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Tobacco Treatment Disparities Among California Medicaid Members With and Without Chronic Disease Who Smoke



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Introduction: People who are covered by Medicaid have a higher smoking prevalence than the general population and are at an increased risk for tobacco-related disease, a major driver of Medicaid costs. California has the largest Medicaid program, called Medi-Cal, whose members also have higher tobacco-use rates and tobacco-related disease. Quitting is beneficial at any age, and health professional advice and assistance are a key indicator of smoking cessation. As Medi-Cal transforms to improve population health and health equity, this study aimed to understand both the prevention and treatment of tobacco-related disease by comparing health professional advice and assistance among all Medi-Cal members with and without chronic disease who smoke.

Methods: Using data from the California Health Interview Survey (2014, 2016–2018), the authors examined 3,517 Medi-Cal current smokers (age ≥ 18 years) who consulted a health professional and reported about having a chronic disease. The outcomes included receiving advice or assistance from a health professional to quit smoking. Adjusted logistic regression models were conducted to examine the association between chronic disease and the outcomes, including adjusting for frequency of office visits.

Results: Among 1,227,154 Medi-Cal members who smoke, over half (51.9%) of whom had at least 1 chronic disease, approximately half received cessation advice, and less than one third received smoking cessation assistance. Smokers with chronic disease were more likely to receive health professional advice (63.9% vs 33.7%, $p < 0.001$) and assistance (37.7% vs 20.5%, $p < 0.001$) than those without chronic disease. In adjusted models, smokers with chronic disease were almost twice as likely to receive advice (OR=1.97, 95% CI=1.39, 2.78) and 1.5 times as likely to receive assistance (OR=1.50, 95% CI=0.94, 2.38) as those without chronic disease, but the latter was not statistically significant.

Conclusions: Medi-Cal members who smoke have tobacco treatment disparities between those with or without chronic disease, even after adjusting for the number of office visits. Medi-Cal population health strategies for tobacco cessation treatment will need to improve prevention, not just treatment, of tobacco-related disease to reduce the long-term burden on the healthcare system and associated costs.

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INTRODUCTION

Smoking remains the single largest cause of preventable disease and death in the U.S., causing multiple serious diseases such as cancer, cardiovascular disease, pulmonary disease, and diabetes mellitus.¹ Quitting smoking is beneficial at any age, can lower the risk for tobacco-related diseases, and can improve quality of life and mortality.² Although a majority of cigarette smokers make an attempt to quit each year, less than a third use evidence-based assistance with medications or counseling to support the attempts to quit.² Health professional advice and assistance to quit are key indicators of smoking cessation but vary across population subgroups.² Although the prevalence of smoking among the U.S. population continues to decrease, the prevalence of smoking among people with chronic disease is still high and unchanged, and more efforts are needed to provide access to and promote and integrate cessation treatment across the continuum of health care.³

People who currently smoke and are covered by Medicaid are at an increased risk for tobacco-related morbidity and mortality.⁴ Individuals eligible for Medicaid have a higher smoking prevalence than the general population, and tobacco-related disease is a major driver of Medicaid costs.^{2,5} Nationwide, smokers with Medicaid were 1.5–1.7 times more likely to get a chronic disease than smokers with private insurance or without insurance.⁶ Decreasing Medicaid smoking prevalence by 1% can reduce Medicaid costs by \$630 million in the next year.⁷

California has the largest Medicaid program, called Medi-Cal,⁸ which has grown to cover 1 in 3 Californians.⁹ Medi-Cal represents over 40% of California's 3 million smokers.¹⁰ By 2016, over half of all adult Californian smokers with chronic disease conditions (heart disease, diabetes, hypertension, and asthma) were covered by Medi-Cal, compared with over a quarter with private insurance.¹⁰ Medicaid spends \$40 billion on health care for smoking-related diseases annually, >15% of Medicaid expenditures.¹¹ Annual healthcare expenditures attributable to smoking in California were \$10.7 billion in 2014.¹²

As the Medi-Cal program transforms to prioritize population health and implement quality strategies for addressing disparities,¹³ it is important to have a comprehensive understanding of both prevention and treatment efforts of tobacco-related disease among Medi-Cal smokers with and without chronic disease. Previous research examined factors for differences in the receipt of smoking-cessation advice and assistance among Latino and non-Latino White adults aged 18–64 years enrolled in Medi-Cal.¹⁴ There was no difference between these 2 groups in adjusted models for receiving

assistance; however, there was an association between having a chronic disease and receiving assistance.¹⁴ This study further examined the association between having a chronic disease and receiving assistance among a wider population, including Medi-Cal smokers of all racial and ethnic groups and adult ages. To examine patterns within the chronic disease category, the study also analyzed the percentage of individuals with specific chronic conditions—including asthma, diabetes, hypertension, and heart disease—who received advice and assistance.

METHODS

Study Sample

Data from the 2014 and 2016–2018 California Health Interview Survey (CHIS), a population-based survey that is representative of the California population, were analyzed as a repeated cross-sectional study. Key outcome variables (the receipt of health professional advice and cessation assistance) were not asked in the CHIS 2015, 2019, or 2020, and only advice was asked in 2021 and 2022; thus, these were not included in this study.

