

Preventing Tobacco Use Among Young People

A Report of the Surgeon General

Executive Summary

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service
Centers for Disease Control and Prevention
National Center for Chronic Disease Prevention and Health Promotion
Office on Smoking and Health



Federal Recycling Program



Printed on Recycled Paper

Suggested Citation

U.S. Department of Health and Human Services. *Preventing Tobacco Use Among Young People: A Report of the Surgeon General*. Atlanta, Georgia: U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 1994.

Use of trade names is for identification only and does not constitute endorsement by the Public Health Service or the U.S. Department of Health and Human Services.



THE SECRETARY OF HEALTH AND HUMAN SERVICES
WASHINGTON, D.C. 20201

The Honorable Thomas S. Foley
Speaker of the House of Representatives
Washington, D.C. 20515

Dear Mr. Speaker:

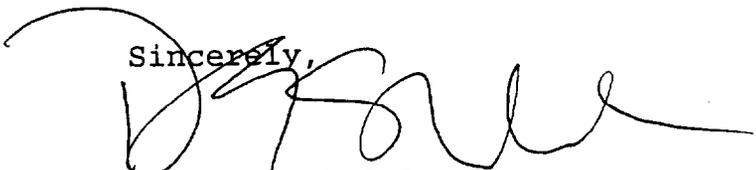
It is my pleasure to transmit to the Congress the Surgeon General's report on the health consequences of smoking entitled Preventing Tobacco Use Among Young People. This report is mandated by section 8(a) of the Public Health Cigarette Smoking Act of 1969 (Public Law 91-222) and includes the health effects of smokeless tobacco products as mandated by section 8(a) of the Comprehensive Smokeless Tobacco Health Education Act of 1986 (Public Law 99-252). The report was prepared by the Centers for Disease Control and Prevention's Office on Smoking and Health.

This report focuses on the vulnerable adolescent ages of 10 through 18 when most users start smoking, chewing, or dipping and become addicted to tobacco. It examines the health effects of early smoking and smokeless tobacco use, the reasons that young men and women begin using tobacco, the extent to which they use it, and efforts to prevent tobacco use by young people.

Smoking kills 434,000 Americans each year. Adolescent smoking and smokeless tobacco use are the first steps in this totally preventable public health tragedy. The facts are simple: one out of three adolescents in the United States is using tobacco by age 18, adolescent users become adult users, and few people begin to use tobacco after age 18. Preventing young people from starting to use tobacco is the key to reducing the death and disease caused by tobacco use. This report documents that intervention programs targeting the broad social environment of adolescents are both effective and warranted.

A great opportunity lies before us to prevent millions of premature deaths and improve the quality of lives. This report points out the overwhelming need in public health for efforts directed toward stopping young people before they start using tobacco.

Sincerely,



Donna E. Shalala

Enclosure



THE SECRETARY OF HEALTH AND HUMAN SERVICES
WASHINGTON, D.C. 20201

The Honorable Albert Gore, Jr.
President of the Senate
Washington, D.C. 20510

Dear Mr. President:

It is my pleasure to transmit to the Congress the Surgeon General's report on the health consequences of smoking entitled Preventing Tobacco Use Among Young People. This report is mandated by section 8(a) of the Public Health Cigarette Smoking Act of 1969 (Public Law 91-222) and includes the health effects of smokeless tobacco products as mandated by section 8(a) of the Comprehensive Smokeless Tobacco Health Education Act of 1986 (Public Law 99-252). The report was prepared by the Centers for Disease Control and Prevention's Office on Smoking and Health.

This report focuses on the vulnerable adolescent ages of 10 through 18 when most users start smoking, chewing, or dipping and become addicted to tobacco. It examines the health effects of early smoking and smokeless tobacco use, the reasons that young men and women begin using tobacco, the extent to which they use it, and efforts to prevent tobacco use by young people.

Smoking kills 434,000 Americans each year. Adolescent smoking and smokeless tobacco use are the first steps in this totally preventable public health tragedy. The facts are simple: one out of three adolescents in the United States is using tobacco by age 18, adolescent users become adult users, and few people begin to use tobacco after age 18. Preventing young people from starting to use tobacco is the key to reducing the death and disease caused by tobacco use. This report documents that intervention programs targeting the broad social environment of adolescents are both effective and warranted.

A great opportunity lies before us to prevent millions of premature deaths and improve the quality of lives. This report points out the overwhelming need in public health for efforts directed toward stopping young people before they start using tobacco.

