



# WHO DROPS OUT OF OPIOID AGONIST TREATMENT PROGRAM IN UKRAINE AND WHY: NATIONAL-LEVEL DATA



### Highlights:

- Between 2020 and 2023, 22.44% of OAT patients dropped out of treatment
- Most barriers to retention in OAT are structural
- Addressing program-level barriers may improve retention in OAT

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### Background:

Among over 21,000 opioid agonist treatment (OAT) patients in Ukraine receiving either methadone or buprenorphine, 80% reach 6-month retention. The objective of this analysis was to assess correlates of OAT dropout in Ukraine given the on-going military conflict due to russia’s full-scale invasion of the country.

### Methods:

For this study, a national registry of OAT patients in Ukraine (N=21,387) was stratified into stable (n=8,256), non-stable (n=5,902), and dropout patients (n=7,229), and analyzed using multinomial logistic regression to compare the groups and identify demographic, drug and HIV treatment correlates of OAT program dropout.

Table 1. Demographic, drug treatment, and HIV treatment characteristics among opioid agonist treatment (OAT) patients in Ukraine (n=21,387), 2020-2023

Characteristics	Cohort of patients						p-value (n=7,229)
	Stable <sup>a</sup> (n=8,256)		Non-stable <sup>b</sup> (n=5,902)		Dropouts <sup>c</sup>		
<i>Mean value (standard deviation, range)</i>							
Age at the time of data collection (yrs)	38.29 (7.43, 18-61)		40.10 (5.23, 18-58)		28.30 (6.48, 19-56)		<0.001
Duration of injection before OAT initiation (yrs)	16.41 (6.43, 2-53)		14.25 (2.12, 1-24)		8.09 (1.03, 0.5-19)		0.041
Duration on OAT (yrs)	4.28 (2.12, 0.5-13)		2.15 (1.89, 1-9)		2.56 (2.14, 0.5-4)		0.023
OAT drug dosing (mg)							
<i>Methadone</i>	88.31 (24.08, 5-275)		81.73 (31.08, 5-350)		66.86 (18.34, 5-300)		0.003
<i>Buprenorphine</i>	9.67 (3.08, 2-28)		9.02 (3.32, 2-24)		7.65 (1.80, 2-20)		
Duration on ART (yrs)	8.41 (4.19, 1-23)		6.35 (3.18, 1-18)		6.24 (2.89, 1-15)		0.240
<i>Percentage (n, %)</i>							
Gender							
<i>Male</i>	6927	83.90	5425	91.92	6865	94.96	<0.001
<i>Female</i>	1329	16.10	477	8.08	364	5.04	
OAT drug			0.072				
<i>Methadone</i>	7245	87.75	5630	95.39	6772	93.68	
<i>Buprenorphine</i>	1011	12.25	272	4.61	457	6.32	
OAT drug dosing (mg) <sup>d</sup>							
<i>Suboptimal</i>	3764	45.59	3247	55.01	4950	68.47	0.004
<i>Optimal</i>	3038	36.80	1674	28.37	1637	22.64	
<i>High</i>	1454	17.61	981	16.62	642	8.89	
Form of OAT receipt							0.003
<i>Daily at OAT site</i>	2418	29.29	3767	63.83	5597	77.42	
<i>Take-home dosing</i>	4350	52.69	1584	26.84	940	13.01	
<i>By prescription at pharmacy</i>	348	4.21	169	2.87	311	4.30	
<i>At home (hospice care)</i>	1140	13.81	382	6.46	381	5.26	
Availability of psychosocial support at OAT site							
<i>Yes</i>	3701	44.83	2377	40.28	2590	35.83	<0.001
<i>No</i>	4555	55.17	3525	59.72	4639	64.17	
Reason for OAT termination <sup>e</sup>							
<i>Individual level</i>		n/a	2924	49.54	2602	35.99	<0.001
<i>Structural level</i>		n/a	1900	32.19	3143	43.48	
<i>Death</i>		n/a	1078	18.27	1484	20.53	
HIV-positive status							0.029
<i>Yes</i>	2822	34.18	2655	45.00	3325	46.00	
<i>No</i>	5434	65.82	3423	55.00	3904	54.00	
<i>Percentage (n, %) among HIV-positive patients</i>							
	(n=2822)		(n=2655)		(n=3325)		
Know HIV status							
<i>Yes</i>	2822	100.00	2655	100.00	3325	100.00	–
<i>No</i>	0	0	0	0	0	0	
Prescribed ART							0.067
<i>Yes</i>	2679	94.92	2401	90.43	2141	64.40	
<i>No</i>	143	5.08	254	9.57	1184	35.60	
Virally suppressed <sup>f</sup>							0.165
<i>Yes</i>	1516	56.59	1280	53.31	1050	49.04	
<i>No</i>	1163	43.41	1121	46.69	1091	50.96	

