

## Editorial

# Building a United Front: Aligning the Agendas for Tobacco Control, Lung Cancer Research, and Policy

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## Abstract

Our society bears a tremendous public health burden from tobacco-related disability and death, particularly in the realm of cancer. Yet research in lung cancer and other tobacco-related diseases research is dramatically underfunded when compared to the number of people affected. Persuading policy makers to increase funding for tobacco-related research, treatment, and policy initiatives will require considerable cooperation among the researchers, clinicians, and advocates who focus on tobacco control and those who concentrate on tobacco-related disease. Traditionally, these groups have battled over resources, expending precious energy competing

for scarce funding. We propose a new way forward: these forces should come together in support of a common agenda that includes both increased tobacco control efforts and additional funding for disease-related research and treatment. Speaking with a unified voice in support of a full continuum of tobacco-related policy initiatives would significantly increase the size and influence of the coalition working to address this public health epidemic. Working together offers our nation the best chance of significantly reducing the scourge of disease and death caused by tobacco use. (Cancer Epidemiol Biomarkers Prev 2007;16(5):859–63)

## Introduction

Tobacco use is the leading cause of preventable death in the United States (1), with lung cancer killing more men and women than any other form of cancer (2). Yet, competition for scarce resources between scientists involved with tobacco control and those performing lung cancer research has impeded constructive collaboration (3). Although there is some convergence of thought among the leading players, for instance, the stance of the American Cancer Society and the American Society of Clinical Oncology on tobacco control (4–6), few tobacco control concepts are integrated into oncology or oncology concepts into tobacco control. As a result, scientists and clinicians at the forefront of their respective fields often remain uninformed of key findings outside their own area of focus. For example, oncologists may be unacquainted with the most up-to-date research on cessation strategies, whereas tobacco control advocates may be unaware of the latest treatment options for lung cancer patients.

To better serve victims of tobacco-related disease, we must develop a broad-based agenda that all those working to combat tobacco use and disease can support. A unified coalition would enhance the influence of the anti-tobacco lobby in state- and federal-policy arenas as well as in the nonprofit and commercial sectors. Only by working together can we increase funding for research into both tobacco control and tobacco-related disease and thus make real progress against this devastating public health epidemic.

## The Underfunding of Research and Lung Cancer as a Stigmatized Disease

Federal spending on tobacco-related health problems is woefully inadequate when compared with the magnitude of tobacco's public health burden. In the United States alone, tobacco use costs the public \$100 billion per year in healthcare costs (7–9). The tobacco industry spends \$15.5 billion per year (\$41.5 million each day) actively promoting tobacco use (10); tobacco marketing outspends tobacco-prevention efforts by a ratio of 25:1 (7–9).

Tobacco use accounts for almost 30% of all cancer deaths; yet, nowhere near that proportion of federal or private research dollars are dedicated to tobacco-related cancer. For example, in Fiscal Year 2003 (FY03), the National Cancer Institute (NCI) spent only \$107 million on tobacco-related research, a mere 2.3% of its \$4.6 billion budget (11). NCI also spent \$273.5 million on lung cancer research and \$77.7 million on head and neck cancer research, 5.95% and 1.69%, respectively, of the FY03 budget of the agency (12). In contrast, NCI spent 11.94% of its budget (\$548.7 million) on breast cancer research, 6.64% (\$305.2 million) on prostate cancer research, and 5.69% (\$261.6 million) on colorectal cancer research, although lung cancer causes far more deaths than all these other cancers combined (12, 13).

Nonprofit grant-making organizations also invest far more research dollars into breast, prostate, and colon cancer than into lung cancer. For example, of the \$107.4 million in extramural grants awarded in 2005 to 2006 by the American Cancer Society, lung cancer research received only \$7.9 million, whereas breast cancer research received \$29.2 million, prostate cancer research received \$12.6 million, and colon cancer research received \$15.6 million (14). The American Cancer Society also awarded \$2.3 million in extramural grants for tobacco control research. Taken together, these public and private figures show that tobacco-related research, particularly lung cancer research, is grossly underfunded in relation to its

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societal burden and in comparison with breast, prostate, and colon cancer (15).

