Evaluating ASSIST
A Blueprint for Understanding State-level Tobacco Control
Other NCI Tobacco Control Monographs


State and Local Legislative Action to Reduce Tobacco Use. Smoking and Tobacco Control Monograph No. 11. NIH Pub. No. 00-4804, August 2000.


Note, when citing this monograph in other works, please use the following format:

Dedication

I wish to acknowledge the invaluable contributions of time and intellect that were provided to the ASSIST evaluation by the many dedicated researchers whose efforts and ingenuity helped make the evaluation come to fruition. Although far too many individuals were involved to name here, this volume is dedicated to all of you. Especially helpful was the technical expertise provided by Lois Biener, Frank Chaloupka, Mike Cummings, Betsy Gilpin, Stan Glantz, Larry Kincaid, David Murray, John Pierce, Jon Samet, and Bill Trochim. Their insight and commitment were essential for completing this enormous undertaking. In addition, my statistical team—Anne Hartman and Barry Graubard—provided invaluable input. I also want to thank my co-editor for this volume, Carol Schmitt, who provided endless support through the development of this monograph.

The ASSIST evaluation would not have been possible without the support of former and current staff of the National Cancer Institute. Barbara Rimer, Bob Hiatt, and Bob Croyle recognized the contribution this project had to offer to advance understanding of population-level tobacco control efforts as well as how the ASSIST evaluation methods and measures could apply to the larger arena of cancer control.

Performing this evaluation was a difficult task. Many new approaches were necessary; many different challenges had to be overcome; and many opinions had to be satisfied. We are truly fortunate that much was learned and much was accomplished. For this I am sincerely grateful. Albert Einstein said, “In the middle of every difficulty lies opportunity.” The ASSIST evaluation was such an opportunity, both intellectually and personally. Most of all, this evaluation was an opportunity to lend credibility to the ground-breaking work accomplished by all those involved in ASSIST.

Frances A. Stillman

October 2006
A Note from the Series Editor

With this volume, the National Cancer Institute (NCI) presents the 17th monograph of the Tobacco Control Monograph series.

This monograph documents the evaluation of a groundbreaking NCI program. The American Stop Smoking Intervention Study for Cancer Prevention, known as ASSIST, put into practice NCI's commitment to prevent and reduce tobacco use across all populations and age groups. ASSIST took evidenced-based interventions from controlled studies and implemented them in the larger community of 17 states. Its underlying rationale—that significant decreases in tobacco use could be realized only with interventions that changed the social environment such that smoking was non-normative—was a significant departure from previous tobacco control programs and in the vanguard of the “new” public health. Prior to ASSIST, few states addressed tobacco use at the population level. The ASSIST legacy remains today in the tobacco control professionals whose work continues to reduce the burden of disability and death caused by tobacco.

ASSIST raised significant conceptual and practical challenges for its evaluation team. These challenges included context-dependent implementation and the diffusion of ASSIST and ASSIST-like interventions into non-ASSIST states. In addition, the evaluation did not begin until several years after ASSIST was implemented, and its budget was limited. What had been envisioned as a simple evaluation of a demonstration project became a complex evaluation effort that engaged a diverse group of scientists and practitioners and required numerous sources of data. The resulting evaluation successfully documented the effectiveness of ASSIST. It also validated the causal pathway described in NCI’s 1991 Smoking and Tobacco Control Monograph 1: Strategies to Control Tobacco Use in the United States: A Blueprint for Public Health Action in the 1990’s—that comprehensive interventions can change the social environment of tobacco use and subsequently result in decreased tobacco use.

This monograph stands alone as a documentation of the ASSIST evaluation and describes the challenges met in evaluating a program that was influenced by numerous forces outside the program’s control. However, this monograph may also be viewed as a companion to NCI Tobacco Control Monograph 16, which reviews the ASSIST program in detail. Together these two monographs provide a detailed history and evidence base that document the success of an NCI initiative that began with a series of research hypotheses, tested those hypotheses with community-based interventions, and ultimately fielded a demonstration program that fundamentally changed tobacco use prevention and control in the United States.

It has been seven years since ASSIST ended and all states became funded by the National Tobacco Control Program at the Centers for Disease Control and Prevention. At this writing, it is no longer considered normative for children to become smokers;
laws and policies that restrict smoking in public places protect more Americans each year; and state tax increases have resulted in cigarette prices that are high enough to reduce consumption and prevalence. We have come far, but there is more work to be done before tobacco use is no longer the leading cause of death and disability in the United States.

