

ONLINE SUPPLEMENTAL MATERIALS

Technical Appendix

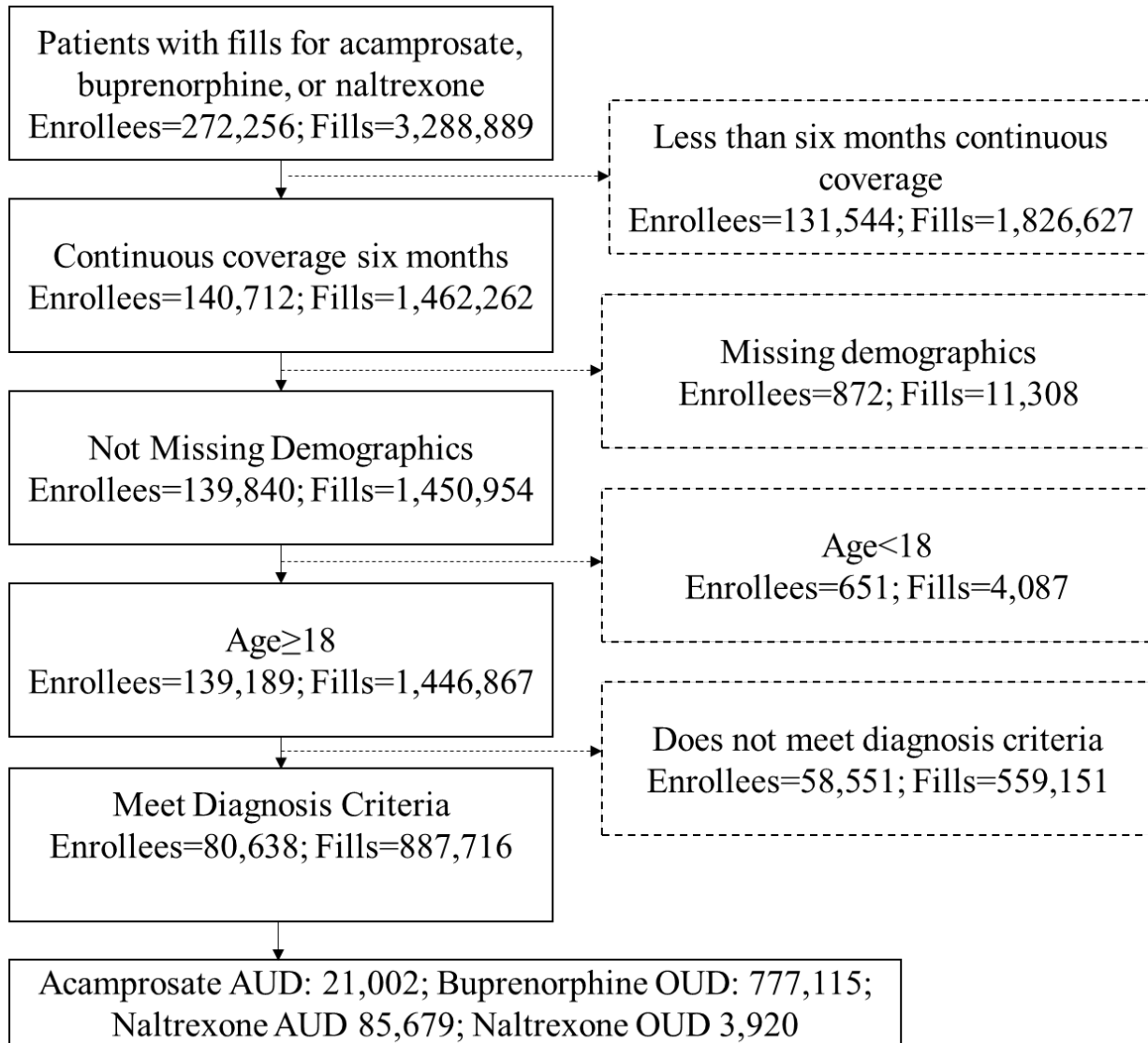
We used generalized estimating equations (GEE) with a log link and a Poisson distribution to implement the Poisson regression models. We used a first-order autoregressive correlation structure AR(1). This correlation structure assumes that observations have the highest correlation with the observations closest in time. The outcome was the count of fills in a given month and we used the natural log of the population with AUD or OUD as the offset term. There was one observation per month for a total of 54 observations in the model.

The specific model we used appears below:

$$f(x) = \beta_0 + \beta_1 \text{COVID19} + \beta_3 \text{TRAINING} + \beta_4 \text{XWAIVER} + \beta_5 \text{MONTH} + \beta_6 \text{TIME} + \varepsilon$$

We included indicator variables for whether the month was on after the time point in question: COVID (\geq March 2020), TRAINING (\geq May 2021), XWAIVER (\geq January 2023). These indicators measure shifts in the level of the rate over time and correspond to the results in Table 1. We also included 11 indicator variables for calendar month (MONTH) to account for differences in the rate for particular months. Finally, we included a time trends (TIME) as a continuous variable ranging from 1 to 54 for the 54 months from January 2019-June 2023.

Supplemental Figure 1: Sample Flow Diagram



AUD: alcohol use disorder; OUD: opioid use disorder.

