

Missouri's State Opioid Response Grant: Treatment Access and Outcomes Report

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3/1/23



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This report provides a summary of the first five years of the Missouri State Targeted Response and State Opioid Response grants (SOR)¹ implementation. These projects expand access to integrated prevention, treatment, recovery support, and harm reduction services for individuals with opioid use disorder (OUD) and stimulant use disorder (StimUD) throughout the state. The State of Missouri Department of Mental Health (DMH) is leading the project, with administration, implementation, and evaluation activities provided by the University of Missouri, St. Louis - Missouri Institute of Mental Health (UMSL-MIMH). The Department of Mental Health and UMSL-MIMH work in collaboration with behavioral healthcare agencies, academic institutions, people with lived experience, and other content experts from around the state.

The data in this statewide summary is available on the Missouri State Opioid Response (SOR) Treatment Dashboard (<http://opioidstr.mimh.edu/>). Agency-level data is also available on the dashboard for registered users. The dashboard and this report use CIMOR data of clients with Opioid Use Disorder (OUD) who are uninsured and treated at SOR-funded agencies. For more variable definitions, see <https://opioidstr.mimh.edu/Documents/VariableDefinitions.pdf>, and the Data Notes section at the bottom of this report. This report was produced by the Addiction Science Team at UMSL-MIMH.

Summary

- Both SOR and non-SOR episodes of care (episodes) consist of majority White and male clients. Non-White clients have increased in proportion between FY17 and FY22. Within SOR, male clients have remained around 70% of the treatment population, while representation of clients outside of a female-male binary has increased.
- Medication utilization, and specifically buprenorphine utilization, was higher among SOR episodes in every year (fiscal years 2017, 2018, 2019, 2020, 2021, and 2022) compared to non-SOR episodes. **Clients within SOR programs received medication sooner than individuals in non-SOR programs across each year. However, the proportion of episodes with zero medications for OUD has been increasing within SOR funded episodes every year.**
- Buprenorphine is the most utilized medication across all years and episodes. A greater proportion of Black clients received methadone than White clients, though the differences have diminished over time.
- Treatment retention was higher in SOR than non-SOR across every year and at most time points. White clients tend to be retained in treatment longer than Black clients in the same programs across all time points.

¹ SOR here will be used to refer to the initial State Targeted Response grant and the subsequent State Opioid Response grants.

- Overall, the proportion of episodes involving telehealth increased from FY19 to FY20 under both non-SOR and SOR programs. The overall increase in episodes involving telehealth was driven by increases in both medical and non-medical telehealth visits, the latter of which were not common prior to COVID-19 and thus evidenced the steepest increases.

 Note

The SOR metrics in this report are calculated based on the fiscal year in which an episode began. Fiscal years run from July 1 of the previous year to June 30 of the named year. For example, FY22 dates run from July 1, 2021, to June 30, 2022. All billing for a given fiscal year is finalized by October following the conclusion of that fiscal year. Episodes of care can extend beyond the conclusion of a fiscal year but will still be counted the fiscal year in which it began. As a result, billing for treatment retention, telehealth utilization, and psychosocial services in FY22 may not be comparable to previous year. Changes in medication during an episode which occur after FY22 may also not be captured.

 Note

FY17 is provided as a comparison year throughout this report. There was no SOR funding for treatment during this time.

Enrollment Demographics

Enrollment by Race

Table 1: Enrollment Demographics By Race

	FY17	FY18	FY19	FY20	FY21	FY22
SOR						
White	-	75%	77%	69%	68%	67%
Black	-	22%	19%	24%	24%	21%
Other	-	3%	4%	7%	8%	12%
Non-SOR						
White	79%	78%	81%	77%	73%	71%
Black	17%	18%	14%	15%	16%	18%
Other	4%	5%	5%	8%	11%	11%

The proportion of new episodes involving Black clients has remained steady between FY18 and FY22 in both SOR and non-SOR treatment episodes. Within SOR, the proportion of episodes with Black clients has fluctuated throughout the years but remained relatively stable (22% in FY18 to 21% in FY22). The proportion of Black clients within non-SOR also fluctuated slightly from 14% in FY19 to 18% in FY18 and FY22. Within the SOR program, the proportion of White clients enrolling in treatment has decreased since the start of SOR(75% of all episodes in FY18 compared to 67% in FY22).

The proportion of episodes involving White clients has decreased for both SOR and non-SOR programs across the same period. This is in part due to the increase in enrollments for clients who are neither White nor Black.

Non-Black and non-White clients includes clients with Asian, American Indian or Alaskan Native, Pacific Islander or Hawaiian Native, or Middle Eastern or North African ancestries. The proportion of clients of other races has steadily increased for both SOR treatment episodes (FY18: 3%; FY22: 12%) and non-SOR treatment episodes (FY17:4%; FY22: 11%).