A number of factors have contributed to this inequity. First, a large and vocal group of breast, prostate, and colon cancer survivors have raised the public profile of these cancers and successfully lobbied for increased funding. This pressure has translated into important budget earmarks and research emphases. Unfortunately, survivors of lung cancer are relatively few and thus underrepresented in the voices clamoring for more research support. In addition, the powerful tobacco lobby has negatively influenced tobacco control and lung cancer funding (16-18).

The stigmatization of smoking and lung cancer has also contributed to the underfunding of lung cancer research. Elected officials, the media, and public often view survivors of other types of cancer as blameless victims who deserve empathy and assistance. In contrast, lung cancer patients are often seen as responsible for their illness because they smoke. Even some healthcare providers continue to view lung cancer as a self-induced problem, despite the fact that millions of smokers are trapped by nicotine addiction. The longstanding denial of the tobacco industry that smoking is an addictive behavior has contributed to the misperception that smoking is simply another lifestyle choice, and that smokers are free to quit at any time. This stigmatization also plays out when lung cancer patients who have never smoked are portrayed as blameless victims, implying that smokers, in contrast, are deserving of the disease. In contrast, the stigma attached to a lung cancer diagnosis is not apparent for smokers who suffer from heart disease perhaps because the etiology of heart disease is multifactorial.

The stigma accorded lung cancer has contributed to the under-identification and under-treatment of the disease as well as its lack of prioritization in research. Trials into the screening and early detection of lung cancer are controversial, and some have suggested screening should only be offered to individuals who have quit smoking. Tobacco-related stigma has caused some clinicians to fail to assess their patients' tobacco use, so as not to be perceived as assigning blame (19, 20). The situation is reminiscent of the stigma attached to AIDS victims in the early days of the epidemic (21). Lung cancer advocates would be wise to emulate AIDS activists, who have dramatically altered public perception of the disease over the past quarter century. Just as no one deserves to get AIDS, no one deserves to develop or suffer from lung cancer.

Along with lung cancer research, tobacco control efforts are also grossly underfunded. For example, only three states currently expend the level of funding recommended by the Centers for Disease Control to conduct effective tobacco prevention and cessation educational programs (22). Thus, the promise from the Master Settlement Agreement of massive state funding for tobacco prevention and cessation research, treatment, and public education has not been realized. With the benefit of hindsight, it seems that an earmark for tobacco control and treatment should have been included in the Master Settlement Agreement because, without such a requirement, states have been free to use the funding stream for other purposes (23).

### Historical Conflict and Perception of Differing Goals

Tobacco control research has historically focused on the prevention of smoking initiation and on smoking cessation in healthy and at-risk smokers. Left within the purview of basic scientists, epidemiologists, and oncologists were the causation, chemoprevention, early detection, and treatment of tobacco-related cancers, such as lung cancer. Expanding the research and treatment options for those afflicted with tobacco-related illnesses traditionally had no place on the tobacco control

agenda. Conversely and equally troubling, medical researchers and clinicians have not always appreciated the effect that primary prevention strategies and structural societal changes could have on the incidence of tobacco-related disease. For example, not until recently have clinicians focused on the need for smoking cessation following a cancer diagnosis (19, 24-26). For too long, tobacco control and tobacco-related research have been conducted in isolation from each other, with relatively few scientists bridging the gap between tobacco control and cancer (19, 25, 27). Limited funding has also led to competition between the disciplines. For example, some in tobacco control have felt that funding for screening and early detection of lung cancer has come at the expense of investments in primary prevention.