The CHIS adult files collect yearly data from a state-representative sample of Californian adults. The CHIS is a telephone-delivered interview survey with a random digit dial sample. Questionnaires are conducted in 6 languages, which include Tagalog, Vietnamese, Korean, Chinese (Mandarin and Cantonese dialects), Spanish, and English. The adult response rate was between 42% and 45%. CHIS survey staff imputed missing values for variables used in the weighting process, and further details are available in the CHIS methodology report.¹⁵ Data collection methods were approved by the University of California, Los Angeles IRB (IRB#17-000362) and the California Committee for the Protection of Human Subjects (12-05-0176).¹⁶ This study was not subject to a University of California, Davis IRB review because it was a secondary and deidentified data analysis.

A total of 82,901 CHIS respondents participated in 2014 and 2016–2018. The study inclusion criteria were adults reporting insurance coverage with Medi-Cal, aged ≥18 years, and current smokers ($n=3,517$). Current smokers were defined as those who had smoked ≥100 cigarettes in their lifetime and smoked some days or every day in the past month.¹⁴

Measures

In terms of the independent variable, respondents were considered to have a chronic disease if they self-reported that a doctor told them that they had 1 or more of the following conditions: asthma, diabetes, hypertension, or heart disease. The questions were *Has a doctor ever told you that you have high blood pressure?*; *Has a doctor ever*

told you that you have asthma?; [Other than during pregnancy, has/Has] a doctor ever told you that you have diabetes or sugar diabetes?; and Has a doctor ever told you that you have any kind of heart disease?

In terms of the dependent variable, to evaluate the receipt of advice and assistance to quit smoking from health professionals, smokers were asked the following questions: *In the past 12 months, did a doctor or other health professional advise you to quit smoking?* and *In the past 12 months, did a doctor or other health professional refer you to, or give you information about, a smoking cessation program?*

The study included covariates to account for the respondents' characteristics in the analyses. Sociodemographic background included ages (18–34, 35–54, 55–64, or ≥65 years), sex (male or female), race/ethnicity (Latino, non-Latino White, non-Latino Asian, non-Latino African American, non-Latino American Indian/Alaska Native, or non-Latino other, and multiple races), and interview language (English or non-English). Tobacco-related behavioral factors included daily cigarette use (yes or no), stopping smoking for 1 day or longer in the past year (yes or no), and thinking about quitting smoking in the next 6 months (yes or no). Physiologic factors included self-rated health status (excellent or very good, good, or fair or poor). Healthcare access factors included the number of office visits to a doctor or other health professional in the past year (continuous variable, referred to as office visits in the remaining parts of this paper) and having a usual place to go to when sick or needing health advice (yes or no). The study also included a survey year variable (2014, 2016, 2017, or 2018) to account for potential temporal differences. These variables were selected according to previous study findings.¹⁴

Statistical Analysis

Survey-weighted descriptive statistics for the prevalence of each covariate were estimated for respondents with and without chronic disease. The study then used chi-square tests to examine the differences in the prevalence of advice and assistance across different subgroups. For each outcome, 2 logistic regression models were estimated to examine whether the associations between having at least 1 chronic disease and receipt of advice and assistance were mediated by the number of office visits.¹⁴ Model 1 included all covariates except the number of office visits, and Model 2 also included the variable for the number of office visits. Results from the full models are shown in [Appendix Tables 1 and 2](#) (available online). The *p*-values referred to 2-tailed tests, and statistical significance was considered at *p*<0.05. Replicate weights were used to account for the complex survey design. The

variance inflation factor was calculated among covariates in the logistic regression model and showed low concerns of multicollinearity (i.e., variance inflation factor<5).¹⁷ All statistical analyses were performed using SAS 9.4. Sensitivity analyses were performed excluding adults that did not have any office visits in the past year ([Appendix Table 3](#), available online).

RESULTS

[Table 1](#) shows the characteristics of Medi-Cal smokers with and without chronic disease in 2014 and 2016–2018 in California. Among 3,517 participants (weighted population: 1,227,154 adults), more than half of Medi-Cal smokers had at least 1 chronic disease, more than two thirds were aged ≤54 years, over half were male, nearly 40% were non-Latino White, around 75% were born in the U.S., 39% were interviewed in a language other than English, and 20% did not have a usual place to go to when sick or needing health advice. The percentage of adults who stopped smoking 1 day or longer in an attempt to quit in the past year was not different among smokers with and without chronic disease (61.8% vs 57.0%, *p*=0.42). Likewise, the proportion thinking about quitting in the next 6 months was not different among these 2 groups (76.7% vs 70.1%, *p*=0.07). There was no change in either advice or assistance from health professionals over time.

