

NOTICE: This material may be protected
By copyright law (Title 17 U.S. Code)

Applied Research Brief: Tobacco Control

Increasing Consumer Demand Among Medicaid Enrollees for Tobacco Dependence Treatment: The Wisconsin “Medicaid Covers It” Campaign

Paula A. Keller, MPH; Bruce Christiansen, PhD; Su-Young Kim, MS; Megan E. Piper, PhD; Lezli Redmond, MPH; Robert Adsit, MEd; Michael C. Fiore, MD, MPH, MBA

Abstract

Purpose. Smoking prevalence among Medicaid enrollees is higher than among the general population, but use of evidence-based cessation treatment is low. We evaluated whether a communications campaign improved cessation treatment utilization.

Design. Quasi-experimental.

Setting. Wisconsin.

Subjects. Enrollees in the Wisconsin Family Medicaid program. The average monthly enrollment during the study period was approximately 170,000 individuals.

Intervention. Print materials for clinicians and consumers distributed to 13 health maintenance organizations (HMOs) serving Wisconsin Medicaid HMO enrollees.

Measures. Wisconsin Medicaid pharmacy claims data for smoking cessation medications were analyzed before and after a targeted communications campaign. HMO enrollees were the intervention group. Fee-for-service enrollees were a quasi-experimental comparison group. Quit Line utilization data were also analyzed.

Analysis. Pharmacotherapy claims and number of registered Quit Line callers were compared precampaign and postcampaign.

Results. Precampaign, cessation pharmacotherapy claims declined for the intervention group and increased slightly for the comparison group ($t = 2.29, p = .03$). Postcampaign, claims increased in both groups. However, the rate of increase in the intervention group was significantly greater than in the comparison group ($t = -2.2, p = .04$). A statistically significant increase was also seen in the average monthly number of Medicaid enrollees that registered for Quit Line services postcampaign compared to precampaign ($F [1,22] = 7.19, p = .01$).

Conclusion. This natural experiment demonstrated statistically significant improvements in both pharmacotherapy claims and Quit Line registrations among Medicaid enrollees. These findings may help inform other states' efforts to improve cessation treatment utilization. (*Am J Health Promot* 2011;25[6]:392–395.)

Key Words: Smoking, Cessation, Medicaid, Treatment, Utilization, Prevention
Research. Manuscript format: research; Research purpose: intervention testing/program evaluation; Study design: quasi-experimental; Outcome measure: behavioral; Setting: clinical/health care; Health focus: smoking control; Strategy: education; Target population: adults; Target population circumstances: education/income level

PURPOSE

Persons living in poverty bear a disproportionate burden of tobacco-related morbidity and mortality. Data from the 2008 Behavioral Risk Factor Surveillance Survey indicate that 27.3% of Wisconsin Medicaid and Badger-Care (Wisconsin's Medicaid expansion program for the working poor) enrollees smoke, compared to 19.8% of all Wisconsin adults.¹

Medicaid is a U.S. health insurance program for low-income individuals and families, cofunded by the federal and state government. Although most state Medicaid programs, including Wisconsin's, cover at least one smoking cessation treatment,² benefit utilization rates remain low.^{3,4} Utilization is influenced by lack of awareness and inaccurate information about accessing benefits. Research has found that less than half of Medicaid smokers and only 60% of physicians were aware of their state Medicaid program's smoking cessation benefit.⁵ Additional research found that smokers who knew that their insurance benefit included smoking cessation were more likely to report that their physician addressed their tobacco use during the visit.^{6,7} Providing clinicians with information about how to help patients access covered benefits may also improve treatment delivery.⁸

We evaluated whether a targeted educational campaign designed to increase patients' and physicians' knowledge of Medicaid smoking cessation benefits would improve rates of pharmacotherapy and Quit Line usage among Wisconsin Medicaid enrollees

Paula A. Keller, MPH; Bruce Christiansen, PhD; Su-Young Kim, MS; Megan E. Piper, PhD; Lezli Redmond, MPH; Robert Adsit, MEd; and Michael C. Fiore, MD, MPH, MBA are with the University of Wisconsin Center for Tobacco Research and Intervention, Madison, Wisconsin.