Another area of conflict between cancer-focused scientists and those involved with tobacco control is the current struggle surrounding the tobacco industry research funding, particularly cancer research. Although many research centers have policies against accepting such funding, many who should have not addressed this issue. The Regents and Academic Senate of the University of California are currently engaged in a contentious debate over industry-funded research (28). Additionally, the labeling of companies affiliated with the tobacco industry as good corporate citizens by cancer-related organizations has frustrated tobacco control advocates. For example, the American Cancer Society recently recognized KPMG, which has a long-standing relationship as a consultant to Philip Morris, for its many cancer-related activities (29).

The public health burden caused by tobacco use extends over a broad spectrum: from passive exposure to chronic tobacco use and from tobacco-related disability to death. Thus, the solutions to this healthcare crisis require efforts on all fronts, from primary prevention to tertiary care for the millions suffering from tobacco-related illness. Yet, reflecting the disunity among scientists and clinicians, few cancer-research programs focus on the entire continuum of behavior, disease, and policies that have the potential to reduce the scourge of tobacco-related disease and death. Those that do are not always appropriately funded. For example, NCI Lung Cancer Integration and Implementation (I2) plan developed a comprehensive series of recommendations to expand the efforts of the United States against lung cancer in FY06 (30). The plan focused on three strategies: "[1] achieving more effective tobacco control; [2] improving early detection and treatment of pre-cancer and established cancer; and [3] developing novel targeted therapies" (30). The I2 plan recommended research into such areas as the genetics of nicotine addiction and a focus on "improving existing behavioral interventions for smoking cessation" (30). Unfortunately, the NCI Director severely curtailed funding for this laudable plan before its implementation, including money for all tobacco control and nicotine-addiction research (\$2.9 million of the \$8.35 million budget), citing a lack of resources and the presence of related activities elsewhere at the NIH (31). Also in FY06, a Request for Applications on Prevention of Cancer in Former Smokers was eliminated. All told, there was a reduction of \$6.5 million in the NCI Tobacco Control Research Branch cancer-control budget from FY04 to FY07 (32).

One issue preventing a more broad-based focus on the full continuum of tobacco-related problems is a perception that tobacco control programs belong at Centers for Disease Control rather than the NCI. This position fails to account for the continuing need for research on and evaluation of all aspects of tobacco control, from primary prevention to policy, as well as disease-focused studies and clinical trials. Moreover, the Centers for Disease Control Office on Smoking and Health is no longer a prominent and highly visible locus; indeed, in the most recent Centers for Disease Control Annual Report, the office was not mentioned at all (33).

## Promoting Integration across Scientific Conferences

The lack of integration across tobacco control and disease-focused research is also reflected in the programs of national and international meetings. For example, at the NIH State of the Science Conference on Smoking Behavior held in June 2006, the major emphasis was on prevention and cessation in healthy populations, whereas smoking cessation for chronic disease patients received limited attention (34).<sup>6</sup> Similarly, most major medical, surgical, and oncology society meetings offer little or no program content related to smoking among those at risk of cancer, patients undergoing cancer treatment, or as part of survivorship efforts. For example, a survey of 20 thoracic surgery, respiratory, cardiac, oncologic, and lung cancer-specific conferences held in 2006 to 2007 revealed that 80% included no presentations on these topics. Of the remaining 20%, only one (the American Association of Cancer Research's Frontiers in Cancer Prevention Research) had more than two presentations on these issues. In addition, few conferences educate clinicians about the many cessation assistance resources. Indeed, a recent study suggests that although physicians believe that their role includes helping patients to quit smoking, they lack confidence in their ability to facilitate cessation and continue to believe that cessation tools are inadequate (35). These data further underscore the lack of transdisciplinary discourse between the clinical and behavioral sciences (19).

There are some notable exceptions to this siloed approach. For example, the Oncology Nursing Society has sponsored several sessions focused on smoking cessation among patients with cancer as well as sessions on lung cancer that incorporate tobacco control issues (36, 37). Recently, the first-ever conference on increasing nursing research into tobacco cessation provided a forum for these issues and a strategic plan for focusing future research on issues relevant to clinical practice (38). The European Respiratory Society is also very active in tobacco control and sponsors meetings that are both cross-disciplinary and interactive.

