaid members in other MODRN states.

	2016	2017	2018	Percentage point change 2016 - 2018
Percent of members with a diagnosis of OUD				
Virginia	1.5%	1.9%	2.2%	+0.7
Other MODRN states	4.7%	5.0%	5.2%	+0.5

[1]Includes members with OUD diagnosis.

There are some notable differences between Virginia and other MODRN states in the characteristics of members with an OUD diagnosis. Virginia Medicaid members with an OUD are somewhat older, much more likely to be female compared to males, more likely to be black compare to white, and somewhat more likely to be living in rural areas compared to other MODRN states. While over half of members with an OUD in other MODRN states are enrolled through Medicaid expansion, Virginia Medicaid members were much more likely to be enrolled through adult disabled and non-disabled categories in the year prior to Medicaid expansion.

Characteristics of Medicaid members with an OUD diagnosis in 2018

	Percent of members with OUD diagnosis	
	Virginia	Other MODRN states
All Members	2.2%	5.2%
Age Group		
12-20	1.2%	1.5%
21-34	35.1%	41.9%
35-44	28.7%	29.4%
45-54	19.3%	16.9%
55-64	15.7%	10.3%
Gender		
Female	66.3%	51.2%
Male	33.7%	48.8%
Race/Ethnicity		
Non-Hispanic White	79.1%	76.2%
Non-Hispanic Black	19.4%	13.8%
Hispanic	0.1%	2.9%
Other/Unknown	1.4%	7.1%
Eligibility Group		
Pregnant	5.1%	5.6%
Youth	1.1%	1.4%
Disabled Adults	41.1%	17.1%
Non-Disabled	52.7%	24.6%
Medicaid Expansion Adults	Not applicable	51.3%
Living Area		
Urban	69.0%	73.3%
Rural	31.0%	26.4%
Missing Urban/Rural Category	0%	0.2%

MOUD treatment rate. MOUD treatment rates increased to a much greater extent between 2016 and 2018 among Virginia Medicaid members compared to members in other MODRN states. Prior to ARTS implementation in 2016, MOUD treatment rates were substantially lower in Virginia (33.6%) compared to other MODRN states (48.7%). MOUD treatment rates increased in both Virginia and other MODRN states between 2016 and 2018, but to a much greater extent in Virginia following implementation of the ARTS program. By 2018, MOUD treatment rates among Virginia Medicaid members were comparable to members in other MODRN states.

Rate of MOUD treatment among Virginia Medicaid members ages 12-64 compared to Medicaid members in other MODRN states.

	2016	2017	2018	Percentage point change 2016 - 2018
MOUD treatment rate[1]				
Virginia	33.6%	44.1%	55.0%	+21.4
Other MODRN states	48.7%	52.9%	57.3%	+8.6

[1]Includes members with OUD diagnosis.

Quality of MOUD treatment. About half of Virginia Medicaid members receiving MOUD treatment in 2017-18 stayed on treatment continuously for at least 180 days or longer, which is slightly lower compared to members in other MODRN states. However, the percentage of Virginia Medicaid members with 180 day continuity of MOUD treatment decreased during the study period, from 60.7% in 2015-16 to 52.6% in 2017-2018. The decrease may be related to the large increase in the number of Virginia Medicaid members receiving MOUD treatment during this period (as shown above), as well as the increase in providers who are offering and providing MOUD treatment to Medicaid members. Rates of continuity of MOUD treatment could be lower for those patients who are relatively new to MOUD treatment, for example, if their addiction is less severe compared to utilizers of MOUD treatment in prior years.

Conversely, the percent of Virginia Medicaid members receiving counseling services during MOUD treatment increased by 32 percentage points between 2015-16 and 2017-18, compared to a 6.3 percentage point increase among members in other MODRN states. Co-prescribing for opioid pain medications and benzodiazepines have decreased in recent years among both Virginia Medicaid members and members in other states who are receiving MOUD treatment, although co-prescribing rates for benzodiazepines are still higher in Virginia compared to the other MODRN states.

Quality of treatment among Virginia Medicaid members receiving MOUD treatment, compared to Medicaid members in other MODRN states.