Enrollment by Sex

Within the SOR program, the percentage of episodes with female clients decreased from FY18 (28%) relative to FY22 (22%). Male participation has remained stable from FY18 (72%) to FY22 (71%), while clients who identify as “other” increased from 0% in FY19 to 7% in FY22.

Table 2: Enrollment Demographics By Sex

	FY17	FY18	FY19	FY20	FY21	FY22
SOR						
Female	-	28%	29%	30%	26%	22%
Male	-	72%	71%	68%	71%	71%
Other	-	-	0%	2%	3%	7%
Non-SOR						
Female	29%	27%	32%	31%	28%	26%
Male	71%	73%	67%	66%	67%	69%
Other	0%	1%	1%	3%	5%	5%

 Note

The increase in clients who identify as neither male nor female may be due in part to evolving/more inclusive reporting options. Data on sex utilizes the terms and response options as presented through CIMOR/TEDs data collection, which does not clearly distinguish between sex and gender. Given the inconsistencies and variations in reporting in healthcare records, it is likely the number of clients who do not identify as either male or female is under-reported.

Days to Receive Medication

Median Days to Medication

Treatment providers have been encouraged to use the Medication First approach since the onset of the State Targeted Response Program in FY18. Medication First, or MedFirst, is a low-barrier framework which prioritizes rapid induction to Medications for Opioid Use Disorder (MOUD). For SOR funded episodes, this MedFirst philosophy led to clients being able to receive medications often as near to the first day of billable services as possible. Median wait times for medication within SOR were short across all medications, with both forms of naltrexone being the only medications where clients waited a week or longer in the beginning of SOR. Compared to SOR, individuals in non-SOR funded episodes often had to wait up to a week, if not longer, for most medications. Methadone was the only MOUD which people in non-SOR episodes could access as fast as those served through SOR. Median wait times for medication shortened in FY21 and FY22 for both SOR and non-SOR episodes. Only naltrexone continued to take more than one week to access for clients not funded by SOR.

Table 3: Median Days to Medication

	FY17	FY18	FY19	FY20	FY21	FY22
SOR						
All	---	0	0	0	0	0
Buprenorphine	---	0	0	0	0	0
Methadone	---	0	3	1	0	0
Mixed	---	0	1	0	0	0
Oral Naltrexone	---	13	15	0	2	3
XR Naltrexone	---	7	6	2	0	6
Non-SOR						
All	7	11	7	6	4	3
Buprenorphine	1	7	6	6	4	5
Methadone	0	6	0	1	0	1
Mixed	11	13	8	5	1	4
Oral Naltrexone	18	19	20	8	10	28
XR Naltrexone	19	19	17	23	17	14

Zero denotes access on the same day as the first billable service.

Mixed comprises episodes which include both antagonist and agonist prescribed medications.

 Note

The median days to medication is the midpoint of the number of days it took all clients to receive medication. Due to outliers, median days to medication is less skewed by a small number of outliers compared to the mean. The mean days to medication is the average amount of days it took to receive medication across all episodes. Mean wait times, while representative of some clients' experience, can be skewed by a small number of outliers.