## Positive Signs of Integration and Combating Stigmatization

Although tobacco control and lung cancer scientists have, to this time, largely failed to work together, new initiatives reflect some integration of the two fields. For example, NCI is sponsoring research into tobacco products marketed as offering reduced harm, examining the testing of such products and assessing the tobacco-use behavior and toxic exposures to users (39). The Tobacco Control Research Branch is currently funding research on tobacco control issues, including how tobacco marketing affects at-risk populations (39).

The NCI-funded Transdisciplinary Tobacco Use Research Centers comprise another prominent research program that uses an integrated approach. The Transdisciplinary Tobacco Use Research Centers, which integrate researchers from the genetics and biology through policy application (40), resemble the NCI Specialized Programs of Research Excellence in lung cancer (41). Unfortunately, these two programs do not overlap or intersect, and they rarely communicate with one another. It would benefit all if these centers of excellence had cross-cutting programs or formal interaction.

The American Legacy Foundation (42), although having a tobacco control mission, has also used its public education campaigns to help raise awareness of lung cancer and reduce the stigma associated with tobacco-related disease. Its Women's Letters Campaign featured women smokers and dramatically showcased the pain and suffering caused by tobacco-related

disease, particularly lung cancer. The Foundation's Code Blue Campaign aims to raise awareness about lung cancer, its cause, and options for early detection and treatment. Recently, the foundation unveiled a new cessation campaign, "Become an EX," soon to be launched nationally. With this campaign, the Foundation, in partnership with state and other organizations, aims to increase cessation and improve knowledge of, and attitudes toward, quitting.

Two important advocacy organizations are also working to raise public awareness and reduce the stigma associated with lung cancer. The Lung Cancer Alliance describes itself as "the only national non-profit organization dedicated solely to patient support and advocacy for people living with lung cancer and those at risk for the disease" (43). The Lung Cancer Alliance motto is "No More Excuses," a reference to the frustration often experienced by lung cancer patients and advocates. The National Lung Cancer Partnership (formerly Women Against Lung Cancer) is a national lung cancer organization founded by scientists and clinicians. The group focuses on how the disease affects men and women differently and strives to "decrease lung cancer deaths and help patients live longer and healthier lives through research, awareness, and advocacy" (44).

## Top Priorities

Our nation's commitment both to tobacco control and lung cancer research should reflect the enormity of the human and financial toll imposed by tobacco use. Further research is needed into nicotine addiction, tobacco-related illness, as well as the prevention of initiation and cessation of tobacco use. Specifically, additional funding is needed in the characterization of nicotine dependence (genetic, brain mechanisms, biobehavioral, pharmacologic, economic, and social aspects), so that we can develop improved strategies to reduce smoking initiation and prevalence, especially in high-risk and underserved groups targeted by the tobacco industry. In lung cancer research, future areas of emphasis should include genetic characterization and prediction of risk (molecular phenotypes); gene-environment interactions, environmental carcinogenesis, including second-hand smoke; early detection; treatment; prognosis; symptom management; survival; and quality of life. Additionally, the evidence-based guidelines on best practices for smoking cessation, developed by a consortium of experts with the support of the U.S. Department of Health and Human Services, need broader dissemination (45).

Another area requiring increased research attention is the effect of continued smoking on patients with tobacco-related diseases (19, 46).<sup>6</sup> Tobacco use is not reliably and systematically documented during oncology and other clinical trials. Thus, vital information on adverse effects on treatment outcome, altered toxicity of treatments and side effects, further disease, and reduced survival has been overlooked. Fortunately, new literature is emerging on these critical issues (19). In addition, two leading medical organizations are moving towards supporting the documentation of smoking behavior in all clinical trials, from trial registration through treatment, follow-up, to death or end of study. The American Medical Association has passed a resolution to this effect (47), and the American Society of Clinical Oncology is exploring such a proposal.<sup>7</sup> Collecting such data will hopefully focus attention on the importance of offering smoking cessation treatment in clinical settings.