[Figures 1 and 2](#) present the number of smokers and the percentage of smokers who received advice or assistance, respectively, both overall and stratified by the presence or absence of chronic diseases as well as by 4 types of chronic diseases. For example, although the total number of smokers with hypertension who received advice or assistance is higher than that of smokers with other chronic disease groups, the percentage of smokers with hypertension who received advice or assistance is lower. [Figure 1](#) shows that less than half of current smokers with Medi-Cal received smoking cessation advice. The percentage that received advice for smokers with chronic disease was nearly double the percentage for smokers without chronic disease (63.9% vs 33.7%). Among smokers with chronic diseases, those with heart disease had the highest percentage of receiving advice, followed by those with diabetes, asthma, and hypertension. [Figure 2](#) shows that less than one third of smokers received assistance. The percentage that received assistance was greater for smokers with chronic disease (37.7%) than for smokers without chronic disease (20.5%). Among smokers with chronic diseases, those with asthma had the highest percentage of receiving assistance, followed by those with diabetes, heart disease, and hypertension. Although descriptive statistics showed

Table 1. Characteristics of Medi-Cal Smokers by Chronic Disease Status, California Health Interview Survey (2014, 2016–2018)

Characteristic	Total	No chronic disease	At least 1 chronic disease
	n (%)	n (%)	n (%)
Participants	3,517 (100)	1,485 (48.11)	2,032 (51.89)
Age, years			
18–34	727 (34.01)	471 (45.75) ^{***}	256 (23.12) ^{***}
35–54	1,177 (35.83)	535 (35.11) ^{***}	642 (36.49) ^{***}
55–64	977 (19.79)	298 (13.85) ^{***}	679 (25.30) ^{***}
≥65	636 (10.37)	181 (5.29) ^{***}	455 (15.09) ^{***}
Female	1,750 (43.05)	660 (40.39)	1,090 (45.52)
Race			
Latino	804 (34.60)	393 (42.49) ^{***}	411 (27.28) ^{***}
Non-Latino White	1,858 (39.64)	792 (39.26) ^{***}	1,066 (40.00) ^{***}
Non-Latino Asian	172 (8.30)	70 (6.38) ^{***}	102 (10.08) ^{***}
Non-Latino African American	341 (11.47)	106 (8.09) ^{***}	235 (14.61) ^{***}
Non-Latino AI/AN	125 (1.81)	46 (1.38) ^{***}	79 (2.20) ^{***}
Non-Latino other and multiple races	217 (4.17)	78 (2.40) ^{***}	139 (5.82) ^{***}
Interview Language			
English	2,559 (61.0)	1,030 (55.06) ^{**}	1,529 (66.60) ^{**}
Non-English	958 (39.0)	455 (44.94) ^{**}	503 (33.40) ^{**}
Daily cigarette use	2,508 (66.47)	1,014 (64.12)	1,494 (68.65)
Stopping smoking 1 day or longer to quit in the past year	2,010 (59.50)	801 (57.03)	1,209 (61.78)
Thinking about quitting in next 6 months	2,517 (73.50)	1,009 (70.06)	1,508 (76.68)
Self-rated health status			
Excellent/very good	800 (27.87)	520 (40.99) ^{***}	280 (15.71) ^{***}
Good	1,107 (31.31)	515 (34.15) ^{***}	592 (28.67) ^{***}
Fair or poor	1,610 (40.82)	450 (24.86) ^{***}	1,160 (55.62) ^{***}
Receipt of cessation advice	2,000 (49.37)	619 (33.74) ^{***}	1,381 (63.86) ^{***}
Receipt of cessation assistance	1,109 (29.43)	355 (20.49) ^{***}	754 (37.72) ^{***}
Office visits (mean±SD)	3.54 ± 0.14	2.59 ± 0.16 ^{***}	4.43 ± 0.21 ^{***}
Usual place of care	3,010 (79.87)	1,175 (71.25) ^{***}	1,835 (87.86) ^{***}
Year			
2014	581 (19.72)	238 (21.84)	343 (17.76)
2016	1,066 (29.50)	460 (28.68)	606 (30.25)
2017	873 (22.59)	372 (22.45)	501 (22.71)
2018	997 (28.19)	415 (27.03)	582 (29.27)

Note: Boldface indicates statistical significance (** $p < 0.01$ and *** $p < 0.001$). AI/AN, American Indian/Alaskan Native.

some variation in advice and assistance by chronic disease type, these differences were not statistically significant.

In Table 2, Model 1 shows that smokers with chronic disease had 2.3 times the adjusted odds of having received advice as those without a chronic disease ($p < 0.001$). Model 2 shows that after adding office visits to the adjusted model, the OR of having received advice decreased slightly to 1.97 ($p < 0.001$). Smokers with chronic disease received more advice, even after adjusting for the number of office visits. For every additional office visit, the odds of having received advice increased

by 24% ($p < 0.001$). Other variables associated with the receipt of advice included being aged > 55 years (compared with being aged 18–34 years) and smoking daily; there was no association between study periods and the receipt of cessation advice (Appendix Table 1, available online).

In Table 2, Model 3 shows that smokers with chronic disease had 1.7 times the adjusted odds of having received assistance as those without a chronic disease ($p = 0.02$). However, Model 4 shows that after adding the variable for office visits, the OR of having received assistance decreased to 1.50 and was no longer statistically

Table 2. Association Between Chronic Disease and Cessation-Related Advice/Assistance Among Medi-Cal Smokers

Covariates	Advice	
	Model 1	Model 2
	OR (95% CI)	OR (95% CI)
Chronic disease		
No	ref	ref
≥1	2.31 (1.65, 3.23)***	1.97 (1.39, 2.78)***
Office visit	—	1.24 (1.16, 1.32)***

Covariates	Assistance	
	Model 3	Model 4
	OR (95% CI)	OR (95% CI)
Chronic disease		
No	ref	ref
≥1	1.72 (1.10, 2.69)*	1.50 (0.94, 2.38)
Office visit	—	1.17 (1.10, 1.24)***

Note: Boldface indicates statistical significance (* $p < 0.05$ and *** $p < 0.001$).