Mean (Average) Days to Medication

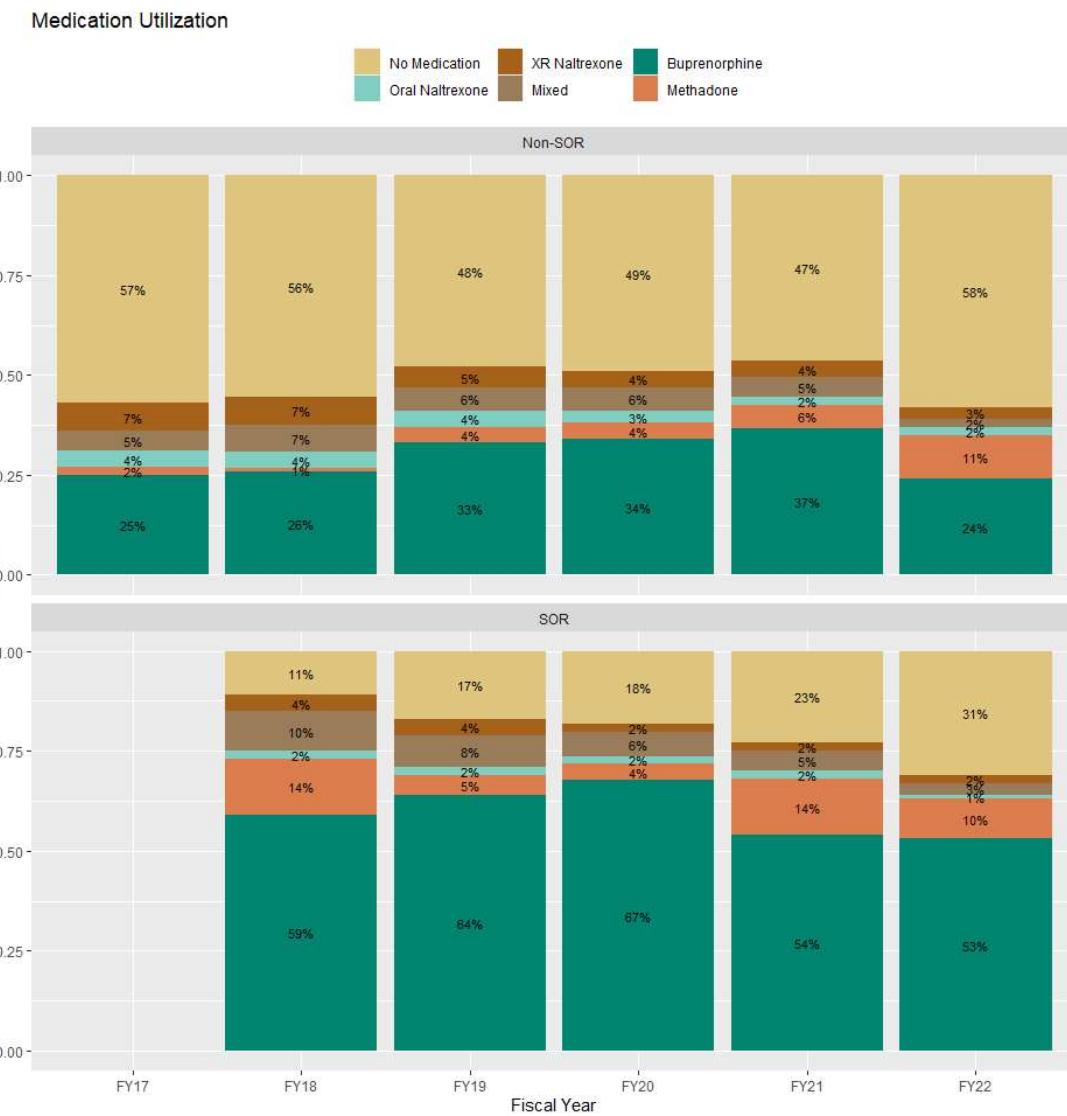
Table 4: Mean Days to Medication

	FY17	FY18	FY19	FY20	FY21	FY22
SOR						
All	-	9.19	10.50	6.91	10.56	9.81
Buprenorphine	-	8.44	10.18	7.40	12.22	10.70
Methadone	-	2.71	6.94	2.18	2.22	2.57
Mixed	-	14.43	8.93	4.20	5.22	2.34
Oral Naltrexone	-	25.43	28.69	3.30	34.50	22.46
XR Naltrexone	-	21.51	15.42	11.57	19.63	21.21
Non-SOR						
All	36.84	44.93	37.54	35.16	30.49	22.50
Buprenorphine	34.29	44.15	36.22	34.91	31.92	25.94
Methadone	19.68	34.21	16.19	13.60	14.00	10.23
Mixed	43.91	45.02	38.94	31.52	24.41	16.77
Oral Naltrexone	45.14	47.38	61.28	52.43	64.09	32.83
XR Naltrexone	41.93	48.37	41.99	55.04	31.59	38.98

Mixed comprises episodes which include both antagonist and agonist prescribed medications.

Average wait times for medication show that SOR clients receive medication sooner than non-SOR clients. For each year of the program, days to receive any medication within SOR episodes has remained between 7 and 11 on average, compared to 23 to 45 days on average for non-SOR episodes. For SOR groups overall, FY20 had the lowest mean days to medication (6.91) which may be due to COVID-19 and utilization of telehealth. Methadone had the lowest mean days across all fiscal years in both SOR and non-SOR groups. Both oral and extended release (XR) naltrexone had a high number of days to receive medication in both SOR and non-SOR groups.