This volume and several future volumes in the Tobacco Control Monograph Series have important implications for research, practice, and policy in tobacco control as well as in other areas of public health. Lessons learned from tobacco prevention and control can be applied to a variety of public health issues, including physical activity, diet and nutrition, overweight and obesity, and substance abuse. NCI is committed to disseminating this cross-cutting knowledge to the widest possible audience so that others can benefit from the experience of the tobacco prevention and control community. By so doing, NCI is increasing the evidence base for effective public health interventions and improving the translation of research to practice and policy.

Stephen E. Marcus, Ph.D.
Monograph Series Editor
Epidemiologist
Tobacco Control Research Branch
Behavioral Research Program
Division of Cancer Control and Population Sciences
October 2006
Foreword

This monograph, like so many others in the National Cancer Institute’s (NCI’s) Tobacco Control Monograph series, is an important document. At a time when “Big Science” is being supported to advance knowledge of society’s most pressing biomedical and public health problems, scientists are also being challenged to demonstrate what has been accomplished for the investment made. There are few guides as to how to evaluate large-scale science. This is one of them.

The American Stop Smoking Intervention Study for Cancer Prevention (ASSIST) was the first “demonstration” project that put into practice the ultimate phase of NCI’s Five Phases of Cancer Control Research” advanced by Peter Greenwald (NCI’s Director of the Division of Cancer Prevention and Control) and Joseph W. Cullen (Deputy Director of the same division) in 1984. The ASSIST program followed the orderly and sequential progression of tobacco control research in the earlier four phases from public education in the 1960s, to individual-level interventions, to community-level and then population-level interventions in the 1970s and 1980s. The Community Intervention Trial for Smoking Cessation (COMMIT; 1986–92), which immediately preceded ASSIST, was a model for the application of a randomized controlled trial to community research. ASSIST was the next logical step and a serious federal investment designed to apply the evidence gained from COMMIT and the large body of other previous research to policy interventions in 17 states. However, at ASSIST’s outset, no evaluation was planned. Only after ASSIST was in progress did the need for some way to assess its impact become apparent. This monograph is a testament to the ingenuity and perseverance of the evaluation team that took on that challenge and saw the evaluation to its successful completion. Coincidently, like the number of states that had ASSIST contracts, this NCI monograph on the evaluation of ASSIST is number 17 in the Tobacco Control Monograph series.

The evaluation process is completely described in this monograph. It required the development of an overall design strategy that took into account the separate and unplanned impacts of other state-based initiatives supported by the Robert Wood Johnson Foundation and the Centers for Disease Control and Prevention (chapter 1). It required the development of metrics that assessed the power of state efforts in tobacco control as well as the countervailing efforts of the tobacco industry to negate these policy initiatives. The Strength of Tobacco Control Index (SoTC) was developed to answer this need after careful study of what information was available and reliable enough to be included in such an index (chapter 2). The evaluators also included metrics that captured changes in state and local clean indoor air laws (chapter 3) and developed metrics to repeatedly assess the initial and intermediate effects of the interventions (chapter 4). Finally, the evaluation took into account the differences among states in their tobacco

growing and production practices due to concerns about the influence of regional commercial interests on receptivity to the ASSIST program (chapters 5 and 6).

All of these approaches to evaluation were novel and required a substantial amount of creativity on the part of the evaluation team and their technical advisors. At the time, the structure and implementation of the evaluation strategy were truly challenging, and painstaking effort was invested in testing and validation. In fact, the evaluation evolved over time. This process of evolution is covered as well as two aspects of the evaluation, the database of newspaper print media coverage (chapter 7) and the study of tobacco industry counter-measures (chapter 8), which did not figure in the final statistical analysis. The inclusion of these aspects in the monograph reflects the thoroughness of the team efforts to report on all aspects of this enormous undertaking, even the false starts.

The need for evaluation of other large-scale NCI-supported cancer research initiatives is now well recognized. These initiatives include the Transdisciplinary Tobacco Use Research Centers (TTURCs), the Centers for Excellence in Cancer Communication, and the Centers for Population Health and Health Disparities. None of these are state-based initiatives, yet each is a large and complex transdisciplinary research enterprise that has required a major public investment. The ASSIST evaluation stands at the vanguard of these efforts, and the reader will learn much about the critical role of such assessments in moving research into practice, in this case into practice against the nation’s number one cause of premature death and disability.