Sincerely,



Donna E. Shalala

Enclosure

Foreword

This Surgeon General's report on smoking and health is the twenty-third in a series that was begun in 1964 and mandated by federal law in 1969. This report is the first in this series to focus on young people. It underscores the seriousness of tobacco use, its relationship to other adolescent problem behaviors, and the responsibility of all citizens to protect the health of our children.

Since 1964, substantial changes have occurred in scientific knowledge of the health consequences of smoking and smokeless tobacco use. Much more is also known about programs and policies that encourage nonsmoking behavior among adults and protect nonsmokers from exposure to environmental tobacco smoke. Although considerable gains have been made against smoking among U.S. adults, this progress has not been realized with young people. Onset rates of cigarette smoking among our youth have not declined over the past decade, and 28 percent of the nation's high school seniors are currently cigarette smokers.

The onset of tobacco use occurs primarily in early adolescence, a developmental stage that is several decades removed from the death and disability that are associated with smoking and smokeless tobacco use in adulthood. Currently, very few people begin to use tobacco as adults; almost all first use has occurred by the time people graduate from high school. The earlier young people begin using tobacco, the more heavily they are likely to use it as adults, and the longer potential time they have to be users. Both the duration and the amount of tobacco use are related to eventual chronic health problems. The processes of nicotine addiction further ensure that many of today's adolescent smokers will regularly use tobacco when they are adults.

Preventing smoking and smokeless tobacco use among young people is critical to ending the epidemic of tobacco use in the United States. This report examines the past few decades' extensive scientific literature on the factors that influence the onset of use among young people and on strategies to prevent this onset. To better understand adolescent tobacco use, this report draws not only on medical and epidemiologic research but also on behavioral and social investigations. The resulting examination of the advertising and promotional activities of the tobacco industry, as well as the review of research on the effects of these activities on young people, marks an important contribution to our understanding of the epidemic of tobacco use in the United States and elsewhere. In particular, this research on the social environment of young people identifies key risk factors that encourage tobacco use. The careful targeting of these risk factors—on a communitywide basis—has proven successful in preventing the onset and development of tobacco use among young people.

Philip R. Lee, M.D.
Assistant Secretary for Health
Public Health Service

David Satcher, M.D., Ph.D.
Director
Centers for Disease Control
and Prevention

Preface

*from the Surgeon General,
U.S. Department of Health and Human Services*

The public health movement against tobacco use will be successful when young people no longer want to smoke. We are not there yet. Despite 30 years of decline in overall smoking prevalence, despite widespread dissemination of information about smoking, despite a continuing decline in the social acceptability of smoking, substantial numbers of young men and women begin to smoke and become addicted. These current and future smokers are new recruits in the continuing epidemic of disease, disability, and death attributable to tobacco use. When young people no longer want to smoke, the epidemic itself will die.

This report of the Surgeon General, *Preventing Tobacco Use Among Young People*, delineates the problem in no uncertain terms. The direct effects of tobacco use on the health of young people have been greatly underestimated. The long-term effects are, of course, well established. The addictive nature of tobacco use is also well known, but it is perhaps less appreciated that early addiction is the chief mechanism for renewing the pool of smokers. Most people who are going to smoke are hooked by the time they are 20 years old.

Young people face enormous pressures to smoke. The tobacco industry devotes an annual budget of nearly \$4 billion to advertising and promoting cigarettes. As this report so well describes, there has been a continuing shift from advertising to promotion, largely because of banning cigarette ads from broadcast media. The effect of the ban is dubious, however, since the use of promotional materials, the sponsoring of sports events, and the use of logos in nontraditional venues may actually be more effective in reaching target audiences. Clearly, young people are being indoctrinated with tobacco promotion at a susceptible time in their lives.

A misguided debate has arisen about whether tobacco promotion “causes” young people to smoke—misguided because single-source causation is probably too simple an explanation for any social phenomenon. The more important issue is what effect tobacco promotion might have. Current research suggests that pervasive tobacco promotion has two major effects: it creates the perception that more people smoke than actually do, and it provides a conduit between actual self-image and ideal self-image—in other words, smoking is made to look cool. Whether causal or not, these effects foster the uptake of smoking, initiating for many a dismal and relentless chain of events.

