

# Assessing the Impact of the X-Wavier Elimination on Prescribing of Buprenorphine for Treating Opioid Use Disorder

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## INTRODUCTION

- Background:** Since 2023, clinicians with a regular license from the Drug Enforcement Administration have been allowed to prescribe buprenorphine for treating opioid use disorder (OUD) without the previously required completion of the X-waiver training.
- Objective:** To assess temporal changes in the diagnosis and the prescribing patterns of OUD before and after the elimination of the X-wavier requirement.

## METHODS

- A retrospective longitudinal study utilized the TriNetX research database. The primary analysis included all buprenorphine prescriptions during two time periods:
  - Wavier-required period (2021-2022)
  - Wavier-removed period (2023-March 2024)
- The study population focused on adults (age≥18) with at least two outpatient visits during the study timeframe.
- OUD diagnoses are captured based on the presence of ICD-10 codes (F11) and ICD-9 codes (304.0,304.7,965.0,E85.00,E93.50)
- Buprenorphine prescriptions for OUD included Injectable or oral buprenorphine prescriptions.
- Outcomes included:
  - Numbers of patients diagnosed with OUD over time and patients prescribed buprenorphine over time.
  - Likelihood of patients newly diagnosed with OUD and initiated on buprenorphine between two policy periods.
- The non-parametric Mann-Whitney U test was applied to evaluate changes in buprenorphine prescribing patterns between the two policy periods.
- Logistic regression was applied to assess the probability of receiving buprenorphine treatment among persons with OUD in the wavier-removed period, compared to those in the wavier-required period, controlled for demographic and comorbid characteristics.