	2015 – 2016[1]	2016 – 2017[1]	2017 – 2018[1]	Percentage point change across 3 year period
Continuous MOUD treatment for 180 days or longer				
Virginia	60.7%	56.1%	52.6%	-8.1
Other states	56.1%	55.9%	56.0%	-0.1
Any urine drug screens				
Virginia	78.8%	83.3%	85.3%	+6.5
Other states	84.7%	86.2%	86.7%	+2.0
Any counseling services				
Virginia	43.7%	56.9%	75.8%	+32.1
Other states	78.2%	83.2%	84.5%	+6.3
Any prescription for opioids				
Virginia	50.7%	44.8%	38.2%	-12.5
Other states	50.7%	44.5%	35.4%	-15.3
Any prescriptions for benzodiazepines				
Virginia	46.1%	40.0%	30.8%	-15.3
Other states	28.5%	24.9%	21.5%	-7.0

[1]Reflects two year averages

Patient Experience With ARTS Services

Positive experiences and interactions with treatment providers among patients may have important implications for the quality of care they receive, including treatment adherence and treatment outcomes.[44] Use of survey tools to assess patient experience – such as the Consumer Assessment of Health Plans Survey (CAHPS) – have been used across a variety of medical settings, and is an important component of several value-based payment initiatives by the Centers for Medicare and Medicaid Services. [45]

The ARTS member survey included a number of questions assessing the patient experience with ARTS treatment services, adapted from a version of the CAHPS designed to assess behavioral treatment providers.[46] We compare patient experiences based on members' use of Preferred OBOT, OTP, and other outpatient treatment providers, identified based on Medicaid claims data at the time of survey sampling.

Selected results from the analysis of survey data are presented in this chapter. Results indicate that the majority of survey respondents have positive experiences with the treatment they are receiving. While patient experience is roughly similar for members using Preferred OBOT, OTP, and other outpatient providers, experiences differ considerably based on co-occurring health factors.

Timeliness, communication, and trust with providers

	Able to see someone as soon as you wanted, if needed[1]	Explains things in a way you could understand[1]	Shows respect for what you had to say[1]	Made you feel safe[1]
Total Responses	508	742	743	746
Responded Affirmatively	67.5%	83.6%	84.5%	90.1%
Type of provider				
Preferred OBOT	68.6%	85.6%[a]	87.7%[a]	90.3%[a]
OTP	65.9%	79.0%	81.1%	90.3%
Other	70.5%	88.8%	87.4%	93.5%

Source: ARTS member survey. [a]Group differences for measure are statistically significant at .05 level based on chi square tests. [1]Estimates reflect the percentage of sample persons who responded "usually" or "always" to each question, versus "never" or "sometimes".

Timeliness of care. About two-thirds of survey respondents reported that there was a time in the past 12 months when they needed treatment or counseling for their substance use (findings not shown). Among these, 67.5% reported that they were usually or always able to see someone as soon as they wanted. Timeliness of care did not vary by treatment setting.

Communication and trust. Most survey respondents reported strong communication with and trust in their providers, including 83.6% who reported that the provider usually or always explained things in a way that they could understand; 84.5% reported that the provider usually or always showed respect for what they had to say; and 90.1% reported that they usually or always felt safe with the people they went to for counseling or treatment. The level of communication and trust was high across all three provider types, although members using OTP services had somewhat lower levels on two of the three measures compared to OBOT and other outpatient providers.

Patient involvement with treatment. Survey respondents also reported a high level of involvement with their treatment, including 84.8% reporting that they were usually or always involved with their treatment as much as they wanted; 73.7% reported that they were given information about different types of counseling or treatment available; and 72.1% reported that they felt able to refuse a specific type of medicine or treatment. There were small differences in patient involvement by provider type.

Patient involvement in treatment, discontinuation of treatment

	Involved in treatment as much as you wanted[1]	Provided information about different treatment options[2]	Felt able to refuse a specific type of medicine or treatment[2]	Stopped treatment against advice of doctor[2]
Total Responses	741	749	749	734
Responded Affirmatively	84.8%	73.7%	72.1%	16.6%
Type of provider				
Preferred OBOT	86.9%[a]	72.8%	70.2%[a]	17.0%[a]
OTP	83.3%	72.5%	72.2%	11.5%
Other	88.3%	79.2%	78.0%	19.7%

Source: ARTS member survey. [a]Group differences for measure are statistically significant at .05 level based on chi square tests.
[1]Estimates reflect the percentage of sample persons who responded "usually" or "always" to the question.
[2]Estimates reflect the percentage of sample persons who responded "yes" to the question.

Discontinuation of treatment. About 17% of members using ARTS services reported that they had stopped their treatment in the past 12 months against the advice of their doctor or counselor. Survey respondents who were treated at OTP facilities were less likely to report stopping treatment (11.5%) compared to respondents who received treatment at Preferred OBOTs or other outpatient providers.