Robert A. Hiatt, M.D., Ph.D.
Director of Population Sciences and Deputy Director
UCSF Comprehensive Cancer Center
Professor, Epidemiology and Biostatistics
University of California, San Francisco
Preface

Capturing the scope of an ecological process such as the evaluation of the American Stop Smoking Intervention Study for Cancer Prevention (ASSIST) in monograph form presents a daunting task because the evaluation’s scope and methodology were constantly evolving. Numerous challenges arose in the writing of this monograph: (1) Some factors and covariates in the evaluation analysis consisted of relatively simple measurements, whereas others required entire sections or chapters to describe in adequate detail. (2) Demonstration projects were undertaken, such as the creation of a print newspaper database of tobacco coverage, which were ultimately not included in the overall ASSIST evaluation analysis but still have relevance to future research efforts. (3) Fundamental assumptions of the original evaluation, such as original design of a direct comparison between ASSIST and non-ASSIST states, were changed as ASSIST-type interventions were introduced in other states.

At the same time, the full story of the ASSIST evaluation is an important one to tell, because in the richness and complexity of its evolution, it serves as a guide for the future of evaluating large-scale population-level public health projects. Older evaluation methodologies were simply not adequate for a project of the scope of ASSIST and, in turn, the methods presented here will undoubtedly evolve further to meet the growing scope of future public health efforts.

Figure 1 outlines a framework for the content presented in this monograph. The monograph tells a procedural story rather than a chronological one, tracing the development of the ASSIST evaluation conceptual model, examining its assumptions in detail, discussing related projects, and finally reviewing the evaluation results in detail.

This framework provides a basis for presenting an overview of the ASSIST evaluation and its design, a detailed discussion of its evaluation components, a summary of related projects, and a discussion of the evaluation outcomes. The chapters are as follows:

Chapter 1. The ASSIST Evaluation Project: An Overview. This chapter presents an overview of the ASSIST evaluation and its historical context. It reviews the key points of the ASSIST project and describes the conceptual model that guided the ASSIST evaluation as well as the key constructs of the conceptual model, the rationales for their inclusion, and the research questions that established the linkages between these conceptual constructs.

Chapter 2. The Strength of Tobacco Control Index. The Strength of Tobacco Control index is a composite measure of the core components of a state-level tobacco control program, developed to assess which components of ASSIST or ASSIST-like programs might be related to a specified outcome or a trend of lower smoking prevalence or cigarette consumption. The Strength of Tobacco Control index assesses three major constructs: tobacco control resources, capacity, and program efforts focused on policy and environmental change. The Strength of Tobacco Control index was developed for the
The Strength of Tobacco Control index is now being used to compare tobacco control programs across the United States. This chapter describes the creation of the Strength of Tobacco Control index, details its descriptive characteristics, and provides examples of how it may be used to assess and improve state-based tobacco control programs.

**Chapter 3. Measuring Policy and Legislative Changes.** The implementation of legislative changes that would promote a tobacco-free social norm and environments was a critical objective of the ASSIST project. The ASSIST evaluation assessed changes in state and local clean indoor air laws as a component of the Initial Outcomes Index. This chapter describes the methods used to track and measure these legislative changes. A longitudinal comparison of clean indoor air legislation in ASSIST and non-ASSIST states is also provided.

**Chapter 4. Initial Outcomes Index.** Changes in policy occur and can be measured before changes in individual behavior. An Initial Outcomes Index was developed to assess the policy outcomes of the states’ tobacco control efforts. This chapter describes the variables used in this index and the methods used to create it.
Chapter 5. State Facilitating Conditions and Barriers to Implementation of Tobacco Control Programs. Tobacco growing and production can profoundly affect the adoption of policy-based tobacco control interventions, as evidenced by substantial differences between tobacco-producing states and nonproducing states in areas such as tobacco taxes and the adoption of tobacco control policies. This chapter outlines the issues and assumptions leading to the development of a state-level variable representing the economic dependence of states on tobacco growing and manufacturing, for use as a covariate in the ASSIST evaluation regression analyses as part of the measures of state conditions.

Chapter 6. Measuring the Impact of Tobacco on State Economies. State differences in population demographics, and economic, political, social, cultural, and geographic factors can affect the likely acceptance, implementation, and outcomes of a state tobacco control program. This chapter describes these factors and how they might affect an evaluation of a tobacco control program, together with a discussion of which factors were used as part of the ASSIST evaluation. In addition, potential measurement techniques for other factors are suggested for use in future evaluations.

Chapter 7. The ASSIST Newspaper Tracking System. Media advocacy was one of the three principal interventions of the ASSIST model. An analysis of the amount and type of newspaper media coverage potentially attributable to media advocacy interventions was one approach used to evaluate their success. This chapter describes a state-level index to measure newspaper coverage of the four ASSIST priority policy areas—clean indoor air, restrictions on minors’ access to tobacco, excise tax increases, and restrictions on tobacco advertising and promotion. Although this index was not used in the ASSIST evaluation, the chapter demonstrates its potential value for future analyses.