Model 1 adjusted for age, sex, race or ethnicity, interview language, daily cigarette use, stopping smoking 1 day or longer to quit in the past year, thinking about quitting in next 6 months, self-rated health status, and survey year. Model 2 adjusted for all covariates in Model 1 and office visit. Model 3 adjusted for age, sex, race or ethnicity, interview language, daily cigarette use, stopping smoking 1 day or longer to quit in the past year, thinking about quitting in next 6 months, self-rated health status, and survey year. Model 4 adjusted for all covariates in Model 3 and office visit.

significant ($p=0.09$). For every additional office visit, the odds of having received assistance increased by 17% ($p < 0.001$). There was no difference between race and receiving cessation advice and assistance (Appendix Tables 1 and 2, available online). In sensitivity analyses of Models 2 and 4, among adults who had at least 1 doctor visit in the past year, results were not substantially different (Appendix Table 3, available online).

DISCUSSION

Among the estimated 1.2 million Medi-Cal members who smoke, approximately half received smoking cessation advice, and less than one third received smoking cessation assistance. Half of Medi-Cal smokers had a chronic disease, and those smokers had double the likelihood to receive advice to quit as those without a chronic disease, even after adjusting for the number of office visits. Medi-Cal smokers with a chronic disease, compared with those without, had an increased likelihood of receiving assistance, but this was no longer statistically significant after adjusting for office visits; however, this may be reflective of the overall low assistance rates. The chronic disease category did not have statistically significant differences for rates of advice or assistance across specific chronic conditions (asthma, diabetes, hypertension, and heart disease). Medi-Cal population health strategies for tobacco cessation treatment will need to

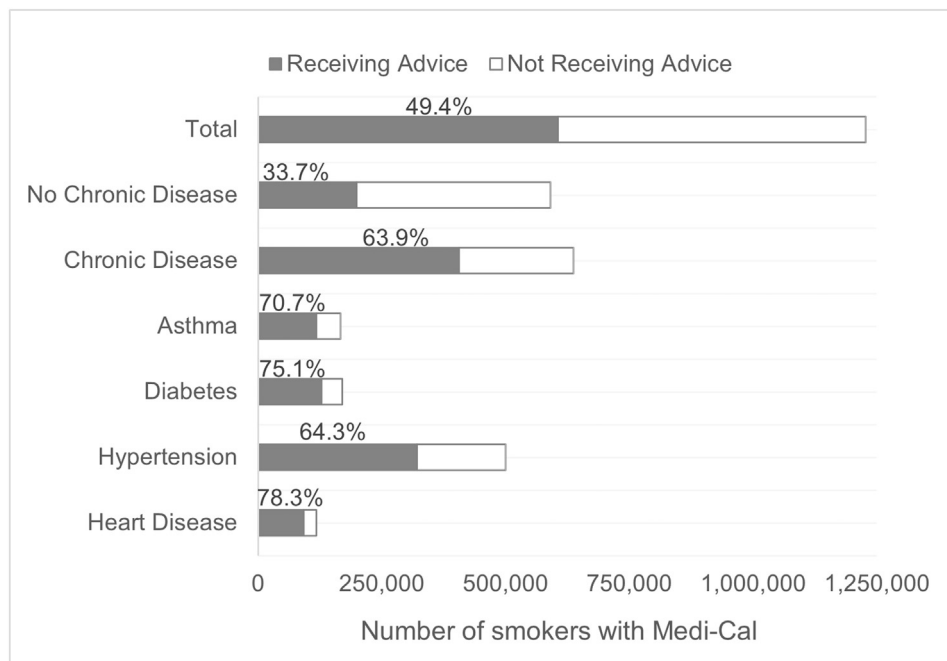


Figure 1. The Total Number and Percentage of Medi-Cal Smokers Receiving Advice by Chronic Disease.

Note: Bar length represents total number of smokers in each category. Percentage labels indicate proportion receiving advice.

