Opioid Use Disorder in Allegheny County: Prevalence and Treatment Update

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https://analytics.alleghenycounty.us/

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KEY POINTS

- Opioid use disorder (OUD) is a prevalent disease with known, effective treatments. It directly affects about 5% of Allegheny County residents every year.
- Most people who are dependent on opioids are not actively receiving treatment.
- Trends show increasing disparities in the fatal overdose rates for Black and White County residents with Black residents dying of overdoses at nearly triple the rate of White residents in recent years.
- Treatment with medications for opioid use disorder (MOUD) is effective at reducing the likelihood of fatal overdoses.
- White residents are more likely to engage with OUD related, behavioral health services through Medicaid than Black residents. They are also more likely to be connected to MOUD when they do engage with these services.
- MOUD connection rates for people initiating OUD related, behavioral health services vary across service types and providers. They have increased over the last decade but remain under 40%.

INTRODUCTION

Opioid use disorder (OUD), defined as the misuse of opioids leading to dependence or addiction, has existed in the United States for many decades. When the illicit opioid supply shifted away from heroin and prescription opioids towards fentanyl which is a much more deadly and powerful opioid. This shift magnified the negative effects of OUD on individuals and communities as overdose rates spiked around the country. We now are increasingly seeing new drugs entering the illicit "opioid" drug market, such as xylazine, medetomidine and other synthetic drugs, that have added additional toxicity and harms.

In Allegheny County, the overdose death rate involving opioids nearly tripled between 2013 and 2017 from 19 to 56 deaths per hundred thousand residents per year. In the years since this peak, opioid-related overdose death rates have remained elevated, averaging 47 deaths per hundred thousand residents per year between 2020 and 2023.

Given the ongoing public health crisis posed by the prevalence of OUD in our community and an increasingly potent and dangerous drug supply, the purpose of this report is to explore local trends in OUD prevalence, treatment, and impacts and provide context for future mitigation measures.

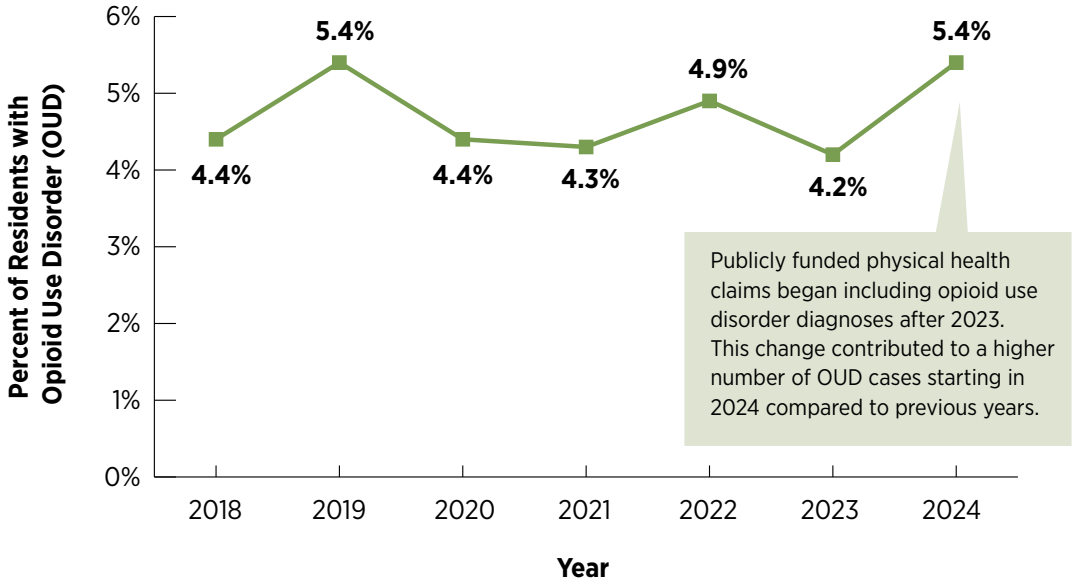
RATES OF OUD IN THE COUNTY

Estimating the prevalence of OUD in Allegheny County is essential for understanding the extent of this public health crisis. Because not all those with opioid dependence are formally diagnosed or documented, there is no comprehensive administrative measure of OUD prevalence. To address this gap, several strategies have been deployed to measure prevalence of addiction.

The National Survey of Drug Use and Health (NSDUH), conducted annually by the Substance Abuse and Mental Health Services Administration (SAMHSA), provides representative data on drug use among U.S. civilians aged 12 and older. In 2022, the NSDUH estimated approximately 40,500 individuals — or about 3.3% of the population — were using illicit drugs in Allegheny County. However, estimates from the NSDUH will understate the true prevalence of OUD, as it excludes individuals in institutional settings, including jails, hospitals and homeless shelters, and relies on self-report, which is likely to undercount due to reluctance to share sensitive information.

To address these shortcomings, the University of Pittsburgh's Medicaid Research Center used a methodology that combines various substance abuse indicators for Allegheny County (e.g., medical examiner death records, health insurance claims, and criminal justice data). Their work shows a relatively stable prevalence of 4—5% of the population each year from 2016-2022.