Supplemental Table 1: Descriptive Statistics for All Fills

Variable	Level	Commercial				MA					
		Acamp. AUD	BUP OUD	NTX OUD	NTX AUD	Acamp. AUD	BUP OUD	NTX OUD	NTX AUD		
Sex	Female	42.5%	33.3%	41.2%	43.8%	Female	43.1%	47.6%	56.9%	43.0%	
	Male	57.5%	66.7%	58.8%	56.2%	Male	56.9%	52.4%	43.1%	57.0%	
Age	18-25	5.0%	5.4%	35.0%	7.1%	18-39	4.0%	5.4%	12.9%	2.4%	
	26-39	26.5%	41.8%	37.6%	29.5%	40-64	44.1%	64.4%	62.6%	42.2%	
	40-64	65.6%	51.4%	27.0%	60.9%	65-70	26.8%	19.0%	15.0%	27.5%	
	65+	70-75	2.9%	1.4%	0.3%	2.5%	70-75	16.8%	8.2%	4.5%	17.6%
		75-80					75-80	5.5%	2.3%	3.5%	7.3%
		80+					80+	2.9%	0.8%	1.5%	3.0%
Race and Ethnicity	Non-Hispanic					Non-Hispanic					
	Asian/Pacific Islander	0.9%	0.6%	1.1%	1.3%	Asian/Pacific Islander	1.1%	0.3%	0.1%	0.7%	
	Non-Hispanic Black	3.2%	4.3%	4.6%	3.9%	Non-Hispanic Black	8.2%	8.4%	12.7%	8.6%	
	Hispanic	5.4%	4.9%	5.6%	5.4%	Hispanic	6.5%	4.5%	7.8%	6.0%	
	Non-Hispanic White	74.9%	70.5%	68.0%	73.1%	Non-Hispanic White	66.3%	67.3%	55.2%	67.7%	
Unknown	15.6%	19.7%	20.7%	16.4%	Unknown	18.0%	19.5%	24.2%	17.0%		
Days Supply	1-7 Days	3.1%	13.9%	7.6%	2.2%	1-7 Days	6.6%	19.7%	7.7%	3.1%	
	8-15 Days	8.1%	15.9%	6.7%	3.3%	8-15 Days	10.0%	18.3%	8.8%	4.7%	
	16-27 Days	1.5%	5.9%	1.2%	0.9%	16-27 Days	1.6%	4.6%	1.6%	0.9	
	28+ Days	87.4%	64.2%	84.5%	93.6%	28+ Days	81.9%	57.3%	81.9%	91.4%	
Elixhauser Comorbidities	Alcohol Use Disorder	100%	8.0%	0%	100%	Alcohol Use Disorder	100%	9.9%	0%	100%	
	Opioid Use Disorder	9.7%	100%	100%	0%	Opioid Use Disorder	12.7%	100%	100%	0%	
Other Comorbidities	Serious Mental Illness	76.3%	36.4%	69.7%	74.4%	Serious Mental Illness	75.5%	53.0%	85.5%	74.8%	
	Psychotic Disorders	1.2%	0.6%	2.4%	1.6%	Psychotic Disorders	9.7%	4.0%	20.2%	11.4%	
	Bipolar Disorders	10.9%	4.6%	15.7%	11.2%	Bipolar Disorders	21.7%	12.0%	38.7%	19.9%	
	Other Mood Disorders/ Dissociative Disorders	4.0%	1.2%	2.9%	3.1%	Other Mood Disorders/ Dissociative Disorders	3.7%	1.7%	5.4%	3.1%	
	Depressive Disorders	55.0%	18.4%	48.2%	51.2%	Depressive Disorders	51.7%	27.8%	47.7%	49.1%	
	Anxiety Disorders	60.0%	26.0%	48.2%	55.8%	Anxiety Disorders	47.4%	34.8%	56.5%	43.8%	
	Obsessive-Compulsive Disorders	1.7%	0.5%	1.4%	1.7%	Obsessive-Compulsive Disorders	1.4%	0.6%	0.9%	1.5%	
	Trauma-Related Disorders	13.6%	4.8%	15.4%	11.9%	Trauma-Related Disorders	16.1%	9.5%	28.3%	14.5%	
	Personality Disorders	2.3%	0.5%	3.7%	2.4%	Personality Disorders	4.6%	1.7%	10.5%	4.3%	

AUD: alcohol use disorder; BUP: buprenorphine; MA: Medicare Advantage; NTX: naltrexone; OUD: opioid use disorder.

Supplemental Table 2: Descriptive Statistics for New Fills

Variable	Level	Commercial				MA					
		Acamp. AUD	BUP OUD	NTX OUD	NTX AUD	Acamp. AUD	BUP OUD	NTX OUD	NTX AUD		
Sex	Female	41.3%	34.6%	35.8%	40.5%	Female	43.6%	48.8%	53.2%	41.7%	
	Male	58.7%	65.4%	64.2%	59.5%	Male	56.4%	51.2%	46.8%	58.3%	
Age	18-25	6.3%	20.2%	37.1%	8.7%	18-39	3.2%	5.7%	13.0%	2.5%	
	26-39	29.4%	41.1%	39.3%	31.6%	40-64	46.7%	59.7%	56.5%	38.8%	
	40-64	62.0%	37.7%	23.1%	57.8%	65-70	27.1%	19.2%	17.5%	30.4%	
	65+	70-75	2.3%	1.0%	0.5%	1.9%	70-75	15.9%	9.8%	8.5%	18.7%
		75-80					75-80	5.2%	3.7%	2.4%	6.9%
		80+					80+	1.9%	1.8%	2.0%	2.6%
Race and Ethnicity	Non-Hispanic					Non-Hispanic					
	Asian/Pacific Islander	1.1%	0.9%	1.0%	1.4%	Asian/Pacific Islander	0.5%	0.4%	0.4%	0.6%	
	Non-Hispanic Black	4.6%	5.2%	4.6%	4.6%	Non-Hispanic Black	7.9%	12.5%	13.2%	10.3%	
	Hispanic	6.2%	6.5%	5.8%	6.3%	Hispanic	7.3%	5.3%	5.2%	5.9%	
	Non-Hispanic White	71.7%	65.9%	68.1%	70.6%	Non-Hispanic White	68.1%	62.4%	58.4%	66.3%	
Unknown	16.4%	21.4%	20.5%	17.0%	Unknown	16.2%	19.4%	22.8%	16.9%		
Days Supply	1-7 Days	5.3%	38.4%	4.7%	12.1%	1-7 Days	6.6%	43.6%	3.6%	12.6%	
	8-15 Days	12.5%	25.0%	6.2%	8.6%	8-15 Days	15.4%	27.2%	7.9%	11.2%	
	16-27 Days	1.7%	4.7%	1.5%	1.6%	16-27 Days	1.9%	3.6%	1.2%	2.2%	
	28+ Days	80.5%	32.0%	87.7%	77.7%	28+ Days	76.1%	25.6%	87.3%	74.0%	
Elixhauser Comorbidities	Alcohol Use Disorder	100%	18.1%	0%	100%	Alcohol Use Disorder	100%	15.0%	0%	100%	
	Opioid Use Disorder	9.4%	100%	100%	0%	Opioid Use Disorder	14.2%	100%	100%	0%	
Other Comorbidities	Serious Mental Illness	72.7%	45.9%	63.0%	68.7%	Serious Mental Illness	72.0%	59.2%	77.6%	69.7%	
	Psychotic Disorders	1.6%	1.6%	2.2%	1.8%	Psychotic Disorders	6.6%	6.9%	14.8%	7.7%	
	Bipolar Disorders	9.6%	7.6%	12.8%	9.2%	Bipolar Disorders	19.8%	16.1%	25.2%	16.8%	
	Other Mood Disorders/ Dissociative Disorders	3.6%	2.2%	2.6%	2.8%	Other Mood Disorders/ Dissociative Disorders	3.3%	2.9%	3.2%	3.0%	
	Depressive Disorders	51.3%	27.9%	42.9%	47.1%	Depressive Disorders	52.3%	36.8%	46.0%	48.7%	
	Anxiety Disorders	55.9%	34.0%	45.1%	51.4%	Anxiety Disorders	48.6%	39.2%	49.6%	42.2%	
	Obsessive-Compulsive Disorders	1.6%	0.7%	1.6%	1.4%	Obsessive-Compulsive Disorders	1.4%	0.7%	2.0%	1.4%	
	Trauma-Related Disorders	11.2%	8.4%	13.3%	10.1%	Trauma-Related Disorders	15.8%	10.9%	20.4%	12.2%	
	Personality Disorders	1.9%	1.4%	3.4%	2.2%	Personality Disorders	3.8%	2.6%	6.8%	3.3%	

AUD: alcohol use disorder; BUP: buprenorphine; MA: Medicare Advantage; NTX: naltrexone; OUD: opioid use disorder.

