
Preventing Tobacco-caused Cancer: A Call to Action

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Nicotine addiction is the most common serious medical problem in the country. Tobacco use is responsible for 30% of cancer deaths in the United States and 90% of all lung cancer deaths. The physical addiction to nicotine explains why over 30% of Americans continue to smoke or use tobacco despite their desires and efforts to quit. The testimony summarized in this paper recommends four broad strategies for preventing tobacco-caused cancers in the United States: *a*) mandating and reimbursing effective treatments for nicotine addiction; *b*) increasing Federal and state tobacco excise taxes and earmarking a fraction of tax revenues for tobacco prevention and cessation; *c*) enacting other policy changes to prevent tobacco use and addiction among children, including expanded clean indoor air legislation, comprehensive youth tobacco access legislation, and the regulation of tobacco products and their advertising and promotion; and *d*) expanding tobacco control research and critical Federal research support. Specific recommendations are given for each broad strategy. — *Environ Health Perspect* 103(Suppl 8):149–152 (1995)

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Introduction

We are at a critical juncture in tobacco control history. The nation is at the brink of momentous changes in the health care system and in public policy regulating the use and marketing of tobacco products. In fulfillment of my charge to summarize key strategies for the prevention of tobacco-caused cancer, I want to recommend four basic strategies for capitalizing on these changes and on the enormous progress we have made in developing effective treatments for nicotine addiction. These four strategies include: mandating and reimbursing treatment for nicotine addiction as a basic preventive benefit under health care reform; raising tobacco excise taxes substantially and using revenues wisely to support prevention and treatment programs; enacting tough tobacco control policy to support prevention and treatment; and

continuing tobacco control research and expanding research funding.

Treatment for Nicotine Addiction

As summarized recently by McGinnis (1), the U.S. Preventive Services Task Force has advanced the following general criteria for including any preventive service for coverage in the preventive care benefits package: There must be evidence that the service is efficacious and cost-effective, that using the clinical setting for the service is necessary or unusually advantageous, and that the clinical setting offers special access to high-risk populations. Treatment for tobacco addiction meets each of these four criteria. In fact, there are at least 10 good reasons for mandating and reimbursing treatment for nicotine addiction.

a) Nicotine addiction is the most common serious medical problem in the country today. This is because tobacco use is the chief avoidable cause of morbidity and mortality in the United States. It is responsible for over 30% of cancer deaths in the United States and 90% of all lung cancer deaths (2). One in five Americans who die each year die from tobacco use. Over 30% of Americans continue to smoke or use smokeless tobacco despite their strong desire to quit (3).

b) Nicotine addiction, like other addictions, warrants recognition and treatment as a full-fledged addiction under health care reform. Smoking and smokeless tobacco use are more than bad habits. All tobacco products contain nicotine, a highly addictive substance, and there is now incontrovertible

evidence, summarized in the 1988 Surgeon General's Report (4) that nicotine addiction is every bit as legitimate and serious an addiction as heroin, cocaine, and alcohol addiction, and just as hard to overcome.

Most of our smokers and smokeless tobacco users want to quit, have tried, and have failed. Young people have proven to be just as dependent on nicotine as adults. The most recent Surgeon General's Report (5) shows that this addiction is clear after 100 cigarettes.

c) Another reason for including tobacco addiction treatment in the basic benefits package is to increase now-limited access to effective treatment services. Past surveys have shown that only 10 to 15% of U.S. smokers who try to quit receive any treatment for nicotine addiction (6). Millions of smokers have tried nicotine replacement therapies (nicotine gum or patches) in the past 10 years, but few have received the adjuvant therapy needed to make these pharmacologic treatments work (7). Financial barriers are the key to underutilization. Treatment has been the least accessible to Americans with the lowest income, the least education, and minority/racial ethnic status. These are the groups, as we have seen, with the greatest prevalence of tobacco use and the greatest burden of tobacco-caused cancer.

d) Do we have effective treatments to offer? Absolutely. Two decades of chiefly National Institutes of Health (NIH)-funded biobehavioral research have produced a range of effective treatments for nicotine addiction. The greatest progress has been made in the development of widely acceptable, easily disseminated, low-intensity,