Medication Utilization



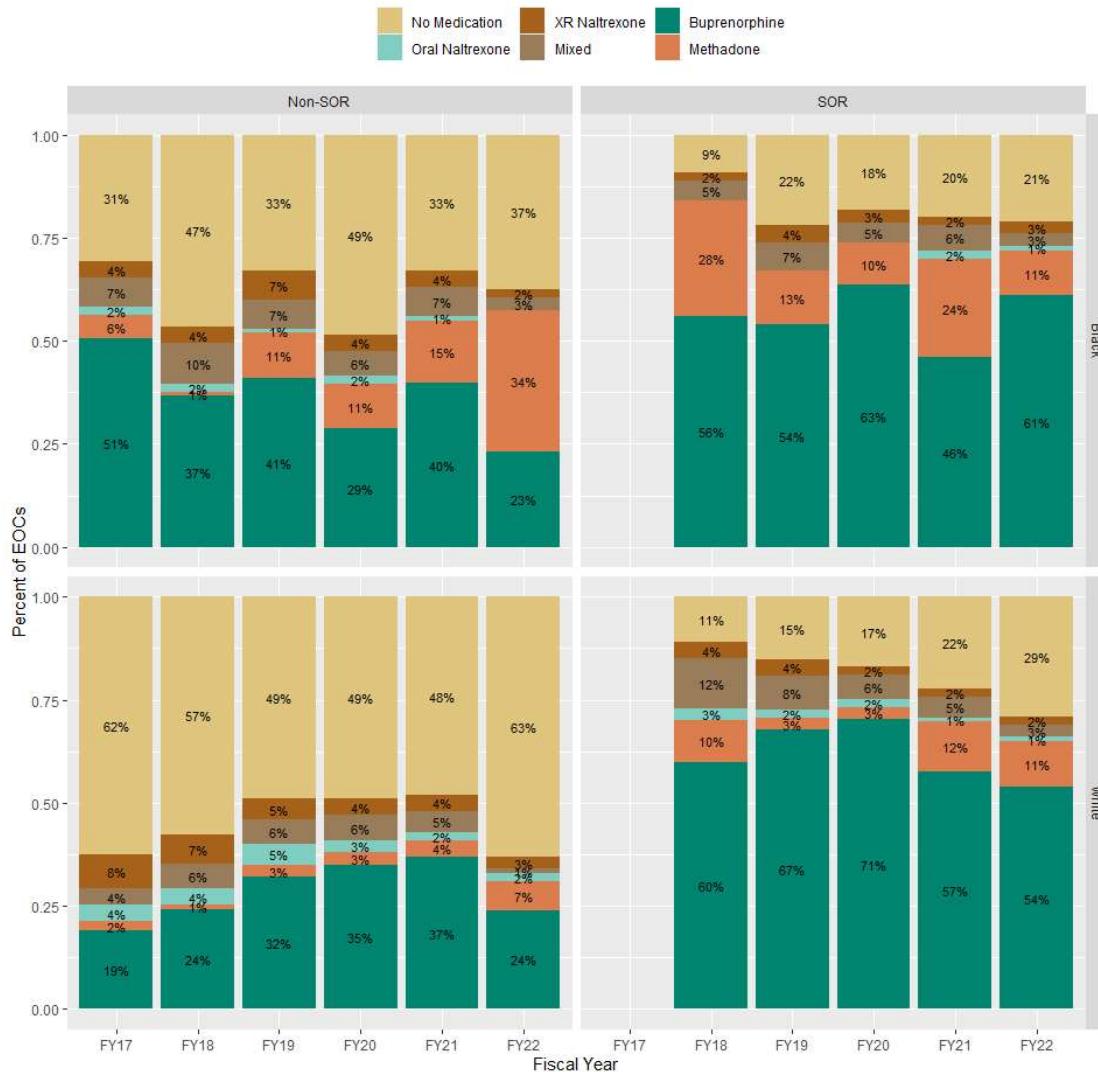
Medication utilization by program. Mixed comprises episodes which include both antagonist and agonist prescribed medications.

The implementation of SOR and the MedFirst approach has allowed a greater proportion of clients to receive any type of medication. Across both SOR and non-SOR episodes, buprenorphine remains the most prescribed medication, with between 50 to 70% of SOR clients and between 25 and 40% of non-SOR clients receiving a buprenorphine prescription. Methadone is the second most common medication in most years, with 4 to 14% of SOR clients receiving methadone prescriptions. It is uncommon for clients to be prescribed both an agonist and antagonist medication within a single episode of care, with between 3 and 10% of clients falling into the mixed group. SOR programs included fewer episodes with no medication than those in non-SOR programs across all years. Around half of non-SOR clients receive no medication during their episode of care, while fewer than one third of SOR clients receive no medication. However, within SOR, the percentage of

episodes with no medication steadily increased each year from FY18 (11%) and is now at its highest in FY22 (31%).

Medication Utilization by Race

Medication Utilization by Race and Program



Medication utilization by program and race.

For both Black and White clients, SOR programs had fewer episodes with no medication compared to their non-SOR counterparts across all years. For Black clients, methadone utilization has decreased in SOR episodes from FY18 (28%) to FY22 (11%), whereas in non-SOR, methadone utilization increased from FY18 (6%) to FY22 (34%). For most years within SOR, Black clients had a proportionally greater percentage of episodes involving methadone than White clients, whereas White clients had a proportionally greater usage of buprenorphine.