FIGURE 1: Estimated OUD Prevalence in Allegheny County



FATAL OVERDOSE TRENDS

While the estimated prevalence of OUD has been relatively stable, this is not the case for fatal overdose rates, which have shifted substantially over this timeframe. After a peak in opioid related fatalities in 2017, Allegheny County saw increases in the opioid overdose rates between 2018 and 2020 followed by a leveling off from 2020–2022. That trend between 2018 and 2022 is mirrored both at the state and national level, although per capita Allegheny County experiences more fatal opioid overdoses than either Pennsylvania or the United States overall. Because local opioid use has been relatively stable by all measures, it is likely that the spike in overdose deaths in Allegheny County in 2017 was the result of a shift in the local drug supply rather than a change in usage.

While the overall fatal overdose rate has leveled off in recent years, this is not the case for all subpopulations. In fact, since 2018 the fatal overdose rate for Black residents of Allegheny County has more than doubled. This trend is mirrored in other metro areas. **Figure 2** shows the fatal overdose rates for Allegheny County, Baltimore, and Philadelphia over time for both the overall populations and White and Black racial groups.[4,5]

FIGURE 2: Overdose Fatality Rate Trends Across Regions

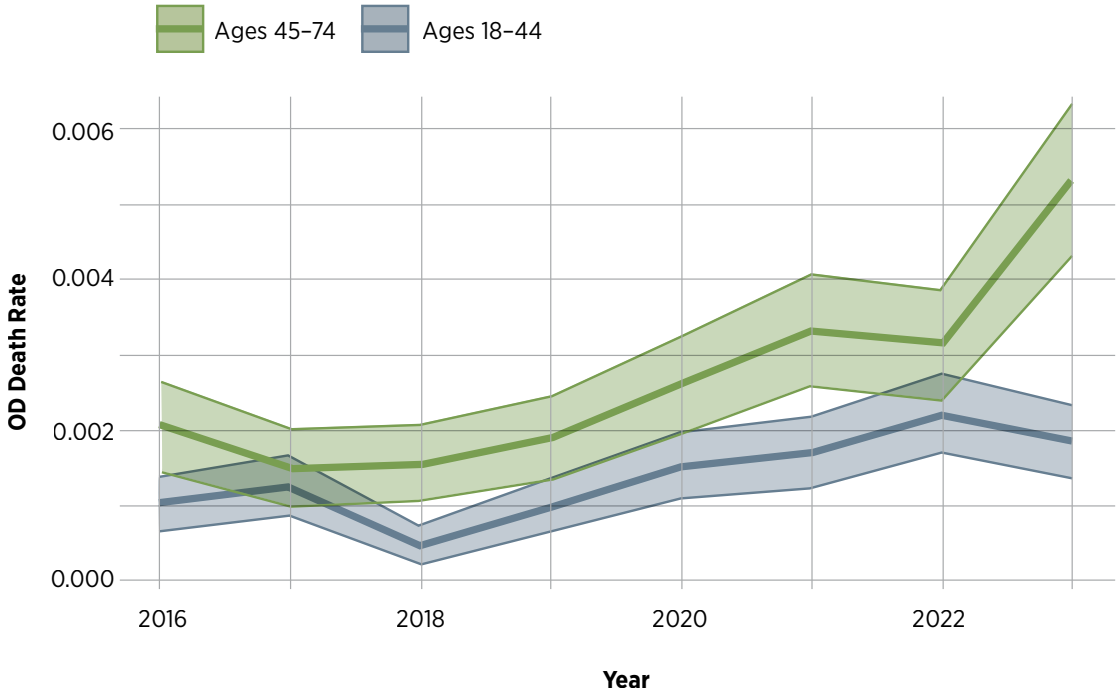
Table 1 provides the change in fatal overdose rates overall and by race for Allegheny County, Baltimore, and Philadelphia from 2016-2021.

TABLE 1: **Percent of Change in Fatal Overdose Rates Between 2016 and 2021**

REGION	OVERALL	BLACK	WHITE
Allegheny County	11%	90%	3%
Baltimore	41%	78%	14%
Philadelphia	56%	122%	15%