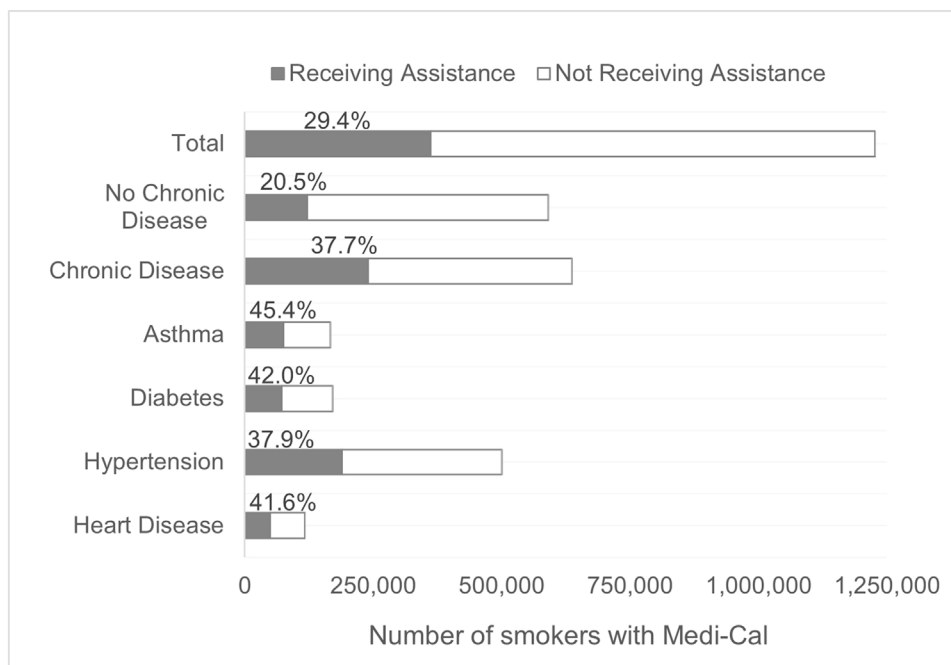


Figure 2. The Total Number and Percentage of Medi-Cal Smokers Receiving Assistance by Chronic Disease.

Note: Bar length represents total number of smokers in each category. Percentage labels indicate proportion receiving assistance.

improve prevention, not just treatment, of tobacco-related disease to reduce the long-term burden on the healthcare system and associated costs.

The proportion of Medi-Cal members who smoke and received advice in this population-based study was lower than that reported in patient experience surveys of Medicaid members who saw a provider. The study specifically found that 49% of Medi-Cal smokers received advice, which was less than the reported 65% in the 2016 Consumer Assessment of Healthcare Providers and Systems (CAHPS) Medicaid Managed Care Survey in California.¹⁸ Similarly, the study found that 29% of Medi-Cal smokers received assistance, which was lower than the reported California data in the 2014–2015 Nationwide Adult Medicaid CAHPS survey (44% received cessation medication from their health providers, 39% received nonmedication support to assist with quitting).¹⁹ Medi-Cal managed care plans have relied on CAHPS for their tobacco quality metric performance, but it is essential to note that a patient experience survey has severe limitations in its methodology compared with population-based surveys. Both CAHPS and Nationwide Adult Medicaid CAHPS have low response rates (~24%).^{18,19} In addition, over half of the managed care plans were not included in the analyses because they had fewer than the required 100 individual member responses for this measure.^{18,19} Population health and

quality improvement efforts for tobacco need to be based on healthcare data of plan members and prioritized by plans as an essential Healthcare Effectiveness Data and Information Set measure for tobacco treatment to move beyond a patient experience measure.

The findings show that Medi-Cal members who smoke with chronic disease and with more frequent office visits were associated with receiving more smoking cessation advice, which is consistent with previous studies. Five or more doctor visits and having a chronic disease were associated with receiving cessation advice among the previously described study of Latino and non-Latino White Medi-Cal smokers.¹⁴ This study expands this research by specifically examining the relationship between chronic disease status and the provision of smoking cessation advice or assistance among Medi-Cal smokers, encompassing all racial and ethnic groups and adult ages. One European study found that smokers with chronic diseases received cessation support more frequently than smokers without chronic disease.²⁰ Another study found that smokers with a higher frequency of office visits were more likely to receive cessation medication orders.²¹ In addition, this study included smokers who did not have any clinic visits in the past year because they can still receive advice or assistance from online cessation resources (e.g., quitline). More population health strategies are needed outside of the clinic setting because health

professionals report challenges due to competing priorities, time constraints, or lack of training.²²

Medi-Cal is undergoing a systems transformation known as California Advancing and Innovating Medi-Cal (CalAIM) with initiatives that emphasize population health management, health equity, and community support.^{23,24} In the 2022 Department of Health Care Services Comprehensive Quality Strategy plan,²⁵ a key document driving CalAIM's new bold goals, tobacco is not prioritized as a goal or a priority clinical outcome metric. However, many chronic diseases and health conditions (e.g., colorectal cancer, high blood pressure, diabetes, prenatal and postpartum care, follow-up for mental health, and substance use disorder) caused and worsened by tobacco use are priority clinical outcome metrics. Tobacco used to be 1 of 5 focus areas for Medi-Cal managed care plans for the 2018 Department of Health Care Services quality strategy, but improvement goals were not met to increase the proportion of smokers counseled (from 65% to 76%), as measured in the 2019 CAHPS, nor the proportion of smokers with a discussion about using cessation medications (from 38% to 45%).²⁵ Now, tobacco is included in CalAIM's 2023 Population Health Management Policy as part of the requirement for Medi-Cal managed care plans to offer comprehensive wellness and prevention programs that provide information.²⁶ Medi-Cal managed care plans are expected to report annually on how community-specific information is used to design and implement strategies unique to their population needs. Leveraging both the chronic disease management priorities and population health focus in CalAIM^{23,24} will be important to continue integrating tobacco treatment and address tobacco treatment disparities among Medi-Cal members with and without chronic disease.

