PAHO HQ Library Cataloguing-in-Publication Data

Jenkins, C. David
Building better health: a handbook for behavioral change
(Scientific and Technical Publication Nº 590)

ISBN 92 75 11590 7

I. Title  II. (Series)
III. Pan American Health Organization

1. PRIMARY PREVENTION
2. HEALTH PROMOTION
3. EDUCATION, PUBLIC HEALTH PROFESSIONAL
4. BEHAVIORAL MEDICINE-education
5. MANUALS

NLM WA590.J52b 2003

The Pan American Health Organization welcomes requests for permission to reproduce or translate its publications, in part or in full. Applications and inquiries should be addressed to the Publications Program, Pan American Health Organization, Washington, D.C., U.S.A., which will be glad to provide the latest information on any changes made to the text, plans for new editions, and reprints and translations already available.

© Pan American Health Organization, 2003

Publications of the Pan American Health Organization enjoy copyright protection in accordance with the provisions of Protocol 2 of the Universal Copyright Convention. All rights are reserved.

The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of the Secretariat of the Pan American Health Organization concerning the status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

The mention of specific companies or of certain manufacturers' products does not imply that they are endorsed or recommended by the Pan American Health Organization in preference to others of a similar nature that are not mentioned. Errors and omissions excepted, the names of proprietary products are distinguished by initial capital letters.
# Table of Contents

Prologue ................................................................. xiii
Preface ................................................................. xv
Acknowledgments .................................................... xvii

## PART I. LAYING THE FOUNDATION

1. General Principles of Health Promotion and Disease Prevention ........ 3
   - Human and Economic Values of Prevention .......................... 3
   - Disease Prevention and Health Promotion ......................... 6
   - Three Levels of Prevention ........................................... 6
     - Primary Prevention ..................................................... 6
     - Secondary Prevention ............................................... 7
     - Tertiary Prevention .................................................. 8
   - The Actual Causes of Death ......................................... 8
   - Box: The Ten “True” Leading Causes of Death ..................... 8
   - The Next Step Needed to Advance “Health for All” ............... 9

2. Principles of Community Health Intervention .......................... 11
   - Box: Puzzles to Solve for Building Better Health ................ 11
   - Strategies for Identifying Causes .................................. 11
     - Agent ........................................................................ 11
     - Host ........................................................................ 12
     - Environment ............................................................ 13
     - Interpersonal Level .................................................... 13
     - Social/economic Level ................................................ 14
     - Cultural/ideological Level .......................................... 15
   - Using the Epidemiologic Triangle in Prevention Programs ....... 17
   - Multiple Contributing Causes ......................................... 18
   - Selecting Which Conditions to Prevent .............................. 19
   - Selecting the Target Populations to Receive Help ............... 21
   - Working with the Whole Community or Only with the
     High-risk Group ......................................................... 24
   - The Prevention Paradox ................................................ 27
   - Specifying the Changes in Behaviors and Environments
     Required to Reach the Health Goals ................................. 28

## PART II. IMPROVING HEALTH THROUGHOUT THE LIFE CYCLE

3. Infants and Children Up to 14 Years Old ............................ 33
   - In Pregnancy ................................................................ 33
   - Risk Factors for Low Birthweight, Fetal Anomalies,
     and Infant Deaths ...................................................... 36
   - Social Risk Factors .................................................... 36
   - Personal Biological Factors .......................................... 36
Screening by Observation ........................................... 125
  Appearance and Behavior ........................................ 125
Clinical and Laboratory Screens and Prophylaxes. ............. 126
  Height and Weight Measurement .............................. 126
  Blood Pressure Measurement ................................. 126
  Mammogram .................................................... 126
  Pap Smears ....................................................... 126
  Skin Lesions ................................................... 127
  Tuberculosis .................................................... 127
  Oral Health ..................................................... 127
  Sexually Transmitted Infections .............................. 127
  Ischemic Heart Disease ....................................... 127
  Tetanus-Diptheria ............................................... 128
  Hepatitis B ..................................................... 128
  Digestive Cancers .............................................. 128

