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Receipt of Cessation Treatments Among Medicaid Enrollees Trying to Quit Smoking

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Abstract

Introduction: Cigarette smoking prevalence is higher among adults enrolled in Medicaid than adults with private health insurance. State Medicaid coverage of cessation treatments has been gradually improving in recent years; however, the extent to which this has translated into increased use of these treatments by Medicaid enrollees remains unknown.

Aims and Methods: Using Medicaid Analytic eXtract (MAX) files, we estimated state-level receipt of smoking cessation treatments and associated spending among Medicaid fee-for service (FFS) enrollees who try to quit. MAX data are the only national person-level data set available for the Medicaid program. We used the most recent MAX data available for each state and the District of Columbia (ranging from 2010 to 2014) for this analysis.

Results: Among the 37 states with data, an average of 9.4% of FFS Medicaid smokers with a past-year quit attempt had claims for cessation medications, ranging from 0.2% (Arkansas) to 32.9% (Minnesota). Among the 20 states with data, an average of 2.7% of FFS Medicaid smokers with a past-year quit attempt received cessation counseling, ranging from 0.1% (Florida) to 5.6% (Missouri). Estimated Medicaid spending for cessation medications and counseling for these states totaled just over $13 million. If all Medicaid smokers who tried to quit were to have claims for cessation medications, projected annual Medicaid expenditures would total $0.8 billion, a small fraction of the amount ($45.9 billion) that Medicaid spends annually on treating smoking-related disease.

Conclusions: The receipt of cessation medications and counseling among FFS Medicaid enrollees was low and varied widely across states.

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Declaration of Interests

None declared.

Supplementary Material

A Contributorship Form detailing each author's specific involvement with this content, as well as any supplementary data, are available online at https://academic.oup.com/ntr.

Implications: Few studies have examined use of cessation treatments among Medicaid enrollees. We found that many FFS Medicaid smokers made quit attempts, but few had claims for proven cessation treatments, especially counseling. The receipt of cessation treatments among FFS Medicaid enrollees varied widely across states, suggesting opportunities for additional promotion of the full range of Medicaid cessation benefits. Continued monitoring of Medicaid enrollees' use of cessation treatments could inform state and national efforts to help more Medicaid enrollees quit smoking.

Introduction

Cigarette smoking prevalence among Medicaid enrollees (23.9%) was more than twice that of adults with private health insurance (10.5%) in 2018.[1] Quitting smoking substantially reduces smoking-related morbidity and mortality.[2] Almost 7 in 10 Medicaid enrollees who smoke (69.2%) reported wanting to quit in 2015, and more than half (56.3%) reported making a quit attempt in the past year; however only 5.9% of them succeeded in quitting during the previous year, compared with 9.4% of privately insured adult smokers.[3]

As of March 2020, over 64 million Americans were covered by Medicaid,[4] a joint federal-state program which provides health coverage to eligible low-income families and individuals. Healthy People 2020 Objective TU-8 calls for all state Medicaid programs to provide comprehensive coverage of evidence-based tobacco cessation treatments, including counseling and medications.[5] Evidence-based smoking cessation treatments include individual, group, and telephone counseling and seven medications approved by the Food and Drug Administration (FDA).[2] While cessation counseling and medication are each effective in helping people quit smoking, they are even more effective when used together.[2] State Medicaid coverage of cessation treatments has been gradually improving in recent years[6]; however, the extent to which this has translated into increased receipt of these treatments by Medicaid enrollees remains undetermined and requires monitoring.

No previous study has assessed the receipt of cessation counseling and medications specifically among Medicaid enrollees who have made a past-year quit attempt. Using Medicaid claims data, this study assessed state-level utilization of tobacco cessation medications and counseling and associated expenditures among fee-for service (FFS) Medicaid enrollees who made a past-year quit attempt.