On the brighter side, a large portion of this report is devoted to countervailing influences. We have the justification: there is a substantial scientific basis for primary prevention of cigarette smoking and smokeless tobacco use. A number of successful prevention programs, based on the psychological and behavioral factors that create susceptibility to smoking, are available. We have the means: the report defines a coordinated, effective, nonsmoking public health program for young people. And we have the will: schools, communities, legislatures, and public opinion all testify to the growing support for encouraging young people to avoid tobacco use.

The task is by no means easy. This report underscores the commitment all of us must have to the health of young people in the United States. Substantial work will be required to translate the justification, the means, and the will into a world in which young people no longer want to smoke. I, for one, relish the task.

M. Joycelyn Elders, M.D.
Surgeon General

Acknowledgments

This report was prepared by the Department of Health and Human Services under the general direction of the Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health.

David Satcher, M.D., Ph.D., Director, Centers for Disease Control and Prevention, Atlanta, Georgia.

Jeffrey P. Koplan, M.D., M.P.H., Director, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, Atlanta, Georgia.

Richard B. Rothenberg, M.D., M.P.H., Associate Director for Science, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, Atlanta, Georgia.

Michael P. Eriksen, Sc.D., Director, Office on Smoking and Health, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, Atlanta, Georgia.

The editors of the report were

Cheryl L. Perry, Ph.D., Senior Scientific Editor, Professor, Division of Epidemiology, School of Public Health, University of Minnesota, Minneapolis, Minnesota.

Gayle Lloyd, M.A., Managing Editor, Office on Smoking and Health, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, Atlanta, Georgia.

Frederick L. Hull, Ph.D., Technical Editor, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, Atlanta, Georgia.

Contributing authors were

David R. Arday, M.D., M.P.H., Preventive Medicine Specialist, Office on Smoking and Health, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, Atlanta, Georgia.

Dennis V. Ary, Ph.D., Research Scientist, Oregon Research Institute, and President, Oregon Center for Applied Science, Eugene, Oregon.

Michael Booth, Ph.D., Lecturer, Department of Public Health, University of Sydney, Sydney, Australia.

Dee Burton, Ph.D., Associate Director for Media Research, University of Illinois at Chicago Prevention Research Center, School of Public Health, Chicago, Illinois.

Frank J. Chaloupka IV, Ph.D., Assistant Professor, Department of Economics, The University of Illinois at Chicago, Chicago, Illinois.

K. Michael Cummings, Ph.D., M.P.H., Director, Smoking Control Program, Roswell Park Cancer Institute, New York State Department of Health, Buffalo, New York.

Joseph R. DiFranza, M.D., Director of Research, Fitchburg Family Practice Residency Program, Fitchburg, Massachusetts.

Roselyn Payne Epps, M.D., M.P.H., Expert, National Cancer Institute, National Institutes of Health, Bethesda, Maryland.

Jean L. Forster, Ph.D., M.P.H., Associate Professor, Division of Epidemiology, School of Public Health, University of Minnesota, Minneapolis, Minnesota.

Gary A. Giovino, Ph.D., Chief, Epidemiology Branch, Office on Smoking and Health, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, Atlanta, Georgia.

Elbert D. Glover, Ph.D., Director, Tobacco Research Center, Mary Babb Randolph Cancer Center, West Virginia University School of Medicine/Robert C. Byrd Health Sciences Center, Morgantown, West Virginia.

Jack E. Henningfield, Ph.D., Chief, Clinical Pharmacology Branch, Addiction Research Center, National Institute on Drug Abuse, National Institutes of Health, Baltimore, Maryland.

Lloyd Johnston, Ph.D., Program Director, Institute of Social Research, University of Michigan, Ann Arbor, Michigan.

Laura Kann, Ph.D., Chief, Surveillance Research Section, Division of Adolescent and School Health, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, Atlanta, Georgia.

R. Monina Klevens, D.D.S., M.P.H., Epidemiologist, Office on Smoking and Health, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, Atlanta, Georgia.

Edward Lichtenstein, Ph.D., Research Scientist, Oregon Research Institute, Eugene, Oregon.

Marc Manley, M.D., M.P.H., Chief, Public Health Applications Research Branch, National Cancer Institute, National Institutes of Health, Bethesda, Maryland.

Robert K. Merritt, M.A., Behavioral Scientist, Office on Smoking and Health, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, Atlanta, Georgia.

David E. Nelson, M.D., M.P.H., Medical Epidemiologist, Office on Smoking and Health, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, Atlanta, Georgia.