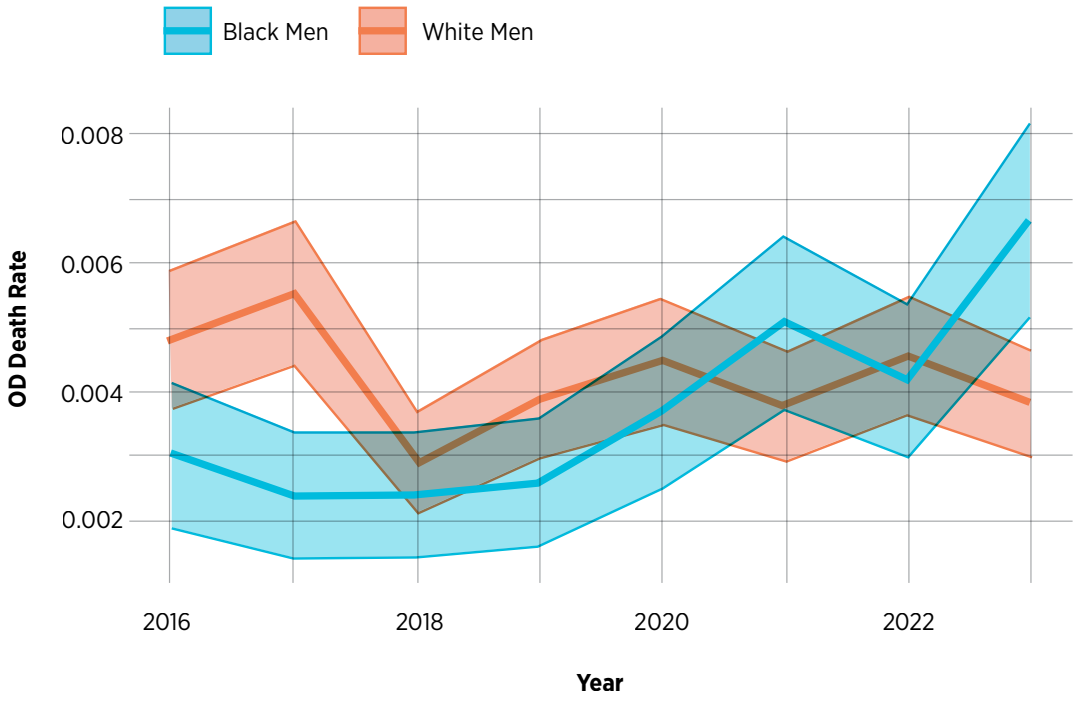
Figure 3 shows that these trends have been driven by a notable increase in the rate of fatal overdoses among Black men ages 45-74. While younger Black men have also experienced increased fatal overdose rates, the relative increase among older Black men has been larger, with a 2023 year-over-year increase of over 66%.

FIGURE 3: **Fatal Overdose Rate for Black Men by Year and Age Group**



Low-income status explains part of the racial gap in overdose rates among older adults. Among Medicaid enrolled individuals 45-74 years old, the racial gap in overdose rates is variable and sometimes indistinguishable. In 2022, for example, the white overdose death rate is higher than the black rate. In 2023, however, the racial gap widened with the large year-over-year increase in overdose deaths among older black adults (**Figure 4**).

FIGURE 4: **Fatal Overdose Rates for Black and White Men on Medicaid Ages 45–74**



Polysubstance use (opioids and stimulants) is a key driver of these trends. The gap between older and younger black men in OD deaths, for example, is small and variable when isolating to opioid-only deaths. In contrast, the gap has grown for deaths where opioids are present with other substances. **Table 2** provides the share of overdose deaths from opioids and stimulants before and after the Covid-19 pandemic by age group and race, showing increases in polysubstance use overdoses among men across races and age groups. This trend underscores the infiltration of fentanyl and analogs into the stimulant drug supply and the value of effective polysubstance use treatment.

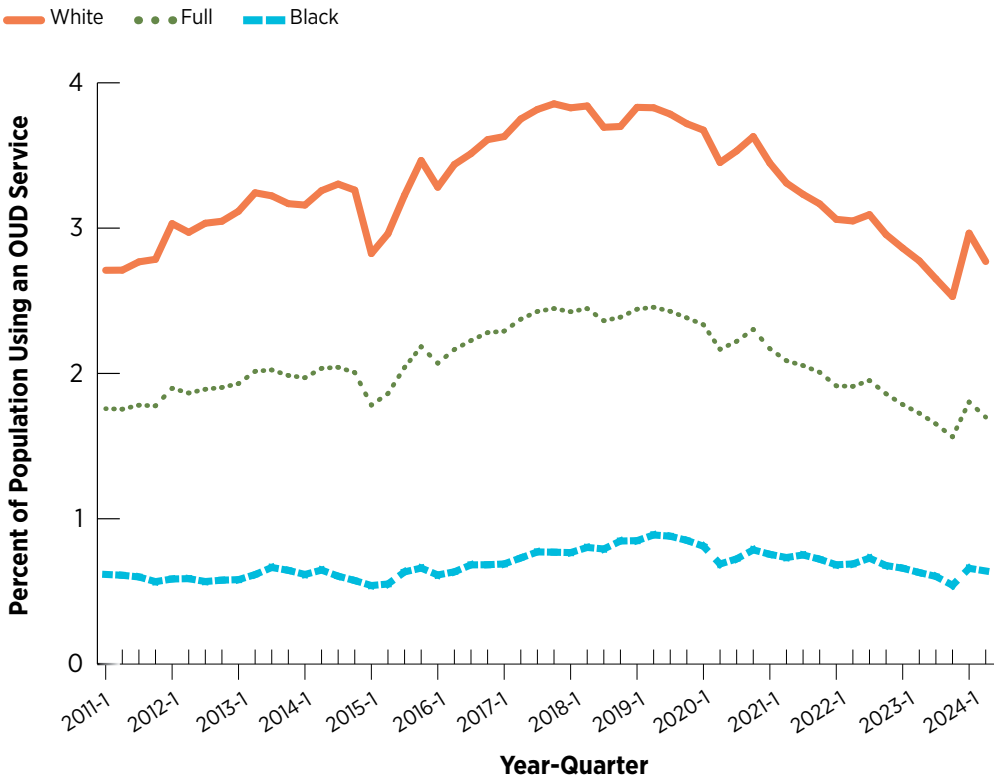
TABLE 2: **Overdose Death Polysubstance Use by Age and Race**

