Paying for Smoking Cessation Coverage Makes Sense and Saves Cents

Land T, Warner D, Paskowsky M, et al. Medicaid coverage for tobacco dependence treatments in Massachusetts and associated decreases in smoking prevalence. PLoS One 2010;5(3):e9770.

Study Overview

Objective. To determine if smoking prevalence decreased significantly after initiation of tobacco cessation coverage by the Massachusetts State Medicaid program.

Design. Ecologic analysis.

Setting and participants. In July 2006, a new Massachusetts health care reform law mandated tobacco cessation coverage for all members of the Massachusetts Medicaid population. This benefit included behavioral counseling and all medications approved for tobacco cessation treatment by the U.S. Food and Drug Administration (FDA). The investigators studied the effect of this benefit using the Behavioral Risk Factor Surveillance System (BRFSS), a state-based, cross-sectional annual telephone survey conducted by state health departments. They limited their analysis to survey respondents who indicated that they had Massachusetts Medicaid coverage. This coverage was verified in a subsample of respondents in 2007, showing high agreement with self-reports.

Main outcome measures. The key outcome measures were current smoking status and quit attempts made, calculated as rates followed over time. The population rate estimates were calculated for population samples and adjusted for age, gender, education, and race/ethnicity. Quit attempt rates were analyzed similarly. Trend analyses were computed using joinpoint analysis. The joinpoint analysis method takes trend data and fits the simplest linear model that the data allow, inclusive of the possibility of a deflection at a given joinpoint. The program starts with the minimum number of joinpoints (0—a straight line) and tests whether an apparent change in trend is statistically significant with further joinpoints introduced. Logistic regression models were also used to adjust for further demographic variables such as eduction, race, and age at the individual level.

Main results. Between 1 July 2006 and 31 December 2008, a total of 70,140 unique Massachusetts Medicaid subscribers used the newly available benefit—37% of all Massachusetts Medicaid smokers. The investigators found that the crude smoking rate decreased from 38.3% (95% confidence interval [CI], 33.6%–42.9%) in the prebenefit period compared with 28.3% (95% CI, 24.0%–32.7%) in the postbenefit period, representing a 26% decrease ($P < 0.05$). Successful quit rates increased from 6.6% (95% CI, 3.8%–9.3%) to 18.9% (95% CI, 10.2%–27.7%), a result that was also significant ($P < 0.05$). A demographically adjusted smoking rate showed near identical results. Joinpoint trend analyses of smoking prevalence among Massachusetts Medicaid-eligible members (those aged 18–64 years) from 1999 through 2008 found a decreasing trend with a joinpoint that was exactly coincident with the implementation of the benefit. A logistic regression controlling for demographic factors also showed that the monthly trend in smoking decreased significantly from July 2006 to December 2008 (odds ratio, 0.987; $P = 0.0004$).

Conclusion. The introduction of a new benefit to cover tobacco treatment among Massachusetts Medicaid recipients was associated with a 25% reduction in smoking rates. A series of rigorous analyses confirmed this significant finding.

Commentary

Tobacco use is one of the leading causes of death and disability worldwide [1]. The World Health Organization strategy for tobacco control promotes a multimodal approach encompassing policy, media, and clinical interventions [1]. Notably, though, there is fierce disagreement in public health and health policy circles about how best to promote decreases in tobacco use at a population level given limited public resources. Some argue that cessation programs should be abandoned because they are less cost-effective and shift resources away from more cost-effective public health strategies such as taxation [2]. In fact, there have been recent well-publicized calls to abandon cessation as a strategy all together given that the majority of smokers quit without help ("cold turkey") and the population-level impact of cessation programs is unclear [3]. Others counter that policymakers and clinicians have a moral imperative to provide cessation services given the powerfully addictive

nature of tobacco [4]. This is especially true given the increasing marginalization of tobacco use into the periphery of developed societies concentrated among the poor and those with mental illness [5]. Thus, whether targeted cessation can be promoted at a population level through benefits design changes to encourage evidence-based counseling and use of medications remains an open question.

This study sought to determine whether the introduction of Massachusetts Medicaid benefits changes in 2006 to cover cessation counseling and medications had a population-level impact on smoking prevalence. The investigators found a strong ecological association between the introduction of the new benefit and a 25% decrease in smoking prevalence in this population. These results suggest that relatively simple and inexpensive benefit changes can have profound impacts on reducing rates of smoking—one of the most expensive and burdensome health risk factors known. The study supports the synergistic approach to tobacco control, incorporating policy and clinical interventions to stem the tide of tobacco use. A recent Italian study also backs this approach. That study evaluated the impact of the 2005 Italian smoking ban on the efficacy of smoking cessation interventions at the clinical level [6]. The investigators found that the introduction of the smoking ban resulted in 52% reduced odds of smoking at 52 weeks among the counseling and bupropion group compared with a matched group in the pre-ban period.

A number of key limitations must be acknowledged. This study was ecologic in nature and as such cannot prove causality; it can only suggest association. Second, the BRFSS only contacts participants with landlines; smokers who only have cellphones would not be represented in this study. Third, smoking status was self-reported, though previous work has documented the general accuracy of self-reports. Fourth, it was unclear how long study participants received Medicaid benefits and whether they actually used medications to quit smoking. Fifth, some media campaigns and tax increases were concurrent with the benefit expansion, though these came in late 2007. Finally, the joinpoint analysis showed a lot of scatter in the prebenefit period, where especially the early years contained small numbers of Medicaid smokers.

Applications for Clinical Practice

This study is part of a growing body of evidence suggesting that in the Manichean debate over tobacco control, public policy strategies versus clinical cessation programs represents a false dichotomy. Promoting tobacco control from a combined tax, media, benefits design, and clinical angle can leverage the advantages of each approach and is likely to be a productive way forward. This is especially true for reaching previously marginalized smokers who may suffer under regressive tax and stigmatization policies, and who may need clinical help to quit even with negative social and economic incentives against continued smoking. This synthesized multimodal approach is exactly that which is favored by the World Health Organization to promote tobacco control.

—Review by Asaf Bitton, MD

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