Supplemental Table 3: Three-Month Moving Rate Ratio of Fills by Insurance, February 2019-May 2023

	Acamp. AUD	Commercial BUP OUD	NTX OUD	NTX AUD	Acamp. AUD	MA BUP OUD	NTX AUD
Jan-19							
Feb-19	1	1	1	1	1	1	1
Mar-19	1.04 (0.9, 1.21)	1.01 (0.98, 1.04)	1.11 (0.84, 1.46)	1 (0.93, 1.07)	1.04 (0.89, 1.21)	1.02 (0.99, 1.05)	1.03 (0.94, 1.13)
Apr-19	1.04 (0.9, 1.21)	1.01 (0.97, 1.04)	0.95 (0.72, 1.26)	1 (0.94, 1.08)	0.97 (0.83, 1.14)	1.02 (0.99, 1.05)	0.96 (0.88, 1.05)
May-19	1 (0.86, 1.15)	0.99 (0.96, 1.02)	0.91 (0.69, 1.22)	0.98 (0.91, 1.05)	0.95 (0.81, 1.11)	1.01 (0.98, 1.04)	1.04 (0.95, 1.14)
Jun-19	1.01 (0.87, 1.17)	1.02 (0.99, 1.05)	0.95 (0.71, 1.26)	1 (0.93, 1.07)	0.92 (0.78, 1.08)	1 (0.97, 1.03)	0.99 (0.91, 1.09)
Jul-19	0.96 (0.82, 1.11)	1.02 (0.99, 1.06)	0.94 (0.7, 1.26)	0.98 (0.91, 1.05)	1.02 (0.87, 1.2)	0.98 (0.95, 1.01)	1.01 (0.92, 1.11)
Aug-19	1.01 (0.87, 1.17)	1.04 (1.01, 1.07)	0.94 (0.7, 1.27)	1 (0.93, 1.07)	0.96 (0.82, 1.13)	0.99 (0.96, 1.02)	0.97 (0.89, 1.06)
Sep-19	0.99 (0.85, 1.15)	1.02 (0.99, 1.05)	0.93 (0.69, 1.27)	1 (0.94, 1.08)	0.99 (0.84, 1.16)	1 (0.97, 1.03)	0.98 (0.89, 1.07)
Oct-19	1.01 (0.87, 1.18)	1 (0.97, 1.03)	0.96 (0.71, 1.31)	0.99 (0.92, 1.07)	1.02 (0.87, 1.19)	0.99 (0.96, 1.02)	0.98 (0.9, 1.08)
Nov-19	0.98 (0.85, 1.14)	0.97 (0.94, 1)	0.94 (0.68, 1.28)	0.99 (0.92, 1.06)	1.1 (0.94, 1.28)	1.01 (0.98, 1.04)	0.98 (0.89, 1.07)
Dec-19	0.98 (0.84, 1.14)	0.98 (0.95, 1.02)	0.87 (0.62, 1.2)	0.98 (0.91, 1.05)	1 (0.85, 1.17)	0.99 (0.96, 1.02)	0.98 (0.89, 1.08)
Jan-20	0.99 (0.85, 1.15)	1 (0.97, 1.03)	1 (0.72, 1.39)	1.02 (0.95, 1.09)	0.94 (0.8, 1.1)	1.02 (0.99, 1.05)	0.98 (0.89, 1.07)
Feb-20	1.04 (0.9, 1.21)	1.05 (1.02, 1.08)	1.03 (0.74, 1.42)	1.04 (0.97, 1.12)	1 (0.85, 1.17)	1.01 (0.98, 1.04)	1.03 (0.93, 1.13)
Mar-20	1.01 (0.87, 1.17)	1 (0.97, 1.04)	1.18 (0.86, 1.61)	1.01 (0.94, 1.08)	1.04 (0.89, 1.22)	1 (0.97, 1.03)	1.01 (0.92, 1.1)
Apr-20	0.96 (0.83, 1.11)	0.99 (0.96, 1.02)	1.01 (0.74, 1.38)	1 (0.94, 1.08)	1.05 (0.9, 1.23)	0.98 (0.95, 1.01)	0.99 (0.9, 1.09)
May-20	0.99 (0.85, 1.15)	1 (0.97, 1.04)	1.02 (0.75, 1.38)	1 (0.93, 1.07)	0.99 (0.84, 1.15)	1 (0.97, 1.03)	1 (0.91, 1.1)
Jun-20	1.01 (0.87, 1.18)	1 (0.97, 1.03)	0.97 (0.71, 1.32)	0.98 (0.91, 1.05)	1.02 (0.88, 1.2)	1.01 (0.98, 1.04)	1.03 (0.94, 1.13)
Jul-20	1.04 (0.89, 1.2)	1 (0.97, 1.03)	0.97 (0.71, 1.33)	0.97 (0.9, 1.04)	1.02 (0.87, 1.19)	1 (0.97, 1.03)	1.05 (0.96, 1.16)
Aug-20	0.95 (0.82, 1.11)	0.99 (0.96, 1.03)	1.06 (0.78, 1.44)	0.98 (0.91, 1.05)	1.03 (0.88, 1.2)	0.99 (0.96, 1.02)	1 (0.91, 1.1)
Sep-20	0.99 (0.85, 1.15)	0.99 (0.96, 1.02)	1.08 (0.8, 1.46)	1.01 (0.94, 1.08)	1.01 (0.86, 1.17)	0.99 (0.96, 1.02)	0.99 (0.9, 1.08)
Oct-20	0.98 (0.84, 1.14)	1 (0.97, 1.03)	1.05 (0.78, 1.42)	1 (0.93, 1.08)	0.97 (0.83, 1.13)	1.01 (0.98, 1.04)	0.96 (0.88, 1.06)
Nov-20	1.01 (0.87, 1.17)	1 (0.97, 1.03)	0.94 (0.69, 1.27)	1.01 (0.94, 1.08)	0.97 (0.83, 1.13)	1.02 (0.99, 1.05)	1.01 (0.92, 1.11)
Dec-20	0.95 (0.82, 1.11)	0.97 (0.94, 1)	0.87 (0.64, 1.19)	0.98 (0.91, 1.05)	0.94 (0.8, 1.1)	0.98 (0.95, 1.01)	0.98 (0.89, 1.07)
Jan-21	0.96 (0.82, 1.12)	1 (0.97, 1.03)	0.91 (0.66, 1.26)	1.02 (0.95, 1.09)	0.98 (0.84, 1.15)	1.01 (0.98, 1.04)	1.01 (0.92, 1.11)
Feb-21	1.02 (0.87, 1.19)	1 (0.97, 1.03)	0.97 (0.7, 1.34)	1.02 (0.95, 1.1)	0.97 (0.82, 1.13)	1 (0.97, 1.03)	1.01 (0.92, 1.11)
Mar-21	1.06 (0.91, 1.23)	1.01 (0.98, 1.05)	1 (0.72, 1.39)	1.04 (0.97, 1.11)	1 (0.85, 1.18)	1.01 (0.98, 1.04)	1.03 (0.94, 1.13)
Apr-21	1.01 (0.87, 1.17)	0.99 (0.96, 1.02)	0.93 (0.66, 1.3)	0.99 (0.92, 1.06)	0.96 (0.82, 1.13)	0.97 (0.94, 1)	1 (0.91, 1.1)
May-21	1 (0.86, 1.16)	1 (0.97, 1.03)	0.98 (0.7, 1.38)	1 (0.93, 1.07)	0.99 (0.84, 1.17)	1 (0.97, 1.03)	0.99 (0.9, 1.09)
Jun-21	0.98 (0.84, 1.14)	1 (0.97, 1.03)	0.89 (0.63, 1.27)	1 (0.93, 1.07)	0.97 (0.82, 1.14)	1.01 (0.98, 1.04)	1.01 (0.92, 1.11)
Jul-21	0.99 (0.85, 1.15)	1 (0.97, 1.03)	0.99 (0.7, 1.4)	1 (0.93, 1.07)	1.08 (0.92, 1.27)	1.02 (0.99, 1.05)	1 (0.91, 1.09)
Aug-21	1.02 (0.87, 1.18)	0.99 (0.96, 1.02)	1.03 (0.73, 1.46)	0.99 (0.92, 1.06)	1.04 (0.88, 1.21)	1 (0.97, 1.03)	1 (0.91, 1.09)
Sep-21	1 (0.86, 1.16)	0.98 (0.95, 1.01)	1.18 (0.85, 1.63)	0.98 (0.91, 1.05)	0.95 (0.81, 1.12)	0.98 (0.96, 1.01)	0.98 (0.9, 1.08)
Oct-21	1.03 (0.89, 1.2)	1.01 (0.98, 1.04)	1.05 (0.76, 1.45)	1.02 (0.95, 1.09)	0.99 (0.84, 1.16)	1.01 (0.98, 1.04)	1.02 (0.93, 1.12)
Nov-21	0.94 (0.81, 1.1)	0.98 (0.95, 1.01)	0.91 (0.65, 1.27)	0.98 (0.91, 1.05)	1.01 (0.86, 1.19)	0.99 (0.96, 1.02)	1 (0.91, 1.09)
Dec-21	0.97 (0.83, 1.13)	0.99 (0.96, 1.02)	1.01 (0.73, 1.41)	0.99 (0.92, 1.07)	1.06 (0.91, 1.24)	1 (0.97, 1.03)	1.02 (0.93, 1.12)

