SMOKING AND TOBACCO CONTROL

MONOGRAPH 15

Those Who Continue To Smoke

Is Achieving Abstinence Harder and Do We Need to Change Our Interventions?

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
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Smoking and Tobacco Control Monographs Issued to Date

Strategies to Control Tobacco Use in the United States: A Blueprint for Public Health Action in the 1990's. Smoking and Tobacco Control Monograph No. 1. Bethesda, MD: U.S. Department of Health and Human Services, Public Health Service, National Institutes of Health, National Cancer Institute, NIH Publication No. 92-3316, December 1991.

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Preface

The End of An Era

Monograph 15, entitled *Those Who Continue to Smoke: Is Achieving Abstinence Harder and Do We Need to Change Our Interventions?*, marks the end of an era. It is the last of the original series of *Smoking and Tobacco Control Monographs* begun in 1991 under the editorial direction of **Donald R. Shopland**, former coordinator for the Smoking and Tobacco Control Program (STCP) at the National Cancer Institute. From the very inception of the monograph series, the National Cancer Institute has been extremely fortunate to have had **David M. Burns,** M.D., professor of family and preventive medicine at the University of California at San Diego, serve as senior scientific editor.

The National Cancer Institute honors the significant contributions of both these men. Mr. Shopland and Dr. Burns have brought keen insight, knowledge, creativity, and boundless energy and dedication to the production of the monographs. Much of the success of this first series of *Smoking and Tobacco Control Monographs* can be attributed to the vision and commitment of these two leaders in the tobacco control community. Their efforts, and those of the hundreds of other contributors to the first 15 volumes, have laid a solid groundwork for future series.

The National Cancer Institute remains strongly committed to producing and disseminating state-of-the-science smoking and tobacco control monographs. The new series will draw from the strengths of the first series and add several new processes and features to improve the breadth, depth, and policy relevance of the evidence reviewed. One major goal will be to provide the most objective and thorough syntheses of research to inform the ongoing efforts of the National Cancer Institute and the extramural research and tobacco control communities.

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The *Introduction* was written by **C. Tracy Orleans**, Ph.D., senior scientist and senior program officer at the Robert Wood Johnson Foundation, based on her comments at a symposium sponsored by the National Cancer Institute at the Society for Research on Nicotine and Tobacco (SRNT) Eighth Annual Meeting held on February 20, 2002, in Savannah, GA. At this symposium, entitled *Hardening the Target: Are Smokers Less Likely to Quit Now Than in the Past?*, authors of several chapters of Monograph 15 participated in a discussion of the scientific evidence, and Dr. Orleans served as the discussant. Chapter 2 is based on data available as of February 2002.

The managing editor of Monograph 15 is **Richard H. Amacher**, project director, KBM Group Inc., Silver Spring, MD. **Stephen E. Marcus**, Ph.D., completed the editorial direction of the monograph after Mr. Shopland retired and served as its managing editor after the KBM contract ended.

The editors gratefully acknowledge the many researchers and authors who made this monograph possible through their numerous hours of writing and review. Contributors to each chapter are as follows:

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Introduction

C. Tracy Orleans

The decline in U.S. smoking prevalence since the publication of the first Surgeon General's Report in 1964 has been hailed as one of the greatest public health accomplishments of the past century (Warner 2001). Forty-four million Americans—almost half of those who ever smoked—have quit, and lung cancer death rates have decreased greatly as a result. As a nation, we've launched wide-reaching tobacco control programs in worksites, schools, communities, and all 50 states, and we've witnessed enormous shifts in social norms, policies, and public attitudes. Growth in clean indoor-air laws and smoking restrictions have made quit-smoking cues "persistent and inescapable" (Glynn, Boyd, and Gruman 1990), and new data shows that tobacco price increases and mass media cessation campaigns can significantly increase population quit rates (CDC 2001). Over the last three decades, we have developed effective clinical treatments—psychosocial and pharmacological—and seen the publication and update of authoritative practice guidelines recommending evidence-based treatments that, if universally applied, could double our national annual quit rate in a highly cost-effective way (Cromwell et al. 1997; U.S. DHHS 2000). Prospects for preventing and treating tobacco use and addiction have never been better.

Yet the papers in this monograph, *Those Who Continue to Smoke: Is Achieving Abstinence Harder and Do We Need to Change Our Interventions?*, raise important questions about what it will take to build on the successes of the last century and, in particular, on the last few decades of research and practice. While efforts to promote tobacco cessation need to be part of a much broader national tobacco control strategy that emphasizes prevention, it is clear that the greatest gains in reducing tobacco-caused morbidity, mortality, and health care costs in the next 30 to 40 years will come from helping addicted smokers quit (Orleans 1997). Further declines in adult smoking are likely to strengthen prevention efforts as well, since adult smoking is a critical determinant of social norms and a vector for youth initiation.