6. The Older Years: 65 to 100 .................................... 129
  Health Goals for the Later Years ............................... 129
Major Health Problems at These Ages ........................... 131
  Mortality ......................................................... 131
  General Systemic Diseases and Disabilities .................. 132
  Box: Leading Noncommunicable Disease Causes of Disability Worldwide ........................................... 132
  Risk Factors for Major Causes of Death and Disability ..... 132
  Protective Factors for Major Causes of Death and Disability ... 133
  Musculoskeletal Conditions .................................... 134
  Arthritis ......................................................... 134
  Osteoporosis .................................................... 135
  Preserving Physical and Mental Functioning .................. 136
  Protective Factors for Mental Abilities ....................... 137
  Treating Pain and Suffering ................................... 137
  Box: Action Checklist for General Preventive Measures for Ages 65 Years and Older .................................. 138
  Community Action for Older Citizens ........................ 139

PART III. BETTER UNDERSTANDING THE LEADING FORMS OF DEATH AND DISABILITY

7. Brain and Behavioral Disorders .................................. 143
  Disabilities of Brain and Behavior .............................. 143
  Who is Vulnerable? .............................................. 145
  A Healthy Scenario ............................................. 145
  Teasing Out the Causes of Brain and Behavioral Disorders ... 147
  Box: Sources that Influence the Risk of Brain and Behavioral Disorders ........................................... 148
  Eleven Crossroads where Risk and Protective Factors Meet ... 150
  Genetic Strengths and Vulnerabilities .......................... 150
  The Intrauterine Environment .................................. 151
Pulmonary Heart Disease .............................................. 183
Box: Prevention of Rheumatic Heart Disease .............. 184
Risk Factors ......................................................... 185
Protective Factors ................................................. 185
Nutritional Heart Diseases ....................................... 186
Hypertension and Hypertensive Heart Disease .......... 187
Risk Factors ......................................................... 189
Protective Factors ................................................. 191
Ischemic Heart Disease ........................................... 192
Risk Factors ......................................................... 192
Protective Factors ................................................. 195
Cerebrovascular Diseases—"Stroke" ......................... 196
Risk Factors ......................................................... 197
Box: Warning Signals of Transient Ischemic Attacks .... 198
Protective Factors ................................................. 199
Protection Summary ............................................... 199

9. Cancers ............................................................ 201
Digestive System Cancers ........................................... 202
Stomach Cancer ..................................................... 203
Risk Factors ......................................................... 203
Protective Factors ................................................. 204
Cancers of the Colon and Rectum .......................... 205
Risk Factors ......................................................... 205
Protective Factors ................................................. 206
Cancers of the Oral Cavity, Esophagus, Larynx, and Pharynx . 207
Risk Factors ......................................................... 207
Protective Factors ................................................. 208
Cancer of the Liver ................................................ 208
Prevention ............................................................ 209
Cancers of the Trachea, Bronchus, and Lung .............. 209
Risk Factors ......................................................... 211
Protective Factors ................................................. 212
Social Influences ................................................... 212
Cancer of the Bladder ............................................. 213
Skin Cancers ........................................................ 214
Risk Factors ......................................................... 215
Protective factors .................................................. 216
Secondary Prevention ............................................ 216
Cancers of the Uterine Cervix ................................. 217
Risk Factors ......................................................... 218
Protective Factors ................................................. 219
Secondary Prevention ............................................ 219
Breast Cancer ...................................................... 220
Risk Factors ......................................................... 221
Protective Factors ................................................. 222
Secondary Prevention ............................................ 223
Prostate Cancer .................................................... 224
Secondary Prevention ............................................ 225
10. Chronic Lung Disorders: ................................. 227
   Chronic Obstructive Lung Diseases ................. 227
   Indoor Air Pollution ................................ 228
   Outdoor Air Pollution ................................ 229
   Asthma ................................................. 230
   Prevention ......................................... 231
   First Steps to Control Environmental Air Pollution ................. 232
   Secondary Prevention of Chronic Obstructive Pulmonary Disease ................. 232
   Tuberculosis ........................................ 233