Treatment Retention

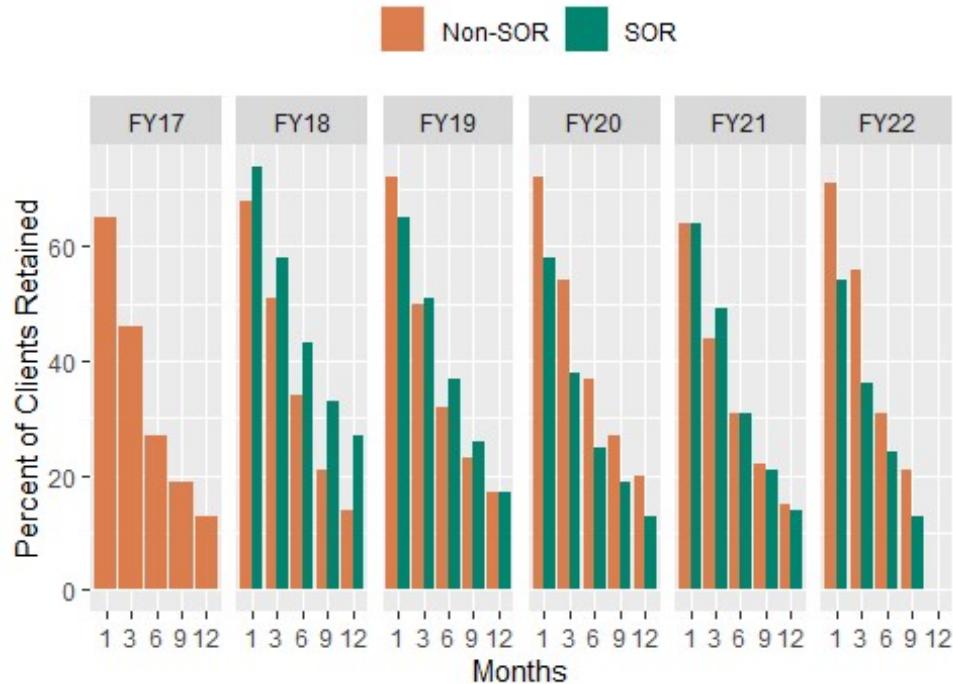
Treatment Retention by Fiscal Year



Treatment retention at 30 days, 3 months, 6 months, 9 months, and 1 year.

Treatment retention for SOR episodes was higher at each time point, up to one year, compared to non-SOR episodes for most years. Since FY18, the gap between SOR and non-SOR at each time point has decreased. Only in FY20 did non-SOR episodes have higher retention at 30 days, 3 months, and 6 months, while it had the similar retention (as SOR episodes) at 9 months and 1 year. For FY22, retention at 30 days and 3 months is similar between SOR and non-SOR episodes.

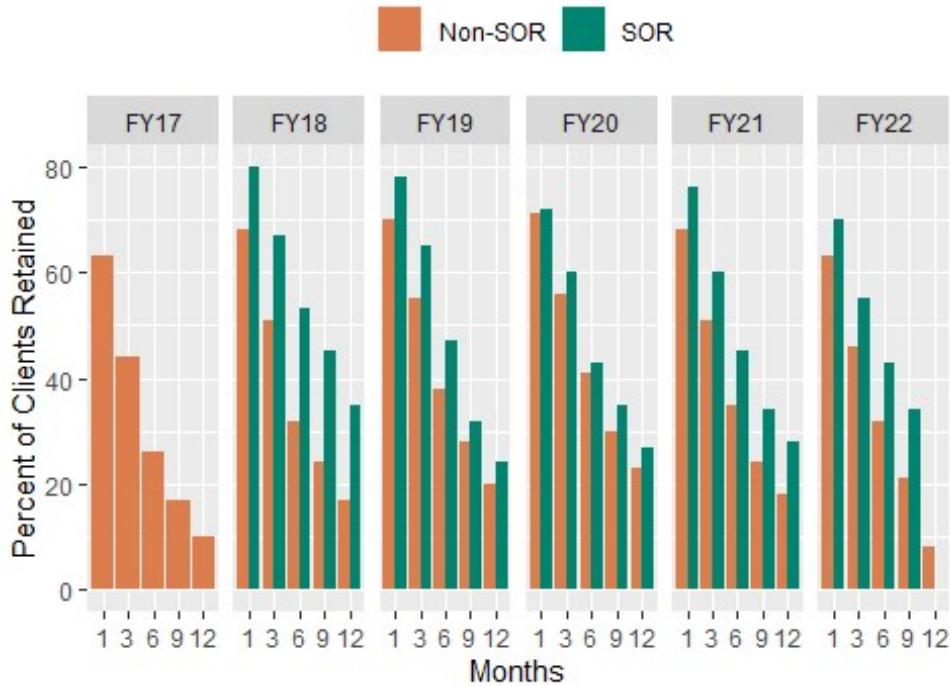
Treatment Retention for Black Clients



Treatment retention at 30 days, 3 months, 6 months, 9 months, and 1 year for Black clients.

Retention of White clients tends to be higher than retention of Black clients in the same programs across all time points. Both SOR and non-SOR funded episodes involving White clients had greater retention at every time point compared to episodes with Black clients. Black clients participating in SOR programs had higher retention than those in non-SOR programs in FY18 and FY21, but in every other year (FY19, FY20, FY22), clients within non-SOR programs had higher retention. For White clients, SOR clients were retained longer than non-SOR clients.