		OPIOIDS + STIMULANTS SHARE OF OD DEATHS		
AGE GROUP	RACE/GENDER	PRE-PANDEMIC (2016-2019)	POST-PANDEMIC (2021-2023)	CHANGE POST-PRE
18–44	Black Males	40.4%	55.8%	15.4%
45–74	Black Males	45.1%	62.3%	17.2%
18–44	White Males	32.0%	55.6%	23.6%
45–74	White Males	30.7%	46.1%	15.4%

OUD TREATMENT TRENDS

Given the recent trends in fatal overdoses, we wanted to understand if there were similar trends in OUD treatment engagement rates. Using Medicaid claims data, we find the behavioral health claims with a diagnosis of 'Opioid related disorders' and count the number of unique people filing claims for OUD services during each quarter. These counts were then divided by the population of Allegheny County Medicaid enrollees of that race each year to compute the percent of Medicaid enrollees using OUD services each quarter. The resulting graph, **Figure 5**, highlights the fact that White Medicaid enrollees are more than three times as likely to engage in OUD services than Black Medicaid enrollees. Furthermore, among the White population we observe a rise in service use that corresponds with the height of the opioid epidemic and declined substantially between 2020 and 2024. The Black population has been engaged in OUD services at a more consistent rate over the years. The consistent service engagement rates do not explain the diverging fatal overdose rates, although expanding service outreach and lowering barriers to accessing treatment are both plausible mechanisms for reversing the recent spike in fatalities.

FIGURE 5: **Medicaid Population OUD Service Use Rates by Race and Quarter**

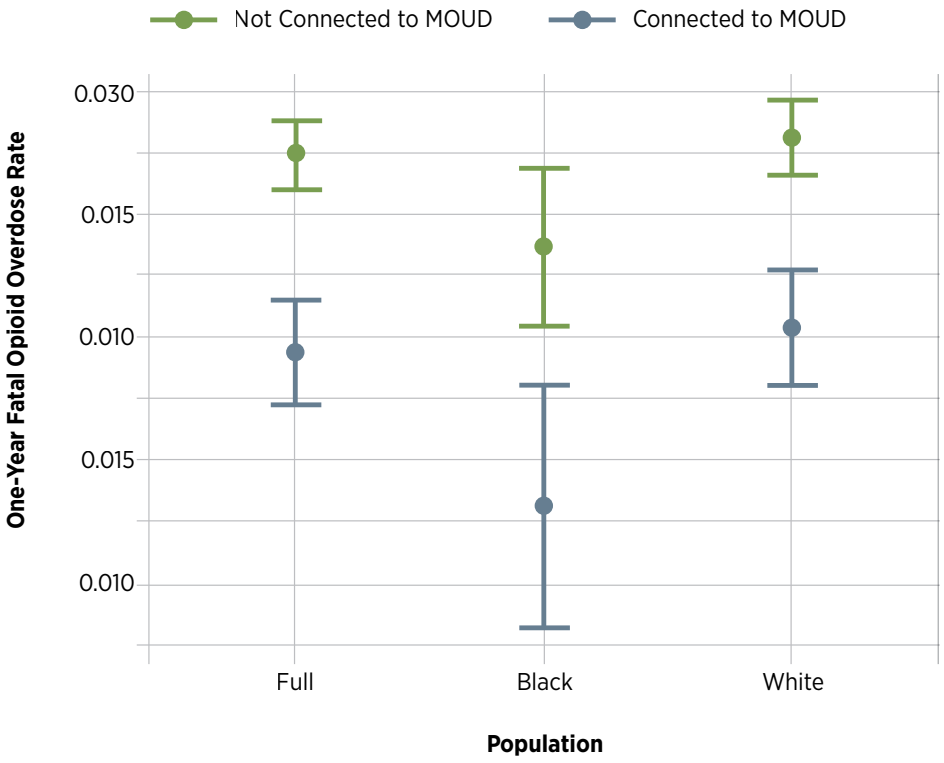


MOUD MEDICATION TRENDS

One of the most effective tools available today for combatting the negative impacts of OUD is medications for opioid use disorder (MOUD). These medications have been shown in multiple studies to reduce dependence on illicit opioids, reduce all-cause mortality and overdose risk, reduce infectious disease spread, and improve social functioning and quality of life.[3,4]

Figure 6 compares the one-year fatal overdose rates for people engaging in OUD behavioral health services who were and were not connected to MOUD as part of their treatment plan. People who begin filling MOUD prescriptions in the month following the initiation of an OUD service are significantly less likely to experience a fatal overdose in the subsequent year. While the differences cannot be interpreted as causal the impacts of treatment, they are consistent with the causal findings in the literature.