11. Injuries and Violence: ................................. 237
   Motor Vehicle Injuries ................................ 239
   The Cultural History of Vehicle Injuries ................. 239
   The Educational Challenge ............................. 240
   The Engineering Challenge ............................ 242
   The Enforcement Challenge ............................ 244
   Important Infractions from a Safety Viewpoint .......... 244
   Cross-cutting Initiatives ............................. 246
   Carbon Monoxide in Vehicles .......................... 248
   Looking Ahead ....................................... 248
   Suicide and Violence ................................ 249
   Risk Factors ......................................... 251

PART IV. INTERVENCING MORE EFFECTIVELY

12. Principles and Methods of Behavior Change ................. 255
   Ethical and Strategic Principles ...................... 255
   Mobilizing the Community ............................ 257
   Overlapping Theories of Behavior Change ................. 261
   Overall Orientation .................................. 262
   Making Programs Happen and Flourish ................. 264
   Collecting Information for Planning and Intervention ................. 265
   Attributes of Group to Be Reached .................... 267
   Attributes of the Disease or Disorder ................. 268
   Attributes of the Health Action ....................... 269
   Making a Behavioral Diagnosis ......................... 271
   Preventing Programs Successfully ...................... 272
   Communicating Health Messages ....................... 274
   Twelve Channels for Communication .................... 274
   Tailoring Programs to the Targeted Group ................. 275
   A Sampling of Self-directed Behavior Change Tactics ................. 277
   Spreading New Health Behaviors through the Community ................. 279
   Innovators ......................................... 280
   Early Adopters ...................................... 281
   Early Majority ...................................... 282
   Late Majority ...................................... 282

TABLE OF CONTENTS
The Resistant Remainder ........................................ 283
Stages in Health Behavior Change ............................ 284

13. Getting Specific: Actions to Reverse the Most Destructive Risk Forces ................................. 287
Malnutrition .................................................... 287
Diagnosing and Treating Hunger Epidemics ............... 290
Inadequate Water Supply, Sanitation Services, and Personal and Domestic Hygiene ............................ 292
Clean Water Supply .......................................... 292
Box: Safe Water Measures that Community Might Consider .......................... 293
Sanitation .................................................... 293
Personal and Domestic Hygiene ................................ 294
Handwashing .................................................. 294
Box: The Message Today ..................................... 294
Food Handling ................................................ 295
Household Cleanliness ....................................... 295
Tobacco Use ................................................... 295
Effects on Users ............................................. 296
Effects on Nonusers .......................................... 296
In Utero .................................................... 296
In Infancy ..................................................... 297
In Childhood ............................................... 297
In Adults .................................................... 298
Three Preventive Strategies .................................... 298
Primordial Prevention ...................................... 299
Primary Prevention .......................................... 299
Secondary Prevention ...................................... 300
Box: Recommendations for Strengthening Smoking Cessation Efforts .......................... 302
Unsafe Sex .................................................... 302
Disease Burden ............................................. 302
Populations at Risk .......................................... 304
Risk Factors ................................................ 304
The Main Protective Factor: The Brain ....................... 305
Causes of Sexual Behavior ................................... 306
Psychosocial Determinants .................................. 306
Social/Environmental Determinants ......................... 309
An Unhurried Decision-making Process ...................... 310
Primary Prevention .......................................... 312
Secondary Prevention ...................................... 313
Suggestions for STI Counselors .............................. 314
Restructuring STI Outreach ................................ 315
Newer Strategies for Efficient Treatment .................... 316
Alcohol Use ................................................... 317
Hypertension ................................................ 318
Occupational Health Hazards ............................... 318
Physical Inactivity/Sedentary Lifestyle ........................................... 321
Box: A Frequently Prescribed Exercise Program ............................ 322
Lack of Essential Primary Health Care Services ......................... 322
Immunizations against Infectious Diseases ................................. 323
Maternal and Child Health Services ........................................... 323
Poverty ..................................................................................... 324
Is Income Inequality an Independent Risk Factor? ...................... 325
Implications for Social Policy ..................................................... 328