Treatment Retention for White Clients



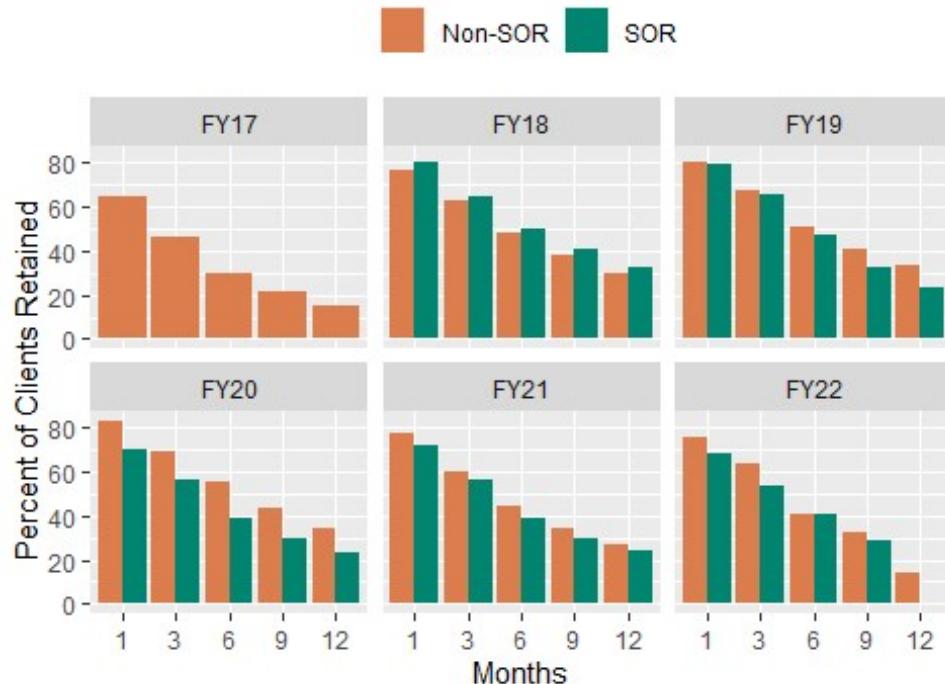
Treatment retention at 30 days, 3 months, 6 months, 9 months, and 1 year for White clients.

(i) Note

Retention is based on continued billing following the initiation of a treatment episode, and information about retention may not be complete until the end of the following fiscal year. As a result, FY22 retention numbers for 9 and 12 months is not be complete at this time, and should be interpreted with caution.

Buprenorphine Treatment Retention

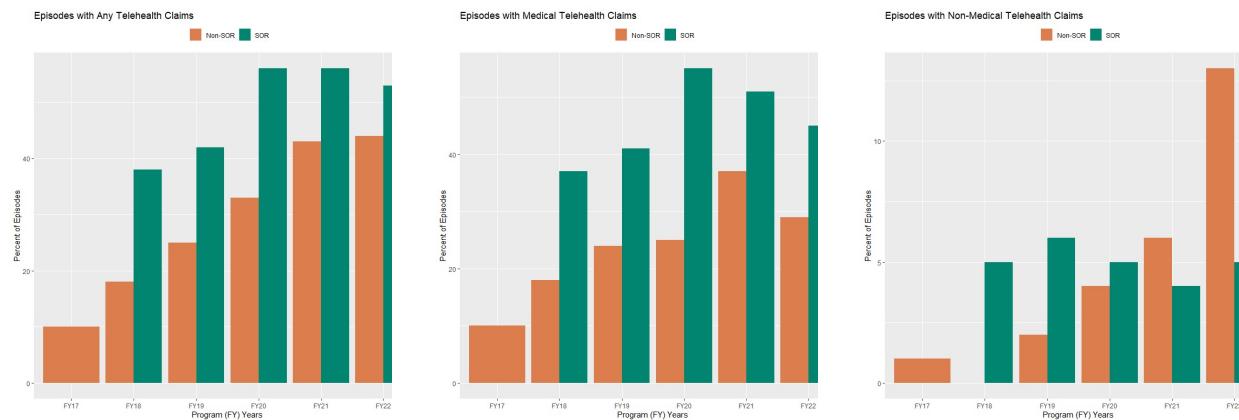
Treatment Retention for Clients Receiving Buprenorphine



Treatment retention only for episodes involving buprenorphene.

For clients who utilized buprenorphine, treatment retention was higher for SOR funded episodes in FY18, but in every subsequent year, non-SOR funded treatment appeared to have higher retention at all time points.

Telehealth



All Telehealth Claims

Medical Telehealth Claims

Non-Medical Telehealth Claims

Overall, episodes involving telehealth increased from FY17 to FY20 under both non-SOR and SOR programs. These graphs show increases in both medical and non-medical telehealth visits, the latter of which were not common prior to the beginning of the COVID-19 pandemic. The increase in medical telehealth visits was not as drastic as non-medical telehealth because these visits were more common prior to COVID-19. Medical telehealth has stayed consistently high for both SOR and non-SOR episodes of care since FY20, but non-SOR non-medical telehealth showed an increase in FY22.