FIGURE 6: **Annual Fatal Opioid Overdose Rates for Individuals on Medicaid and Participating in OUD Services**



There are three main types of MOUD: methadone, buprenorphine, and naltrexone. These medications vary in how they interact with opioid receptors in the brain, and thus each come with distinct advantages and disadvantages which are summarized in **Table 3**. Importantly, this set of medications represents an evolution in available options for people seeking medication assisted treatment. While methadone has been available for OUD treatment since the 1970s,[5] Buprenorphine has only been FDA approved for OUD treatment since 2002.[6] Naltrexone was first approved for treatment of heroin addiction in 1984, but the longer-lasting, injectable version, Vivitrol, was only approved in 2010.[7] Furthermore, in the last ten years the FDA has approved several versions and combinations of these medications to provide a broader range of treatment options.

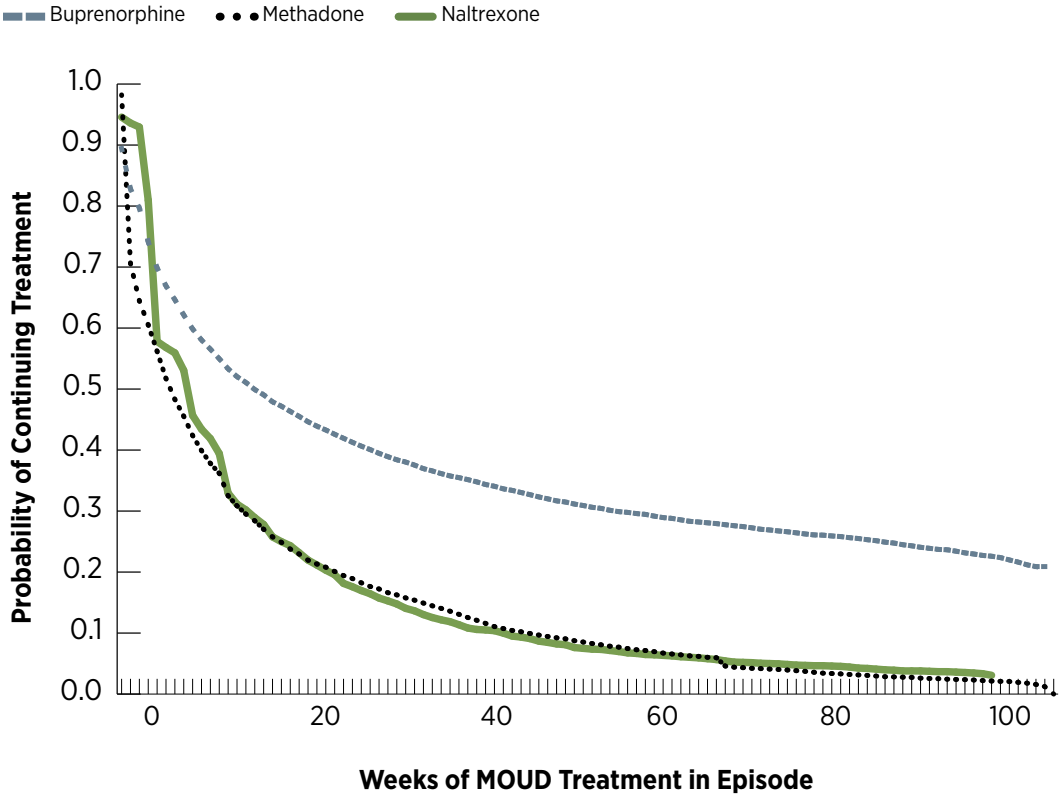
Importantly, people who initiate MOUD treatment often do not stay on their regimen for extended periods of time, and MOUD is only effective at preventing overdose while a patient is actively taking it. Long-acting injectable forms have been developed with the goal of increasing the duration of engagement, but patients may be reluctant to take an injectable, particularly before knowing how they will individually react to the medication. The current recommended duration for MOUD treatment is indefinite.

TABLE 3: **Overview of Medications for Opioid Use Disorder (MOUD)[3]**

MEDICATION	ADVANTAGES	DISADVANTAGES
Methadone — full agonist	• Oldest and best studied of the MOUDs available	• Can only be dispensed through a certified opioid treatment program (OTP) which often require daily visits • Missed doses will lead to withdrawal • Misuse and overdose are possible • Takes days-weeks to reach therapeutic dose • Increased overdose risk in the first two weeks of treatment
Buprenorphine — partial agonist and antagonist	• Can be prescribed by primary care doctors and prescriptions can be filled at regular pharmacies • Lower risk of overdose than methadone • Therapeutic dose achieved in a few days • Partially blocks reward from illicit opioid use	• First dose may induce non-life-threatening withdrawal • Misuse and overdose are possible • Discontinuation may lead to withdrawal
Naltrexone — full antagonist	• No misuse potential • No overdose risk • No withdrawal • Accessible through primary care • Blocks reward from illicit opioid use • Does not cause physical dependence	• Can only be used by patients who have been opioid-free (including MOUD agonists) for at least seven days • Higher risk of overdose if patient relapses

Figure 7 depicts a survival curve illustrating the duration for MOUD episodes by medication type. An episode is considered continuous until a person has been 30 days without medication at which point the end date is recorded as the last day they had access to medication. The curve starts at 100% representing all episodes beginning and decreases over time as episodes conclude. Each point on the curve illustrates the proportion of episodes still in treatment at that time, providing insights into treatment longevity and identifying opportunities for interventions to improve retention in medication for opioid use disorder.