Survey respondents who had more positive treatment experiences with treatment providers were less likely to report discontinuing their treatment, compared to respondents who reported fewer positive experiences with treatment. To assess this, we summed responses to the six items relating to communication, trust, and patient involvement with treatment. Respondents who agreed with the statements on all six items were considered to have the most positive experiences with treatment providers, while those who agreed with only a few or no items had the least positive experience.

Respondents who had the least favorable experience with treatment providers (agreed on 3 or fewer items) were by far the most likely to stop treatment (32.4%) compared to those with the most positive experiences with treatment providers (agreed on all six items) (12.5%).

Discontinuation of treatment by extent of positive experiences with treatment providers

	Number of survey respondents	Percent who stopped treatment against the advice of their doctor
Total	708	16.6%
Most positive experience with providers (agreed on all 6 patient experience items)	353	12.5%
Moderately positive experience with providers (agreed on 4-5 patient experience items)	250	16.0%
Least positive experience with providers (agreed on 3 items or fewer)	105	32.4%

Source: ARTS member survey. Summary measure reflects the number of positive responses on (1) Explains things in a way you can understand; (2) Shows respect for what you had to say; (3) made you feel safe; (4) Involved in treatment as much as you wanted; (5) Provided information on different treatment options; (6) Felt able to refuse a specific type of treatment.

Survey respondents provided a variety of other reasons for stopping treatment, including the lack of effectiveness of treatment, convenience of being able to get to treatment providers, potential stigma associated with treatment (i.e. felt nervous or uncomfortable about treatment), and issues related to coverage and approval for treatment from their Medicaid health plans. However, no single reason stood out as to why members discontinued treatment.

Difference in patient experience by co-occurring health factors

Respondents with co-occurring health problems tended to have less favorable experiences with treatment and are more likely to discontinue their treatment. For example, respondents who reported that their health was "fair or poor" were almost twice as likely to report having discontinued with their treatment (20.8%) compared to members who reported excellent or good health (10.6%). Almost one-fourth of members with co-occurring psychological distress (23.2%) reported discontinuing their treatment, compared to only 4.2% of members who had no or mild psychological distress.[iv] Also, polysubstance users – survey respondents who reported using two or more addictive substances in the past year – were much more likely to report discontinuing treatment (23.0%) compared to those using one or no substances (8%).

[iv] The measure of psychological distress is based on the Kessler six item measure, which results in a score between 0 and 24. Consistent with recommendations and prior research, a score of 13 or higher is considered to indicate serious psychological distress.

Discontinuation of treatment by co-occurring health factors

	Number of survey respondents	Percent who stopped treatment against the advice of their doctor
Total	734	16.6
Polysubstance user[1]		
Yes	406	23.9%[a]
No	312	8.0%
General health status		
Excellent or very good	132	10.6%[a]
Good	290	16.6%
Fair or poor	289	20.8%
Serious psychological distress[2]		
Yes	461	23.2%[a]
No	240	4.2%

Source: ARTS member survey. [a]Group differences for measure are statistically significant at .05 level based on chi square tests. [1]Used two or more substances in the past year, including alcohol. [2]Based on a score of 13 or higher from the six item Kessler index of psychological distress.

Changes to personal and social life related to treatment

The ARTS member survey also assessed changes to respondent's personal, social, and employment circumstances as a result of having received treatment. These questions were adapted from a questionnaire used to assess substance use treatment services among providers participating in the Centers of Excellence program in Pennsylvania.[47] Most respondents reported positive impacts of treatment on a number of aspects of their lives. Among these findings (based on agreeing or strongly agreeing with the following statements):

- 82% are more confident about not being dependent on drugs or alcohol
- 80% are able to deal more effectively with daily problems
- 73% are better able to deal with a crisis
- 81% are getting along better with their family
- 68% perform better in social situations
- 63% report that their housing situation has improved
- 43% report that their employment situation has improved

There were few differences in respondent assessments of the impact of treatment by provider type. However, as with patient experience, treatment impact varied considerably by other respondent health factors. For example, among respondents who reported fair or poor health, 50.5% reported that their housing situation had improved, compared to 78.6% of those in excellent or very good health. Improvements in housing were lower among those with serious psychological distress (51.8%) compared

to those with no or mild distress (83.3%). Polysubstance users experienced less improvement in their housing (56.8%) compared to those who used none or one substance (70.2%).