 Note

Telehealth utilization for all telehealth claims in FY20 include both standard telehealth claims (similar to other years), and claims for COVID-related services using either established telehealth or informal audio equipment. These COVID-related claims did not exist prior to or following FY20.

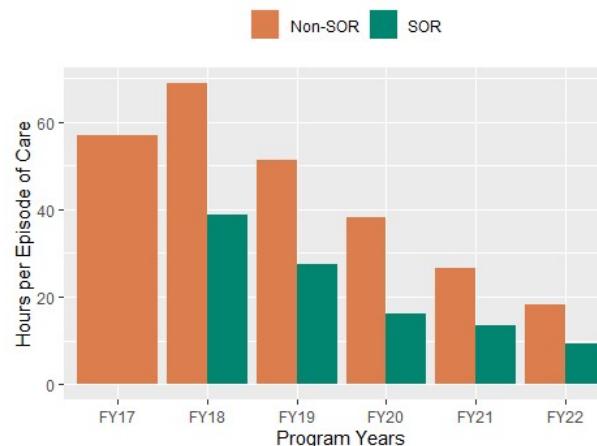
Psychosocial Services

Mean Hours of Psychosocial Services



Average number of psychosocial service hours per day.

Total Hours of Psychosocial Services

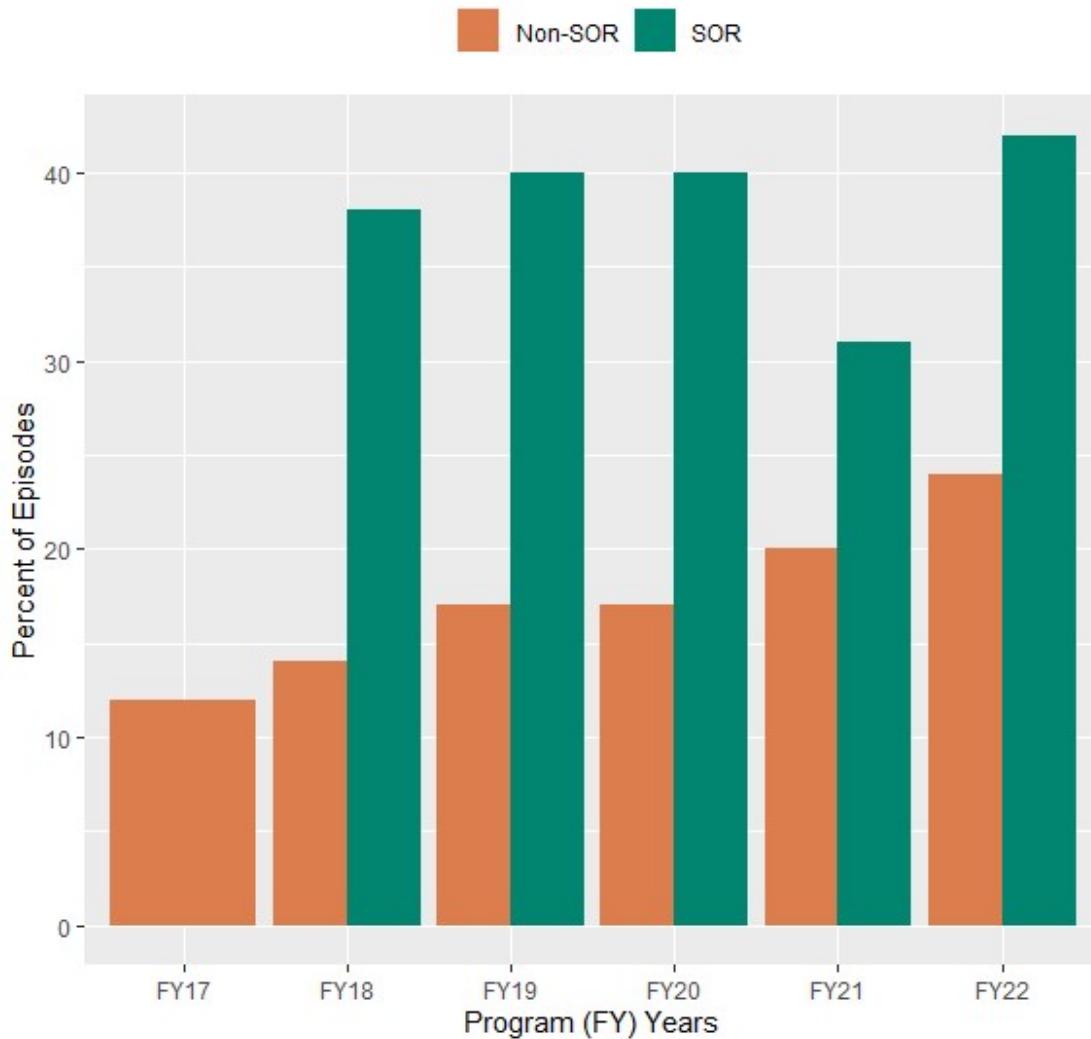


Total number of psychosocial service hours per episode.