Donald Nutbeam, Ph.D., Professor, Department of Public Health, University of Sydney, Sydney, Australia.

Mario Orlandi, Ph.D., M.P.H., Chief, Division of Health Promotion Research, American Health Foundation, New York, New York.

Cheryl L. Perry, Ph.D., Professor, Division of Epidemiology, School of Public Health, University of Minnesota, Minneapolis, Minnesota.

Richard W. Pollay, Ph.D., Professor of Marketing and Curator, History of Advertising Archives, Faculty of Commerce, University of British Columbia, Vancouver, British Columbia.

Edward T. Popper, D.B.A., Professor of Business Administration and Marketing, Dean, School of Business and Professional Studies, Aurora University, Aurora, Illinois.

Jonathan M. Samet, M.D., Professor of Medicine, University of New Mexico, School of Medicine, Albuquerque, New Mexico.

Herbert H. Severson, Ph.D., Research Scientist, Oregon Research Institute, Eugene, Oregon.

Dana M. Shelton, M.P.H., Epidemiologist, Office on Smoking and Health, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, Atlanta, Georgia.

Charles W. Warren, Ph.D., Sociologist, Division of Adolescent and School Health, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, Atlanta, Georgia.

John K. Worden, Ph.D., Research Professor, Department of Family Practice and Office of Health Promotion Research, University of Vermont, Burlington, Vermont.

Reviewers were

David G. Altman, Ph.D., Senior Research Scientist, Stanford Center for Research in Disease Prevention, Stanford University, Palo Alto, California.

Karl E. Bauman, Ph.D., Professor, Department of Health Behavior and Health Education, School of Public Health, University of North Carolina, Chapel Hill, North Carolina.

Richard F. Beltramini, Ph.D., Associate Professor, Department of Marketing, Arizona State University, Tempe, Arizona.

Glen Bennett, M.P.H., Coordinator, Smoking Education Program, National Heart, Lung and Blood Institute, National Institutes of Health, Bethesda, Maryland.

Neal Benowitz, M.D., Professor of Medicine, University of California at San Francisco, San Francisco, California.

Gilbert J. Botvin, Ph.D., Professor and Director, Institute for Prevention Research, Cornell University Medical College, New York, New York.

Robert G. Brubaker, Ph.D., Professor, Department of Psychology, Eastern Kentucky University, Richmond, Kentucky.

David M. Burns, M.D., Professor of Medicine, University of California, San Diego School of Medicine, San Diego, California.

Laurie Chassin, Ph.D., Professor, Arizona State University, Department of Psychology, Tempe, Arizona.

Arden G. Christen, D.D.S., Professor of Oral Biology, Department of Oral Biology, Indiana University School of Dentistry, Indianapolis, Indiana.

Robert J. Collins, D.M.D., M.P.H., Chief Dental Officer, Public Health Service, Indian Health Service, Rockville, Maryland.

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

K. Michael Cummings, Ph.D., M.P.H., Director, Smoking Control Program, Roswell Park Cancer Institute, New York State Department of Health, Buffalo, New York.

Dorynne J. Czechowicz, M.D., Associate Director for Medical and Professional Affairs, Division of Clinical Research, National Institute on Drug Abuse, National Institutes of Health, Rockville, Maryland.

Michael M. Daube, Public Service Commission, Perth, Australia.

Preventing Tobacco Use Among Young People

Ronald M. Davis, M.D., Chief Medical Officer, Michigan Department of Public Health, Lansing, Michigan.

John Elder, Ph.D., M.P.H., Professor of Health Promotion, Graduate School of Public Health, San Diego State University, San Diego, California.

Paul Fischer, M.D., Editor, *Journal of Family Practice*, Augusta, Georgia.

Michael C. Fiore, M.D., M.P.H., Director, Center for Tobacco Research and Intervention, University of Wisconsin Medical School, Madison, Wisconsin.

Brian R. Flay, D. Phil., Professor and Director, Prevention Research Center, School of Public Health, University of Illinois, Chicago, Illinois.

Erica Frank, M.D., M.P.H., Assistant Professor, Department of Community Preventive Medicine/ Department of Medicine, Emory University School of Medicine, Atlanta, Georgia.

Betsy Gelb, Ph.D., Director, Institute for Health Care Marketing, and Professor of Marketing, University of Houston, Houston, Texas.