Chapter 8. Evaluating Tobacco Industry Tactics as a Counterforce to ASSIST. Tobacco industry efforts to counter tobacco control initiatives are not typically taken into account when tobacco control programs are evaluated, even though counterefforts constitute a strong force that impedes achievement of tobacco control intervention objectives. In this chapter, examples of tobacco industry efforts to counter ASSIST and other state tobacco control programs are provided from the peer-reviewed literature and tobacco industry documents. While the inherent difficulty of measuring these counter-efforts ultimately precluded their use in the ASSIST evaluation model, the chapter discusses the impediments to creating a tobacco industry effort measure and potential solutions for overcoming these impediments.

Chapter 9. Final Outcomes: Analytical Methods and Results. The final outcomes of the ASSIST evaluation are cigarette smoking prevalence and per capita cigarette consumption at the end of the intervention. This chapter describes the methodology and statistical techniques used to assess the final outcomes and discusses the evaluation results.

Chapter 10. Cost-effectiveness of ASSIST. This chapter uses standard econometric techniques to assess the cost-effectiveness of the ASSIST project. The standard
econometric techniques enable comparisons of the cost-effectiveness of ASSIST with other types of tobacco control interventions and with other large-scale public health initiatives.

**Chapter 11. The ASSIST Evaluation: Contributions to Evaluation of Complex Public Health Initiatives.** The closing chapter summarizes the major findings of the ASSIST study and discusses how this evaluation effort can serve as a model for evaluating large-scale, complex public health initiatives. The chapter discusses the broader issues in evaluation of large-scale initiatives, such as addressing complexity in public health projects and the need to go beyond existing “black box” approaches. It also discusses the programmatic and evaluation challenges, such as tobacco industry efforts to undermine or counter public health initiatives, and the potential for generalizing evaluation efforts such as ASSIST.

The ASSIST evaluation represents a successful attempt to measure the effectiveness of upstream tobacco control interventions in an environment where these interventions were widely adopted beyond the states funded by the National Cancer Institute. Using a rigorously developed and validated model, the evaluation shows a positive correlation between these interventions and a decline in tobacco usage and, more important, provides a model for how complex public health issues can be evaluated at broad levels of the population. In this sense, efforts such as the ASSIST evaluation represent part of the future of public health as this field moves beyond individuals and communities to address the fundamental sociopolitical issues that will reduce society’s burden of disease and preventable death.

Frances A. Stillman
Senior Scientific Editor
Co-Director, Institute for Global Tobacco Control
Associate Professor, Department of Epidemiology
Bloomberg School of Public Health
Johns Hopkins University
Baltimore, MD

Carol L. Schmitt
Senior Scientific Editor
Senior Health Research Scientist
Battelle Centers for Public Health Research & Evaluation
Baltimore, MD
The American Stop Smoking Intervention Study for Cancer Prevention (ASSIST)

This monograph, *Evaluating ASSIST: A Blueprint for Understanding State-level Tobacco Control* (NCI Tobacco Control Monograph 17), and the preceding one in this series, Monograph 16, *ASSIST: Shaping the Future of Tobacco Prevention and Control*, are designed as companion documents. Whereas Monograph 17 addresses the evaluation framework, the details of the ASSIST evaluation, and the results of this effort, Monograph 16 focuses on the processes and interventions used to implement ASSIST, lessons learned and insights, and the transition of ASSIST from a demonstration project to the National Tobacco Control Program supported by the Centers for Disease Control and Prevention. (Where appropriate, reference to Monograph 16 is provided; complete citation information for Monograph 16 can be found on page ii of this volume.) Following is a brief overview of Monograph 16, which was published in May 2005.

**Monograph 16. ASSIST: Shaping the Future of Tobacco Prevention and Control**

ASSIST was an 8-year, nonrandomized demonstration project for tobacco use prevention and control conducted by the National Cancer Institute, the American Cancer Society, and 17 state health departments. The goal of ASSIST was to change the social, cultural, economic, and environmental factors that promote tobacco use by using policy, mass media, and program services interventions. The four policy strategies were as follows:

- Raising excise taxes to increase the price of tobacco products
- Eliminating exposure to environmental tobacco smoke
- Limiting tobacco advertising and promotion
- Reducing minors’ access to tobacco products

The strategies for ASSIST were developed and implemented by state and local tobacco control coalitions using population-based research, public health practices, policy development, and media advocacy. The concepts of building on a strong evidence base; designing interventions with broad population impacts; changing social norms in pursuit of greater justice; developing strong partnerships based on common goals and mutual respect; maintaining a determination not to be swayed or pushed off target by one’s adversaries; and ensuring a serious commitment to evaluation, self-reflection, and midcourse correction were crucial components of ASSIST.