Changes to personal life as a result of treatment - Percent who agree or strongly agree about the effects of treatment on their lives

	More confident about not being dependent on drugs or alcohol	Housing situation has improved	Employment situation has improved
Total Responses	730	734	699
Responded Affirmatively	81.6%	62.8%	42.8%
Type of provider			
OBOT	81.4%	62.8%	46.1%
OTP	83.5%	64.6%	39.9%
Other	81.9%	61.3%	42.4%
Polysubstance user[1]			
Yes	76.3%[a]	56.8%[a]	36.5%[a]
No	88.8%	70.9%	51.6%
General health status			
Excellent or very good	92.4%[a]	78.6%[a]	60.8%[a]
Good	85.8%	66.7%	50.5%
Fair or poor	72.6%	50.5%	25.1%
Serious psychological distress[2]			
Yes	75.9%[a]	51.8%[a]	30.3%[a]
No	94.5%	83.3%	66.8%

Source: ARTS member survey. [a]Group differences for measure are statistically significant at .05 level based on chi square tests. [1]Used two or more substances in the past year, including alcohol. [2]Based on a score of 13 or higher from the six item Kessler index of psychological distress.

Health Equity and Disparities in Substance Use Treatment Services among Medicaid Members

Protests against racial discrimination, promoting economic and social justice, and the persistent and often wide disparities that have been observed in health and health care by race/ethnicity, income, region, and other factors have intensified calls for the promotion of health equity as a major goal of health policy. Health equity refers to the goal "that everyone has a fair and just opportunity to be as healthy as possible."[48] "Health equity means reducing and ultimately eliminating disparities in health and its determinants that adversely affect excluded or marginalized groups."[49]

Prevalence of illicit drug dependence or abuse in Virginia, ages 12 and older

	Percent with illicit drug dependence or abuse in past year
Virginians, ages 12 and older	2.5%
Race/ethnicity	
White, non-Hispanic	2.7%
Black, non-Hispanic	4.0%
Hispanic	1.5%
Other	0.8%
Income relative to federal poverty level (FPL)	
<100% FPL	4.4%
100-200% FPL	2.6%
>200% FPL	2.1%
Education	
Less than H.S.	5.9%
H.S. graduate	2.8%
Some college	3.0%
College degree or higher	0.8%
Employment	
Full-time	2.3%
Part-time	2.5%
Unemployed	7.3%
Not in labor force	2.2%

Source: National Survey of Drug Use and Health, 2017-18

Differences among individuals and communities in economic and educational opportunities, health care access, food and housing stability, and public safety likely contributes to increased incidence of SUD.[50] For example, rates of illicit drug dependence or abuse among Virginians are higher among those who are unemployed and have less than a high school education, compared to adults who are employed full time and have a college education.

Illicit drug dependence or abuse is also higher among those with family incomes below the poverty level relative to those with incomes above 200% of poverty. Black members have a slightly higher rate of illicit drug dependence or abuse compared to White members, although the difference is not statistically significant.

However, these same factors may also lead to widely different outcomes among individuals who experience SUD. As noted earlier, there are wide disparities in treatment rates for SUD and OUD among Medicaid members by race/ethnicity. Among members with any SUD diagnosis, 56% of White members received some type of treatment during 2019, compared to 40% of Black members, and 45% among other racial/ethnic groups. Among members with any OUD diagnosis, 61% of White members received MOUD treatment, compared to 48% of Black members and 54% among other racial/ethnic groups.

In this chapter, we explore in greater detail some of the possible sources of racial/ethnic disparities in treatment rates, including availability of treatment providers, differences in initiation and engagement with treatment, patient experiences, and quality of treatment. In addition, we examine the role of social factors in members' experience with treatment that may or may not be correlated with racial/ethnic disparities, including the high rate of housing and food insecurity, unemployment, social isolation, and involvement with the criminal justice system.

Differences in access to ARTS treatment providers among Virginia counties

Despite the expansion of treatment providers since implementation of the ARTS program, the distribution of treatment providers across Virginia counties and other localities is uneven. More than two-thirds of counties have at least one buprenorphine-waivered prescriber, one out of 5 counties has an OTP provider, and 46% of counties have an Preferred OBOT provider.

Not surprisingly, availability of treatment providers tends to vary the most by rural/urban areas. Counties in large metropolitan areas (1 million or people) are more likely to have waivered prescribers (79%), OTP providers (35%) and Preferred OBOT providers (54%) compared to rural areas. However, the number of waivered prescribers relative to the population tends to be higher in rural areas (16.2 prescribers per 100,000 people) compared to large metro areas (10.8 prescribers per 100,000), indicating that urban areas potentially have greater problems with treatment capacity.