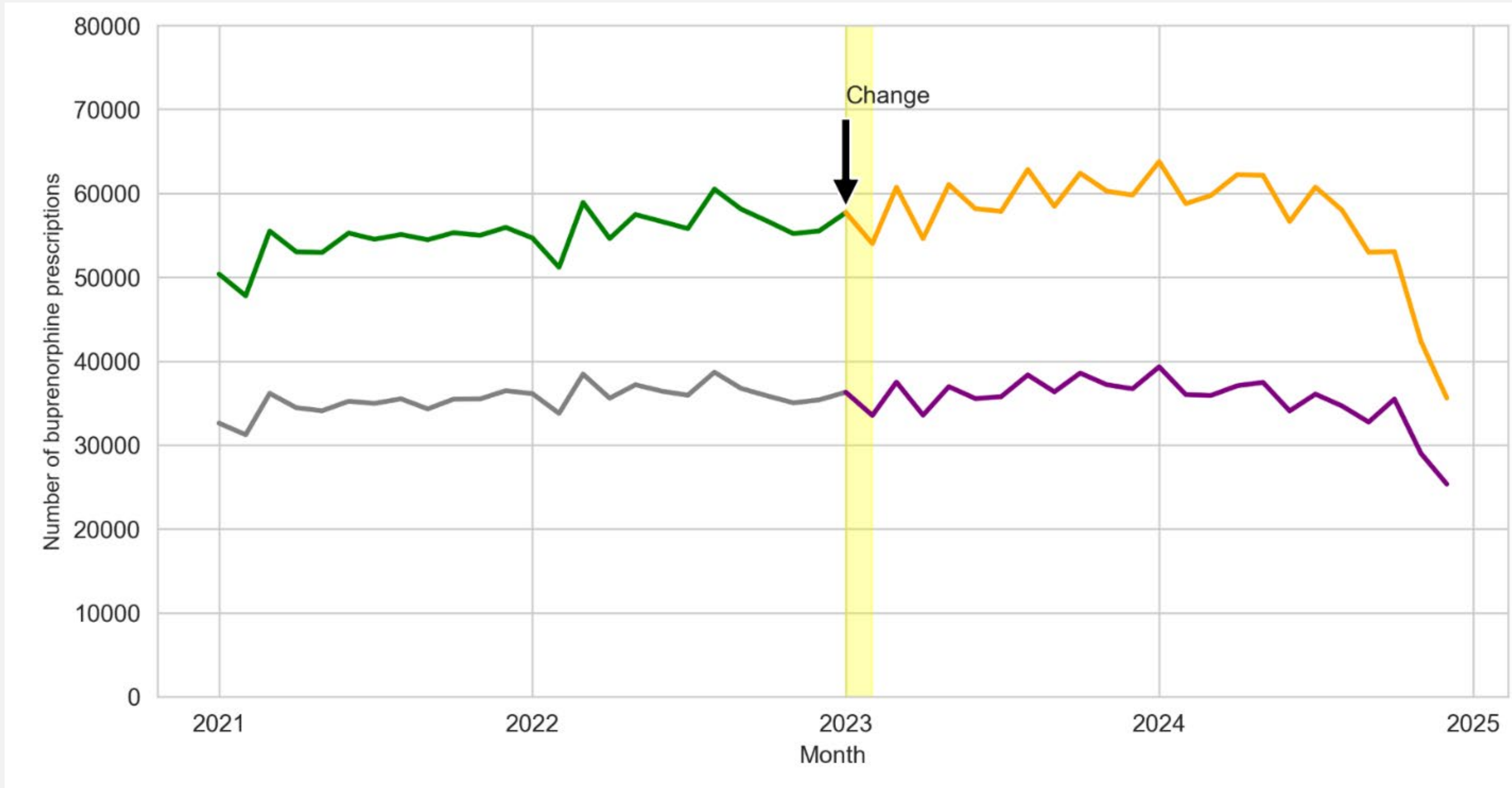
## SAMPLE DESCRIPTION

STUDY POPULATION SUMMARY BY POLICY PERIOD			
Baseline Characteristics	Total Sample, N=257,452	X-Wavier Required (2021-2022), N=131,330	X-Wavier Elimination (2023-March 2024), N=126,122
Female	125,623 (43.6)	64,255 (43.7)	61,368 (43.5)
New OUD Diagnosis Age	48.3 (15.8)	47.6 (15.7)	49.1 (15.9)
Race/ethnicity			
White	188,158 (65.3)	96,853 (65.9)	91,305 (64.8)
Black	45,898 (15.9)	23,429 (15.9)	22,469 (15.9)
Hispanic	20,551 (7.1)	9,926 (6.8)	10,625 (7.5)
Other	33,362 (11.6)	16,812 (11.4)	16,550 (11.7)
Medical Condition			
Diabetes	58,464 (20.3)	28,086 (19.1)	30,378 (21.6)
Obesity/overweight	48,420 (16.8)	23,047 (15.7)	25,373 (18)
Chronic Pain	83,048 (28.8)	41,318 (28.1)	41,730 (29.6)
Mental Health Condition			
Depression	72,645 (25.2)	36,128 (24.6)	36,517 (25.9)
Anxiety	87,638 (30.4)	43,418 (29.5)	44,220 (31.4)
Bipolar	26,517 (9.2)	13,434 (9.1)	13,083 (9.3)
Substance Use Disorder			
Alcohol	35,154 (12.2)	17,368 (11.8)	17,786 (12.6)
Nicotine	108,091 (37.5)	54,645 (37.2)	53,446 (37.9)
Other Drugs	63,348 (22)	31,582 (21.5)	31,766 (22.5)
Co-prescription			
Benzodiazepine	156,279 (54.3)	79,335 (54)	76,944 (54.6)
Stimulant	5,391 (1.9)	2,678 (1.8)	2,713 (1.9)
Gabapentin/pregabalin	40,969 (14.2)	20,338 (13.8)	20,631 (14.6)

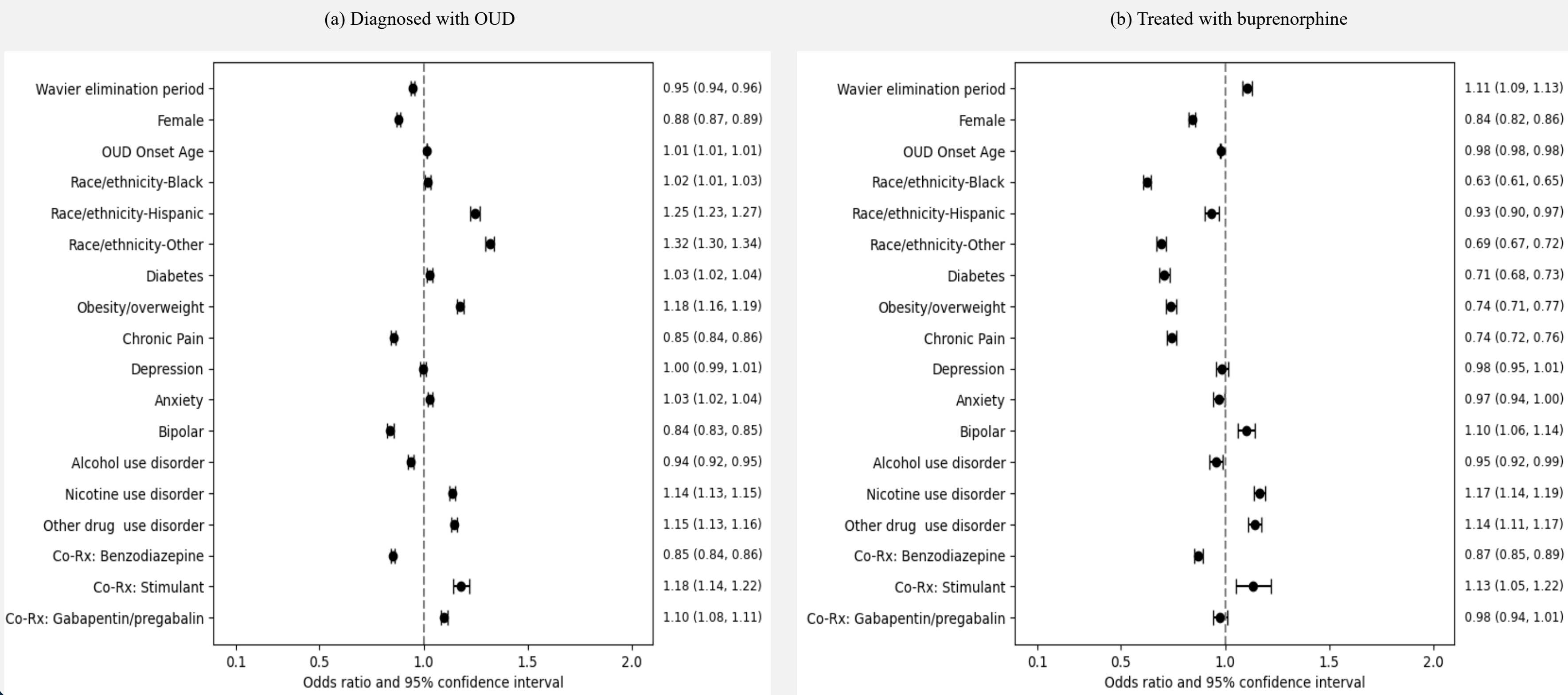
# Adults with opioid use disorder are **more likely** to be prescribed buprenorphine since the **removal of the X-wavier policy** in 2023