Methods

Data Source and Study Sample

The Medicaid Analytic eXtract (MAX) files, administered by the Centers for Medicare and Medicaid Services (CMS), are the only national person-level data set available for the Medicaid program.[7] Annual MAX data files include information on enrollment, service use, and expenditures for all Medicaid enrollees in the 50 states and the District of Columbia. We used data from the MAX files from 2010 to 2014 to assess state-level utilization of smoking cessation medications and cessation counseling services among FFS Medicaid enrollees. The most recent MAX data for each state and the District of Columbia were used, including

data from 17 states in 2014, 11 states in 2013, 20 states in 2012, 2 states in 2011, and 1 state in 2010.

To identify drugs used by Medicaid enrollees for smoking cessation, we used the FDA National Drug Codes (NDC) for seven FDA-approved cessation medications: the five forms of nicotine replacement therapy (NRT) (nicotine patches, gum, lozenges, inhalers, and nasal sprays), as well as the non-nicotine medications bupropion and varenicline. Information on the NDC codes used in our analysis and the related FDA data sources is provided in Supplementary Appendix A.

Our analysis focused on adult FFS Medicaid enrollees aged 18–64 years who were continually enrolled in Medicaid for a calendar year. Pregnant women, for whom cessation medication is contraindicated,[2] and those dually enrolled and covered by Medicaid/Medicare were excluded from analysis.

Measures

Utilization—We focused on two primary outcome measures of utilization of smoking cessation medications and counseling. The first measure is the proportion of FFS Medicaid smokers with a past-year quit attempt who had one or more smoking cessation treatment claims in a calendar year. The second measure is the number of cessation treatment claims per 100 FFS Medicaid smokers with a past-year quit attempt.

To estimate the number of FFS Medicaid smokers in a state who tried to quit, we multiplied the total number of FFS enrollees in each state by the state smoking prevalence among the Medicaid population, and then multiplied the resulting number by the prevalence of past-year quit attempts among Medicaid current smokers from the Behavioral Risk Factor Surveillance System (BRFSS) (see Supplementary Appendix B). This approach assumes that the prevalence of smoking and past-year quit attempts among FFS Medicaid enrollees in each state mirrored the prevalence among that state's overall Medicaid population.

Cost—We estimated annual state Medicaid spending on smoking cessation treatments among FFS smokers with a past-year quit attempt by summing individuals' claims in that year. To estimate total Medicaid annual expenditures, we projected total spending that would accrue in each state under hypothetical conditions[1]: if all FFS Medicaid smokers with a past-year quit attempt were to have claims for cessation medications; and[2] if all Medicaid smokers (those in managed care plans as well as those in FFS) with a past-year quit attempt were to have claims for cessation medications. To arrive at the latter estimate, we assumed that the proportion of FFS enrollees with a past-year quit attempt who had claims for cessation medications was the same for managed care enrollees. Projected expenditures were adjusted to 2015 dollars using the Consumer Price Index for Medical Care Services. Given limited availability of data, Medicaid spending projections for cessation counseling if all Medicaid smokers who made a quit attempt were to receive counseling were not reported.

Following CMS's small cell suppression rule,[7] data from 37 states were available for reporting cessation claims, and 20 states were available for reporting cessation counseling.

State-specific data used in utilization and cost calculations are available in Supplementary Appendix C1.

Results

Among the 37 states reporting cessation medication claims, 24 states covered all seven FDA-approved cessation medications for all FFS Medicaid enrollees[8] (Table 1). On average, 9.4% of FFS Medicaid smokers who made a past-year quit attempt had claims for cessation medications in the year assessed. This rate varied widely from 0.2% in Arkansas to 32.9% in Minnesota, with 13 states achieving rates of 10% or higher. The average receipt rate of cessation medications was 21.5 prescriptions per 100 FFS Medicaid smokers who made a past-year quit attempt, ranging from 0.5 prescriptions in Arkansas to 89.2 prescriptions in Minnesota. On average, the number of cessation medication claims per user was 2.5, ranging from 1.6 in North Carolina to 5.1 in Utah. Enrollee demographic characteristics are available in Supplementary Appendices C2 and C3.

Cessation medication spending among FFS Medicaid enrollees in the 37 states totaled ~$12.9 million, ranging from $1,516 in Arizona to $3.6 million in Illinois (Supplementary Appendix C4). Assuming all FFS Medicaid smokers with a past-year quit attempt were to have claims for cessation medications, projected spending would total $127.1 million, ranging from $42,000 in Wisconsin to $39.2 million in California. Assuming all Medicaid (FFS plus managed care) smokers with a past-year quit attempt were to have claims for cessation medications, projected spending would be $841.1 million, ranging from $0.6 million in Wyoming to $301.3 million in California.