Send reprint requests to Paula A. Keller, MPH, Clear Way Minnesota, Two Appletree Square, 8011 34th Avenue South, Suite 400, Minneapolis, MN 55425; pkeller@clearwaymn.org.

This manuscript was submitted September 23, 2009; revisions were requested January 28, 2010, and March 18, 2010; the manuscript was accepted for publication March 21, 2010.

Copyright © 2011 by American Journal of Health Promotion, Inc.
0890-1171/11/\$5.00 + 0
DOI: 10.4278/ajhp.090923-QUAN:311

1 year after the campaign was implemented.

METHODS

Design

The design was quasi-experimental.

Sample

The study period was October 1, 2005, through December 31, 2007. The sample for the pharmacy claims analysis comprised all adult enrollees in the Wisconsin Family Medicaid Program (average monthly enrollment 169,867). The sample for the Wisconsin Tobacco Quit Line analysis comprised all adult Quit Line callers that reported being insured by Medicaid. All data were collected retrospectively in summer and fall 2008.

Measures

Pharmacy Claims Data. Pharmacy claims data were obtained from the Wisconsin Medicaid Program. No individual-level data were provided. Data were reported by month, enrollment type (health maintenance organization [HMO] or fee-for-service [FFS] insurance), and, if in an HMO, by specific HMO. Data included demographics (e.g., average age, percentage female) and number of smoking cessation pharmacotherapy claims (nicotine patch, nicotine gum, nicotine nasal spray, nicotine inhaler, Zyban, varenicline).

The analysis was limited to adults enrolled in the Wisconsin Family Medicaid Program. In Wisconsin, people with incomes up to 200% of the federal poverty level are eligible for Medicaid health insurance coverage. Family Medicaid HMO enrollees served as the intervention group, as HMOs were the target of the educational campaign. Family Medicaid FFS enrollees served as a quasi-experimental comparison group to monitor secular trends in pharmacy claims for smoking cessation medications. FFS enrollment is limited to persons living in counties with either one or no HMO; thus, enrollees would have limited, if any, exposure to the campaign.

Bupropion SR (a medication sometimes used for smoking cessation) and other generic formulations of bupropion were excluded from the analysis

as we did not have individual-level data to exclude when it was prescribed for diagnoses other than smoking cessation (e.g., depression).

We also estimated changes in the percentage of adult smokers with a pharmacy claim for smoking cessation medication precampaign and postcampaign. Pharmacy claims data, monthly Medicaid enrollment data, and the estimated Medicaid and BadgerCare smoking prevalence rate in 2008 were used to calculate this estimate.

Wisconsin Tobacco Quit Line Data. The Wisconsin Tobacco Quit Line provided data on monthly numbers of callers who registered for Quit Line services and whether they were insured by Medicaid during the study period.

Other HMO Data. Descriptive data about the 13 Wisconsin HMOs that are contracted to serve Medicaid enrollees were collected from publicly available sources and from qualitative interviews conducted as part of this research project during 2007 and 2008. Nine factors, such as HMO type (e.g., staff model, network model), size, and use of campaign materials were analyzed.

Intervention

In 2006, the University of Wisconsin Center for Tobacco Research and Intervention (UW-CTRI), in partnership with the Wisconsin Medicaid Program and the Wisconsin Department of Health Services, developed an educational campaign, "You Can Afford to Quit: Medicaid Covers It." The campaign's goals were to increase awareness among health care providers that the Wisconsin Medicaid Program covers tobacco cessation and to increase consumer demand for and utilization of this benefit.

The campaign comprised messages and materials for clinicians and consumers, including two-page summaries of the Medicaid cessation benefit for clinicians, pharmacists, and office/billing staff; laminated reminder sheets for clinician offices; and patient education materials. Brochures and posters were developed for consumers in both English and Spanish.

Materials were distributed to HMOs through the UW-CTRI website and via academic detailing/outreach by UW-CTRI regional outreach specialists

from October 2006 through 2008. The UW-CTRI distributed 80,000 brochures, 6000 posters, and 16,000 two-page summaries. Additional copies of materials were printed by the HMOs for their enrollees.

