Supplemental Online Content

Mojtabai R. Estimating the prevalence of substance use disorders in the US using the benchmark multiplier method. *JAMA Psychiatry*. Published online September 21, 2022. doi:10.1001/jamapsychiatry.2022.2756

eTable 1. SUD treatment setting and type among Medicaid-enrollees who received treatment for SUDs in 2018 and 2019 based on the Transformed Medicaid Statistical Information System (T-MSIS)

eTable 2. The benchmarks and multipliers for computing annual prevalence of alcohol, cannabis, opioid, and stimulant use disorders in the United States using the benchmark multiplier method. The multipliers were computed as the proportion of participants with substance use disorders in NSDUH 2018-2019 who used treatments typically covered by health insurance and who were covered by Medicaid

eTable 3. Multiplier estimates (+/- 95% confidence interval) among those with less severe (abuse) and more severe (dependence) SUDs in NSDUH 2018-2019 used to estimate a plausible range of prevalence estimates based on the benchmark multiplier method

eTable 4. The benchmarks and multipliers for computing annual prevalence of alcohol, cannabis, opioid, and stimulant use disorders in the United States using the benchmark multiplier method. The multipliers were computed as the proportion of participants with substance use disorders in NSDUH who used any treatments and were covered by Medicaid

eTable 5. Prevalence of alcohol, cannabis, opioid, and stimulant use disorders in the United States estimated based on the benchmark multiplier method and based on the NSDUH 2018-2019 survey. The multiplier for the benchmark multiplier method was computed as the proportion of participants with substance use disorders in NSDUH who used any treatments and were covered by Medicaid

eTable 6. Numbers (in 1,000s) of individuals with alcohol, cannabis, opioid, and stimulant use disorders in the United States estimated based on the benchmark multiplier method and based on the NSDUH 2018-2019 survey. The multiplier for the benchmark multiplier method was computed as the proportion of participants with substance use disorders in NSDUH who used any treatments and were covered by Medicaid

This supplemental material has been provided by the authors to give readers additional information about their work.

eTable 1. SUD treatment setting and type among Medicaid-enrollees who received treatment for SUDs in 2018 and 2019 based on the Transformed Medicaid Statistical Information System (T-MSIS)

Treatment setting/Treatment type	T-MSIS 2018	T-MSIS 2019
Treatment setting		
Treated in outpatient setting	76.7%	77.8%
Treated in inpatient setting	43.4%	41.9%
Treated in emergency department	46.0%	43.4%
Treated in residential setting	5.6%	6.3%
Treatment type		
Counseling	25.0%	26.1%
Medication-assisted treatment (MAT)	23.8%	31.6%
Case management	4.9%	5.8%
Detoxification	3.9%	3.9%
Peer support	1.0%	1.4%

eTable 2 The benchmarks and multipliers for computing annual prevalence of alcohol, cannabis, opioid, and stimulant use disorders in the United States using the benchmark multiplier method. The multipliers were computed as the proportion of participants with substance use disorders in NSDUH 2018-2019 who used treatments typically covered by health insurance and who were covered by Medicaid

Substance use disorder	2018-2019[a]		2018		2019	
	Benchmark sample (N)[b]	Multiplier (95% CI)[c]	Benchmark sample (N)[b]	Multiplier (95% CI)[c]	Benchmark sample (N)[b]	Multiplier (95% CI)[c]
Alcohol use disorder	1,029,332.5	1.83 (1.49-2.16)	1,017,308	1.95 (1.46-2.44)	1,041,357	1.73 (1.26-2.20)
Cannabis use disorder[d]	644,258.5	3.09 (2.31-3.87)	643,737	2.95 (1.88-4.05)	644,780	3.30 (2.21-4.41)
Opioid use disorder[e]	1,490,837	15.53 (12.94-17.98)	1,406,455	16.27 (12.73-19.69)	1,575,219	14.81 (11.11-18.44)
Stimulant use disorder[f]	634,081.5	11.96 (9.88-13.95)	610,858	10.46 (7.74-13.14)	657,305	13.58 (10.53-16.57)