There are differences in the availability of treatment providers across counties in metropolitan areas, but not necessarily along the lines that would suggest income and racial/ethnic-related disparities in access. Metropolitan counties with the lowest per capita income are more likely to have a waivered prescriber (92%), a higher relative number of waivered prescribers (19 per 100,000 people), and an OBOT provider (65%) relative to counties with the highest per capita income.

Availability of addiction treatment providers in Virginia counties

	Percent with any Buprenorphine waivered prescriber	Total waivered prescribers per 100,000 people	Percent of counties with any OTP	Percent of counties with any Preferred OBOT provider
All localities in VA	68%	13.9	21%	46%
Large metropolitan	79%	10.8	35%	54%
Small metropolitan	70%	14.9	24%	59%
Rural	56%	16.2	4%	27%
Per capita income (metro only)[1]				
< $22,668	92%	19.0	33%	65%
$22,668 - $32,648	65%	10.9	28%	52%
>$32,648	83%	12.6	33%	56%
Share of people in county who are Black (metro only)[1]				
<6.3%	76%	13.8	18%	58%
6.3% - 30%	71%	10.0	25%	53%
>30%	85%	18.1	55%	60%

[1]Categories based on quartile values of per capita income and percent black in the county.

Similarly, metropolitan areas that have the highest share of Black residents have a higher number of waivered prescribers (18.1 per 100,000 people) compared to counties with the lowest share of Black residents (13.8 per 100,000). Localities with the highest share of Black members are much more likely to have an OTP provider (55%) compared to localities with the smallest share of Black members (18%). It is possible that income and racial disparities in access to treatment providers are more localized (that is, greater disparities within counties), and that lower income people and racial/ethnic minorities may experience greater transportation barriers or have to travel longer distances within counties to treatment providers.

Initiation and engagement with treatment

The rate at which individuals initiate and engage with treatment (IET), once they are diagnosed, was developed by the National Center for Quality Assurance (NCQA) and is included as a core measure for the Medicaid program.[51] The measure is useful for understanding disparities in members gaining entry to the system after receiving a diagnosis and engaging with timely treatment. The measure was developed as part of the multi-state Medicaid Outcomes Distributed Research Network (MODRN) (See Appendix), of which VCU and DMAS are participating members.

Virginia Medicaid members who initiated and engaged with treatment for SUD and OUD

	Percent initiated treatment	Percent initiated and engaged with treatment
All members receiving treatment for SUD	43.5%	13.5%
Race		
White	44.0%	16.6%
Black	42.9%	8.3%
Living Area		
Urban	43.9%	12.3%
Rural	42.5%	17.1%
All members receiving treatment for OUD	48.8%	26.1%
Race		
White	48.8%	28.2%
Black	48.8%	19.3%
Living Area		
Urban	50.5%	24.7%
Rural	45.3%	28.9%

Source: Medicaid Outcomes Distributed Research Network

Overall, about 44% of members initiated treatment within 14 days of a SUD diagnosis in 2018, a rate that is similar for Black members and White members, as well as for members living in urban and rural areas.

However, Black members are less likely to initiate *and engage* with treatment following an initial diagnosis, meaning they had two or more additional treatment services or MOUD within 34 days of the initiation visit. Among Black members with any SUD diagnosis, only 8% initiated and engaged with treatment, compared to 17% of White members. Members in rural areas are also more likely to initiate and engage with treatment (17.1%) compared to members in urban areas (12.3%). Differences by race and rural/urban residence in rates of initiation and engagement with treatment for OUD services were similar to overall SUD.

While rates of initiation were identical between Black members and White members, 19% of Black members with OUD initiated and engaged with treatment, compared to 28% of White members. Urban residents were somewhat more likely to initiate OUD treatment compared to rural residents, while the latter were somewhat more likely to initiate and engage with treatment than urban residents.

Racial and ethnic disparities in engaging with treatment may be driven by a number of factors, such as distance or transportation barriers to treatment providers, the ability to get appointments at a time that is convenient for patients, the quality of care received, and discrimination or biases against racial/ethnic minorities that may affect trust, communication, and confidence in the treatment providers.

Quality of outpatient treatment services

Consistent with lower rates of engagement with treatment, episodes of outpatient treatment for OUD tend to be shorter for Black members (median of 86 days) compared to White members (99 days). MOUD treatment rates among Black members during an outpatient episode are only slightly (69.7%) compared to White members (72.0%), with Black members also having somewhat shorter duration of MOUD treatment compared to White members. Rates of psychotherapy or counseling services used during an episode of treatment were slightly higher for Black members compared to White members, although claims for UDS and care coordination were much lower for Black members. Co-prescribing of opioid pain medications was slightly higher for Black members, while co-prescribing of benzodiazepines was higher for White members (14.2%) as for Black members (8.5%).

