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HOW SHOULD INSURERS TREAT TOBACCO USE?

A Review of the Research

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FOR INSURERS, THE most salient fact about tobacco use can be summarized simply: overwhelming scientific evidence indicates that all widely used forms of tobacco harm human health.² A significant body of evidence also indicates tobacco use correlates strongly with other risky behaviors.³ According to the Centers for Disease Control and Prevention, furthermore, 19.3 percent of U.S. adults smoke tobacco.⁴

1. Eli Lehrer is president of R Street Institute. He wishes to thank Dr. Brad Rodu and Dr. Deborah Bailin for their assistance with this paper.

2. U.S. Department of Health and Human Services, *The Health Consequences of Smoking: A Report of the Surgeon General*. Atlanta: 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, 2004.

3. Joni Hersch and W. Kip Viscusi, "Smoking and Other Risky Behaviors," *Journal of Drug Issues*, Vol. 28, Number 3, 1998, pages 645-661.

4. Centers for Disease Control, "Adult Cigarette Smoking in the United States: Current Estimate," http://www.cdc.gov/tobacco/data_statistics/fact_sheets/adult_data/cig_smoking/index.htm.

Tobacco users are less healthy than the population as a whole, die more quickly on average, and in many cases engage in a variety of personal behaviors shown to result in policy claims. Thus it is financially advantageous for insurers to consider tobacco use as a rating factor and, in certain business models, refuse to underwrite certain types of policies for certain groups of tobacco users.

Not surprisingly, therefore, nearly all life and individual market health insurers inquire directly about tobacco use as part of their rating processes and, in most cases, attempt to double-check individuals' tobacco use through blood or breath tests. Given the overwhelming evidence of harms associated with tobacco, there is nothing unfair about this widespread practice. Indeed, regulators probably would have good reason question the underwriting and rating standards of any insurer that didn't at least ask about tobacco use.

This paper, however, contends that an ever-growing reserve of data concerning reduced-harm tobacco and nicotine products suggests some insurers rating some products might consider taking into account the *type* of tobacco used, particularly in light of forthcoming restrictions on insurance rating in the health insurance market.

This paper consists of three sections. The first reviews the research about the harms of tobacco and the value of tobacco use as an insurance rating factor. The second reviews scientific work suggesting that, although no safe tobacco product currently exists, some types of tobacco appear less harmful than others. The final section makes three points relevant to policymakers and life and health insurers interested in gaining a more complete and nuanced view of tobacco use.

SMOKING IS HARMFUL AND INDICATES RISK TAKING

Tobacco use is harmful and correlates with a variety of other harmful behaviors.

Smoking tobacco—particularly cigarettes—is very clearly harmful to human health.⁵ Lung cancer, emphysema, heart disease, and at least 13 other often-fatal conditions all stem directly from smoking. So do a variety of very harmful though not fatal conditions such as complications during pregnancy and low bone density.⁶ Research also shows significant harm from the use of cigars, pipes, and other smoked tobacco products, albeit less than from cigarette smoking.⁷

Although smoking is itself an important determiner of risk, looking at tobacco use is of further importance to insurers because it correlates with other risk-taking behaviors.

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A study by two then-Harvard University faculty members shows smokers are generally more neglectful of their health than nonsmokers. They are more likely than nonsmokers not to wear seatbelts, to fail to floss their teeth, to get injured on the job, and to get into accidents at work and at home.⁸ They’re also more likely to be absent from work. In short, smokers tend to engage in “systematic neglect of their health.”⁹ Controlling for other factors such as occupation and educational level reduces but does not eliminate the increased risk-taking behavior found among smokers. (And, of course, insurers generally do not try to control for these factors anyway and may even use them as rating factors.)

5. Department of Health and Human Services, *supra*.

6. *Ibid.*

7. See, e.g., Jasim Albanda et al., “Cigar, pipe, and cigarette smoking as risk factors for periodontal disease and tooth loss,” *Journal of Periodontology*, 2000, pp. 1874-1881 and National Cancer Institute. “Harms and Benefits of Quitting Smoking,” 2012 <http://www.cancer.gov/cancertopics/factsheet/Tobacco/cessation>

8. *Ibid.*

9. Hersch and Viscusi (1998), page 654.

Although more limited in scope (one study deals only with high school students), research that explicitly includes users of tobacco products other than cigarettes shows increased levels of risk-taking behavior analogous to those found in samples of those who smoke cigarettes, including increased sexual and other risks.¹⁰ Current research however, does not provide definitive evidence that all tobacco users take the same types of risks: The majority of those studied were smokers, and the data do not provide any specific indications about differences between tobacco users who smoked and those who consumed tobacco in other ways.