PART V. THE AUTHOR’S EPILOGUE
   Confronting Basic Decisions .................................................. 333
   Can the World, My Community, or My Family Achieve
   Better Health? ................................................................. 333
   Should We Wait for New Discoveries in Medical Sciences?
   New “Magic Bullet Vaccines?” .............................................. 333
   What Are the Health Goals Implied in this Handbook?
   What Might Be the Handbook’s Mission Statement? ................ 335
   Deciding between Prevention and Advanced Treatment ............ 335
   How Can We Do Both: Prevent and Treat? ............................. 336
   Reducing Costs of Each Unit of Service Rendered ................... 337
   Increasing Self-care and Reducing Demand on Facilities
   and Professionals ............................................................. 338
   Setting Cost-effective Priorities ............................................. 338
   What Might the Future Hold? ................................................. 339
   Population and Income Projections ....................................... 340
   Health Projections ........................................................... 341
   Protective Forces to Advance Health ...................................... 343
   Community and State Responsibilities .................................. 344
   Group and Family Responsibilities ....................................... 345
   Individual Responsibilities .................................................... 346
   Steps Along the Road .......................................................... 347
   Take One Step At-a-time ..................................................... 347
   Enlisting New Kinds of Health Workers .................................. 349
   Saving Lives is More than Reducing Mortality ......................... 352

References and Additional Resources .......................................... 355
Index ....................................................................................... 371
Prologue

At the beginning of the 21st century, our Region’s health report card is mixed. On the plus side, the countries of the Americas have made clear gains in “Health for All” goals. Infant mortality rates are lower, for example, and this, in turn, has helped to add six years to life expectancy at birth in the last two decades. On the other hand, these gains have not been evenly attained throughout the Region, and some countries, as well as some areas and population groups within countries, have been deprived of these benefits. The fast pace of aging and urbanization has resulted in an exponential rise in chronic noncommunicable diseases, adding to the yet unsolved toll in death and disability wrought by communicable diseases, especially among the poor.

Already, noncommunicable diseases are the leading cause of disability and premature mortality in the vast majority of countries of the Americas. If projections hold, chronic degenerative diseases, lifestyle-related diseases, and violence will continue to take up an increasingly greater share of death and suffering, impairing the quality of life among the peoples of the Americas. They will also overtax health services and drive up health care costs. The good news is that many of these diseases and conditions can be prevented. At the very least, their development can be delayed or slowed, their severity mitigated. Because many of their determinants and risk factors respond to behavior change, health promotion holds the key in this battle.

Throughout its 100 years of work in and for health with the countries of the Americas, the Pan American Health Organization (PAHO) has championed the prevention of disease and the enhancement of health. Following the “Ottawa Charter for Health Promotion” issued by the First International Conference on Health Promotion in 1986, PAHO’s health promotion efforts focused and gathered momentum. Since then, the Organization has worked with its Member States to fulfill the Charter’s health promotion tenets, pursuing efforts that have included the fostering of healthy public policies, creation of supportive environments, strengthening of community actions, and development of personal skills. The book that you hold in your hands is PAHO’s latest contribution to its overall health promotion effort.