Although oncologists and related professions, such as nursing, generally have positive attitudes about tobacco

<sup>6</sup> E.R. Gritz et al. Chronic disease and co-occurring risk from smoking. *Am J Prev Med*. Submitted for publication.

<sup>7</sup> D. Wollins. Smoking cessation and clinical trials, email communication to ER Gritz re: Cancer Prevention Committee Mtg, Jan 19, 2007. Personal communication.

control, they would benefit from increased education on smoking and cessation (48, 49). Promisingly, the forthcoming American Society of Clinical Oncology Prevention Curriculum will have a chapter on this topic (50), as will the next edition of *Cancer: Principles and Practices of Oncology*.<sup>8</sup> Several nursing publications have also focused on tobacco control and tobacco cessation research (27, 38).

Clinicians need to offer cancer patients increased cessation support. One program worth replicating is found at the M.D. Anderson Cancer Center, where all patients who currently smoke or have recently quit are offered comprehensive behavioral and pharmacologic treatment to quit or prevent relapse. This treatment, available at no cost to the patient, is also offered to spouses who smoke. A proactive, electronic, referral system, derived from data collected at institutional registration, will soon provide automatic referrals to the Tobacco Treatment Program, reducing the need for a referral (51). Nationally, many states have implemented a "fax-back" program, which allows clinicians to fax a request for consultation to their state telephone Quitline, a benefit free to the patient (52, 53).

Additional policy changes necessary to reduce the burden of tobacco-related disease and death include:

- The creation of new forums for discussions among tobacco control scientists, cancer biologists, clinicians, and policy makers;
- An increase in research funding into tobacco-related illnesses commensurate with the human and financial toll of the epidemic;
- Congressional implementation of the Inter-Agency Committee on Smoking and Health's tobacco control plan, which mandates steep increases in the federal excise tax on tobacco products and would require the Health and Human Services Secretary to work with the private sector to increase health care coverage of cessation and tobacco dependence treatment (54, 55);
- Support for the efforts of communities to become smoke-free;
- Congressional passage of policy initiatives designed to reduce tobacco consumption, such as the establishment of Food and Drug Administration authority over tobacco, the regulation of tobacco sales made via the Internet, and increased enforcement aimed at reducing cigarette smuggling;
- The dedication of state Master Settlement Agreement dollars to tobacco-related programs, including research, in excess of Centers for Disease Control–recommended levels;
- An increased effort on the part of health care providers to incorporate "best practices" for tobacco prevention and cessation into clinical practice;
- The development of cost-effective, evidence-based, systematic screening for all tobacco-related cancers or diseases;
- The creation of a federally funded mass public education campaign on the prevention and cessation of tobacco use, which will be necessary if the nation is to meet Health and Human Services Healthy People 2010 objectives for youth and adult smoking rates;
- U.S. ratification of the landmark Framework Convention on Tobacco Control (56), a public health treaty that prescribes effective tobacco control policies for implementation by member countries;

- Aggressive support for global implementation of the Framework Convention on Tobacco Control; and
- The education of health care providers about the Framework Convention on Tobacco Control and the creation of working environments for clinicians to lend credibility and expertise to the Framework Convention on Tobacco Control policy prescriptions.

Developing the political clout necessary to accomplish these ambitious goals will require a broad-based coalition of scientists, clinicians, and advocates working together on integrated solutions. Only then can we hope to ease the devastating public health burden that tobacco currently inflicts on our nation.

## Conclusion

Leaders in the fields of tobacco control, lung cancer research, public policy, and healthcare need to work together to develop a comprehensive plan to combat tobacco-related disease. This agenda should encompass a continuum of proposals, from basic biology to societal change. Uniting the talent and expertise of the multiple forces working on tobacco has the potential to make a dramatic effect on the addiction, suffering, and death it causes.

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