Nonetheless, insurers have very sound reasons to believe tobacco use ought to be considered as a factor indicating increased risk of costly claims and financial losses.

REDUCED-HARM TOBACCO AND NICOTINE PRODUCTS: WHAT THE SCIENCE SAYS

Although all forms of tobacco and nicotine have the potential to harm human health, an extensive body of research shows some are safer than others.

In particular, a significant and growing body of peer-reviewed evidence supports the notion that conventional nicotine replacement therapies, e-cigarettes, and certain forms of smokeless tobacco such as *snus* and dissolvable tobacco pose lesser health risks than smoking. A similar though less complete body of evidence lends support to the notion that switching from cigarettes to these types of nicotine products produces health consequences similar to quitting smoking altogether.

The largest body of research in this area involves nicotine replacement therapies. These include products such as gum, lozenges, and patches used primarily by people attempting to quit smoking. Although not perfectly safe, these products appear benign by most conventional measures, according to a substantial body of research. An extensive meta-analysis based on a very large sample size—120 studies involving more than 175,000 individuals—found most short-term consequences of using these therapies are trivial from the standpoint of most life or health insurers.¹¹ The overwhelming majority of people using these therapies suffered no adverse consequences at all. Among those who did, most consequences were minor and largely to be expected: A small percentage of those using nicotine replacement patches experienced skin irritations, and approximately 2 percent of

10. S. Everett et al., “Relationship between cigarette, smokeless tobacco, and cigar use, and other health risk behaviors among U.S. high school students,” *Journal of School Health*, August 2000, pp. 234-40.

11. Edward Mills et al., “Adverse events associated with nicotine replacement therapy (NRT) for smoking cessation,” *Tobacco Induced Diseases*, 2010, <http://www.tobaccoinduceddiseases.com/content/8/1/8>.

those using any nicotine replacement product experienced heart palpitations.¹² A similarly complete analysis looking at longer-term health risks concluded, “Nicotine replacement therapy and smoking were not significant predictors of cancer in the models for gastrointestinal cancer or all cancers.”¹³ As with any public health issue involving long periods of time and large populations, there are significant caveats: Nicotine replacement therapy has been in wide use for only a little more than a decade, and because of lag times associated with research and peer review, nearly all of the work cited above involves studies of five years or less. There is not—and could not be—any research showing very long-term (thirty- to for-

“The current state of the research does not allow definitive conclusions about what insurers should or should not do regarding different types of tobacco use.”

ty-year) impacts of these products. In addition, essentially all people who use nicotine replacement are former smokers and thus likely to suffer some of the same negative health consequences as cigarette smokers. Allowing for these significant unknowns, however, the existing evidence still suggests nicotine replacement therapy is probably not highly risky.

E-cigarettes—vaporizers that do not contain tobacco but mimic the tactile sensation of smoking and deliver nicotine, the same addictive stimulant as cigarettes—appear to be another safer replacement for cigarette smoking. An extensive review of the academic literature published in the *Journal of Public Health Policy* found some brands of e-cigarettes emit small amounts of “tobacco-specific nitrosamines” (although far less than cigarettes), but with this

12. *Ibid.*, 5. Since nicotine is a stimulant that, like caffeine, increases heart rate, heart palpitations are neither unexpected nor particularly worrisome.

13. Robert P. Murray, John E. Connett, and Lisa Zapawa, “Does nicotine replacement therapy cause cancer? Evidence from the Lung Health Study” *Nicotine Tobacco Research*, 2009, Vol 11, Number (9), pp. 1076-1082, 10.1093/ntr/ntp104. There does not seem to be extensive research on heart disease and nicotine replacement therapy.

exception “few, if any, chemicals at levels detected in electronic cigarettes raise serious health concerns.”¹⁴ Because e-cigarettes are new, however, the article’s authors conclude, “existing research does not warrant a conclusion that electronic cigarettes are safe in absolute terms.”¹⁵ The Food and Drug Administration also raises concerns about chemicals contained in e-cigarettes and outlines avenues for additional research, but it stops short of definitively saying they pose any known danger.¹⁶

Two other smokeless tobacco products—dissolvable tobacco products and *snus*—also appear to be safer than smoked cigarettes. The body of research supporting *snus* is particularly impressive. One comprehensive paper on harm reduction strategies observes that societies that heavily use *snus* in place of cigarettes appear to have lower rates of almost all smoking-related cancers.¹⁷ Other research in the United States and Sweden (where *snus* use is the most common) also indicates strongly that *snus* use, although not entirely benign, is much less risky than smoking cigarettes.¹⁸ In addition, because *snus* has been on the market longer than any other tobacco substitute, the research can look deeper into the past. *Snus* cannot be declared safe, and some users may be former smokers, but it’s far less dangerous than cigarettes.