Analysis

Data were analyzed using SPSS 17. The precampaign period was defined as October 1, 2005, through September 30, 2006, and the postcampaign period was defined as January 1, 2007, through December 31, 2007. Data from October 2006 through December 2006 were excluded from the analysis because the campaign rollout took several weeks.

Group differences on demographic variables between the intervention and comparison groups were tested using analysis of variance (ANOVA). Our first dependent variable, changes in pharmacotherapy claims over time (precampaign versus postcampaign), defined as the number of cessation medication prescriptions divided by the number of enrollees in the appropriate group per month, was tested using general linear models. In these analyses, we included time as a continuous variable, phase (i.e., precampaign = 0 vs. postcampaign = 1), and the interaction of time and phase, to permit examination of changes over time, differences in phases, and whether there were differences in the rate of change over time between the two phases. Finally, univariate regression analyses were performed to explore whether HMO-level factors explained differences in our dependent variable.

Wisconsin Tobacco Quit Line data were analyzed using ANOVA to determine whether our second dependent variable, the average number of monthly Quit Line registrants, differed significantly precampaign vs. postcampaign.

The University of Wisconsin Health Sciences Minimal Risk Institutional Review Board (IRB) reviewed the protocol and determined it to be exempt from full IRB review.

RESULTS

Pharmacy Claims

The Table describes differences between Wisconsin Medicaid enrollees

Table
HMO and Fee-For-Service Enrollee Characteristics*

	HMO	Fee-For-Service	F	p
Average enrollment, No.	120,862.8	49,006.7	751.5	<0.001
Average age, y	31.2	32.5	3.7	0.06
Female, %	74.6	70.9	4.3	0.04
Average continuous enrollment, mo	15.3	24.6	93.5	<0.001

* HMO indicates health maintenance organization.

in the intervention (HMO) and comparison (FFS) groups across the 27-month study period. More people were enrolled in the intervention group than in the comparison group ($p < .001$) and a greater percentage of the intervention group was female ($p = .04$). On average, the comparison group had been continuously enrolled in the Wisconsin Medicaid Program for a longer period of time than the intervention group ($p < .001$).

Differences in pharmacotherapy claims for smoking cessation medications precampaign and postcampaign are illustrated in the Figure. Precampaign, a statistically significant rate of change was seen between the intervention and comparison groups. The rate of change in pharmacotherapy claims for the intervention group declined, whereas the rate of change increased slightly for the comparison group ($t = 2.29, p = .03$). Postcampaign, changes in pharmacotherapy

claims increased in both groups. However, the rate of increase in the intervention group was significantly greater than in the comparison group ($t = -2.22, p = .04$).

Further analyses focused only on the 13 HMOs that comprised the intervention group. Statistically significant increases in changes in pharmacotherapy claims postcampaign compared to precampaign were seen in 10 of the 13 HMOs ($p < .05$). Pharmacotherapy claims for the remaining HMOs improved postcampaign compared to precampaign, but the difference in trend was not statistically significant. Univariate regression analyses were used to determine whether HMO-level variables might explain these improvements. None of the variables explored were statistically significant ($p > .05$).

The analysis of changes in pharmacotherapy claims for the estimated number of adult smokers enrolled in Family Medicaid (HMO and FFS) precampaign and postcampaign

showed that pharmacotherapy claims increased from 1.5% at the beginning of the campaign to 4.4% at the end of the follow-up period.