To promote tobacco treatment outside of the clinical encounter, healthcare systems and plans that serve Medi-Cal members can consider proactive outreach strategies²⁷ to connect members to evidence-based tobacco treatment services, such as free state quitlines.²⁸ Proactive outreach to Medi-Cal patients who smoke but do not have documented assistance within the Los Angeles County Department of Health Services led to 16% of these patients agreeing to a quitline referral.²⁸ Higher response rates were among those patients called with a local area code and Spanish-speaking smokers than among English speakers.²⁸ Three Medi-Cal managed care plans are implementing proactive outreach with the state quitline, Kick It California, and CA Quits,²⁹ a project that advances tobacco treatment delivery for Medi-Cal. These plan efforts include improving the identification of members who use tobacco because a Department of Health Care Services report showed that administrative data only identified 20% of members.³⁰

Incentives for Medicaid members also increase engagement with tobacco treatment services. In the Medi-Cal Incentives to Quit Smoking project, a Centers for Medicare and Medicaid Services statewide demonstration project,³¹ Medi-Cal members were offered modest incentives (nicotine patch starter kit, \$20 gift card) to engage with Kick It California, the state quitline.³¹ The Medi-Cal Incentives to Quit Smoking project showed that statewide outreach improved the reach of quitline use among Medi-Cal members.³¹ A cost-benefit analysis showed that the incentives had nearly \$2 cost savings for Medi-Cal for every dollar spent.³² Some Medi-Cal managed care plans also began implementing proactive outreach mailings about incentives to members.³³ As Medi-Cal managed care plans decide on strategic investments, there is substantial evidence that incentivizing members for tobacco treatment will have cost savings.

Community-based strategies for tobacco treatment are also important, especially for populations who are less likely to visit a physician. Community pharmacies can be important for enhancing access to care,³⁴ because California pharmacists can furnish nicotine medication without a prescription.³⁵ Leveraging community leaders and promotors can be an effective channel and trusted messenger for health education and prevention services.³⁶ Community health workers are a covered Medicaid benefit in 9 states (California, Indiana, Louisiana, Minnesota, North Dakota, Nevada, Oregon, Rhode Island, and South Dakota).³⁷ Community health workers can potentially promote or provide tobacco treatment services for different populations, such as those with language or access issues, and community settings, especially rural areas.

Finally, health systems and plans need to improve the data collection and reporting of tobacco use assessment and counseling quality metrics. The 2023 Uniform Data System for community health centers to report on quality metrics now requires including e-cigarettes and vapes as tobacco products in tobacco assessment.³⁸ In California, public hospital clinics are now required to report on the proportion of tobacco users who were counseled instead of only reporting the combined proportion of patients assessed for tobacco status (the majority who are nonsmokers) plus the tobacco users who were counseled.^{39,40} The 2024 electronic Clinical Quality Measure for tobacco will now include reporting on ages ≥ 12 years and not just adults.⁴¹

Limitations

This study had several limitations. First, this study is cross-sectional and an observational survey; thus, the study team could not conclude any causal relationship. Second, the response rate was below 50%, but the CHIS

used survey weights to account for some of the nonresponses. Third, the measurements in CHIS were self-reported, which may be subject to social desirability bias or recall bias. Fourth, findings may not be generalizable to all adults in different states and individuals in other age groups. Fifth, the study did not explore health professional factors that affected the delivery of smoking cessation advice and assistance for smokers with or without chronic disease(s). Finally, cancer was not included as a chronic disease in the survey, but this is an important population for future study because Medi-Cal members with cancer present with later stages of cancer and are sicker than those with private insurance.¹⁰

CONCLUSIONS

Because Medi-Cal members represent a large proportion of California's population and smokers, Medi-Cal and its managed care plans will need to identify their members who use tobacco, accurately measure how they are being advised and assisted, and develop sustainable strategies for offering community-engaged and population-based tobacco treatment services. These steps will help to ensure that tobacco treatment is equitably offered to all Medi-Cal members for both prevention and treatment of tobacco-related diseases.

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Declaration of interest: none.

CREDIT AUTHOR STATEMENT

Nan Wang: Writing - original draft, Data curation, Formal analysis. Melanie S. Dove: Writing -review & editing, Data curation, Formal analysis, Methodology. Cindy V. Valencia: Writing -review & editing. Elisa K. Tong: Conceptualization, Writing - review & editing, Funding acquisition, Supervision.

SUPPLEMENTARY MATERIALS

Supplementary material associated with this article can be found in the online version at [doi:10.1016/j.focus.2024.100292](https://doi.org/10.1016/j.focus.2024.100292).