FIGURE 7: **Survival Curves for MOUD Episode Lengths by MOUD Type**

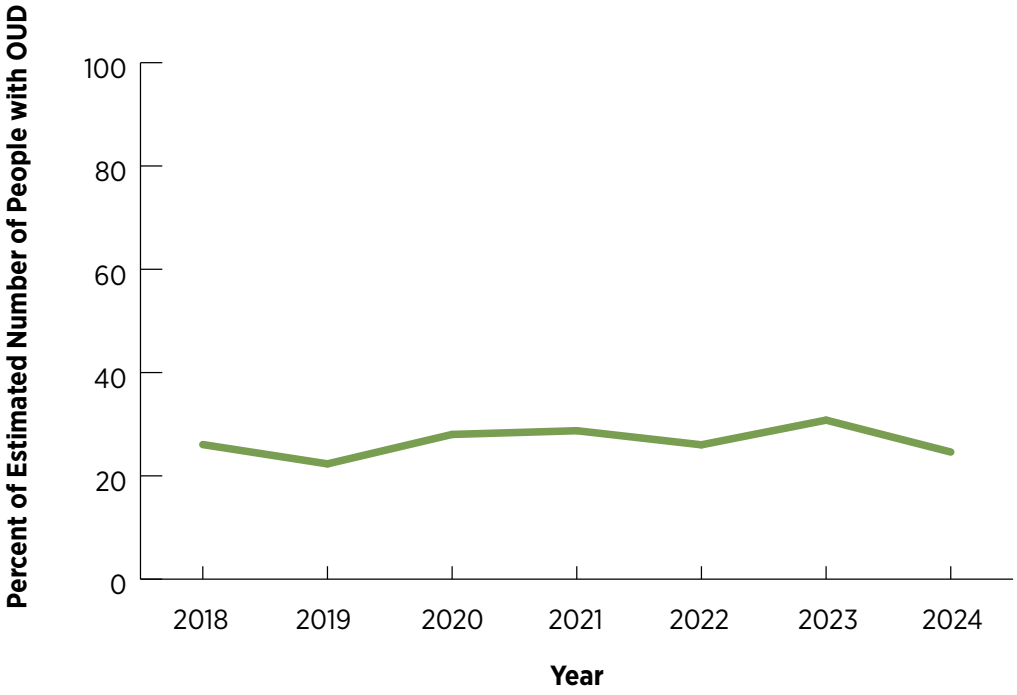


The decline shows that many MOUD treatment episodes are discontinued almost immediately. The curve's most notable decline is seen after Week 1, indicating this is the week where the highest proportion of episodes are discontinued. By about 10 weeks, 50% of the methadone and naltrexone treatment episodes were discontinued, while only 40% of buprenorphine episodes had been discontinued. This indicates that people taking buprenorphine tend to have longer episodes of treatment than those taking other forms of MOUD.

Access to MOUD and utilization of MOUD are valuable metrics of how well our behavioral health system is functioning. Figure 8, below presents the estimated percentage of individuals with opioid use disorder who receive MOUD during that year. This estimate combines the prevalence estimates of OUD above with data from Pennsylvania's Prescription Drug Monitoring Program (PDMP) database and publicly funded behavioral health pharmacy claims. The PDMP is a statewide electronic database that collects information about controlled