Table 2 reports receipt of cessation counseling services among FFS Medicaid smokers who made a past-year quit attempt in 20 states. On average, 2.6% of FFS smokers who made a past-year quit attempt received counseling, ranging from 0.1% in Florida to 5.6% in Missouri. The counseling utilization rate per 100 FFS Medicaid smokers who made a quit attempt ranged from 0.1 in Florida to 9.5 in Minnesota, with an average rate of 4.3. FFS Medicaid spending for cessation counseling for the 20 states combined was $342,008.

Discussion

Our findings show that more than one-third of adult Medicaid enrollees in the assessed states and time points currently smoked cigarettes, with about two-thirds of them reporting a past-year quit attempt. About 9% of FFS Medicaid smokers who made a past-year quit attempt received cessation medications, with fewer than 3% receiving cessation counseling. These findings are generally aligned with other studies that used claims data to examine smoking cessation treatment utilization among Medicaid smokers. Using linked data from the National Health Interview Surveys and the MAX file, Kahende et al. found that the proportion of FFS smokers with ≥1 medication claim was 9.9% in 2008 (44 states).[9] Using more recent data (2010–2013) from the CMS Medicaid drug rebate files, Ku et al. found that about 10% of Medicaid smokers received cessation medications in 2013.[10] A study using survey data from the 2015 National Health Interview Surveys found that 56.3% of Medicaid smokers reported making a past-year quit attempt, 32.2% reported using cessation

medication when trying to quit, and 8.0% reported using cessation counseling when trying to quit.[3] The corresponding prevalences for privately insured smokers were 57.2%, 29.9%, and 6.8%; none of these estimates were significantly different from those for Medicaid smokers.[3]

The receipt of cessation treatment by Medicaid FFS enrollees varied substantially across states. These variations might be due, in part, to: differences in state Medicaid cessation coverage and coverage barriers (eg, prior authorization and duration limits)[6,11]; differences in the extent of efforts to promote cessation and use of cessation treatments among Medicaid enrollees (eg, through media campaigns)[6,12–14]; variations in the extent to which health care providers prescribe medications and/or make counseling and quitline services referrals to Medicaid enrollees[12]; and variations in the extent to which providers correctly coded or claimed cessation counseling services.[15]

Effective January 2014, the Patient Protection and Affordable Care Act bars state Medicaid programs from excluding coverage of FDA-approved tobacco cessation medications for all Medicaid enrollees.[16] Recent reports and studies found that insurance coverage for smoking cessation treatment that is comprehensive, barrier-free, and widely promoted increases utilization of cessation treatments, leads to higher rates of successful quitting, and is cost-effective.[2,17,18] Our projected expenditure estimates show that, even if all Medicaid smokers who tried to quit were to have claims for cessation medications, annual Medicaid expenditures would total $0.8 billion—1.7% of the amount that Medicaid spends annually on treating smoking-related disease ($45.9 billion in 2015 dollars)[19] and <0.2% of total Medicaid spending ($534 billion in 2015).[20]

Limitations

This study is subject to some limitations. First, we limited our analysis to FFS Medicaid enrollees aged 18 to 64 years, in part because of the quality of the encounter data for managed care Medicaid plans available from the MAX file. Accordingly, estimates based exclusively on the FFS population, which includes many people with disabilities, might not be representative of the overall Medicaid population. Second, given the absence of smoking status in the MAX claims data, we used self-reported 2014 BRFSS data to generate state-specific estimates of Medicaid enrollees' smoking prevalence; these estimates might not be generalizable to Medicaid enrollees in a given state. In addition, because BRFSS data and MAX data do not all come from the same year, our findings may be confounded by environmental and policy changes that occurred over this period. Third, we relied on a conservative definition for bupropion use for smoking cessation (150 mg formulation) by Medicaid enrollees who had a documented tobacco-related diagnosis. Thus, estimates for bupropion use as a cessation medication and associated expenditures represent a lower bound. Fourth, CMS data do not capture receipt of NRT and counseling through state tobacco cessation quitlines or over-the-counter purchases; therefore, our results may be underestimated. In addition, we might underestimate the receipt of cessation counseling due to potential undercoding in medical practice. Finally, the overall cost projections are based on an assumption that Medicaid managed care enrollees cessation treatment use is similar to that of FFS enrollees, which is unlikely.