Dissolvable tobacco products, which contain doses of harmful substances similar to those found in *snus*, may fall into the same category. Although less definitive—largely because the products have been on the market for only ten years and are not widely used—a recent review of research, conducted by the U.S. Food and Drug Administration, concluded dissolvable tobacco products also appear to be safer than cigarettes.¹⁹ The advisory committee that compiled the report concludes, “exclusive use of [dissolvable tobacco products] by an individual would greatly reduce risk for smoking caused disease compared with regular use of cigarettes.”²⁰ At the same time, the FDA research review warned that widespread availability of such products could lead to greater use of tobacco overall.

14. Zachary Cahn and Michael Siegel, “Electronic cigarettes as a harm reduction strategy for tobacco control: A step forward or a repeat of past mistakes?” *Journal of Public Health Policy*, pages 1–16, <http://www.hsph.harvard.edu/centers-institutes/population-development/files/article.jphp.pdf>. Another potential concern concerning chemical, diethylene glycol, was also found but was not actually detected in some laboratory experiments.

15. *Ibid.*, 3.

16. U.S. Food and Drug Administration, “Public Health Focus: Electronic Cigarettes,” <http://www.fda.gov/newsevents/publichealthfocus/ucm172906.htm>.

17. Carlo LaVecchia et al, “Trends of cancer mortality in Europe, 1955–1989: II and IV,” *European Journal of Cancer*, 1992, Vol. 28:514–599, pp. 1210–1218.

18. Brad Rodu and Cathrine Jansson, “Smokeless tobacco and oral cancer: a review of the risks and determinants,” *Critical Reviews in Oral Biology & Medicine*, Sept. 1, 2004, pp. 252–63.

19. Tobacco Products Scientific Advisory Committee of the Food and Drug Administration, “TPSAC Report on Dissolvable Tobacco Products,” <http://www.fda.gov/downloads/AdvisoryCommittees/CommitteesMeetingMaterials/TobaccoProductsScientificAdvisoryCommittee/UCM295842.pdf>.

20. *Ibid.*, 5.

The preponderance of scientific evidence indicates tobacco products are not all equally dangerous. In some cases, rating individuals on the basis of tobacco use alone, without distinguishing between different kinds, may cause insurers to miss opportunities to make better and more profitable rating and underwriting decisions.

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WHAT REDUCED HARM MEANS: THREE PUBLIC POLICY PATHS WORTH FOLLOWING

The current state of the research does not allow definitive conclusions about what insurers should or should not do regarding different types of tobacco use. Nonetheless, current science does suggest insurers should seek more precision in the use of tobacco-related rating criteria. In particular, they should consider ways in which rating criteria limitations in the Patient Protection and Affordable Care Act may make tobacco types more relevant, ensure that state and federal law allows for flexibility in tobacco-related rating, and support additional research to ascertain whether use of non-cigarette tobacco products correlates with other risky behaviors.

Restrictions on Rating Criteria in the Patient Protection and Affordable Care Act May Make Type of Tobacco Use More Relevant

The Patient Protection and Affordable Care Act, better known as “Obamacare,” makes numerous very significant changes to the United States’ health care system.²¹ Perhaps the most important change for health insurance companies operating in the individual and small group market is a severe limitation on allowable rating factors.

In particular, Section 2701 of the law prohibits all rating except that based on “(a) whether a plan covers an individual or a family; (b) rating area; ... (c) age [for adults; and] ... (d) tobacco use.”²² The law allows significant administrative discretion in rating area and family status but limits the variation for age to 300 percent and the variation for tobacco use to 50 percent.

Although tobacco use, under these guidelines, seems like a fairly unimportant factor (other things can impact premiums far more), it likely will become quite important as a marketing factor. Among allowable rating factors under the new law, only tobacco use is easily within any individual’s personal control and relevant as a marking criterion. With other now commonly used criteria such as claims history, overall health, and preexisting conditions excluded from use in setting health insurance rates, the relative importance of tobacco seems almost certain to increase.

This means health insurers who can effectively differentiate between different types of tobacco users’ claims costs may be able to improve profitability while providing pricing attractive to particular groups of policyholders. Although current research does not indicate any health insurer would be wise to ignore tobacco use altogether, accounting for significantly smaller health risks of certain tobacco and nicotine products may provide a business opportunity.

State and Federal Law Should Encourage Flexibility in Tobacco-Related Rating

If insurers believe it is a good business practice to assign a single premium to all tobacco use (as most do now), state and federal law should not prevent them from doing so. But as new rate plans are filed with regulators, laws and regulations should allow and even encourage differentiation based on different types of tobacco use. Likewise, people on all sides of the debate over harm reduction and tobacco use may want to consider revisiting the 50 percent rating premium allowed for tobacco.