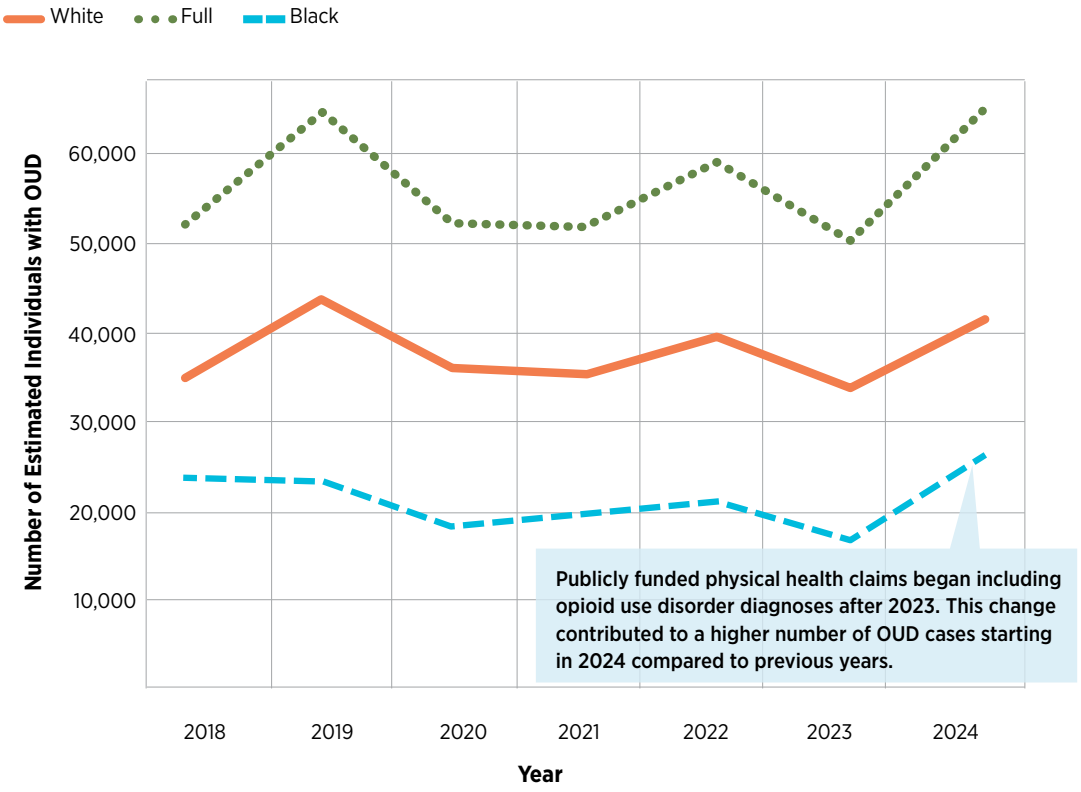
substance prescription drugs dispensed to individuals within the state, including buprenorphine and opioids. This includes prescription claims for all payers, including Medicare, Medicaid, commercial insurance, private pay, and other types of insurance. **Figure 8** indicates that take-up of MOUD among estimated individuals with OUD is around 26-32% annually. The NSDUH estimates nationally approximately 18% of individuals with OUD in 2022 received medication-assisted treatment.

FIGURE 8: **Estimated Utilization of Medication for Opioid Use Disorder (MOUD) Among Individuals with OUD in Allegheny County by Year**



For Medicaid enrollees, OUD is determined through diagnoses listed on behavioral health service claims. A common quality metric involves computing the percent of people who file a claim for OUD treatment services in a given quarter and also fill an MOUD prescription in that same quarter. When looking at this metric, we see that over the last eight years, approximately 80% of people engaging in OUD treatment services have also received MOUD. Taken together, the low county-level utilization of MOUD among all individuals with OUD and high utilization of MOUD among people presenting in the publicly funded behavioral health treatment system suggests that treatment-seeking is a major barrier to adoption of MOUD rather than provider behavior after initiation of services.

FIGURE 9: Estimated Opioid Use Disorder Prevalence in Allegheny County

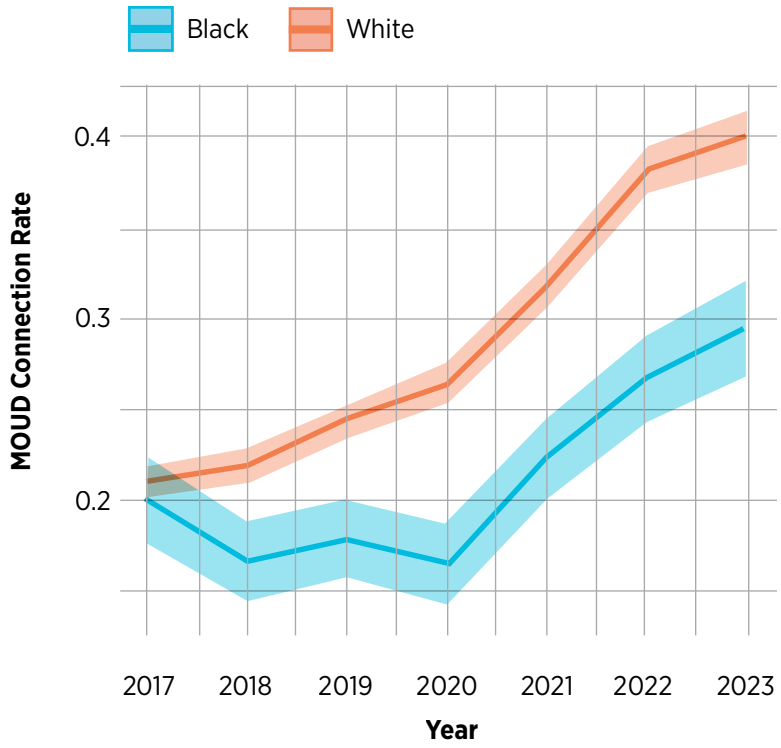


MOUD CONNECTION RATES

We next evaluate connection rates to MOUD for providers as a controllable input metric that could be influenced by provider skill and disposition toward medication. While patients vary in their interest in MOUD, providers may also vary in how likely they are to offer a prescription for MOUD or motivational interviewing skills to increase adoption of medication. Further, while MOUD is considered the gold standard of care for those with OUD, some people believe that using MOUD undermines, or even negates, a person's abstinence, which could lower utilization rates.