Jan-22	1 (0.86, 1.17)	0.98 (0.95, 1.01)	1 (0.71, 1.39)	0.96 (0.9, 1.04)	0.97 (0.83, 1.14)	1 (0.97, 1.03)	1.02 (0.93, 1.11)
Feb-22	1.01 (0.87, 1.18)	1.02 (0.98, 1.05)	1.17 (0.85, 1.61)	1.02 (0.95, 1.09)	0.95 (0.81, 1.11)	1.02 (0.99, 1.05)	1.05 (0.96, 1.15)
Mar-22	1.04 (0.89, 1.21)	1.01 (0.97, 1.04)	0.9 (0.65, 1.25)	1.01 (0.94, 1.09)	0.99 (0.85, 1.17)	1.02 (0.99, 1.05)	1 (0.92, 1.1)
Apr-22	0.97 (0.83, 1.13)	1 (0.97, 1.03)	1.03 (0.74, 1.43)	1.04 (0.96, 1.11)	1.03 (0.88, 1.21)	1 (0.97, 1.03)	1 (0.92, 1.1)
May-22	1 (0.86, 1.17)	1 (0.97, 1.03)	0.85 (0.6, 1.2)	1 (0.93, 1.07)	1.01 (0.86, 1.18)	0.99 (0.96, 1.02)	0.98 (0.9, 1.07)
Jun-22	0.95 (0.81, 1.11)	0.99 (0.96, 1.02)	0.95 (0.67, 1.35)	1 (0.94, 1.08)	0.98 (0.84, 1.15)	0.98 (0.95, 1.01)	1 (0.91, 1.09)
Jul-22	1 (0.86, 1.17)	1.01 (0.98, 1.04)	1.01 (0.71, 1.43)	1 (0.94, 1.08)	1.03 (0.88, 1.21)	1 (0.97, 1.03)	1.04 (0.95, 1.14)
Aug-22	1.02 (0.87, 1.19)	0.99 (0.96, 1.02)	0.96 (0.68, 1.37)	0.99 (0.92, 1.07)	1.01 (0.86, 1.18)	0.98 (0.95, 1.01)	0.99 (0.91, 1.09)
Sep-22	1.05 (0.9, 1.22)	1 (0.97, 1.03)	0.92 (0.64, 1.32)	1.04 (0.97, 1.12)	1.07 (0.92, 1.25)	0.99 (0.96, 1.02)	1.01 (0.93, 1.11)
Oct-22	1.01 (0.87, 1.18)	0.99 (0.96, 1.02)	0.97 (0.67, 1.4)	1.01 (0.94, 1.08)	1.01 (0.86, 1.17)	0.99 (0.96, 1.02)	0.98 (0.9, 1.08)
Nov-22	1.01 (0.87, 1.17)	0.98 (0.95, 1.02)	1.01 (0.7, 1.46)	1.01 (0.94, 1.08)	0.98 (0.84, 1.14)	0.99 (0.96, 1.02)	1.01 (0.92, 1.1)
Dec-22	0.99 (0.85, 1.16)	1 (0.97, 1.03)	1.08 (0.75, 1.54)	0.98 (0.91, 1.05)	0.96 (0.82, 1.12)	1.01 (0.98, 1.04)	1.01 (0.92, 1.1)
Jan-23	1 (0.86, 1.16)	0.99 (0.96, 1.02)	0.88 (0.6, 1.27)	0.99 (0.92, 1.06)	0.97 (0.83, 1.14)	1 (0.97, 1.03)	0.98 (0.9, 1.07)
Feb-23	1.01 (0.86, 1.17)	1.02 (0.99, 1.05)	1.01 (0.7, 1.47)	1.03 (0.96, 1.1)	1.02 (0.87, 1.2)	1.03 (1, 1.06)	1.06 (0.97, 1.16)
Mar-23	1 (0.86, 1.16)	0.99 (0.96, 1.02)	1.01 (0.69, 1.46)	1 (0.93, 1.07)	1.05 (0.89, 1.22)	1 (0.97, 1.03)	1 (0.92, 1.1)
Apr-23	1 (0.86, 1.17)	1.01 (0.98, 1.04)	1.09 (0.76, 1.56)	1.03 (0.96, 1.1)	1.05 (0.9, 1.22)	1.02 (0.99, 1.05)	1.02 (0.94, 1.12)
May-23	0.98 (0.84, 1.14)	1 (0.97, 1.03)	1.05 (0.74, 1.5)	0.99 (0.93, 1.07)	1.08 (0.93, 1.26)	1 (0.97, 1.03)	0.98 (0.89, 1.07)