Monograph 16 provides in-depth descriptions of intervention processes, examples of materials and best practices, and resource lists and guidance for activities such as media advocacy campaigns. Numerous case studies are presented, not in the form of formal social research, but as stories and vignettes from state and local public health staff.
and volunteers who describe their efforts, the barriers they encountered, the lessons they learned, and insights they gained. These case studies show ASSIST as it was experienced by the many committed and diverse people responsible for its success.

Below are the major topics addressed in Monograph 16:

- The historical context and conceptual framework of ASSIST
- The national partners and state agencies and their respective roles, and communication linkages among all the structural units that promoted collaborative decision making and were essential for the program to function
- National, state, and local capacity building by mobilizing communities, establishing coalitions, promoting participatory planning, and providing training and technical assistance
- Descriptions of strategies and intervention methods, insights, and lessons learned for the three ASSIST intervention channels—policy development, mass media and media advocacy, and program services
- The tobacco industry challenge to ASSIST and the ASSIST response
- Strategic planning for a national tobacco use prevention and control program
- The processes and challenges in maintaining capacity built by the ASSIST demonstration project, disseminating best practices, and building a comprehensive national tobacco use prevention and control program
- Contributions of ASSIST to tobacco use prevention and control and to other behavioral health programs

The insights and lessons learned from ASSIST have advanced our understanding of how research studies can be successfully translated and disseminated as demonstration projects, while illustrating how sustained funding builds effective tobacco use prevention and control programs. The ASSIST legacy endures in the infrastructure that continues to support tobacco use prevention and control interventions. As the first major public health intervention grounded in ecological theory, ASSIST remains an exemplar for modern systems-level public health programs.
## Acronyms List

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Full Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACS</td>
<td>American Cancer Society</td>
</tr>
<tr>
<td>ANRF</td>
<td>American Nonsmokers’ Rights Foundation</td>
</tr>
<tr>
<td>ASSIST</td>
<td>American Stop Smoking Intervention Study for Cancer Prevention</td>
</tr>
<tr>
<td>BRFSS</td>
<td>Behavioral Risk Factor Surveillance System</td>
</tr>
<tr>
<td>CDC</td>
<td>Centers for Disease Control and Prevention</td>
</tr>
<tr>
<td>COMMIT</td>
<td>Community Intervention Trial for Smoking Cessation</td>
</tr>
<tr>
<td>CPS</td>
<td>Current Population Survey</td>
</tr>
<tr>
<td>DHHS</td>
<td>Department of Health and Human Services</td>
</tr>
<tr>
<td>ETS</td>
<td>environmental tobacco smoke</td>
</tr>
<tr>
<td>FDA</td>
<td>U.S. Food and Drug Administration</td>
</tr>
<tr>
<td>FOIA</td>
<td>Freedom of Information Act</td>
</tr>
<tr>
<td>GDP</td>
<td>gross domestic product</td>
</tr>
<tr>
<td>GSP</td>
<td>gross state domestic product</td>
</tr>
<tr>
<td>IMPACT</td>
<td>Initiatives to Mobilize for the Prevention and Control of Tobacco Use</td>
</tr>
<tr>
<td>IOI</td>
<td>Initial Outcomes Index</td>
</tr>
<tr>
<td>ISIS</td>
<td>Initiative for the Study and Implementation of Systems</td>
</tr>
<tr>
<td>MAV</td>
<td>media advocacy variable</td>
</tr>
<tr>
<td>MDS</td>
<td>multidimensional scaling</td>
</tr>
<tr>
<td>MSA</td>
<td>Master Settlement Agreement</td>
</tr>
<tr>
<td>NCI</td>
<td>National Cancer Institute</td>
</tr>
<tr>
<td>NIH</td>
<td>National Institutes of Health</td>
</tr>
<tr>
<td>NTCP</td>
<td>National Tobacco Control Program</td>
</tr>
<tr>
<td>PDV</td>
<td>present discounted value</td>
</tr>
<tr>
<td>PM</td>
<td>Philip Morris</td>
</tr>
<tr>
<td>QALYs</td>
<td>quality-adjusted life-years</td>
</tr>
<tr>
<td>RWJF</td>
<td>Robert Wood Johnson Foundation</td>
</tr>
<tr>
<td>SCLD</td>
<td>State Cancer Legislative Database</td>
</tr>
<tr>
<td>SoTC</td>
<td>Strength of Tobacco Control</td>
</tr>
<tr>
<td>TUS-CPS</td>
<td>Tobacco Use Supplement to the Current Population Survey</td>
</tr>
<tr>
<td>USDA</td>
<td>United States Department of Agriculture</td>
</tr>
</tbody>
</table>
Acknowledgments

This monograph was developed by the National Cancer Institute under the editorial direction of Senior Scientific Editors Frances A. Stillman and Carol L. Schmitt. Individual chapters of this monograph and the entire volume were subjected to extensive peer review and revision.