Characteristics of episodes of outpatient treatment for OUD

	White members	Black members
Number of outpatient episodes of OUD treatment	**6,431**	**1,490**
Provider type in first 60 days of treatment		
OBOT[1]	24.7%	29.1%
OTP/Methadone[2]	24.9%	37.8%
Other outpatient provider[3]	50.4%	33.2%
Median number of days in treatment	99	86
25th and 75th percentile	42-248	34-217
MOUD treatment		
Percent with any MOUD	72.0%	69.7%
Any Buprenorphine	51.0%	36.7%
Any Methadone	21.7%	33.6%
Any naltrexone	1.4%	1.2%
Median number of months with MOUD treatment, for those with any	4	3
25th and 75th percentile	2-9	2-8
Number with any claim for naloxone	18.1%	14.4%

	White members	Black members
Other treatment services		
Percent with any claim for psychotherapy or counseling (OUD as primary DX)	61.2%	63.1%
Median number of claims for psychotherapy or counseling, for those with any	7	5
Percent with any claim for UDS	83.4%	70.7%
Median number of UDS claims, for those with any	6	5
Percent with any care coordination claim	40.0%	24.6%
Co-prescribing		
Percent with any opioid prescription	13.2%	16.2%
Percent with any prescription for benzodiazepine	14.2%	8.5%

[1]Based on NPI of provider – had no OTP provider claims in first 60 days. [2]Based on NPI of provider – had no OBOT or other ASAM 1 provider claims in first 60 days or Methadone treatment only in first 60 days. [3]Had no OBOT or OTP claims in first 60 days

Race, social factors, and the patient experience with treatment

Disparities in SUD treatment by race/ethnicity may be related in part to different social and economic circumstances between White and Black Medicaid members. Findings from the ARTS Member Survey show that 16.2% of members receiving treatment reported not having housing or were concerned about losing housing (housing insecure), 69.5% reported food insecurity (not able to afford enough food to last) 35.1% were unemployed, and 9% having no social support (no one they could count on if they had serious problems). In addition, 17% of ARTS survey respondents reported that they had been in jail or prison for at least one night during the past 12 months.

Black Medicaid members were twice as likely as White members to report housing insecurity (27% of Black members were housing insecure compared to 14% for White members). An equal percentage of Black members and White members reported they had stayed overnight or longer in jail or prison during the past 12 months (17%). Black members also lacked social support to a greater extent than White members: 14% of Black members reported that they had no one they could count on if they had serious problems (compared to 8% for White members), although a higher percentage of Black members reported 3 or more close contacts compared to White members.

Differences in social factors, by race.

	All Respondents	Non-Hispanic White	Non-Hispanic Black
Housing insecure (p<.001)			
Yes	16.2%	13.5%	26.7%
No	83.8%	86.5%	73.3%
Food insecure (p=0.655)			
Yes	69.5%	69.2%	70.8%
No	30.5%	30.8%	29.2%
Employment status (p=0.556)			
Employed	23.8%	24.2%	22.4%
Unemployed	35.1%	34.2%	38.3%
Not in labor force	41.1%	41.5%	39.3%
Social support (p<0.001)			
None	9.0%	7.9%	14.2%
1 or 2	50.7%	54.9%	39.3%
3 or more	38.5%	37.2%	46.5%
Prison/jail stay (p=0.853)			
Yes	17.0%	17.1%	16.6%
No	83.0%	82.9%	83.4%

Source: ARTS member survey. p values reflect the results of chi-square tests of differences in characteristics between White members and Black members.

Patient experiences with treatment vary to some extent by race. Compared to White members, Black members receiving treatment were **less likely to agree** that; (1) the treatment provider showed respect for what they had to say; (2) made them feel safe; and (3) involved them in treatment as much as they wanted (see table on following page). The largest disparity was that fewer Black members felt able to refuse a specific treatment (59%) compared to White members (76%). Perhaps because of this, fewer Black members reported that they discontinued treatment against the advice of doctors (12%) compared to White members (17%), although the difference was not statistically significant. In sum, there is some indication that Black members are somewhat less satisfied than White members with the treatment they are receiving, but less likely to perceive that they have other options.

Social factors are more strongly associated with patient experiences than race/ethnicity. For example, respondents with insecure housing were twice as likely to report having discontinued treatment (28%) compared to those with housing security (14%). Similarly, those who lacked food security and had been incarcerated in the past year were more likely to discontinue treatment, relative to those with food security and had not been in jail or prison.