Wisconsin Tobacco Quit Line

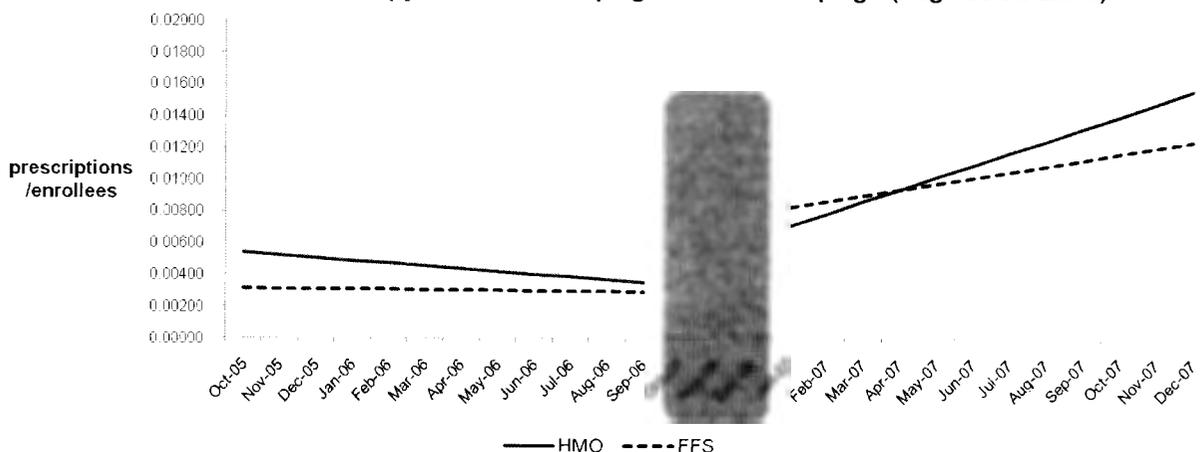
There was a statistically significant increase in the number of Medicaid enrollees who registered for Wisconsin Tobacco Quit Line services postcampaign compared to precampaign (average monthly registrants 59.42 vs. 93.42, $F[1,22] = 7.19, p = .01$). The Wisconsin Tobacco Quit Line does not capture whether a caller is enrolled in a Family Medicaid HMO or in Family Medicaid FFS, so we were not able to differentiate the intervention and comparison groups.

DISCUSSION

Summary

The "You Can Afford to Quit: Medicaid Covers It" campaign appears to have contributed to increased rates

Figure
Trends in Pharmacotherapy Claims Precampaign and Postcampaign (Regression Lines)



of pharmacotherapy claims for smoking cessation medications in the intervention group (HMO). Although a similar improvement was seen in the quasi-experimental comparison group (FFS), the rate of increase among the intervention group was significantly greater than in the comparison group. We also found a statistically significant increase in the total number of Medicaid enrollees registering for Wisconsin Tobacco Quit Line services.

The results of this project may help other state Medicaid programs reach both clinicians and smokers. This evidence that a coordinated communications campaign is associated with increases in the utilization of evidence-based tobacco cessation treatments—both counseling and pharmacotherapy—has the potential to yield substantial population health benefit. However, given the high tobacco use rates in this population,¹ additional strategies are needed to ensure that Medicaid enrollees access evidence-based cessation counseling and pharmacotherapy if we are to address income-based disparities in tobacco use rates, reduce adverse health outcomes in this population, and reduce future health care costs. Consumer demand strategies, such as direct-to-consumer advertising or other mailings targeting Medicaid enrollees,^{9,10} may be especially promising approaches.

Limitations

Although the results of the intervention are promising, there are several caveats. There was a similar trend in increased pharmacotherapy claims among the comparison group. Although the communications campaign targeted HMOs, it is possible that Medicaid FFS enrollees may have received campaign materials from a public health department or another entity serving Medicaid enrollees. It is also possible that some clinicians may see both Medicaid HMO and Medicaid FFS patients in their practices. However, it is unlikely that a clinician will have access to detailed insurance information that would result in different care being delivered to Medicaid HMO and Medicaid FFS patients. The Food and Drug Administration's approval of varenicline in May 2006 and the subsequent addition of this medication to the Wisconsin Medicaid Program formulary may have contribut-

ed to an increased number of claims over time, but would not have resulted in a differential increase in claims between Medicaid HMO and FFS enrollees. We also cannot discount other external factors such as generic Quit Line promotional or earned media campaigns that may have increased Quit Line utilization, although Quit Line advertising was very limited during the study period (Lezli Redmond, personal communication, August 21, 2009). Finally, it is important to note that there was a significant decrease in pharmacotherapy claims in the intervention group prior to the campaign, raising the possibility that the significant increase postcampaign may represent regression to the mean.

HMO-specific factors did not appear to explain improvements in individual HMOs over the study period. Our analysis of these factors was limited by our sample size ($n = 13$) and the fact that all HMOs demonstrated improvements. It is possible that we could have detected an effect if we had a larger sample and increased variability within our sample.