Authors and Contributors

Chapter 1

Authors
Frances A. Stillman, Ed.D.
Co-Director, Institute for Global Tobacco Control
Associate Professor, Department of Epidemiology
Bloomberg School of Public Health
Johns Hopkins University
Baltimore, MD

Carol L. Schmitt, Ph.D.
Senior Health Research Scientist
Battelle Centers for Public Health Research & Evaluation
Baltimore, MD

Chapter 2

Authors
Frances A. Stillman, Ed.D.
Co-Director, Institute for Global Tobacco Control
Associate Professor, Department of Epidemiology
Bloomberg School of Public Health
Johns Hopkins University
Baltimore, MD

Carol L. Schmitt, Ph.D.
Senior Health Research Scientist
Battelle Centers for Public Health Research & Evaluation
Baltimore, MD

Pamela I. Clark, Ph.D.
Senior Research Scientist
Battelle Centers for Public Health Research & Evaluation
Baltimore, MD

William M. K. Trochim, Ph.D.
Professor
Department of Policy Analysis and Management
Cornell University
Ithaca, NY

Stephen E. Marcus, Ph.D.
Monograph Series Editor
Epidemiologist
Tobacco Control Research Branch
Behavioral Research Program
Division of Cancer Control and Population Sciences
National Cancer Institute
Bethesda, MD

Contributors
Warren Strauss, M.S.
Research Leader, Statistics and Information Analysis
Battelle Memorial Institute
Columbus, OH

Jyothi Nagaraja, M.S.
Research Scientist
Battelle Memorial Institute
Columbus, OH
Chapter 3

Authors

Jamie Chriqui, Ph.D., M.H.S.
Technical Vice-President
Center for Health Policy and Legislative Analysis
The MayaTech Corporation
Silver Spring, MD

Marcy Frosh, J.D.
Consultant
The MayaTech Corporation
Silver Spring, MD

Ross C. Brownson, Ph.D.
Professor, Community Health in Epidemiology
Saint Louis University School of Public Health
St. Louis, MO

Frances A. Stillman, Ed.D.
Co-Director, Institute for Global Tobacco Control
Associate Professor, Department of Epidemiology
Bloomberg School of Public Health
Johns Hopkins University
Baltimore, MD

Chapter 4

Authors

Elizabeth A. Gilpin, M.S.
Clinical Professor of Biostatistics
Department of Family & Preventive Medicine
University of California, San Diego
La Jolla, CA

Anne M. Hartman, M.S., M.A.
Biostatistician
Risk Factor Monitoring and Methods Branch
Applied Research Program
Division of Cancer Control and Population Sciences
National Cancer Institute
Bethesda, MD

Frances A. Stillman, Ed.D.
Co-Director, Institute for Global Tobacco Control
Associate Professor, Department of Epidemiology
Bloomberg School of Public Health
Johns Hopkins University
Baltimore, MD

Chapter 5

Author

Elizabeth A. Gilpin, M.S.
Clinical Professor of Biostatistics
Department of Family & Preventive Medicine
University of California, San Diego
La Jolla, CA

Contributors

Sandy J. Slater, Ph.D.
Research Specialist
Institute for Health Research and Policy
University of Illinois at Chicago
Chicago, IL

Anne M. Hartman, M.S., M.A.
Biostatistician
Risk Factor Monitoring and Methods Branch
Applied Research Program
Division of Cancer Control and Population Sciences
National Cancer Institute
Bethesda, MD
Chapter 6

Authors
Lan Liang, Ph.D.
Senior Economist
Center for Financing, Access, and Cost Trends
Agency for Health Care Research and Quality
Rockville, MD

Frank J. Chaloupka, Ph.D.
Professor of Economics
College of Business Administration
University of Illinois at Chicago
Chicago, IL

Kathryn Jerulli, Ph.D.
Adjunct Assistant Professor
University of Chicago Graduate School of Business
Chicago, IL

Chapter 7

Authors
W. Douglas Evans, Ph.D.
Vice President
Center for Health Promotion Research
Research Triangle Institute (RTI) International
Washington, DC

Alec Ulasevich, Ph.D.
Senior Research Analyst
Health Program
American Institutes for Research
Silver Spring, MD

Frances A. Stillman, Ed.D.
Co-Director, Institute for Global Tobacco Control
Associate Professor, Department of Epidemiology
Bloomberg School of Public Health
Johns Hopkins University
Baltimore, MD