Abbreviation: CI stands for confidence interval.
[a] Average benchmark and multiplier values for 2018 and 2019.
[b] Based on the number of Medicaid beneficiaries who received services for each type of substance use disorder in the past year as reported in the Transformed Medicaid Statistical Information System (T-MSIS) Substance Use Disorder Data Books.
[c] Estimated as the proportion of NSDUH participants with each type of substance use disorder who were covered by Medicaid and who received treatment in the past year.
[d] Includes marijuana and hashish.
[e] Includes heroin and prescription opioids.
[f] Includes cocaine, methamphetamine and prescription stimulants.

eTable 3. Multiplier estimates (+/- 95% confidence interval) among those with less severe (abuse) and more severe (dependence) SUDs in NSDUH 2018-2019 used to estimate a plausible range of prevalence estimates based on the benchmark multiplier method						
	N		Multiplier estimate (95% CI)[ab]		Benchmark multiplier method prevalence estimate[b]	
Substance use disorder	Substance abuse	Substance dependence	Substance abuse	Substance dependence	Substance abuse	Substance dependence
Alcohol use disorder	3,165	3,588	0.92 (0.57-1.28)	2.62 (2.07-3.15)	41.73 (28.85-64.91)	14.22 (11.70-17.81)
Cannabis use disorder[c]	968	2,062	2.51 (1.33-3.78)	3.41 (2.43-4.39)	9.80 (6.10-17.33)	6.90 (5.25-9.49)
Opioid use disorder[d]	153	664	6.25 (2.68-10.57)	17.46 (14.50-20.23)	9.59 (5.01-19.74)	3.07 (2.64-3.68)
Stimulant use disorder[e]	242	862	11.05 (6.93-15.27)	12.29 (9.91-14.58)	2.12 (1.48-3.26)	1.86 (1.56-2.29)

Abbreviation: CI stands for confidence interval.
[a] Estimated as the proportion of NSDUH participants with each type of substance use disorder who were covered by Medicaid and who received treatment in the past year.
[b] Average benchmark and multiplier values for 2018 and 2019.
[c] Includes marijuana and hashish.
[d] Includes heroin and prescription opioids.
[e] Includes cocaine, methamphetamine and prescription stimulants.

eTable 4. The benchmarks and multipliers for computing annual prevalence of alcohol, cannabis, opioid, and stimulant use disorders in the United States using the benchmark multiplier method. The multipliers were computed as the proportion of participants with substance use disorders in NSDUH who used <u>any treatments</u> and were covered by Medicaid

Substance use disorder	2018-2019[a]		2018		2019	
	Benchmark sample (N)[b]	Multiplier (95% CI)[c]	Benchmark sample (N)[b]	Multiplier (95% CI)[c]	Benchmark sample (N)[b]	Multiplier (95% CI)[c]
Alcohol use disorder	1,029,332.5	2.30 (1.92-2.67)	1,017,308	2.42 (1.87-2.96)	1,041,357	2.21 (1.68-2.73)
Cannabis use disorder[d]	644,258.5	3.73 (2.87-4.57)	643,737	3.69 (2.49-4.92)	644,780	3.83 (2.65-5.03)
Opioid use disorder[e]	1,490,837	15.86 (13.25-18.29)	1,406,455	16.43 (12.87-19.86)	1,575,219	15.34 (11.59-19.03)
Stimulant use disorder[f]	634,081.5	13.36 (11.18-15.41)	610,858	10.94 (8.16-13.66)	657,305	15.90 (12.60-19.10)

Abbreviation: CI stands for confidence interval.
[a] Average benchmark and multiplier values for 2018 and 2019.
[b] Based on the number of Medicaid beneficiaries who received services for each type of substance use disorder in the past year as reported in the Transformed Medicaid Statistical Information System (T-MSIS) Substance Use Disorder Data Books.
[c] Estimated as the proportion of NSDUH participants with each type of substance use disorder who were covered by Medicaid and who received treatment in the past year.
[d] Includes marijuana and hashish.
[e] Includes heroin and prescription opioids.
[f] Includes cocaine, methamphetamine and prescription stimulants.