Samuel S. Gidding, M.D., Associate Professor of Pediatrics, Northwestern University Medical School, Division of Cardiology, Children's Memorial Hospital, Chicago, Illinois.

Thomas Glynn, Ph.D., Acting Associate Director, Cancer Control Science Program, National Cancer Institute, National Institutes of Health, Bethesda, Maryland.

Ellen R. Gritz, Ph.D., Professor and Chair, Department of Behavioral Science, The University of Texas M.D. Anderson Cancer Center, Houston, Texas.

Sandra W. Headen, Ph.D., Assistant Professor of Research, Department of Health Behavior and Health Education, School of Public Health, Chapel Hill, North Carolina.

Richard B. Heyman, M.D., Committee on Substance Abuse, American Academy of Pediatrics, and Suburban Pediatric Associates, Inc., Cincinnati, Ohio.

David Hill, Ph.D., Director, Anti-Cancer Council of Victoria, Victoria, Australia.

Thomas Houston, M.D., Director, Department of Preventive Medicine and Public Health, American Medical Association, Chicago, Illinois.

John Hughes, M.D., Professor, Human Behavioral Pharmacology Laboratory, Departments of Psychiatry, Psychology, and Family Practice, University of Vermont, Burlington, Vermont.

Sandra MacD. Hunter, Ph.D., Research Professor, Tulane University Medical Center, Department of Applied Health Sciences, School of Public Health and Tropical Medicine, New Orleans, Louisiana.

Dushanka V. Kleinman, D.D.S., Deputy Director, National Institute of Dental Research, National Institutes of Health, Bethesda, Maryland.

Norman A. Krasnegor, Ph.D., Chief, Human Learning and Behavior Branch, National Institute of Child Health and Human Development, National Institutes of Health, Bethesda, Maryland.

Edward Lichtenstein, Ph.D., Research Scientist, Oregon Research Institute, Eugene, Oregon.

Douglas S. Lloyd, M.D., M.P.H., Associate Administrator for Public Health Practice, Health Resources and Services Administration, Department of Health and Human Services, Rockville, Maryland.

Russell V. Luepker, M.D., M.S., Professor and Head, Division of Epidemiology, School of Public Health, University of Minnesota, Minneapolis, Minnesota.

William R. Lynn, Public Health Advisor, Cancer Control Science Program, National Cancer Institute, National Institutes of Health, Bethesda, Maryland.

Willard Manning, Ph.D., Professor, Institute for Health Services Research, School of Public Health, University of Minnesota, Minneapolis, Minnesota.

Stephen E. Marcus, Ph.D., Senior Epidemiologist, National Institute of Dental Research, National Institutes of Health, Bethesda, Maryland.

J. Michael McGinnis, M.D., Deputy Assistant Secretary for Health, Office of Disease Prevention and Health Promotion, Department of Health and Human Services, Washington, D.C.

Ann D. McNeil, Ph.D., Manager, Smoking Program, Health Education Authority, London, England.

David Murray, Ph.D., Professor, Division of Epidemiology, School of Public Health, University of Minnesota, Minneapolis, Minnesota.

Thomas Novotny, M.D., M.P.H., Centers for Disease Control and Prevention Liaison Officer and Assistant Dean for Public Health Practice, School of Public Health, University of California, Berkeley South, Berkeley, California.

Patrick O'Malley, Ph.D., Research Scientist, Institute for Social Research, Survey Research Center, University of Michigan, Ann Arbor, Michigan.

Guy S. Parcel, Ph.D., Professor and Director, Center for Health Promotion and Research Development, University of Texas Health Science Center, Houston, Texas.

Joseph Patterson, Director of Government Relations and Special Projects, American Cancer Society, Atlanta, Georgia.

Terry F. Pechacek, Ph.D., Associate Professor, School of Medicine and Biomedical Sciences, State University of New York, Buffalo, New York.

Michael Pertschuk, J.D., Co-Director, The Advocacy Institute, Washington, D.C.

John P. Pierce, Ph.D., Associate Professor and Head, Cancer Prevention and Control, University of California, San Diego, California.

John M. Pinney, Chief Executive Officer, Corporate Health Policies Group, Bethesda, Maryland.

Patrick Remington, M.D., State Medical Officer and Epidemiologist, Chronic Disease and Health Promotion Section, Wisconsin Department of Health and Social Services, Madison, Wisconsin.

John W. Richards, Jr., M.D., Associate Editor, *Journal of Family Practice*, Augusta, Georgia.