Psychosocial services are represented as a combined total of the following services: clients counseling, group counseling, group education, family counseling, community support, case management, and peer support services. The number of hours per episode and hours of psychosocial services per day has been steadily decreasing for both SOR and non-SOR since FY18. During this time, the amount of time billed for psychosocial services delivered within non-SOR episodes has remained greater than those in SOR.

Peer Support Services

Episodes with Peer Support Services Claims



Peer support services.

SOR episodes include peer services more often than non-SOR episodes. For every year of SOR, peer services have been included in more than 30% of episodes and were included in more than 40% of episodes in FY22. For non-SOR episodes, peer services have increased from 12% in FY17 to 24% in FY22.

Supportive Housing

Table 5: EOCs with Housing Claims

	FY17	FY18	FY19	FY20	FY21	FY22
Non-SOR						
Episodes with housing support (%)	5%	6%	5%	5%	5%	2%
Number of nights per EOC (median)	16.0	17.0	20.0	24.0	19.0	30.0
Number of nights per EOC (mean)	16.6	33.4	40.6	52.9	41.1	48.5
SOR						
Episodes with housing support (%)	---	9%	9%	12%	10%	7%
Number of nights per EOC (median)	---	51.0	33.0	62.0	52.0	46.0
Number of nights per EOC (mean)	---	93.9	77.6	88.7	77.4	67.1

Across all fiscal years, a greater proportion of SOR episodes included supportive housing and had higher average and median number of nights per episode compared to non-SOR.

Supportive Housing by Race

Table 6: EOCs with Housing Claims

	FY17		FY18		FY19		FY20		FY21		FY22	
	Non-SOR	SOR	Non-SOR	SOR	Non-SOR	SOR	Non-SOR	SOR	Non-SOR	SOR	Non-SOR	SOR
Black or African American												
Episodes with housing support (%)	6%	---	7%	5%	3%	9%	5%	7%	4%	7%	3%	5%
Number of nights per EOC (mean)	13.6	---	12.9	51.5	29.9	42.9	43.3	40.7	72.2	52.3	23.0	22.2
Number of nights per EOC (median)	16.0	---	11.5	30.0	19.0	22.0	15.5	20.0	22.0	19.0	22.0	21.0
White												
Episodes with housing support (%)	5%	---	6%	10%	5%	9%	5%	13%	6%	11%	2%	8%
Number of nights per EOC (mean)	17.1	---	39.2	98.0	42.2	89.9	56.5	96.3	34.5	83.9	57.1	79.5
Number of nights per EOC (median)	16.0	---	18.0	52.0	20.0	39.0	28.0	82.0	18.0	60.5	41.0	68.0

EOCs for Black clients had a lower proportion of housing support compared to white clients in SOR episodes in FY18, FY20, FY21, and FY22. Non-SOR funded episodes were more similar in proportion between Black and White clients. At most time points for both SOR and non-SOR episodes, White clients had a greater number of nights on average compared to Black clients.

Transportation

Table 7: Transportation Claims

	FY17	FY18	FY19	FY20	FY21	FY22
Non-SOR	0%	1%	2%	1%	0%	0%
SOR	---	14%	20%	8%	2%	5%

SOR funded episodes had a greater proportion of transportation claims compared to non-SOR episodes, which had very few. The COVID-19 pandemic is one explanation for the steep and maintained drop off in transportation claims beginning in FY20.

Data Notes

Days to Receive Medication

This metric reflects the difference in days between the first billable service date and the date of the first billed OUD medication. Zero denotes clients received medication on the same day as their first billable service. We only include episodes which do NOT involve detoxification encounters prior to medication billings. Additionally, this data does not depict the extent to which there is a lag time between when clients call or physically present to request treatment, and when they formally enroll in treatment.

Medication Utilization

The “Mixed Group” comprises episodes which include both antagonist and agonist prescribed medications. This group is highly heterogeneous and administrative data does not provide an indication of the intended treatment path. This Mixed Group category ensures that the oral and XR naltrexone groups are limited to those medications only. We group episodes involving agonist or partial agonist medications using the hierarchy: methadone > buprenorphine. Therefore, episodes classified as methadone may involve both buprenorphine and methadone, whereas episodes classified as buprenorphine involve solely buprenorphine. For episodes involving only antagonist medications, XR naltrexone supersedes oral naltrexone. Therefore, episodes classified as XR naltrexone may involve both oral and XR naltrexone, whereas episodes classified as oral naltrexone solely involve oral naltrexone.

Treatment Retention

Treatment retention estimates are based only on the subset of people for whom engagement can be determined at the time of analysis. For example, treatment episodes initiated six weeks prior to the end of the fiscal year, we would be unable to determine retention at three months, and this episode would be excluded from the three-month retention analyses. Both lags in billing and the start date of an episode contribute to how long treatment engagement can be assessed.