REFERENCES

1. U.S. Department of Health and Human Services. The Health Consequences of Smoking: 50 Years of Progress. A Report of the Surgeon General. Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 2014.
2. U.S. Department of Health and Human Services. Smoking Cessation. A Report of the Surgeon General. Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 2020.
3. Loretan CG, Cornelius ME, Jamal A, Cheng YJ, Homa DM. Cigarette smoking among US adults with selected chronic diseases associated with smoking, 2010–2019. *Prev Chronic Dis*. 2022;19:E62. <https://doi.org/10.5888/pcd19.220086>.
4. DiGiulio A, Jump Z, Yu A, et al. State Medicaid coverage for tobacco cessation treatments and barriers to accessing treatments — United States, 2015–2017. *MMWR Morb Mortal Wkly Rep*. 2018;67(13):390–395. <https://doi.org/10.15585/mmwr.mm6713a3>.
5. Xu X, Shrestha SS, Trivers KF, Neff L, Armour BS, King BA. U.S. healthcare spending attributable to cigarette smoking in 2014. *Prev Med*. 2021;150:106529. <https://doi.org/10.1016/j.ypmed.2021.106529>.
6. Zhu SH, Anderson CM, Zhuang YL, Gamst AC, Kohatsu ND. Smoking prevalence in Medicaid has been declining at a negligible rate. *PLoS One*. 2017;12(5):e0178279. <https://doi.org/10.1371/journal.pone.0178279>.
7. Glantz SA. Estimation of 1-year changes in Medicaid expenditures associated with reducing cigarette smoking prevalence by 1%. *JAMA Netw Open*. 2019;2(4):e192307. <https://doi.org/10.1001/jamanetworkopen.2019.2307>.
8. Health for California, State of California & national scene: Medicaid by state. Health for California. <https://www.healthforcalifornia.com/covered-california/health-insurance-companies/medi-cal/medicaid-by-state>. Accessed October 1, 2024.
9. California Department of Health Care Services, Medi-Cal monthly enrollment recent trends. Department of Health Care Services. <https://www.dhcs.ca.gov/dataandstats/statistics/Pages/Medi-Cal-Certified-Eligibles.aspx>. Accessed October 1, 2024.
10. Zhu SH, Anderson CM, Wong S, Kohatsu ND. The growing proportion of smokers in Medicaid and implications for public policy. *Am J Prev Med*. 2018;55(6):S130–S137 (suppl 2). <https://doi.org/10.1016/j.amepre.2018.07.017>.
11. Centers for Disease Control and Prevention, STATE system Medicaid coverage of tobacco cessation treatments fact sheet. Centers for Disease Control and Prevention. <https://www.cdc.gov/statesystem/factsheets/medicaid/Cessation.html>. Accessed October 1, 2024.
12. Max W, Stark B, Sung HY. Healthcare costs attributable to smoking in California, U.S. for different racial/ethnic communities. *Tob Induc Dis*. 2018;16(suppl 1):A821. <https://doi.org/10.18332/tid/84304>.
13. California Department of Health Care Services, Comprehensive quality strategy. Department of Health Care Services. <https://www.dhcs.ca.gov/services/Pages/DHCS-Comprehensive-Quality-Strategy.aspx>. Accessed October 1, 2024.
14. Valencia CV, Dove M, Tong EK. Factors associated with receipt of Smoking Cessation advice and assistance by health professionals among Latino and non-latino White smokers with Medicaid insurance in California. *JAMA Netw Open*. 2022;5(1):e2144207. <https://DOI.ORG/10.1001/JAMANETWORKOPEN.2021.44207>.
15. California Health Interview Survey. Center for Health Policy Research, UCLA. www.chis.ucla.edu. Accessed October 1, 2024.
16. CHIS Methodology reports repository. Center for Health Policy Research, UCLA. <https://healthpolicy.ucla.edu/our-work/california>