Note: The three-month moving average rate ratio is calculated with respect to January-March 2019. AUD: alcohol use disorder; BUP: buprenorphine; MA: Medicare Advantage; NTX: naltrexone; OUD: opioid use disorder.

Supplemental Table 4: Three-Month Moving Rate Ratio of Fills by Insurance and Days Supply, February 2019-May 2023

	Buprenorphine Commercial				Buprenorphine MA			
	1-7	8-15	16-27	28+	1-7	8-15	16-27	28+
Jan-19								
Feb-19	1	1	1	1	1	1	1	
Mar-19	1.03 (0.98, 1.08)	0.99 (0.94, 1.04)	1.03 (0.95, 1.12)	1.01 (0.99, 1.04)	1.02 (0.96, 1.08)	0.99 (0.93, 1.05)	1 (0.88, 1.12)	1.03 (0.99, 1.06)
Apr-19	1.03 (0.98, 1.08)	0.98 (0.93, 1.03)	1.05 (0.97, 1.14)	1.02 (1, 1.05)	1.06 (1, 1.12)	0.99 (0.93, 1.05)	1.08 (0.96, 1.21)	1.04 (1.01, 1.08)
May-19	0.99 (0.94, 1.05)	0.95 (0.91, 1)	1.07 (0.99, 1.16)	1.01 (0.99, 1.04)	1.11 (1.04, 1.17)	1 (0.95, 1.06)	1.08 (0.96, 1.21)	1.04 (1.01, 1.07)
Jun-19	1.03 (0.98, 1.08)	1.01 (0.96, 1.06)	1.09 (1.01, 1.17)	1.02 (1, 1.05)	1.12 (1.06, 1.19)	1.02 (0.97, 1.08)	1.09 (0.97, 1.22)	1.03 (1, 1.06)
Jul-19	1.1 (1.05, 1.15)	1.07 (1.02, 1.12)	1.11 (1.03, 1.19)	1.03 (1, 1.05)	1.11 (1.05, 1.17)	1.03 (0.97, 1.09)	1.03 (0.92, 1.15)	1 (0.97, 1.04)
Aug-19	1.2 (1.14, 1.26)	1.13 (1.08, 1.19)	1.09 (1.01, 1.18)	1.05 (1.03, 1.08)	1.1 (1.04, 1.16)	1.03 (0.97, 1.08)	0.99 (0.88, 1.11)	1 (0.97, 1.03)
Sep-19	1.27 (1.21, 1.33)	1.16 (1.11, 1.21)	1.11 (1.03, 1.2)	1.06 (1.04, 1.09)	1.14 (1.08, 1.2)	1.03 (0.97, 1.08)	1.02 (0.91, 1.14)	0.99 (0.96, 1.02)
Oct-19	1.3 (1.24, 1.37)	1.13 (1.08, 1.19)	1.15 (1.07, 1.24)	1.05 (1.02, 1.07)	1.12 (1.06, 1.18)	1.01 (0.95, 1.06)	1.05 (0.94, 1.17)	0.98 (0.94, 1.01)
Nov-19	1.27 (1.21, 1.33)	1.09 (1.04, 1.14)	1.19 (1.1, 1.28)	1.01 (0.99, 1.04)	1.1 (1.05, 1.17)	0.98 (0.93, 1.04)	1.17 (1.05, 1.31)	0.99 (0.96, 1.02)
Dec-19	1.24 (1.18, 1.3)	1.07 (1.03, 1.13)	1.2 (1.12, 1.29)	0.99 (0.97, 1.02)	1.09 (1.03, 1.15)	0.96 (0.91, 1.02)	1.14 (1.02, 1.27)	0.99 (0.96, 1.02)
Jan-20	1.2 (1.14, 1.26)	1.08 (1.03, 1.13)	1.17 (1.08, 1.26)	1 (0.97, 1.02)	1.14 (1.08, 1.2)	0.96 (0.91, 1.02)	1.09 (0.98, 1.22)	1 (0.97, 1.04)
Feb-20	1.19 (1.13, 1.25)	1.15 (1.1, 1.2)	1.15 (1.06, 1.24)	1.07 (1.04, 1.09)	1.16 (1.1, 1.23)	1 (0.95, 1.06)	0.97 (0.86, 1.08)	1.02 (0.99, 1.05)
Mar-20	1.1 (1.05, 1.16)	1.16 (1.1, 1.21)	1.09 (1.01, 1.18)	1.1 (1.07, 1.12)	1.08 (1.02, 1.14)	1.01 (0.96, 1.07)	0.93 (0.83, 1.04)	1.05 (1.02, 1.08)
Apr-20	1.02 (0.96, 1.07)	1.18 (1.12, 1.24)	1.02 (0.95, 1.11)	1.1 (1.08, 1.13)	0.97 (0.92, 1.02)	1 (0.94, 1.05)	0.91 (0.81, 1.02)	1.05 (1.02, 1.09)
May-20	1.02 (0.97, 1.07)	1.2 (1.15, 1.26)	1.01 (0.93, 1.09)	1.1 (1.08, 1.13)	0.93 (0.88, 0.99)	0.99 (0.93, 1.04)	0.95 (0.84, 1.06)	1.06 (1.03, 1.1)
Jun-20	1.06 (1.01, 1.12)	1.2 (1.14, 1.25)	0.99 (0.92, 1.07)	1.09 (1.07, 1.12)	0.98 (0.93, 1.04)	0.99 (0.94, 1.04)	0.97 (0.87, 1.09)	1.05 (1.02, 1.08)
Jul-20	1.12 (1.07, 1.18)	1.18 (1.12, 1.23)	1.03 (0.95, 1.11)	1.08 (1.05, 1.1)	0.99 (0.94, 1.05)	1.01 (0.96, 1.07)	1.01 (0.9, 1.12)	1.03 (1, 1.07)