Julius Richmond, M.D., John D. McArthur Professor of Health Policy Emeritus, Harvard Medical School, Boston, Massachusetts.

Nancy A. Rigotti, M.D., Assistant Professor of Medicine and Preventive Medicine, Harvard Medical School and Associate Director, Quit Smoking Service, Massachusetts General Hospital, Boston, Massachusetts.

Jonathan M. Samet, M.D., Professor of Medicine, University of New Mexico, School of Medicine, Albuquerque, New Mexico.

Thomas C. Schelling, Ph.D., Distinguished Professor of Economics and Public Affairs, Department of Economics/School of Public Affairs, University of Maryland, College Park, Maryland.

Russell Sciandra, M.A., Project Manager, American Stop Smoking Intervention Study for Cancer Prevention, New York State Department of Health, Albany, New York.

Donald R. Shopland, Coordinator, Smoking and Tobacco Control Program, National Cancer Institute, National Institutes of Health, Bethesda, Maryland.

Vivian L. Smith, M.S.W., Acting Director, Center for Substance Abuse Prevention, Substance Abuse and Mental Health Services Administration, Rockville, Maryland.

Jesse Steinfeld, M.D., Surgeon General, U.S. Public Health Service, 1969-1973, San Diego, California.

Steve Sussman, Ph.D., Associate Professor, Institute for Health Promotion and Disease Prevention Research, University of Southern California, Alhambra, California.

Ira B. Tager, M.D., Professor of Epidemiology, University of California, Berkeley, School of Public Health, Berkeley, California.

Larry Wallack, Dr. P.H., Professor, School of Public Health, University of California at Berkeley, Berkeley, California.

Kenneth E. Warner, Ph.D., Professor and Chair, Department of Public Health Policy and Administration, School of Public Health, University of Michigan, Ann Arbor, Michigan.

Jeffrey Wasserman, Ph.D., Associate Director, Health Policy Research, SysteMetrics, Santa Barbara, California.

Scott T. Weiss, M.D., Associate Professor of Medicine, Harvard School of Public Health, and Channing Laboratory, Harvard Medical School, and Brigham and Women's Hospital, Boston, Massachusetts.

Judith Wilkenfeld, J.D., Assistant Director, Division of Advertising Practices, Federal Trade Commission, Washington, D.C.

Deborah M. Winn, Ph.D., Chief, Analytical Studies and Decision Systems Branch, Epidemiology and Oral Disease Prevention Program, National Institute of Dental Research, National Institutes of Health, Bethesda, Maryland.

Ernst L. Wynder, M.D., President, American Health Foundation, New York, New York.

Other contributors were

Deborah Anker, M.A., Graphic Artist, Circle Solutions, Inc., McLean, Virginia.

Victoria Agee, M.L.S., Agee Indexing Services, Albuquerque, New Mexico.

Kelly L. Byrne, Word Processing Specialist, Circle Solutions, Inc., McLean, Virginia.

Michele Chang, Special Assistant to the Director, Office on Smoking and Health, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, Atlanta, Georgia.

Jeffrey H. Chrismon, Computer Programmer, The Orkand Corporation, Atlanta, Georgia.

Anita Cowan, M.L.S., Director, Information Systems and Services Group, Circle Solutions, Inc., McLean, Virginia.

Preventing Tobacco Use Among Young People

Karen M. Deasy, Assistant Director (Liaison), Office on Smoking and Health, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, Washington, D.C.

Susan R. Derrick, Editorial Assistant, Office on Smoking and Health, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, Atlanta, Georgia.

Alice A. DeVierno, M.L.S., Manager, Technical Information Center, Office on Smoking and Health, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, Atlanta, Georgia.

Elizabeth D. Eckl, M.S.L.S., Information Specialist, Circle Solutions, Inc., McLean Virginia.

Joseph Gfroerer, Statistician, Division of Epidemiology and Prevention Research, National Institute on Drug Abuse, National Institutes of Health, Rockville, Maryland.

Donna Gloria, Secretary, HCR Consulting Group, Atlanta, Georgia.

Lakshmi M. Grama, M.L.S., Database Advisor, Circle Solutions, Inc., McLean, Virginia.

Janet C. Greenblatt, Statistician, Office of Applied Studies, Substance Abuse and Mental Health Services Administration, Washington, D.C.

William A. Harris, Computer Specialist, Division of Adolescent and School Health, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, Atlanta, Georgia.