Contributor
K. Viswanath, Ph.D.
Department of Medical Oncology
Dana Farber Cancer Institute
Associate Professor
Department of Society, Human Development, and Health
Harvard School of Public Health
Harvard University
Boston, MA

Chapter 8

Authors
Brion J. Fox, J.D.
Associate Scientist
Comprehensive Cancer Center
University of Wisconsin
Madison, WI

Stella Aguinaga Bialous, Dr.Ph., R.N., M.S.C.N.
President
Tobacco Policy International
San Francisco, CA

William M. K. Trochim, Ph.D.
Professor
Department of Policy Analysis and Management
Cornell University
Ithaca, NY

Frances A. Stillman, Ed.D.
Co-Director, Institute for Global Tobacco Control
Associate Professor, Department of Epidemiology
Bloomberg School of Public Health
Johns Hopkins University
Baltimore, MD

Carol L. Schmitt, Ph.D.
Senior Health Research Scientist
Battelle Centers for Public Health Research & Evaluation
Baltimore, MD
Chapter 9

Authors

Barry I. Graubard, Ph.D.
Senior Investigator
Division of Cancer Epidemiology and Genetics
National Cancer Institute
Bethesda, MD

Anne M. Hartman, M.S., M.A.
Biostatistician
Risk Factor Monitoring and Methods Branch
Applied Research Program
Division of Cancer Control and Population Sciences
National Cancer Institute
Bethesda, MD

Elizabeth A. Gilpin, M.S.
Clinical Professor of Biostatistics
Department of Family & Preventive Medicine
University of California, San Diego
La Jolla, CA

David M. Murray, Ph.D.
Professor and Chair
Division of Epidemiology and Biostatistics
School of Public Health
The Ohio State University
Columbus, OH

Frances A. Stillman, Ed.D.
Co-Director, Institute for Global Tobacco Control
Associate Professor, Department of Epidemiology
Bloomberg School of Public Health
Johns Hopkins University
Baltimore, MD

Contributors

James T. Gibson
Senior Programmer/Systems Analyst
Information Management Services
Silver Spring, MD

William Davis, Ph.D.
Mathematical Statistician
Statistical Research & Applications Branch
Division of Cancer Control and Population Sciences
National Cancer Institute, NIH
Bethesda, MD

Chapter 10

Authors

Richard M. Peck, Ph.D.
Associate Professor
Department of Economics
University of Illinois at Chicago
Chicago, IL

Mary Ellen Wewers, Ph.D., M.P.H.
Professor
School of Public Health
The Ohio State University
Columbus, OH

Contributors

Anne M. Hartman, M.S., M.A.
Biostatistician
Risk Factor Monitoring and Methods Branch
Applied Research Program
Division of Cancer Control and Population Sciences
National Cancer Institute
Bethesda, MD

Barry I. Graubard, Ph.D.
Senior Investigator
Division of Cancer Epidemiology and Genetics
National Cancer Institute
Bethesda, MD
Chapter 11

Authors
Frances A. Stillman, Ed.D.
Co-Director, Institute for Global Tobacco Control
Associate Professor, Department of Epidemiology
Bloomberg School of Public Health
Johns Hopkins University
Baltimore, MD

Carol L. Schmitt, Ph.D.
Senior Health Research Scientist
Battelle Centers for Public Health Research & Evaluation
Baltimore, MD

Reviewers

Chapter Reviewers
Lois Biener, Ph.D.
Senior Research Fellow
Center for Survey Research
University of Massachusetts Boston
Boston, MA

Michele Bloch, M.D., Ph.D.
Medical Officer
Tobacco Control Research Branch
Division of Cancer Control and Population Sciences
National Cancer Institute
Bethesda, MD

David M. Burns, M.D.
Professor of Family and Preventive Medicine
Professor of Medicine
School of Medicine
University of California, San Diego
San Diego, CA

Carole Celebucki, Ph.D.
Associate Professor
Department of Psychology
University of Rhode Island, Providence Campus
Providence, RI

Gregory Connolly, D.M.D., M.P.H.
Director, Massachusetts Tobacco Control Program
Massachusetts Department of Public Health
Boston, MA

Richard A. Daynard, J.D., Ph.D.
Professor of Law
Northeastern University School of Law
Boston, MA

Ellen Feighery, R.N., M.S.
Principal Investigator
Public Health Institute
Half Moon Bay, CA

Fred Gale, Ph.D.
Senior Economist
Economic Research Service
United States Department of Agriculture
Washington, DC

Stanton A. Glantz, Ph.D.
Professor of Medicine and Director
Center for Tobacco Control Research and Education
Comprehensive Cancer Center
University of California, San Francisco
San Francisco, CA