Given that, under current statute, tobacco use is the only easily controllable factor allowed to be used in insurance rating, Congress may wish to consider allowing for greater variation on the basis of tobacco use, if insurers, public health officials, and researchers can present a convincing case that larger rating variations are justified. The difference between the risks presented by different types of tobacco appears to be greater than 50 percent. This indicates variations on the basis of tobacco use than the law currently allows may be warranted.

21. Public Law 111-148, <http://www.gpo.gov/fdsys/pkg/PLAW-111publ148/html/PLAW-111publ148.htm>.

22. PL 111-148 Sec. 2701 (A)(1)(a)(i-iv).

More Research Is Needed to Determine Whether Use of Forms of Tobacco Other than Cigarettes Correlates with Other Risky Behaviors.

Although it's impossible to be confident that an initial literature review has identified every study ever done, the currently available electronic resources indicate a strong correlation between cigarette smoking and other risky behavior. Although some reports have looked at other types of tobacco, researchers typically have lumped all types of tobacco use together, rather than separating out different forms.²³ Given that approximately 90 percent of all tobacco users smoke cigarettes, the current data may not provide a full picture of people who use types of tobacco other than cigarettes.²⁴ Current research, at least in the peer-reviewed literature, does not indicate whether people who use types of tobacco other than cigarettes are more prone to risk-taking behavior in the manner cigarette users are. More research is needed to determine whether people who use forms of tobacco other than cigarettes have lesser (or greater) risk-taking propensity than those who smoke cigarettes.

Two hypotheses seem equally plausible. On one hand, it's possible that decisions to cease smoking or to switch from one tobacco product to another are made in isolation. Given that the overwhelming majority of people using tobacco and nicotine products other than cigarettes did smoke cigarettes at one time (and some continue to do so), it's possible the only health consequences of switching from cigarettes to other tobacco/nicotine products are those such as improved lung function that can be attributed to smoking cessation, and that risk-taking behavior continues.²⁵

On the other hand, some research appears to indicate that people who stop using cigarettes experience improved well-being in other respects, with the strong implication that smoking cessation is part of broader life changes. If these factors translate to people who switch forms of tobacco rather than ceasing all tobacco use, it may have relevance to insurers.

In one study, ex-smokers report improved subjective senses of well-being, decreased stress, and other positive consequences that do not seem likely to result from the physical consequences of smoking cessation per se.²⁶ Another study shows people who successfully stop using cigarettes have some differences from the population of cigarette smokers overall that may be of interest to insurers in rate-making:

They tend to have higher incomes and are older and more likely to be married than people who try to quit but do not succeed.²⁷

All of this indicates quitting smoking correlates with other life changes, and it's plausible to suggest people who switch their form of tobacco use would undergo the same overall changes. Thus it seems possible that people who switch from cigarettes to nicotine replacement, snus, or e-cigarettes may also acquire risk profiles that warrant other changes in their insurance rates.

CONCLUSION

Insurers should include tobacco use as a rating factor for life and health policies. Overwhelming scientific evidence indicates tobacco use is harmful and correlates with other risky activities, but several types of tobacco and nicotine products appear to be safer than cigarettes (although none can be said conclusively to be altogether benign).

Particularly in light of new restrictions on the use of health insurance rating factors, insurers and public policy makers should consider ways to distinguish between different types of tobacco products and support additional research into the correlation between tobacco products other than cigarettes and dangerous behaviors. Public policy should not place any restrictions on the use of tobacco as a rating factor, and policymakers, regardless of their positions on tobacco use, may find it advantageous to allow for more rating flexibility in regard to tobacco than the Patient Protection and Affordable Care Act currently allows.

Insurers should, of course, consult their own actuarial data and business objectives in deciding how to treat tobacco use. A good deal of evidence, however, indicates a nuanced approach to tobacco use in insurance rating could create a competitive advantage for some insurers in some cases.

23. See, e.g., Everett et al., *supra*.

24. Cathy L. Backinger et al, "Use of Other Tobacco Products among U.S. Adult Cigarette Smokers: Prevalence, Trends and Correlates," *Addictive Behavior*, 2008 (March), 33(3), pp. 472-489.

25. *Ibid.*

26. Megan E. Piper et al, "Smoking Cessation and Quality of Life: Changes in Life Satisfaction over 3 Years Following a Quit Attempt," *Annals of Behavioral Medicine*, Volume 43, Number 2, pp. 262-270, DOI: 10.1007/s12160-011-9329-2.

27. Pew Research Center, "Smokers Can't Blow Off Stress," *Pew Demographic and Social Trends*, April 8, 2009, <http://www.pewsocialtrends.org/2009/04/08/smokers-cant-blow-off-stress/#fn-732-1>

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