Lillian Hatch, M.S.L.S., Information Specialist, Circle Solutions, Inc., McLean, Virginia.

Corinne G. Husten, M.D., M.P.H., Medical Officer, Office on Smoking and Health, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, Atlanta, Georgia.

Gwendolyn A. Ingraham, Writer-Editor, National Center for Injury Prevention and Control, Centers for Disease Control and Prevention, Atlanta, Georgia.

Jeffrey C. Johnson, Computer Specialist, Division of Epidemiology, School of Public Health, University of Minnesota, Minneapolis, Minnesota.

Doreen Johnson-Kloehn, M.A., Scientist, Division of Epidemiology, School of Public Health, University of Minnesota, Minneapolis, Minnesota.

Steven C. Joseph, M.D., Dean, School of Public Health, University of Minnesota, Minneapolis, Minnesota.

Sarah Knowlton, J.D., Attorney-Advisor, Office of the General Counsel, Centers for Disease Control and Prevention, Atlanta, Georgia.

Kelli Komro, M.S.W., M.P.H., Doctoral Student, Division of Epidemiology, School of Public Health, University of Minnesota, Minneapolis, Minnesota.

Sushil Kriplani, M.A., Consultant, Minneapolis, Minnesota.

Mark J. Leech, M.A., Information Specialist, Circle Solutions, Inc., McLean, Virginia.

Peggy Lytton, Editor, Circle Solutions, Inc., McLean, Virginia.

Karen McCloud, Editorial Assistant, HCR Consulting Group, Atlanta, Georgia.

Bonnie L. Manning, Executive Secretary, Division of Epidemiology, School of Public Health, University of Minnesota, Minneapolis, Minnesota.

William L. Marx, Technical Information Specialist, Office on Smoking and Health, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, Atlanta, Georgia.

Daniel F. McLaughlin, Editor, Circle Solutions, Inc., McLean, Virginia.

Jennifer A. Michaels, M.L.S., Technical Information Specialist, Office on Smoking and Health, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, Atlanta, Georgia.

Nancy A. Miltenberger, M.A., Editor, Circle Solutions, Inc., McLean, Virginia.

Kimberly J. Miner, Ph.D., Postdoctoral Fellow, Division of Epidemiology, School of Public Health, University of Minnesota, Minneapolis, Minnesota.

Paul D. Mowrey, M.S., Research Scientist, Battelle Memorial Institute, Atlanta, Georgia.

Suong Nguyen, Student, School of Public Health, San Diego University, San Diego, California.

Gwen J. Nunnally, Secretary, Office on Smoking and Health, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, Atlanta, Georgia.

Cathie M. O'Donnell, Project Director, Circle Solutions, Inc., McLean, Virginia.

J.P. Peddicord, M.S., Computer Scientist, Office on Smoking and Health, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, Atlanta, Georgia.

Richard Ray, Director of Computer Services, Circle Solutions, Inc., McLean, Virginia.

John Robey, Word Processing Specialist, Circle Solutions, Inc., McLean, Virginia.

Kathleen L. Schroeder, D.D.S., Associate Professor of Oral Pathology, West Virginia University School of Medicine, Morgantown, West Virginia.

Maggie Shelby, Secretary, HCR Consulting Group, Atlanta, Georgia.

Michael B. Siegel, M.D., M.P.H., Epidemiologist, Office on Smoking and Health, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, Atlanta, Georgia.

Renee E. Sieving, M.S.N., Doctoral Student, Division of Epidemiology, School of Public Health, University of Minnesota, Minneapolis, Minnesota.

Michael J. Stauffer, M.P.H., Doctoral Student, Division of Epidemiology, School of Public Health, University of Minnesota, Minneapolis, Minnesota.

Scott L. Tomar, D.M.D., Dr.P.H., Epidemiologist, Office on Smoking and Health, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, Atlanta, Georgia.

Traci L. Toomey, M.P.H., Doctoral Student, Division of Epidemiology, School of Public Health, University of Minnesota, Minneapolis, Minnesota.

Laura Williams, Student, Northeast Ohio University College of Medicine, Rootstown, Ohio.

Rebecca B. Wolf, M.A., Program Analyst, Office of Program Planning and Evaluation, Centers for Disease Control and Prevention, Atlanta, Georgia.

Bao-Ping Zhu, Ph.D., Research Scientist, Battelle Memorial Institute, Atlanta, Georgia.