Taking the population of individuals enrolled in Medicaid who are not already taking MOUD at the time that they initiate some form of OUD related, behavioral health treatment such as a detox, a residential treatment program, or outpatient services, an individual was considered connected to MOUD if they began some form of MOUD within one month of their service initiation. Figure 9 shows that MOUD connection rates have been increasing over time, which indicates improvements in local access to a lifesaving treatment, but it is also clear that there persists a substantial gap in take up rates between White and Black individuals. Because we only observe when a patient engages in MOUD (i.e. fills a prescription for buprenorphine, or attends a methadone maintenance appointment, etc.), it is not possible to identify whether this discrepancy represents a difference in care offered by physicians or a difference in interest in MOUD as a tool for recovery.

FIGURE 10: One-Month MOUD Connection Rates for Medicaid Patients Initiating OUD Treatment Who Are Not Already Taking MOUD



There are many different services a person may engage in for treatment for OUD, and these service levels have different MOUD connection rates as shown in **Table 4**. The services with the highest MOUD connection rates are the high-intensity, residential programs. Importantly, the likelihood of a person who is initiating a service already being connected to MOUD increases as the intensity of the service decreases. This may mean that the people who initiate a lower-level service, such as therapy, who are not already connected to MOUD have already been offered MOUD and declined and are not interested in MOUD as a treatment path.

TABLE 4: Summary of OUD Services

SERVICE	DESCRIPTION	2023 % NEWLY CONNECTED TO MOUD	2023 % TAKING MOUD AT SERVICE START
ASAM 3.7 — Residential Detox	Medically managed high-intensity inpatient treatment.	44%	25%
ASAM 3.5 — Residential	Clinically managed residential services.	41%	26%
Intensive Outpatient	At least 9 and no more than 20 hours per week of treatment.	27%	44%
Individual Therapy	Regular visits with a therapist focused on addiction.	36%	67%
Group Therapy	Therapy in a group setting focused on addiction recovery.	25%	78%

We further analyzed connection rates to MOUD across providers and service types. **Table 5** below displays average connection rates by provider-service while controlling for factors which are correlated with MOUD engagement such as housing stability, demographic factors, mental health factors, and criminal history.

While there is variation between providers, MOUD connection rates for those not already using medication are low across providers, suggesting opportunities for increased connection. Within a service, connection rates vary substantially even when controlling for patient characteristics. This indicates that there are substantial differences in the likelihood of being connected to MOUD depending on which provider an individual sees. For providers that offer multiple services, more intensive levels of service tend to have higher connection rates. This may owe to providers having more contact with patients in residential programs than in outpatient therapy sessions. It is also the case that most of the individuals initiating lower levels of services for OUD are already connected to MOUD. Therefore, it may be that the individuals remaining in the analysis have already had this treatment offered to them and declined it.

TABLE 5: **Controlled 1-Month MOUD Connection Rate**

PROVIDER	ASAM 3.7	ASAM 3.5	INTENSIVE OUTPATIENT	INDIVIDUAL THERAPY	GROUP THERAPY	AVERAGE ACROSS SERVICES
A	17%	11%	NA	NA	NA	15%
B	33%	23%	NA	NA	NA	24%
C	31%	33%	NA	NA	NA	32%
D	30%	35%	NA	NA	NA	33%
E	18%	15%	17%	11%	NA	17%
F	27%	25%	21%	17%	10%	25%
G	24%	23%	16%	22%	12%	20%
H	30%	30%	24%	28%	18%	29%
I	22%	22%	16%	15%	9%	21%
J	5%	12%	21%	26%	12%	16%
K	20%	17%	11%	16%	8%	16%
L	NA	NA	28%	27%	17%	25%
M	NA	NA	29%	37%	22%	29%
N	NA	NA	29%	25%	13%	25%
Base Rate	26%	24%	23%	25%	14%	25%

NEXT STEPS

While awareness about OUD has spread substantially over the past decade, as a county we remain focused on decreasing the overdose death rate and related harms from addiction. Allegheny County has launched several initiatives using funding from legal settlements against actors in the opioid epidemic to bolster Medicaid and state-funded behavioral health services to address the issue, and we are continuing to invest in treatment capacity and supports that the opioid settlement funds can be used to mitigate the negative effects of opioid use in our region.

Figure 11 lists some of the current initiatives being orchestrated to help mitigate the negative impacts of the opioid epidemic in our region. To learn more about how the county is using the funding from the opioid settlement, please refer to the Allegheny County Opioid Settlement Annual Report – 2024.

FIGURE 11: **Current County Initiatives Supported by Opioid Settlement Funds**

INITIATIVE	DETAIL
Increase access to treatment and recovery	• Mobile MOUD Sites • MOUD via telehealth • Warm hand off process from Emergency Departments
Support people in recovery	• Recovery and low-barrier housing
Reduce harms of substance use	• Syringe service programs
Prevent misuse of opioids	• Educate the public on safe storage practices • Support youth at risk for / impacted by substance use
Test innovative approaches	• Contingency management pilot • Wastewater monitoring

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