Additional limitations include lack of data on physician counseling claims, potentially underestimating the rate of tobacco dependence treatment delivery. Also, prescriptions for generic bupropion were excluded, so cessation pharmacotherapy claims rates may be conservatively estimated. Analyzing pharmacotherapy claims may understate prescribing rates, as prescriptions may not be filled by the patient. Although it is possible that there may be differences in rates of filling prescriptions among HMO enrollees compared to their FFS counterparts, there is no structural reason (e.g., free prescriptions for HMO enrollees but not for FFS enrollees) to suspect this is the case. Although the Wisconsin Tobacco Quit Line asks all callers about insurance status, not all callers agree to provide this information, so our estimates of Quit Line utilization may underestimate calls from Medicaid enrollees. Wisconsin's Medicaid HMOs may have engaged in quality improvement activities for tobacco use that we were unable to measure and may have influenced pharmacotherapy claims. Finally, the Wisconsin Medicaid Program began a "pay for performance" initiative in 2007 that consisted of a financial incentive for

HMOs to establish a registry of smokers. However, this factor was not significant in our analysis of HMO-level factors.

Significance

This natural experiment demonstrated a statistically significant increase in smoking cessation pharmacotherapy prescriptions for Medicaid Family HMO enrollees who were targeted by a communication campaign compared to the quasi-experimental comparison group. A statistically significant increase in calls to the Wisconsin Tobacco Quit Line by Medicaid enrollees was also seen. These findings may help inform other state efforts to improve delivery of evidence-based tobacco dependence treatment to Medicaid enrollees.

Acknowledgments

The study was supported by grant 63261 from the Substance Abuse Policy Research Program, Robert Wood Johnson Foundation. Dr. Piper was supported by an Institutional Clinical and Translational Science Award (UW-Madison KL2 Grant 1K12RR025012-01). The Wisconsin Department of Health Services, the Wisconsin Medicaid Program, and the Wellpoint Foundation supported the development and dissemination of the educational campaign. The authors would like to thank the Wisconsin Medicaid Program, Cheryl Mellquham, the UW-CTRI Education and Outreach Program staff, Eric Beyer, and Katrina Bundy for their support of and assistance with this project.

References

1. Wisconsin Department of Health Services. 2008 Behavioral Risk Factor Surveillance System (BRFSS) tobacco fact sheet. Available at: <http://dhs.wisconsin.gov/tobacco/pdffiles/BRFS2008FactSheet.pdf>. Accessed August 24, 2009.
2. Centers for Disease Control and Prevention. State Medicaid coverage for tobacco-dependence treatments—United States, 2006. *MMWR Morb Mortal Wkly Rep*. 2008;57:117-122.
3. Cokkinides VE, Ward E, Jemal A, Thun MJ. Under-use of smoking-cessation treatments: results from the National Health Interview Survey, 2000. *Am J Prev Med*. 2005;28:119-122.
4. Burns ME, Fiore MC. Under-use of tobacco dependence treatment among Wisconsin's fee-for-service Medicaid recipients. *Wis Med J*. 2001;100:54-58.
5. McMenamin SB, Halpin HA, Ibrahim JK, Orleans CT. Physician and enrollee knowledge of Medicaid coverage for tobacco-dependence treatments. *Am J Prev Med*. 2004;26:99-104.
6. Boyle RG, Solberg LJ, Maguan S, et al. Does insurance coverage for drug therapy affect smoking cessation? *Health Aff (Millwood)*. 2002;21:162-168.
7. Solberg LJ, Davidson G, Alenci NL, et al. Physician smoking-cessation actions: are they dependent on insurance coverage or on patients? *Am J Prev Med*. 2002;23:160-165.
8. American Association of Medical Colleges. Physician behavior and practice patterns related to smoking cessation: summary report. Available at: <http://www.aamc.org/workforce/smoking-cessation-summary.pdf>. Accessed August 24, 2009.
9. O'Connor RJ, Carlin-Mentzer SM, Celestino PB, et al. Using direct mail to prompt smokers to call a quitline. *Health Promot Pract*. Jul 2008;9:262-270.
10. Tobacco Cessation Leadership Network. Medicaid partnership project. Available at: http://www.celn.org/medicaid_project/pdfs/Medicaid_Partnership_Project_Report1.pdf. Accessed August 24, 2009.