Conclusions

Many FFS Medicaid smokers make quit attempts, but few had claims for proven cessation treatments, especially counseling. The receipt of cessation treatments among FFS Medicaid enrollees varies widely across states, suggesting opportunities for additional promotion of the full range of FFS Medicaid cessation benefits. The evidence suggests that increasing Medicaid smokers' use of cessation counseling and medications increases the number of Medicaid smokers who quit smoking.[11] Covering these treatments with minimal barriers and promoting this coverage so that Medicaid smokers and their providers are aware of and use the covered treatments are essential.[2] Continued monitoring of Medicaid enrollees' use of cessation treatments is vital to track progress in quitting smoking in this vulnerable population.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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Disclaimer

The findings and conclusions in this paper are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

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Table 1.

Receipt of smoking cessation medications[€] among FFS medicaid enrollees[*], by selected state (2010 to 2014)

State	Medicaid covered all 7 FDA- approved drugs[π]	Number of cessation medication claims[Ω]	Number of FFS enrollees who had cessation medication claims[Ω]	Percent of FFS smokers with cessation medication claims, %	RX per 100 FFS smokers	Average number of cessation medication claims per user
Alaska[c]	No	1845	840	25.0	54.8	2.2
Arizona[b]	Yes	93	35	0.3	0.8	2.7
Arkansas[b]	No	58	26	0.2	0.5	2.2
California[a]	Yes	1558	695	0.6	1.3	2.2
Colorado[e]	Yes	3018	1165	8.4	21.7	2.6
Connecticut[b]	Yes	21 047	9953	21.0	44.5	2.1
Florida[c]	No	7239	2684	6.8	18.2	2.7
Illinois[c]	Yes	40 278	21 417	14.8	27.8	1.9
Indiana[b]	Yes	9305	4792	22.1	42.9	1.9
Iowa[a]	Yes	1471	695	6.3	13.4	2.1
Louisiana[a]	No	2198	898	1.9	4.7	2.4
Maryland[c]	No	138	49	2.5	7.0	2.8
Massachusetts[b]	Yes	19 386	9577	22.7	46.0	2.0
Michigan[a]	Yes	642	282	2.1	4.7	2.3
Minnesota[a]	Yes	6230	2295	32.9	89.2	2.7
Missouri[a]	Yes	12 653	6030	16.7	35.1	2.1
Montana[c]	Yes	1618	718	13.4	30.1	2.3
Nebraska[c]	No	83	34	3.8	9.2	2.4
New Hampshire[c]	Yes	2909	1229	22.5	53.2	2.4
New Mexico[c]	Yes	103	45	0.7	1.6	2.3

State	Medicaid covered all 7 FDA- approved drugs[π]	Number of cessation medication claims[Ω]	Number of FFS enrollees who had cessation medication claims[Ω]	Percent of FFS smokers with cessation medication claims, %	RX per 100 FFS smokers	Average number of cessation medication claims per user
New York[b]	No	6861	3218	18.9	40.4	2.1
North Carolina[c]	Yes	94	59	0.9	1.4	1.6
North Dakota[c]	Yes	356	140	6.3	15.9	2.5
Ohio[b]	Yes	3178	1109	3.5	10.0	2.9
Oklahoma[b]	Yes	268	134	3.3	6.5	2.0
Oregon[b]	Yes	886	389	8.5	19.5	2.3
Pennsylvania[a]	Yes	309	100	0.7	2.2	3.1
Rhode Island[d]	Yes	326	109	3.5	10.3	3.0
South Dakota[a]	No	488	160	4.4	13.5	3.1
Texas[c]	No	342	119	1.0	2.7	2.9
Utah[a]	No	622	121	6.5	33.3	5.1
Vermont[a]	Yes	7833	4224	29.4	54.5	1.9
Virginia[c]	Yes	651	262	3.5	8.7	2.5
Washington[b]	No	481	109	1.8	7.8	4.4
West Virginia[a]	Yes	7755	3899	11.9	23.7	2.0
Wisconsin[c]	No	84	32	7.1	18.6	2.6
Wyoming[a]	No	445	248	11.8	21.2	1.8
Average	—	4401	2105	9.4	21.5	2.5

[a] State data were from 2014 MAX (12 states).