- health-interview-survey-chis/chis-design-and-methods/chis-methodology-reports-repository. Accessed October 1, 2024.
17. Dormann CF, Elith J, Bacher S, et al. Collinearity: a review of methods to deal with it and a simulation study evaluating their performance. *Ecography*. 2013;36(1):27–46. <https://doi.org/10.1111/j.1600-0587.2012.07348.x>.
 18. California Department of Health Care Services, Managed Care Quality and Monitoring Division. www.dhcs.ca.gov/dataandstats/reports/Documents/MMCD_Qual_Rpts/CAHPS_Reports/CAHPS_2015-2016.pdf. Accessed October 1, 2024.
 19. The U.S. Centers for Medicare & Medicaid Services. Medical assistance with smoking and tobacco cessation: findings from a 2014–2015 nationwide survey of adult Medicaid beneficiaries. Published online 2017. www.medicaid.gov/medicaid/quality-of-care/downloads/performance-measurement/brief-tobacco-cessation.pdf. Accessed November 27, 2022.
 20. Hedman L, Katsounou PA, Filippidis FT, et al. Receiving support to quit smoking and quit attempts among smokers with and without smoking related diseases: findings from the EUREST-PLUS ITC Europe Surveys. *Tob Induc Dis*. 2018;16(2):A14. <https://doi.org/10.18332/tid/102787>.
 21. Solberg LI, Parker ED, Folds SS, Walker PF. Disparities in tobacco cessation medication orders and fills among special populations. *Nicotine Tob Res*. 2010;12(2):144–151. <https://doi.org/10.1093/ntr/ntp187>.
 22. Tong EK, Strouse R, Hall J, Kovac M, Schroeder SA. National survey of U.S. health professionals' smoking prevalence, cessation practices, and beliefs. *Nicotine Tob Res*. 2010;12(7):724–733. <https://doi.org/10.1093/ntr/ntq071>.
 23. California Department of Health Care Services, Medi-Cal transformation. Department of Health Care Services. <https://www.dhcs.ca.gov/CalAIM/Pages/CalAIM.aspx>. Accessed October 1, 2024.
 24. California Department of Health Care Services, CalAIM population health management initiative. Department of Health Care Services. <https://www.dhcs.ca.gov/CalAIM/Pages/PopulationHealthManagement.aspx>. Accessed October 1, 2024.
 25. California Department of Health Care Services. www.dhcs.ca.gov/services/Documents/Formated-Combined-CQS-2-4-22.pdf. Accessed October 1, 2024.
 26. California Department of Health Care Services. www.dhcs.ca.gov/CalAIM/Documents/PHM-Policy-Guide.pdf. Accessed October 1, 2024.
 27. Haas JS, Linder JA, Park ER, et al. Proactive tobacco cessation outreach to smokers of low socioeconomic status: a randomized clinical trial. *JAMA Intern Med*. 2015;175(2):218–226. <https://doi.org/10.1001/jamainternmed.2014.6674>.
 28. Valencia CV, Dove MS, Cummins SE, et al. A proactive outreach strategy using a local area code to refer unassisted smokers in a safety net health system to a quitline: a pragmatic randomized trial. *Nicotine Tob Res*. 2023;25(1):43–49. <https://doi.org/10.1093/ntr/ntac156>.
 29. Kaslow AA, Romano PS, Schwarz E, Shaikh U, Tong EK. Building and scaling-up California quits: supporting health systems change for tobacco treatment. *Am J Prev Med*. 2018;55(6):S214–S221 (suppl 2). <https://doi.org/10.1016/j.amepre.2018.07.045>.
 30. California Department of Health Care Services. www.dhcs.ca.gov/dataandstats/reports/Documents/MMCD_Qual_Rpts/TechRpt/CA2016-17_EQR_Technical_Report_F1.pdf. Accessed October 1, 2024.
 31. Tong EK, Stewart SL, Schillinger D, et al. The Medi-Cal incentives to quit smoking project: impact of statewide outreach through health channels. *Am J Prev Med*. 2018;55(6):S159–S169 (suppl 2). <https://doi.org/10.1016/j.amepre.2018.07.031>.
 32. Sung HY, Penko J, Cummins SE, et al. Economic impact of financial incentives and mailing nicotine patches to help Medicaid smokers quit smoking: a cost–benefit analysis. *Am J Prev Med*. 2018;55(6):S148–S158 (suppl 2). <https://doi.org/10.1016/j.amepre.2018.08.007>.
 33. Hood-Medland EA, Dove MS, Stewart SL, et al. Direct-to-member household or targeted mailings: incentivizing Medicaid calls for quitline services. *Am J Prev Med*. 2018;55(6):S178–S185 (suppl 2). <https://doi.org/10.1016/j.amepre.2018.06.026>.
 34. Goode JV, Owen J, Page A, Gatewood S. Community-based pharmacy practice innovation and the role of the community-based pharmacist practitioner in the United States. *Pharmacy (Basel)*. 2019;7(3):106. <https://doi.org/10.3390/pharmacy7030106>.
 35. Adams AJ, Hudmon KS. Pharmacist prescriptive authority for smoking cessation medications in the United States. *J Am Pharm Assoc (2003)*. 2018;58(3):253–257. <https://doi.org/10.1016/j.japh.2017.12.015>.
 36. Carter-Pokras OD, Feldman RH, Kanamori M, et al. Barriers and facilitators to smoking cessation among Latino adults. *J Natl Med Assoc*. 2011;103(5):423–431. [https://doi.org/10.1016/S0027-9684\(15\)30339-4](https://doi.org/10.1016/S0027-9684(15)30339-4).
 37. Haldar S, Hinton E. *State policies for expanding Medicaid coverage of Community Health Worker (CHW) services*. San Francisco, CA: Kaiser Family Foundation; 2023. <https://www.kff.org/medicaid/issue-brief/state-policies-for-expanding-medicaid-coverage-of-community-health-worker-chw-services/>.
 38. Health Resources and Services Administration, Bureau of Primary Health Care. Uniform Data System Reporting Requirements for 2023 Health Center Data. bphc.hrsa.gov/sites/default/files/bphc/data-reporting/2023-uds-manual.pdf. Accessed October 1, 2024.
 39. CA Quits: advancing tobacco treatment with Medi-Cal for health systems change. Sacramento, CA: CA Quits, Center for Healthcare Policy and Research, UC Davis; 2023. <https://files.constantcontact.com/398da980401/71aacb9-b6cd-4f24-b408-43e65b84f706.pdf?rdr=true>.
 40. CA Quits. Center for Healthcare Policy and Research, UC Davis. <https://health.ucdavis.edu/chpr/programs/ca-quits/>. Accessed October 1, 2024.
 41. eCQI resource center. Preventive Care and Screening: Tobacco Use: Screening and Cessation Intervention. <https://ecqi.healthit.gov/ecqm/ec/2024/cms0138v1?compare=2024to2023>. Accessed November 17, 2023.