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Abbreviations: AHCPR, Agency for Health Care Policy and Research; CDC, Centers for Disease Control and Prevention; ETS, environmental tobacco smoke; JCAHO, Joint Commission for Accreditation of Health Care Organizations; NCI, National Cancer Institute; NIH, National Institutes of Health; OSAP, Office for Substance Abuse Prevention.

low-cost treatments that now produce 15 to 20% 1-year quit rates. These treatments are increasingly tailored to special populations, including pregnant smokers, African American and Latino smokers, and athletes who use smokeless tobacco (8). We have found that adding brief personalized counseling (face-to-face, by phone, or by mail) to self-help materials raises quit rates to the 25 to 30% level. These are quit rates that most clinics achieve, although clinics are far less acceptable to smokers (8,9). In addition, we have made enormous progress in developing stage-based treatments that are suitable for smokers who are not yet ready to quit, including the use of biomarker feedback to raise quitting motivation (10). And, finally, nicotine replacement therapy has been found to boost these self-help and clinic treatment outcomes by 100% to 300%, so that 50% quit rates are now conceivable. This is phenomenal progress. If we had cure rates like this for other chronic diseases, for which treatment generally is reimbursed, we would be a much healthier nation.

e) Treating nicotine addiction in medical settings does have powerful advantages. The doctor-patient relationship provides a unique and powerful context for nicotine addiction treatment. And, most American smokers who quit do so for health reasons. In research summarized by Glynn and Manley (11), based on over 30,000 smokers and over 1000 providers (mostly physicians and dentists), smokers who received brief physician-assisted treatment during regular medical care (often a matter of 3–5 min) were 2 to 6 times more likely to quit than smokers receiving usual care. The most successful physician-assisted treatments used multiple modalities, a combination of face-to-face advice, printed materials, and pharmacologic evidence, and involved repeated contacts over a number of health care visits and a team approach (12). This is not a one-shot intervention. It is not particularly costly or labor-intensive, but it must be continuous over repeated health care episodes. And, I think, for that reason, it must be mandated and supported. Today, only half of Americans say they have ever received even physician advice to quit (13).

Moreover, effective treatment models have been defined for a range of nonphysician providers—psychologists, dentists, nurses, respiratory therapists, and certified addiction counselors. Tobacco intervention certification and training programs are reaching greater numbers of American

health care providers than ever before. Finally, the Joint Commission for Accreditation of Health Care Organizations (JCAHO) now bans all patient smoking in accredited hospitals, providing unprecedented opportunities to reach hospitalized smokers who may be most at risk for tobacco-caused cancer. Only a dozen hospitals in the United States offer any form of inpatient treatment program, however, and again, reimbursement is a chief barrier.

f) Is treating nicotine addiction cost effective? Yes. Eddy (14) has called it “the gold standard” of prevention cost effectiveness. It requires less cost per year of life saved than most preventive screening services or the treatment of hypertension or hypercholesterolemia (15,16). New data show that hospital-based smoking cessation treatments for heart attack survivors are up to 200 times more cost effective than commonly reimbursed medical care (17).

g) Science-based clinical practice guidelines are currently under development by the newly formed Agency for Health Care Policy and Research (AHCPR) panel on Smoking Cessation and Prevention. These guidelines will give us a critical tool to move toward mandated treatment. They are likely to outline cost-effective stepped-care treatment models with patient-treatment matching (13,18).

h) The potential to deliver nicotine addiction treatments through public and private health care delivery systems has never been greater than it will be over the next decade, in large part because of wide implementation of the National Cancer Institute’s (NCI’s) ASSIST and Centers for Disease Control and Prevention’s (CDC’s) IMPACT Statewide programs, the wide reach of the NCI’s Train the Trainer program, and the growth of pharmacologic therapies, especially nicotine replacement therapies, which have involved more physicians and pharmacists more directly in the treatment process (8,18).

i) Health care reform will improve the infrastructure and incentives for equitable and cost-effective nicotine addiction treatment, not only through wider prevention programming and universal access but also because it will involve a shift toward health plans that provide care through integrated networks of services and providers, which will result in greater continuity of care over time and providers. These conditions will help to facilitate repeated tobacco interventions over time and health care visits (12). Health care reform will also fuel greater use of sophisticated information systems and

interactive computer-based programs that can be harnessed to create and deliver highly personalized quitting messages and support programs that do not burden providers (13).

j) Finally, increased Federal excise taxes can provide the revenues needed to treat nicotine addiction, as we have seen in California and Massachusetts (19). In both states, a fraction of excise tax revenues were earmarked for prevention and treatment.