Aug-20	1.14 (1.09, 1.2)	1.16 (1.11, 1.22)	1.03 (0.95, 1.11)	1.07 (1.04, 1.09)	0.99 (0.94, 1.05)	1.03 (0.98, 1.09)	1.02 (0.91, 1.13)	1.01 (0.98, 1.05)
Sep-20	1.14 (1.08, 1.19)	1.16 (1.11, 1.21)	1.04 (0.97, 1.13)	1.05 (1.03, 1.08)	1 (0.95, 1.05)	1.02 (0.97, 1.08)	1 (0.9, 1.11)	1 (0.97, 1.03)
Oct-20	1.12 (1.06, 1.18)	1.13 (1.08, 1.19)	1.06 (0.98, 1.14)	1.06 (1.04, 1.09)	1.03 (0.98, 1.09)	1.02 (0.97, 1.08)	1.03 (0.93, 1.15)	1 (0.97, 1.03)
Nov-20	1.08 (1.03, 1.13)	1.13 (1.08, 1.18)	1.07 (0.99, 1.16)	1.07 (1.04, 1.09)	1.07 (1.02, 1.13)	1.02 (0.97, 1.07)	1.05 (0.94, 1.16)	1.01 (0.98, 1.04)
Dec-20	1.01 (0.96, 1.06)	1.09 (1.04, 1.15)	1.02 (0.94, 1.1)	1.05 (1.03, 1.08)	1.05 (1, 1.11)	0.98 (0.93, 1.04)	1.02 (0.92, 1.14)	0.99 (0.96, 1.02)
Jan-21	1.02 (0.97, 1.07)	1.1 (1.05, 1.15)	1 (0.92, 1.08)	1.05 (1.03, 1.08)	1.1 (1.05, 1.16)	0.98 (0.93, 1.03)	0.98 (0.88, 1.09)	1.01 (0.98, 1.04)
Feb-21	1.02 (0.97, 1.07)	1.09 (1.04, 1.15)	0.93 (0.86, 1.01)	1.05 (1.03, 1.08)	1.11 (1.06, 1.17)	0.97 (0.92, 1.02)	0.95 (0.85, 1.06)	1 (0.97, 1.03)
Mar-21	1.06 (1.01, 1.12)	1.1 (1.05, 1.15)	0.94 (0.86, 1.01)	1.07 (1.04, 1.09)	1.12 (1.07, 1.18)	0.97 (0.92, 1.03)	0.95 (0.85, 1.05)	1.02 (0.99, 1.05)
Apr-21	1.04 (0.99, 1.1)	1.07 (1.02, 1.13)	0.92 (0.85, 0.99)	1.06 (1.03, 1.08)	1.06 (1.01, 1.12)	0.94 (0.89, 0.99)	0.94 (0.85, 1.05)	1 (0.97, 1.03)
May-21	1.06 (1.01, 1.11)	1.06 (1.01, 1.11)	0.94 (0.87, 1.02)	1.06 (1.03, 1.08)	1.05 (0.99, 1.1)	0.95 (0.9, 1)	0.97 (0.87, 1.08)	0.99 (0.96, 1.02)
Jun-21	1.05 (1, 1.11)	1.05 (1, 1.1)	0.98 (0.91, 1.06)	1.06 (1.03, 1.08)	1.07 (1.02, 1.13)	0.95 (0.91, 1)	1.01 (0.91, 1.12)	0.99 (0.96, 1.02)
Jul-21	1.03 (0.98, 1.08)	1.06 (1.01, 1.11)	0.99 (0.92, 1.07)	1.06 (1.03, 1.08)	1.11 (1.06, 1.17)	0.98 (0.93, 1.03)	1.03 (0.93, 1.14)	1 (0.97, 1.03)
Aug-21	1.01 (0.96, 1.06)	1.02 (0.97, 1.06)	1 (0.92, 1.08)	1.05 (1.03, 1.08)	1.14 (1.08, 1.2)	0.99 (0.94, 1.04)	1.02 (0.93, 1.13)	0.99 (0.96, 1.02)
Sep-21	1 (0.95, 1.05)	0.97 (0.93, 1.02)	0.97 (0.9, 1.05)	1.04 (1.01, 1.06)	1.13 (1.08, 1.19)	0.97 (0.92, 1.01)	1.04 (0.94, 1.15)	0.97 (0.94, 1)
Oct-21	1 (0.95, 1.05)	0.97 (0.92, 1.02)	0.95 (0.88, 1.03)	1.06 (1.03, 1.08)	1.16 (1.1, 1.22)	0.97 (0.92, 1.02)	1.02 (0.92, 1.12)	0.98 (0.95, 1.01)
Nov-21	0.95 (0.91, 1)	0.94 (0.9, 0.99)	0.91 (0.84, 0.98)	1.04 (1.01, 1.06)	1.13 (1.08, 1.19)	0.95 (0.9, 1)	1.01 (0.91, 1.12)	0.98 (0.95, 1)
Dec-21	0.94 (0.89, 0.99)	0.94 (0.9, 0.99)	0.89 (0.82, 0.97)	1.03 (1.01, 1.06)	1.12 (1.07, 1.18)	0.97 (0.92, 1.02)	0.96 (0.87, 1.06)	0.97 (0.95, 1)
Jan-22	0.91 (0.86, 0.96)	0.91 (0.87, 0.96)	0.87 (0.8, 0.95)	1.02 (0.99, 1.04)	1.12 (1.07, 1.18)	0.97 (0.92, 1.02)	0.93 (0.84, 1.03)	0.97 (0.94, 1)
Feb-22	0.93 (0.88, 0.98)	0.94 (0.89, 0.98)	0.89 (0.82, 0.97)	1.03 (1.01, 1.06)	1.15 (1.1, 1.21)	0.98 (0.94, 1.03)	0.87 (0.79, 0.97)	0.99 (0.96, 1.02)
Mar-22	0.93 (0.88, 0.98)	0.94 (0.89, 0.99)	0.85 (0.78, 0.93)	1.04 (1.02, 1.07)	1.2 (1.14, 1.26)	0.98 (0.93, 1.03)	0.9 (0.81, 1)	1 (0.97, 1.03)
Apr-22	0.91 (0.86, 0.96)	0.94 (0.89, 0.99)	0.88 (0.81, 0.95)	1.04 (1.02, 1.07)	1.18 (1.13, 1.24)	0.98 (0.94, 1.03)	0.96 (0.86, 1.06)	1 (0.97, 1.03)