Thomas Glynn, Ph.D.
Director, Cancer Science & Trends
Director, International Tobacco Programs
American Cancer Society
Washington, DC

Ellen J. Hahn, D.N.S., R.N.
Associate Professor
College of Nursing
University of Kentucky
Lexington, KY
Acknowledgments

Teh-wei Hu, Ph.D.
Professor Emeritus of Health Economics
Division of Health Policy and Management
School of Public Health
University of California, Berkeley
Berkeley, CA

Donald S. Kenkel, Ph.D.
Professor
Policy Analysis and Management
College of Human Ecology
Cornell University
Ithaca, NY

Douglas Luke, Ph.D.
Associate Professor of Community Health
School of Public Health
Saint Louis University
St. Louis, MO

Jonathan M. Samet, M.D., M.S.
Professor and Chairman
Department of Epidemiology
Bloomberg School of Public Health
Johns Hopkins University
Baltimore, MD

Brenda Seals, Ph.D., M.A., M.P.H.
Director, Masters in Public Health Program
Practice and Research Coordinator
Department of Public Health
Temple University
Philadelphia, PA

Donald R. Shopland
United States Public Health Service, Retired
Ringgold, GA

Robert E. Vollinger Jr., M.S.P.H.
Program Director, Public Health Advisor
Tobacco Control Research Branch
Behavioral Research Program
Division of Cancer Control & Population Sciences
National Cancer Institute
Bethesda, MD

Melanie Wakefield, Ph.D.
Director and NHMRC Principal Research Fellow
Centre for Behavioural Research in Cancer
Cancer Control Research Institute
The Cancer Council Victoria
Carlton, Victoria
Australia

Kenneth E. Warner, Ph.D.
Dean
School of Public Health
University of Michigan
Ann Arbor, MI

Senior Peer Reviewers

Michele Bloch, M.D., Ph.D.
Medical Officer
Tobacco Control Research Branch
Division of Cancer Control and Population Sciences
National Cancer Institute
Bethesda, MD

Thomas Glynn, Ph.D.
Director, Cancer Science & Trends
Director, International Tobacco Programs
American Cancer Society
Washington, DC

Scott Leischow, Ph.D.
Deputy Director
Arizona Cancer Center
The University of Arizona
Tucson, AZ

Jonathan M. Samet, M.D., M.S.
Professor and Chairman
Department of Epidemiology
Bloomberg School of Public Health
Johns Hopkins University
Baltimore, MD
Robert E. Vollinger Jr., M.S.P.H.
Program Director, Public Health Advisor
Tobacco Control Research Branch
Behavioral Research Program
Division of Cancer Control & Population Sciences
National Cancer Institute
Bethesda, MD

ASSIST Evaluation Team

Technical Expert Panel

Lois Biener, Ph.D.
Senior Research Fellow
Center for Survey Research
University of Massachusetts Boston
Boston, MA

Frank J. Chaloupka, Ph.D.
Professor of Economics
College of Business Administration
University of Illinois at Chicago
Chicago, IL

K. Michael Cummings, Ph.D., M.Ph.
Chair, Department of Health Behavior
Division of Cancer Prevention and Population Sciences
Roswell Park Cancer Institute
Buffalo, New York

Stanton Glantz, Ph.D.
Professor of Medicine and Director
Center for Tobacco Control Research and Education
Comprehensive Cancer Center
University of California, San Francisco
San Francisco, CA

D. Lawrence Kincaid, Ph.D.
Associate Scientist
Department of Health Behavior & Society
Johns Hopkins University
Baltimore, MD

John Pierce, Ph.D.
Professor, Family & Preventive Medicine
Cancer Prevention & Control Program
University of California, San Diego
San Diego, CA

Jonathan M. Samet, M.D., M.S.
Professor and Chairman
Department of Epidemiology
Bloomberg School of Public Health
Johns Hopkins University
Baltimore, MD

Series Editor

Stephen E. Marcus, Ph.D.
Monograph Series Editor
Epidemiologist
Tobacco Control Research Branch
Behavioral Research Program
Division of Cancer Control and Population Sciences
National Cancer Institute
Bethesda, MD

Finally, the editors would like to acknowledge the contributions of the editorial consultants and the current and former staff members of the American Institutes for Research, who provided technical and editorial assistance in the preparation of this monograph:

Margot Raphael and Paige Jackson, Project Managers
Richard S. Gallagher, Technical Editor
Elizabeth Bruce and Laurene Jackson, Editors
Michael W. Rollins, Karen Ward, and Francesca R. Oneto, Graphic Designers
Matthew J. Koenig, Project Associate