Tobacco Excise Taxes Are Key to Funding Health Care Reform and Tobacco Control

Tobacco is the single most appropriate source of revenue for health care reform. It is the only product that causes addiction, disease, and death when used as intended. It is responsible for 419,000 deaths each year and costs the nation \$68 billion yearly in health care costs and lost productivity. The increased Federal tobacco excise taxes now being debated will generate 30 to \$60 billion in revenues over a 3-year period, and recent polls have found that two-thirds of voters—smokers and nonsmokers alike—favor a \$2 per pack tobacco excise tax to generate revenues for health care and health care reform (20). Moreover, substantially raising the Federal excise taxes on all tobacco products, cigarettes, and smokeless tobacco, will propel tens of thousands of the nation’s 49 million smokers (2–4) and 12 million smokeless tobacco users (4–6) to quit and dramatically curb youth initiation of smoking and smokeless tobacco use.

Almost all new users of tobacco are children (20). As last year’s Surgeon General’s Report summarizes, over 90% of all smokers start when they are children or teenagers. Most start before age 16. Today, 3.1 million adolescents, including 25% of all 17- and 18-year-olds, are smokers, and 3 million children and teens use smokeless tobacco—today’s “stealth tobacco”—foreboding a new oral cancer epidemic (5). In the United States, there has been no significant decline in youth smoking since the early 1980’s. However, during roughly the same period (from 1980 to 1991), youth smoking dropped 60% in Canada, where tobacco taxes were raised by 60% (21).

A \$2 per pack tax will be far more effective than a \$0.75 tax, and we must not let the tobacco industry lobby Congress out of it. A \$2 tax could save 1 million more lives and generate far more revenue than a \$0.75 tax (20). Today, the United States ranks nineteenth among 19 developed countries in the magnitude of our excise tax. A \$2 tax would raise our rank to

9th (5). But make no mistake; it is not enough just to raise tobacco excise taxes. A fraction of those taxes, even just 2 to 5%, must be earmarked for tobacco control. As the NCI's Expert Panel on Tobacco Taxation concluded, "raising excise taxes is most effective when part of a comprehensive tobacco control program that includes other policy interventions, mass media counter-advertising, public education, school-based prevention programs, and help for smokers who want to stop" (21).

California's Proposition 99 and Massachusetts' similar state initiative provide models for the comprehensive tobacco control programs advised. Each state earmarks a portion of its state tobacco excise tax increases for tobacco prevention and cessation programs. Results from California indicate that a modest (\$0.25) tobacco tax increase alone is unlikely to have dramatic effects on youth smoking in the absence of such comprehensive tobacco control programming (19).

Tax revenues must be earmarked for cessation as well as prevention programs. There are two reasons for this. First, devoting some portion of tobacco tax revenues to the treatment of nicotine addiction makes the tax less exploitative and responds to critics of the tax's regressivity. Second, tobacco tax revenues must be tied to needs that will decline with a decline in tobacco use to prevent excessive tobacco tax dependence. David Dangoor, Executive Vice President of Philip Morris International, was quoted in the *New York Times Magazine* as saying, "We have the best partners in the world: the governments. In a lot of countries, it's incredibly important to the whole welfare state that we sell our products to collect taxes." (22). We must act to reduce our long-term dependence on tobacco tax revenues for uses other than prevention, cessation, and health care for tobacco-caused disease.

Policy Needed to Support Prevention, Treatment

Besides increasing tobacco excise taxes, other policy changes are also essential. The primary conclusion of the 1994 Surgeon General's Report is that policy initiatives are our strongest tools for curbing smoking and tobacco use initiation in childhood and adolescence (5). Four major powerful policy initiatives get special attention. Clean Indoor Air legislation is essential to protect nonsmokers from the proven dangers of environmental tobacco smoke (ETS), now classified as a Type A carcinogen. The

Smoke-Free Environment Act proposed by the House Subcommittee on Health and the Environment exemplifies this type of legislation; it would restrict or ban smoking in all public places used by more than 10 people. We also need comprehensive youth tobacco access legislation; for example, the Synar Amendment, which requires state retailer licensing, unannounced inspections, penalties for violations, and bans on vending machines, free samples, and the sale of "loosies" (single cigarettes). The 1994 Surgeon General's Report (5) also emphasizes the need to regulate tobacco advertising and promotion, citing growing evidence that children and teens are especially susceptible to this advertising.