eTable 5. Prevalence of alcohol, cannabis, opioid, and stimulant use disorders in the United States estimated based on the benchmark multiplier method and based on the NSDUH 2018-2019 survey. The multiplier for the benchmark multiplier method was computed as the proportion of participants with substance use disorders in NSDUH who used any treatments and were covered by Medicaid

Substance use disorder	Combined 2018-2019		2018		2019	
	Benchmark Multiplier method	NSDUH	Benchmark Multiplier method	NSDUH	Benchmark Multiplier method	NSDUH
	Percent (95% CI)	Percent (95% CI)	Percent (95% CI)	Percent (95% CI)	Percent (95% CI)	Percent (95% CI)
Alcohol use disorder	16.10 (13.78-19.19)	5.34 (5.10-5.58)	15.27 (12.35-19.50)	5.38 (5.11-5.66)	17.06 (13.62-22.12)	5.29 (4.98-5.63)
Cannabis use disorder[a]	6.26 (5.05-8.02)	1.68 (1.59-1.79)	6.43 (4.70-9.28)	1.62 (1.48-1.76)	6.14 (4.57-8.67)	1.75 (1.62-1.90)
Opioid use disorder[b]	3.38 (2.91-4.02)	0.68 (0.60-0.78)	3.10 (2.54-3.92)	0.75 (0.63-0.89)	3.71 (2.95-4.84)	0.62 (0.53-0.72)
Stimulants use disorder[c]	1.71 (1.47-2.03)	0.85 (0.75-0.96)	2.03 (1.60-2.68)	0.85 (0.74-0.98)	1.49 (1.23-1.86)	0.85 (0.72-1.00)

Abbreviation: CI stands for confidence interval
[a] Includes marijuana and hashish.
[b] Includes heroin and prescription opioids.
[c] Includes cocaine, methamphetamine, and prescription stimulants.

eTable 6. Numbers (in 1,000s) of individuals with alcohol, cannabis, opioid, and stimulant use disorders in the United States estimated based on the benchmark multiplier method and based on the NSDUH 2018-2019 survey. The multiplier for the benchmark multiplier method was computed as the proportion of participants with substance use disorders in NSDUH who used <u>any treatments</u> and were covered by Medicaid

Substance use disorder	2018-2019		2018		2019	
	Benchmark multiplier method	NSDUH	Benchmark multiplier method	NSDUH	Benchmark multiplier method	NSDUH
	N in 1,000s (95% CI)	N in 1,000s (95% CI)	N in 1,000s (95% CI)	N in 1,000s (95% CI)	N in 1,000s (95% CI)	N in 1,000s (95% CI)
Alcohol use disorder	44,991 (38,502-53,611)	14,906 (14,241-15,601)	42,521 (34,376-54,286)	14,978 (14,235-15,758)	47,818 (38,176-62,005)	14,834 (13,946-15,776)
Cannabis use disorder[b]	17,494 (14,104-22,401)	4,705 (4,429-4,998)	17,909 (13,080-25,830)	4,503 (4,127-4,912)	17,209 (12,808-24,307)	4,908 (4,533-5,313)
Opioid use disorder[c]	9,450 (8,141-11,241)	1,906 (1,668-2,178)	8,640 (7,067-10,903)	2,080 (1,747-2,475)	10,391 (8,260-13,555)	1,732 (1,478-2,029)
Stimulant use disorder[d]	4,773 (4,110-5,669)	2,376 (2,103-2,682)	5,663 (4,463-7,471)	2,379 (2,070-2,733)	4,168 (3,435-5,209)	2,372 (2,016-2,791)

Abbreviation: CI stands for confidence interval.
[a] Estimated counts were computed by multiplying the prevalence estimates from the benchmark multiplier method and NSDUH by the US population aged 12 and older in 2018, 2019 and the mean of the 2018 and 2019 population for the 2018-2019 estimate.
[b] Includes marijuana and hashish.
[c] Includes heroin and prescription opioids.
[d] Includes cocaine, methamphetamine and prescription stimulants.