May-22	0.91 (0.86, 0.96)	0.92 (0.87, 0.96)	0.89 (0.82, 0.97)	1.04 (1.02, 1.07)	1.15 (1.1, 1.21)	0.97 (0.92, 1.02)	1.04 (0.94, 1.15)	0.99 (0.97, 1.02)
Jun-22	0.88 (0.83, 0.93)	0.91 (0.86, 0.96)	0.93 (0.85, 1)	1.03 (1.01, 1.06)	1.12 (1.06, 1.17)	0.96 (0.91, 1.01)	1.05 (0.95, 1.16)	0.97 (0.95, 1)
Jul-22	0.9 (0.85, 0.95)	0.95 (0.9, 1)	0.93 (0.85, 1)	1.03 (1.01, 1.06)	1.09 (1.04, 1.15)	0.97 (0.92, 1.01)	1.09 (0.99, 1.2)	0.97 (0.95, 1)
Aug-22	0.87 (0.82, 0.91)	0.96 (0.92, 1.01)	0.91 (0.84, 0.98)	1.03 (1, 1.05)	1.07 (1.02, 1.12)	0.94 (0.9, 0.99)	1.06 (0.96, 1.17)	0.96 (0.93, 0.99)
Sep-22	0.82 (0.78, 0.87)	0.97 (0.92, 1.01)	0.91 (0.84, 0.99)	1.03 (1.01, 1.06)	1 (0.96, 1.06)	0.93 (0.89, 0.98)	1.08 (0.98, 1.19)	0.96 (0.93, 0.98)
Oct-22	0.74 (0.7, 0.78)	0.94 (0.89, 0.98)	0.9 (0.83, 0.98)	1.04 (1.01, 1.06)	0.96 (0.92, 1.01)	0.92 (0.88, 0.97)	1.06 (0.96, 1.17)	0.96 (0.93, 0.99)
Nov-22	0.7 (0.66, 0.74)	0.89 (0.85, 0.94)	0.91 (0.84, 0.99)	1.03 (1.01, 1.06)	0.91 (0.87, 0.96)	0.91 (0.87, 0.96)	1.09 (0.99, 1.2)	0.96 (0.93, 0.99)
Dec-22	0.71 (0.67, 0.75)	0.88 (0.84, 0.93)	0.9 (0.83, 0.97)	1.04 (1.01, 1.06)	0.94 (0.9, 0.99)	0.92 (0.87, 0.96)	1.05 (0.95, 1.16)	0.97 (0.94, 1)
Jan-23	0.71 (0.67, 0.75)	0.86 (0.81, 0.9)	0.9 (0.83, 0.98)	1.03 (1, 1.05)	0.97 (0.92, 1.02)	0.9 (0.86, 0.95)	1 (0.9, 1.1)	0.97 (0.94, 1)
Feb-23	0.74 (0.69, 0.78)	0.88 (0.83, 0.92)	0.86 (0.79, 0.94)	1.05 (1.02, 1.08)	1.02 (0.97, 1.08)	0.93 (0.88, 0.97)	0.94 (0.85, 1.04)	1 (0.97, 1.03)
Mar-23	0.72 (0.68, 0.76)	0.85 (0.8, 0.89)	0.86 (0.79, 0.94)	1.05 (1.02, 1.07)	1.02 (0.97, 1.08)	0.92 (0.88, 0.97)	0.95 (0.85, 1.05)	1.01 (0.98, 1.04)
Apr-23	0.73 (0.69, 0.77)	0.85 (0.8, 0.89)	0.91 (0.84, 0.99)	1.06 (1.03, 1.08)	1.03 (0.98, 1.08)	0.95 (0.9, 1)	1 (0.9, 1.1)	1.03 (1, 1.06)
May-23	0.71 (0.67, 0.76)	0.85 (0.81, 0.9)	0.97 (0.89, 1.05)	1.05 (1.02, 1.08)	1.02 (0.97, 1.07)	0.95 (0.9, 0.99)	1.07 (0.97, 1.18)	1.03 (1, 1.06)

Note: The three-month moving average rate ratio is calculated with respect to January-March 2019. AUD: alcohol use disorder; BUP: buprenorphine; MA: Medicare Advantage; NTX: naltrexone; OUD: opioid use disorder.

Supplemental Table 5: Distribution of Fills by Dosage, January 2019-June 2023

	Buprenorphine Commercial				Buprenorphine MA			
	0-7.9 MG	8-11.9 MG	12-15.9 MG	16+ MG	0-7.9 MG	8-11.9 MG	12-15.9 MG	16+ MG
Jan-19	25.4%	32.7%	11.5%	30.4%	9.0%	10.4%	12.6%	68.0%
Feb-19	25.5%	33.2%	10.7%	30.6%	9.1%	11.2%	12.8%	66.9%
Mar-19	25.6%	33.0%	11.4%	29.9%	9.4%	11.8%	11.9%	66.8%
Apr-19	26.0%	32.9%	11.6%	29.5%	9.1%	12.1%	12.4%	66.4%
May-19	26.4%	32.7%	11.2%	29.7%	8.7%	11.7%	11.5%	68.1%
Jun-19	26.1%	32.6%	12.2%	29.2%	9.8%	11.3%	12.3%	66.5%
Jul-19	25.8%	31.2%	11.6%	31.5%	8.9%	10.8%	12.9%	67.5%
Aug-19	24.5%	29.9%	11.9%	33.8%	9.6%	10.7%	12.5%	67.2%
Sep-19	24.0%	28.6%	12.1%	35.3%	9.4%	11.4%	12.5%	66.7%
Oct-19	23.5%	27.6%	13.2%	35.7%	9.4%	11.4%	12.4%	66.7%
Nov-19	23.4%	27.3%	12.6%	36.6%	10.1%	10.8%	12.9%	66.2%
Dec-19	22.9%	26.6%	12.8%	37.6%	10.0%	10.6%	12.6%	66.8%
Jan-20	22.7%	26.6%	13.4%	37.3%	9.3%	10.9%	13.6%	66.2%
Feb-20	22.1%	26.6%	13.4%	37.9%	9.7%	10.7%	13.0%	66.6%
Mar-20	22.4%	26.1%	13.0%	38.5%	9.9%	10.8%	12.2%	67.1%
Apr-20	22.3%	25.6%	13.4%	38.7%	10.3%	9.9%	12.5%	67.3%
May-20	21.9%	25.3%	14.0%	38.8%	9.7%	10.3%	12.3%	67.7%
Jun-20	21.9%	24.6%	13.8%	39.7%	10.1%	9.8%	12.1%	67.9%
Jul-20	21.5%	23.9%	14.4%	40.2%	10.5%	10.2%	12.2%	67.2%
Aug-20	21.0%	23.8%	14.4%	40.8%	10.3%	9.9%	12.4%	67.5%
Sep-20	21.8%	23.1%	14.0%	41.1%	8.8%	10.0%	12.9%	68.2%
Oct-20	21.0%	22.9%	14.6%	41.5%	10.2%	9.6%	12.4%	67.8%
Nov-20	20.7%	22.6%	14.3%	42.4%	10.3%	10.1%	12.2%	67.5%
Dec-20	19.9%	22.3%	15.2%	42.6%	10.1%	9.6%	12.2%	68.2%
Jan-21	20.3%	21.8%	14.3%	43.6%	10.2%	9.9%	12.1%	67.7%
Feb-21	20.4%	21.7%	14.2%	43.7%	9.9%	10.1%	11.5%	68.5%
Mar-21	20.5%	21.6%	14.8%	43.1%	10.1%	9.9%	12.1%	67.9%
Apr-21	19.9%	21.7%	14.5%	43.9%	10.2%	9.3%	11.7%	68.9%
May-21	19.8%	21.4%	14.7%	44.1%	11.1%	9.8%	12.0%	67.1%
Jun-21	19.6%	21.2%	14.2%	45.0%	11.0%	9.8%	12.5%	66.7%
Jul-21	19.0%	21.2%	14.4%	45.5%	10.7%	9.6%	12.8%	66.9%
Aug-21	19.0%	20.5%	14.1%	46.4%	10.7%	10.0%	12.5%	66.8%
Sep-21	18.4%	20.7%	14.3%	46.6%	10.3%	9.7%	12.8%	67.2%
Oct-21	18.6%	20.6%	14.4%	46.4%	10.3%	9.8%	13.0%	66.8%
Nov-21	18.7%	19.7%	14.4%	47.2%	10.6%	9.7%	12.0%	67.7%
Dec-21	18.8%	19.8%	14.4%	47.1%	10.2%	9.9%	11.7%	68.2%
Jan-22	19.5%	20.1%	14.4%	46.0%	10.8%	10.2%	11.6%	67.5%
Feb-22	19.4%	20.0%	14.0%	46.6%	10.9%	9.8%	11.5%	67.9%
Mar-22	19.6%	19.2%	14.9%	46.3%	10.6%	9.9%	11.7%	67.7%
Apr-22	19.2%	19.5%	14.6%	46.8%	10.8%	10.2%	11.2%	67.9%
May-22	19.3%	19.7%	14.3%	46.6%	11.1%	10.1%	11.4%	67.4%
Jun-22	19.1%	20.1%	13.9%	46.8%	11.1%	10.1%	11.5%	67.3%
Jul-22	18.7%	19.5%	14.7%	47.2%	10.9%	10.2%	11.7%	67.2%
Aug-22	18.6%	19.5%	14.5%	47.3%	10.8%	10.3%	11.7%	67.1%
Sep-22	18.6%	19.1%	14.1%	48.1%	9.9%	10.3%	11.7%	68.1%
Oct-22	18.6%	19.1%	14.4%	47.8%	10.6%	9.8%	11.6%	68.0%
Nov-22	18.1%	19.4%	15.0%	47.6%	10.6%	10.0%	11.3%	68.1%
Dec-22	18.5%	19.0%	14.4%	48.1%	10.3%	9.9%	11.5%	68.2%
Jan-23	19.2%	18.5%	14.8%	47.6%	10.3%	10.0%	11.9%	67.8%
Feb-23	19.4%	18.7%	14.3%	47.6%	10.5%	10.1%	12.2%	67.2%