<sup>a</sup> A stable patient is an OAT patient who has been enrolled into OAT program for at least three months and has not missed any OAT drug intake and tested negative for opiates  
<sup>b</sup> A non-stable patient is an OAT patient who violates OAT program rules; got admitted into the program at least twice  
<sup>c</sup> A dropout is an OAT patient who has not presented for an OAT drug intake for at least past three months  
<sup>d</sup> Suboptimal: Methadone<80 mg; Buprenorphine<10 mg. Optimal: Methadone 80-120 mg; Buprenorphine 10-14 mg. High: Methadone>120 mg; Buprenorphine>14 mg  
<sup>e</sup> Individual level reasons include: OAT drug diversion; voluntary discharge; OAT treatment completion; change of patient's place of living; OAT drug side effects; patient's incarceration. Structural level reasons include: administrative discharge initiated by OAT provider; violations of OAT program rules; referral to another healthcare facility; missing OAT dosing for over 10 days  
<sup>f</sup> <100 copies

Table 2. Results of adjusted multinomial logistic regression modelling to determine characteristics associated with dropping out from opioid agonist treatment (OAT) program in 21,387 people who inject drugs (PWID) in Ukraine, 2020-2023

Covariate	Multinomial logistic regression models by cohort of OAT patients			
	Stable vs non-stable patients		Stable patients vs dropouts	
	Adjusted OR	95% CI	Adjusted OR	95% CI
Age (continuous)	1.28	1.08-1.43	1.87	1.23-2.49
Gender				
Male		Ref.		Ref.
Female	0.39	0.23-0.76	0.79	0.24-0.98
OAT drug dosing (mg)				
Low	2.14	1.46-3.25	3.01	1.42-4.09
Optimal	Ref.		Ref.	
High	0.56	0.32-0.78	0.69	0.48-0.71
Form of OAT receipt				
Daily at OAT site		Ref.		Ref.
Take-home dosing	1.45	1.16-2.76	1.18	1.09-2.15
By prescription at pharmacy	0.67	0.45-0.98	1.34	1.12-2.43
At home (hospice care)	1.23	0.80-2.31	2.84	1.28-4.32
Availability of psycho-social support at OAT site				
No		Ref.		Ref.
Yes	0.76	0.54-0.87	0.55	0.38-0.63

### Results:

Mean age among stable, unstable and dropout patients was 38.3, 40.1, and 28.3 years respectively. Duration of injection before OAT ranged from 8.1 to 16.4 years with the longest duration among stable patients; time on OAT was 2.2, 2.6, and 4.3 years among stable, unstable, and dropout patients, respectively. Most patients were male (83.9-95.0%), on methadone (87.8-95.4%), received suboptimal OAT dosing (45.6-68.5%). Factors associated with being either unstable or dropout patient were younger age (aOR=1.28; 95% CI: 1.08-1.43, aOR=1.87; 95% CI: 1.23-2.49), male gender (aOR=0.39; 95% CI: 0.23-0.76, aOR=0.79; 95% CI: 0.24-0.98), suboptimal OAT dosing (aOR=2.14; 95% CI: 1.46-3.25, aOR=3.01; 95% CI: 1.42-4.09), coming for OAT daily (aOR=1.45; 95% CI: 1.16-2.76, aOR=1.18; 95% CI: 1.09-2.15), no access to psychosocial support at OAT site (aOR=0.76; 95% CI: 0.54-0.87, aOR=0.55; 95% CI: 0.38-0.63).

### Conclusion:

These results suggest that most of the barriers to retention in OAT are structural such as suboptimal dosing, daily dosing, no formal psychosocial support services on site rather than individual. Advocacy efforts at both national and regional levels could lead to program-level changes which will improve OAT retention among patients in Ukraine.

### A Disclosure of Interest Statement:

The authors have no conflict of interests to declare.