## RESULTS

- Time pattern summary:**
  - (Top) Population newly diagnosed with OUD:** number of adult patients newly diagnosed with OUD each year.
  - (Bottom) Prescribed buprenorphine to treat OUD:** number of adult patients prescribed buprenorphine to treat OUD each year
  - Change:** Implementation for the X-wavier elimination policy
  - Finding:** Buprenorphine prescriptions increased from 2021 to 2024, with higher proportions of newly diagnosed adults with OUD and buprenorphine initiation observed following the waiver elimination ( $p<0.01$ ).



- Impact of X-Wavier Elimination Policy:**
  - Finding:** Among individuals with OUD, the likelihood of a first-time diagnosis was 5% lower during the waiver-elimination period compared to the waiver-required period (Figure a). However, individuals diagnosed during the waiver-elimination period were 11% more likely to initiate buprenorphine therapy (Figure b).



## RESULTS (cont.)

LOGISTIC REGRESSION MODEL		
	New OUD Diagnosis	Buprenorphine Treatment
	Adjusted Odds Ratio (95% Confidence Interval)	Adjusted Odds Ratio (95% Confidence Interval)
X-wavier Elimination Period	0.95** (0.94, 0.96)	1.11** (1.09,1.13)
Female	0.88** (0.87,0.89)	0.84** (0.82,0.86)
OUD Onset Age	1.01** (1.01,1.01)	0.98** (0.98,0.98)
Race/ethnicity (ref: White)		
Black	1.02** (1.01, 1.03)	0.63** (0.61,0.65)
Hispanic	1.25** (1.23, 1.27)	0.93** (0.90,0.97)
Other	1.32** (1.30, 1.34)	0.70** (0.67,0.72)
Medical Health Condition		
Diabetes	1.03** (1.02, 1.04)	0.71** (0.68,0.73)
Obesity/overweight	1.18** (1.16, 1.19)	0.74** (0.71,0.77)
Chronic pain	0.86** (0.85, 0.87)	0.74** (0.72,0.76)
Mental Health Condition		
Depression	1.00 (0.99, 1.01)	0.98 (0.95,1.01)
Anxiety	1.03** (1.02, 1.04)	0.97** (0.94,0.99)
Bipolar	0.84** (0.83, 0.86)	1.10** (1.06,1.14)
Drug Use Disorder		
Alcohol	0.94** (0.92, 0.95)	0.96** (0.92,0.98)
Nicotine	1.14** (1.13, 1.15)	1.17** (1.14,1.19)
Other Drug	1.15** (1.13, 1.16)	1.14** (1.11,1.17)
Co-prescription		
Benzodiazepine	0.85** (0.84, 0.86)	0.87** (0.85,0.89)
Stimulant	1.18** (1.14, 1.22)	1.13** (1.05,1.22)
Gabapentin	1.10** (1.08, 1.12)	0.98 (0.94,1.01)

\* $p<0.05$ ; \*\* $p<0.01$

- Other Population Characteristics:** Females and individuals with chronic pain, alcohol use disorder, diabetes, or obesity showed a lower likelihood of OUD diagnosis and subsequent buprenorphine treatment. Racial minority groups had higher odds of being diagnosed with OUD but were less likely to receive treatment compared to White individuals. Nicotine and other drug-related disorders were associated with increased diagnosis and treatment, whereas bipolar disorder showed mixed patterns. Recent stimulant use was positively associated with diagnosis and treatment, while benzodiazepine use was associated with lower rates of both.

## CONCLUSION

- This study highlights the impact of the X-waiver elimination on OUD diagnosis and treatment patterns, demonstrating a decline in new OUD diagnoses alongside an increase in buprenorphine prescriptions among newly diagnosed patients following the X-waiver elimination.
- While the policy change may have improved access to MOUD by reducing regulatory barriers, other factors, such as provider hesitancy, lack of training, and persistent disparities in treatment access, may continue to hinder adoption and limit its impacts.
- Addressing these barriers through provider education, patient outreach, and systemic support is essential to maximizing the benefits of expanded buprenorphine prescribing.

## FUNDING

2023 Penn State Inter-Campus Health and Medicine Research Program (MPI: S. Park, W. Tuan)