Mar-23	18.5%	18.8%	14.4%	48.3%	10.8%	10.0%	11.4%	67.8%
Apr-23	18.6%	18.3%	14.4%	48.8%	11.2%	10.1%	11.0%	67.8%
May-23	18.0%	17.8%	14.8%	49.4%	11.1%	10.2%	11.3%	67.3%
Jun-23	17.6%	18.1%	14.0%	50.3%	11.0%	10.0%	11.2%	67.8%

MG=Milligrams.

Supplemental Table 6: Percentage of Fills by Prescriber Specialty, January 2019-June 2023

	Acamprosate AUD				Buprenorphine OUD				Naltrexone OUD				Naltrexone AUD			
	FP	PM	PSY	APN/ PA	FP	PM	PSY	APN/ PA	FP	PM	PSY	APN/ PA	FP	PM	PSY	APN/ PA
2019Q1	15.9%		42.0%	14.2%	19.1%	7.0%	30.0%	10.7%			35.6%	31.8%	14.5%		36.7%	19.5%
2019Q2	12.9%		41.4%	16.2%	17.1%	7.1%	31.4%	11.1%			39.8%	31.6%	15.2%		39.8%	17.9%
2019Q3	11.3%		37.2%	19.6%	21.9%	5.1%	29.0%	13.3%			39.3%	27.9%	13.1%		39.4%	19.4%
2019Q4	12.8%		41.4%	17.3%	17.3%	6.2%	29.2%	15.8%			37.1%	28.9%	14.3%		37.6%	19.2%
2020Q1	12.2%		33.5%	20.1%	19.3%	6.0%	26.4%	18.3%			25.6%	33.3%	14.9%		36.8%	21.7%
2020Q2	9.8%		37.8%	24.1%	18.5%	6.3%	25.0%	17.5%			37.2%	26.6%	15.5%		35.6%	21.4%
2020Q3	14.2%		35.3%	23.3%	17.4%	6.8%	26.8%	17.5%			31.6%	32.6%	12.7%		35.2%	22.5%
2020Q4	9.4%		38.8%	25.1%	16.8%	6.3%	28.3%	21.8%			32.6%	35.9%	13.6%		32.9%	24.3%
2021Q1	11.8%		34.6%	22.1%	14.6%	4.0%	26.6%	24.1%			30.7%	31.7%	12.8%		32.0%	24.7%
2021Q2	10.5%		38.2%	13.0%	13.9%	5.3%	26.2%	24.3%			25.0%	38.5%	12.3%		26.7%	24.7%
2021Q3	12.6%		32.4%	22.5%	15.0%	4.9%	22.9%	26.7%			30.0%	42.5%	13.2%		29.2%	28.3%
2021Q4	13.5%		28.8%	22.3%	12.6%	7.8%	22.6%	24.6%			18.7%	35.2%	14.0%		28.4%	27.0%
2022Q1	8.2%		31.6%	23.7%	15.0%	6.1%	18.5%	25.1%			21.0%	34.6%	15.8%		28.8%	24.2%
2022Q2	10.0%		34.8%	20.9%	11.7%	6.2%	19.3%	28.3%			20.4%	35.2%	14.5%		28.2%	27.3%
2022Q3	12.6%		28.5%	23.9%	13.2%	5.4%	20.6%	27.1%			18.4%	35.5%	14.6%		25.7%	27.7%
2022Q4	12.6%		27.1%	26.0%	11.9%	6.2%	19.9%	30.1%			19.7%	40.9%	13.5%		26.8%	29.9%
2023Q1	13.2%		21.6%	27.0%	15.2%	5.7%	15.5%	30.5%			27.3%	28.8%	14.5%		23.0%	30.0%
2023Q2	13.2%		23.9%	27.9%	12.6%	7.3%	17.2%	31.8%			21.8%	29.1%	16.1%		22.5%	28.9%

Note: APN/PA stands for advanced practice nurses and physician assistants, FP stands for family practice, PM stands for pain medicine, PSY stands for psychiatry.