This core policy agenda includes the 1994 *Surgeon General's Report* (5) recommendation that tobacco be included in school-based drug prevention curricula and that we implement school-based tobacco use prevention programs that have community-wide support. Recent evidence that cigarette manufacturers may carefully titrate cigarettes' nicotine levels has given the Food and Drug Administration new impetus to push for regulation of otherwise unregulated tobacco products. These recommendations are also included in the policy initiatives recommended by the 1994 Surgeon General's Report on Preventing Tobacco Use Among Young People (5).

Control Research and Research Funding Must Be Expanded

The fourth and final strategy for preventing tobacco-caused cancer is to continue to fund innovative biobehavioral tobacco control research and expand the revenues available for it. Some of the many critical areas needing further research to help answer still unanswered questions about the etiology of tobacco use and addiction, develop and test preventive programs and policy initiatives, and come up with breakthrough treatments are

- Neurobiologic effects of early nicotine exposures
- Etiology of tobacco use—especially distal factors
- Better patient–treatment matching
- Women's special tobacco risks/treatments—across lifespan
- Tailored treatments for special populations (minorities, teens, women, heavy smokers) and medically high-risk groups, including pregnant smokers
- Treatments for smokeless tobacco addiction

- Validation of continuous (vs dichotomous) outcome measure to drive down research sample sizes/costs and facilitate discovery of breakthrough treatments
- Postmarketing assessment of nicotine therapies, including long-term nicotine replacement
- Cost-effectiveness treatment research
- Tobacco policy research.

In addition, our efforts to expand research support should include

- Earmarking some excise tax revenues for research
- Including nicotine addiction in OSAP's research efforts
- Establishing a standing NIH review group/study section on tobacco use/addiction.

We must learn more about the etiology of tobacco use, including the role of early (even fetal) nicotine exposure and genetic factors. Lung cancer is now the leading cause of cancer death among women in the United States (2). Women's special tobacco risks across the lifespan need further study, especially given new evidence that women smokers may be more susceptible to lung cancer. Gritz and Moon (23) have proposed a new model for cancer prevention and control that uses biomarkers and intermediate end points to guide patient–treatment matching. Research to test its application to smoking and tobacco use is greatly needed.

Special research among minority populations is also needed, especially given new evidence for racial differences in the mechanisms of tobacco addiction and carcinogenesis, and the continued high rates of smoking within U.S. minority populations (African Americans, Latinos, Asian Americans, Native Americans) (3). In general, we need more research to identify effective, tailored treatments for special populations—women, minorities, teens, and heavy smokers—and medically high-risk groups such as pregnant smokers. There is still much to be learned as well about effective treatments for smokeless tobacco addiction for youth and for adults. To the treatment research list, I would add recommendations for postmarketing assessments of nicotine replacement therapies, sorely needed cost-effectiveness treatment research, and efforts to develop useful continuous (vs dichotomous) treatment outcome measures, measures that would permit us to move to much smaller sample sizes for early-stage research testing of innovative new treatments. Tobacco policy research and studies to improve the impact of school-based prevention

programs also are critical for our progress in the prevention arena.

The sad reality is that tobacco intervention research funds currently are limited and are likely to shrink even further. We must expand the funds available for research to conquer the nation's most deadly addiction. Earmarking federal excise tax revenues for research would be a big help. A 1% research reserve would yield 3.6 to \$5.9 billion over

the next 3 years (based on a per pack Federal excise tax from 0.75 to \$2). As recommended in the recent American Medical Association summit on tobacco (24), I would also recommend including nicotine addiction in the Office for Substance Abuse Prevention's (OSAP's) research efforts and establishing a standing review group or study section on tobacco use and addiction at the National Institutes of Health.

In conclusion, the last decade of research, advocacy, and policy advances place us in a better position than we have ever been to prevent and control tobacco use and tobacco-caused disease. We have the opportunity and obligation to lead the world in the fight against tobacco and tobacco-caused cancer. Also, however, we've never had so great a lead to squander. Let's not miss this precious chance.

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