In this context, the findings presented in this monograph have important implications for the next generation of research and practice to help addicted smokers quit. Specifically, these papers and the findings they present indicate that helping more smokers quit will require: (1) developing more powerful treatments that can break through the 25% to 30% quit-rate ceiling achieved with our best existing treatments; (2) refining, targeting and tailoring treatments for high-risk populations; (3) greatly improving surveillance of quitting patterns and determinants; (4) developing combined

clinical-public health approaches that harness synergies between evidence-based clinical treatments, and macrolevel policy and environmental cessation strategies; and (5) improving the use of and demand for treatments that work.

IS THE TARGET HARDENING? ARE SMOKERS LESS LIKELY TO QUIT NOW THAN IN THE PAST?

This is the central question addressed in different ways by each of the papers in this monograph. Surprisingly, none of the papers presents compelling evidence that this is the case. But each paper offers unique insights into what it will take to raise success rates of individually oriented and population-based approaches.

Burns and Warner (see Chapter 1) approach this question by carefully operationalizing the hardening construct and then testing the hardening hypothesis against available national Current Population Survey (CPS) and National Health Interview Survey (NHIS) data, 1964 to 1999, as well as against data from the California Tobacco Survey (CTS), 1990 to 1999, and the Community Intervention Trial for Smoking Cessation (COMMIT). Their thoughtful paper asks clear questions and gives us mostly clear answers:

- Is there epidemiological evidence that the nation's annual quit rate is falling? No, not at present.
- Is there epidemiological evidence in the United States for decreased cessation rates among groups in which more ever-smokers have quit? No.
- Is there epidemiological evidence that levels of dependence, estimated by cigarettes per day or score on the Fagerström Tolerance Questionnaire (1994), have increased in the United States as prevalence has decreased? No.
- Is there epidemiological evidence among current smokers for increased psychiatric comorbidity among current smokers? The answer here is uncertain, given the lack of systematic surveillance. However, new data from the National Co-morbidity Study (Lasser et al. 2000) shows that patients with diagnosed psychiatric disorders—ranging from anxiety disorders, phobias, and dysthymia to other chemical dependencies to major depressive disorder and schizophrenia—are twice as likely to smoke and currently consume approximately 50% of the cigarettes sold in America. However, Lasser et al. (2000) point out that lifetime quit rates for these smokers are also fairly respectable (ranging from 27% to 34% compared with 43% for smokers with no history of mental illness).

And finally, Burns and Warner highlight the growing concentration of smokers in low socioeconomic status (SES) groups. However, in the absence of evidence that low-SES smokers are any less likely to quit than those in higher income groups when offered proven treatments or exposed to effective cessation policies and environmental influences, it is difficult to conclude support for the hardening hypothesis from these findings.

Hence Burns and Warner conclude that the hardening hypothesis should continue to be tested, and evidence that hardening is actually occurring should be required before it is used as a justification for changing current tobacco control strategies.

Burns' and Warner's paper also raises some important questions about language. They wisely cite John Slade's caution about the use of hardening as a term that could be construed to be demeaning or dismissive of people's quit attempts. Moreover, their findings suggest that a better question for understanding and addressing the challenges of increasing our national quit rate might be "is the target *changing?*" Substituting the word "changing" for "hardening" immediately brings a wider range of solutions into view, pointing not only toward future treatments that might be more intensive but also toward those that might be more effective or better tailored, packaged, promoted, and priced to reach their target populations.

Irvin and Brandon (see Chapter 4) offer another creative and rigorous approach to testing the hardening hypothesis: reviewing published cessation trials conducted in the United States to examine whether success rates have declined. For cognitive-behavioral multicomponent treatments published between 1977 and 1996, they found significant declines in reported end-of-treatment, 3-month, and 6-month (but not 12-month) abstinence rates—with mean 6-month quit rates declining about 10 percentage points, from over 40% to about 30%. Somewhat similar patterns were observed for trials of nicotine gum (1984 to 1996), transdermal nicotine (1990 to 2000), and varied placebo treatment conditions (1983 to 1999).

However, while they carefully examined and attempted to control for a range of potentially confounding and mediating variables (e.g., mean age, years smoked, daily smoking rate, Fagerström Tolerance Questionnaire scores), Irvin et al. point out that they may have missed key mediating variables (especially those related to nonspecific treatment effects) and had limited statistical power to detect mediation effects. In fact, it is quite possible that early adopters of these treatments (both smokers and clinicians) brought higher treatment expectations than later adopters, and that those smokers who were among the first to try each of these treatments had higher treatment-related self-efficacy based on fewer past, unsuccessful quit attempts or treatment experiences. Moreover, while these trials were conducted during periods of significant decline in national adult smoking prevalence, participants represented a very small subset of all U.S. smokers who tried to quit. The 1986 Adult Use of Tobacco Survey (AUTS) found, for instance, that only 30% of smokers tried to quit that year, and that only 10% to 15% of them used any formal treatment (2% to 4% counseling, 3% to 12% nicotine gum) (Fiore et al. 1990). Hence these published treatment studies provide limited insight into national quitting patterns and practices. Irvin and Brandon conclude that they cannot establish that their findings are consistent with the "population target hardening" theory.