[b] State data were from 2013 MAX (10 states).

[c] State data were from 2012 MAX (13 states).

[d] State data were from 2011 MAX (1 states).

[e] State data were from 2010 MAX (1 state).

Nicotine Tob Res. Author manuscript; available in PMC 2023 February 22.

€ Smoking cessation medications include 7 FDA-approved drugs: the nicotine patch, gum, lozenge, inhaler, and nasal spray, bupropion, and varenicline.

* Sample included adult Medicaid smokers aged 18 to 64 who tried to quit and were enrolled in fee-for service Medicaid for 12 continuous months during a calendar year. Pregnant women and persons who had dual Medicaid/Medicare coverage during any month in a 12-month calendar year were excluded.

π Data obtained from Centers for Disease Control and Prevention State Tobacco Activities Tracking and Evaluation system.

Ω States with values <11 were not reported following CMS small cell size suppression rules.

Nicotine Tob Res. Author manuscript; available in PMC 2023 February 22.

Table 2.

The receipt of smoking cessation counselling services[£] among FFS medicaid enrollees[*] and associated spending, by selected state (2010 to 2014)

State	Number of claims on cessation counselling services[Ω]	Number of FFS enrollees who had cessation counselling service claims[Ω]	Percent of FFS smokers who used counselling services (%)	Counselling per 100 FFS smokers	Associated Medicaid expenditures ($)
Alaska[c]	93	75	2.2	2.8	3629
Connecticut[b]	3226	1727	3.7	6.8	52 534
Florida[c]	30	26	0.1	0.1	1392
Indiana[b]	508	296	1.4	2.3	9190
Iowa[a]	45	41	0.4	0.4	2105
Maine[c]	2204	1542	5.6	8.1	30 628
Maryland[c]	73	42	2.1	3.7	793
Massachusetts[b]	1819	881	2.1	4.3	108 766
Michigan[a]	257	154	1.1	1.9	2916
Minnesota[a]	664	306	4.4	9.5	15 822
Missouri[a]	3366	2033	5.6	9.3	44 814
Montana[c]	137	70	1.3	2.6	1570
New York[b]	1075	708	4.2	6.3	15 388
North Carolina[c]	23	19	0.3	0.3	278
Oklahoma[b]	167	108	2.6	4.1	3387
Oregon[b]	125	81	1.8	2.7	8004
Rhode Island[d]	132	55	1.7	4.2	1582
Vermont[a]	1134	796	5.5	7.9	15 866
Washington[b]	107	106	1.7	1.7	21 379
Wyoming[a]	136	108	5.1	6.5	1965
Average	766	459	2.6	4.3	—

State	Number of claims on cessation counselling services[Ω]	Number of FFS enrollees who had cessation counselling service claims[Ω]	Percent of FFS smokers who used counselling services (%)	Counselling per 100 FFS smokers	Associated Medicaid expenditures ($)
Total	—	—	—	—	342 008

[a] State data were from 2014 MAX (12 states).

[b] State data were from 2013 MAX (10 states).

[c] State data were from 2012 MAX (13 states).

[d] State data were from 2011 MAX (1 states).

[£] Smoking cessation counselling services include both individual counseling and group counseling.

[*] Sample included adult Medicaid smokers aged 18 to 64 who tried to quit and were enrolled in fee-for service Medicaid for 12 continuous months during a calendar year. Pregnant women and persons who had dual Medicaid/Medicare coverage during any month in a 12-month calendar year were excluded.

[Ω] Estimates for states with cell size <11 were not reported following MAX data small cell size suppression rules.

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