Experiences and perceptions about addiction treatment providers, by race/ethnicity and social factors.

	Able to see someone as soon as you wanted, if needed[1]	Explains things in a way you could understand	Shows respect for what you had to say	Made you feel safe	Involved in treatment as much as you wanted	Provided information about different treatment options	Felt able to refuse a specific type of medicine or treatment	Stopped treatment against advice of doctor
Race/ethnicity								
White, non-Hispanic	69.9%	85.9%	86.3%[a]	91.7%[a]	87.7%[a]	74.5%	76.1%[a]	17.4%
Black, non-Hispanic	61.4%	79.7%	83.8%	86.6%	78.2%	73.2%	58.7%	12.1%
Housing insecure								
Yes	63.9%	80.5%	82.7%	85.7%[a]	78.2%[a]	69.9%	67.7%	27.5%[a]
No	68.5%	85.1%	85.4%	91.5%	86.9%	74.9%	73.2%	14.2%
Food insecure								
Yes	62.9%[a]	80.3%[a]	81.9%[a]	88.7%[a]	81.7%[a]	71.8%[a]	71.7%	18.7%[a]
No	80.8%	92.1%	91.1%	93.6%	93.1%	79.5%	74.5%	11.0%
Employment status								
Employed	71.4%	85.8%	86.2%	94.7%[a]	86.8%	75.5%	80.7%[a]	13.5%
Unemployed	63.4%	80.9%	83.6%	87.8%	81.5%	74.4%	66.0%	18.9%
Not in LF	69.5%	88.3%	87.9%	91.1%	87.2%	73.8%	73.6%	16.9%
Social support								
None	44.2%[a]	64.9%[a]	67.5%[a]	70.5%[a]	61.5%[a]	50.0%[a]	62.3%	22.4%
1 or 2	66.2%	84.0%	83.4%	91.8%	86.6%	75.1%	72.8%	17.6%
3 or more	76.7%	88.8%	92.2%	94.4%	89.5%	78.8%	74.6%	14.2%
Jail/prison in past year								
Yes	57.7%[a]	80.7%	81.1%	87.9%	79.3%[a]	74.1%	71.6%	26.5%
No	71.6%	85.3%	85.7%	91.3%	87.1%	74.1%	72.5%	13.7%

Source: ARTS member survey. [1]Defined as reporting that they did not need treatment right away or that they needed it and usually or always were able to see someone as soon as possible. [a]Group differences for measure are statistically significant at .05 level based on chi square tests.

There were few statistically significant differences between Black members and White members in how they assessed the impact of treatment on their lives. For example, roughly equal percentages of White members and Black members reported that their housing situation had improved (63%). White members were somewhat were more likely to report that their employment situation had improved (44% for White members compared to 38% for Black members) although the difference was not statistically significant.

Social factors were more strongly associated with assessments of treatment outcomes, with those in more difficult circumstances reporting less favorable outcomes across all measures. For example, members who were housing and/or food insecure, unemployed, and lacking social support were much less likely to report that their housing and employment situation had improved as a result of treatment, compared to members with greater housing and food security, who were employed, and had greater social support.

Changes as a result of receiving treatment services

	More confident about not being dependent on drugs or alcohol	Housing situation has improved	Employment situation has improved
Race/ethnicity			
White, non-Hispanic	82.0%	63.1%	43.8%
Black, non-Hispanic	81.0%	63.8%	38.3%
Housing insecure			
Yes	72.9%[a]	33.3%[a]	25.6%[a]
No	83.7%	69.0%	46.5%
Food insecure			
Yes	80.0%[a]	59.1%[a]	38.4%[a]
No	86.6%	73.3%	54.4%
Employment status			
Employed	85.2%	71.7%[a]	77.3%[a]
Unemployed	78.4%	55.8%	25.4%
Not in labor force	82.5%	63.8%	33.9%
Social support			
None	72.0%[a]	51.3%[a]	31.4%[a]
1 or 2	80.2%	55.7%	37.6%
3 or more	87.1%	76.0%	53.1%
Prison/jail in past year			
Yes	78.4%	58.5%	38.8%
No	83.7%	64.4%	44.6%

Source: ARTS member survey. [a]Group differences for measure are statistically significant at .05 level based on chi square tests.