The Handbook blends proven disease prevention practices and behavioral science principles into a one-of-a-kind, hands-on manual. Its pages spell out how
to think about developing effective health promotion/disease prevention pro-
grams and how to carry them out so that they yield the best possible results. 
The book explores the causes of morbidity, disability, and premature mortality 
for each stage in the life cycle—from infancy to the elder years. The Handbook 
also looks at the protective and risk factors for each of the leading forms of 
death and disability, and recommends easily implemented, practical preventive 
interventions.

Health professionals battling to “add years to life and life to years” will find 
Building Better Health: A Handbook of Behavioral Change an invaluable tool in 
their work. In addition, national, provincial, and local health authorities will find 
it useful in planning health promotion programs. We hope that it also will be-
come a popular textbook for teaching and training new generations of health 
workers.

We are grateful to the author, Dr. C. David Jenkins, a well-known professor of 
psychiatry, epidemiology, and preventive medicine and community health for 
partnering with PAHO to issue this important and useful work.

Dr. Mirta Roses Periago
Director
Preface

Dear Reader:

Welcome to Building Better Health: A Handbook of Behavioral Change.

Today, the nations of the world devote huge sums of money to “health care.” Sadly, about 98% of these budgets are actually spent on “disease care” and only about 1% or 2% on genuine care of health. In contrast, this Handbook devotes itself fully to health care, defined as improving and maintaining good health—which consists of feeling well and functioning well, physically, mentally and interpersonally; as well as having a high likelihood of continuing to live healthfully in the future.

The highway to “Health for All” for the 21st Century will be constructed by activating within communities already proven methods for advancing health and preventing disease and disability. The science is known, now its utilization must spread. Most of the programs we present are low technology, but people-intensive. Hence, they are sustainable even where financial resources are limited.

This book has been written by many people: those who have asked “What if?” and “Why not?”; those whose words and data I have read; and especially those in many parts of the world, in high and low places, to whom I have listened carefully over the years. Actually, these thoughtful people are much like you who read this Handbook. And I sincerely thank them. My task has been like that of a chef—to take these rich ingredients and blend them in a way that is appealing, nourishing, and energizing.

This Handbook was written for many kinds of persons, in many different countries, professions, and community niches. You may be a health worker in the countryside, a physician in a health clinic, a visiting nurse, a student in the health professions, someone updating their knowledge of community problems, a school teacher, a town council member, a dedicated parent, or someone else beyond my imagination. In any case, if you read this book, you are a student and a seeker. I am both of those, so we should get along well.

The Handbook covers many topics. I’m not an expert in most of them, but I’ve compared multiple resources and tried to select the better-validated and more
practical wheat from acres and hectares of chaff. Expert reviewers have checked over each chapter, and I express my appreciation to all of them here. I am responsible for whatever errors may remain. You will find that reading the Handbook is different from reading a medical or public health textbook. I’ve tried to keep it fresh, personal, concrete, motivating, and sometimes even prodding. Comprehensive indexing makes the Handbook easier to use.

So, please—enjoy! Compare your ideas with those presented here, find new directions, see what actions can address the needs of the people around you. Be captured by a sense of urgency and an assurance that you can start this journey to a healthier world. Bring others with you to prevent disease and build health by means of behavioral and social changes.

The sands of the Twenty-First Century await our footprints. . . .

Respectfully yours,

C. David Jenkins, Ph.D.
Acknowledgments

The author extends deep appreciation:

To stimulating and enabling mentors: John C. Cassel, MB, BCh; Irene Case Sherman, MD, Ph.D.; Stephen J. Zyzanski, Ph.D., Robert M. Rose, MD, Don W. Micks, Sc.D., and others at Universities and health agencies.

To everyday mentors in Chicago and Boston ghettos, in Suriname rainforests, in the South Yemen desert, and to patients in public health and medical clinics.


To Diane K. Godwin, for diligent work and solid advice on the many revisions of the manuscript.

And, especially to my wife, Perry, for her editorial help and for sustaining me during five years of work on this book.

C. David Jenkins, Ph.D.