Conclusion

Medicaid expansion increased enrollment by over 400,000 nonelderly adults in 2019. Not surprisingly, Medicaid expansion led to a surge in members utilizing ARTS benefits in 2019, as new members enrolled through expansion had higher diagnosed prevalence of both SUD and OUD compared to members enrolled through traditional eligibility criteria. More than 46,000 members utilized ARTS services in 2019, a 79% increase from 2018. The number of members receiving MOUD treatment in 2019 (23,000 members) doubled from that of 2018. Preferred OBOTs, OTPs, and residential treatment centers also experienced especially large increases in utilization. Despite low levels of utilization in the first two years of ARTS, the percent of members receiving treatment at residential treatment centers in 2019 (3.6%) more than doubled from 2018. Due to expanded eligibility through Medicaid expansion, postpartum Medicaid coverage increased substantially for members who gave birth, likely contributing to an increase in MOUD treatment during the 12 months after birth for members with OUD.

Treatment rates for SUD and OUD continued to increase in 2019, even for base Medicaid eligibles. Since 2016 (the year before ARTS implementation), the percent of members with OUD who received some type of treatment has doubled, to about 66% by 2019. While MOUD treatment rates among Medicaid members have been increasing in other states, the increase in Virginia far outpaces that of other states, providing further evidence of the impact of the ARTS program. Thus, while MOUD treatment rates for Virginia in 2016 were well below that of many other states, Virginia is now roughly equivalent with other states in terms of MOUD treatment.

Continued improvements in many aspects of quality of care were observed. More members are receiving treatment within 30 days following SUD and OUD-related ED visits, as well as receiving follow-up care after discharge from residential treatment centers. For those with OUD, use of urine drug screens and counseling services has also been steadily increasing, while co-prescribing of opioid pain medications and benzodiazepines has decreased. Use of Preferred OBOTs and OTPs has increased to the point where they now comprise about half of all outpatient treatment episodes for OUD. Treatment episodes at OBOT and OTP providers generally include higher rates of MOUD treatment, urine drug screens, counseling, and care coordination services compared to other outpatient providers.

The report also included the first results from a survey of Medicaid members who used ARTS treatment services for OUD. Surveyed members generally report positive experiences with their treatment providers in terms of trust, communication, and level of involvement with their treatment. Having positive experiences with treatment providers is important, in part because it is strongly associated with fewer members discontinuing their treatment against the advice of their doctor or counselor. Members also report improvements in many aspects of their lives after receiving treatment, such as confidence in not being dependent on drugs or alcohol, getting along better in their social lives, and improvements in their housing or employment situation. Of concern is that treatment experiences were somewhat less favorable for members who reported other health problems, experiencing serious psychiatric distress, or were polysubstance users.

ED utilization for SUD and OUD had notably decreased following implementation of ARTS in 2017, strongly suggesting improved access to SUD and OUD treatment services. The spike in ED visits in 2019 may reflect the statewide and national increase in drug overdoses observed between 2018 and 2019. With COVID-19 potentially exacerbating problems with addiction in the Commonwealth in 2020, further examination is needed to identify potential gaps in treatment that may be related to avoidable ED visits.

Prior reports had noted wide disparities between Black and White Medicaid members in treatment rates for SUD and OUD. The report noted that these disparities continue, but also provided additional evidence on the nature of these disparities. Black and White members with SUD and OUD are equally likely to be initiated into treatment following a diagnosis. However, Black members are less likely than White members to follow-up with and continue this treatment once initiated. Consistent with this is that episodes of outpatient treatment tend to be considerably shorter for Black members than White members. This may reflect in part less favorable experiences with treatment among Black members relative to White members, which may be due to either differences in the quality of treatment providers that Black patients tend to see, or due to real or perceived discrimination on the part of treatment providers that affects trust and communication. Particularly noteworthy is that Black members felt much less able to refuse specific types of treatments compared to White members, which may explain why Black members were less likely to report discontinuing treatment against the advice of doctors relative to White members. Black members also experience greater housing insecurity and are less likely to have any social support compared to White members – factors which them at higher risk for less favorable experiences with treatment providers.

The analysis for this report preceded the COVID-19 pandemic, and therefore the results do not reflect any impact of COVID-19 on SUD prevalence, utilization, quality of care, and outcomes. Medicaid enrollment has increased due to higher unemployment and many Virginians losing their employer-sponsored coverage. As these and other Medicaid members struggle with the economic impact of the pandemic, as well as greater social isolation and potential disruptions in treatment, COVID-19 is likely to have a substantial impact on diagnosed prevalence and utilization of SUD treatment services among Medicaid members. Future analysis will be forthcoming that more explicitly examines changes in prevalence, treatment, quality of care, and outcomes before and after the beginning of the COVID-19 pandemic. The ARTS member survey is directly assessing patient experiences with COVID-19, as well as overall changes in the experience with treatment before and after the start of the pandemic.

Endnotes

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