HEALTHY PEOPLE 2000

National Health Promotion and Disease Prevention Objectives

CONFERENCE EDITION: SUMMARY

DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service

Office of the Assistant Secretary
for Health
Washington DC 20201

The Honorable Louis W. Sullivan
Secretary of Health and Human Services

Dear Mr. Secretary:

I am pleased to submit to you Healthy People 2000: National Health Promotion and Disease Prevention Objectives. This document contains a national strategy for significantly improving the health of the Nation over the coming decade. It addresses the prevention of major chronic illnesses, injuries, and infectious diseases.

The Public Health Service has served as leader, convener, and facilitator over the three-year period of this report's development. However, it can truly be labelled a national, not just a Federal, initiative to focus existing knowledge, resources, and commitment to capitalize on our opportunities to prevent premature death and needless disease and disability. Thousands of professionals from many different disciplines, as well as many health advocates and consumers, have contributed substantially to produce this set of measurable targets to be achieved by the year 2000. They have voluntarily testified at public hearings, written eloquent letters and papers, engaged in extensive reviews of draft materials, and organized and attended informational forums in support of Healthy People 2000. The comprehensiveness and depth of this report stand as a tribute to their commitment to better health for Americans through prevention. In addition to their contribution, Federal staff from other departments, other Operating Divisions of this Department, and the Public Health Service Agencies, have worked above and beyond the call of duty to produce this national prevention strategy. The Institute of Medicine of the National Academy of Sciences has served as an important partner in our efforts to involve a broad consortium of participants in the process. Each deserves a special note of appreciation.

I commend Healthy People 2000 to you and through you to the American people. This set of objectives for the year 2000 makes an important, compelling point to us and to all health policy makers: we can no longer afford not to invest in prevention. From the perspective of avoiding human suffering as well as saving wasteful costs for treating diseases and injuries that could have been prevented, the 1990s should be the decade of prevention in the United States.

With the submission of Healthy People 2000, I commit the Public Health Service to work toward achievement of these objectives for the coming decade.

Sincerely yours,

James O. Mason

James O. Mason, M.D., Dr.P.H.
Assistant Secretary for Health

Enclosure

HEALTHY PEOPLE 2000

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Conference Edition: Summary

U.S. Department of Health and Human Services
Public Health Service

***Healthy People 2000** is a statement of national opportunities. Although the Federal Government facilitated its development, it is not intended as a statement of Federal standards or requirements. It is the product of a national effort, involving 22 expert working groups, a consortium that has grown to include almost 300 national organizations and all the State health departments, and the Institute of Medicine of the National Academy of Sciences, which helped the U.S. Public Health Service to manage the consortium, convene regional and national hearings, and receive testimony from more than 750 individuals and organizations. After extensive public review and comment, involving more than 10,000 people, the objectives were revised and refined to produce this report.*

Foreword

Americans today are taking a more active interest in their health than ever before. They are coming to realize the influence that they, themselves, can have on their own health destinies and on the overall health status of the Nation.

It wasn't always thus. Until fairly recently, we Americans gave little thought to health as a positive concept. The past 15 years or so, however, have witnessed important changes in our thinking about the protection and enhancement of personal health. Three of those changes are of great importance for the well-being of our people as we move into the final decade of this century.

First, personal responsibility, which is to say responsible and enlightened behavior by each and every individual, truly is the key to good health. Evidence of this still-evolving perspective abounds in our concern about the dangers of smoking and the abuse of alcohol and drugs; in the emphasis that we are placing on physical and emotional fitness; in our growing interest in good nutritional practices; and in our concern about the quality of our environment. We have become, in a word, increasingly health-conscious, increasingly appreciative of the extent to which our physical and emotional well-being is dependent upon measures that only we, ourselves, can affect.

We can control our health destinies in significant ways, then, but if we are to realize, fully, the benefits of assuming that control, and this is the second of the three points I would make, we must find the means of extending the benefits of good health to the most vulnerable among us.

The correlation between poor health and socio-economic status has been well documented, but that does not make it right or inevitable. Good health should not be seen, or, for that matter, be permitted to exist in fact, as a benefit for only those who can afford it; it should be available and accessible to every citizen.

Medical care, alone, will not eliminate the devastating impact of chronic disease on the disadvantaged, nor will it reduce, as much as we would like, the rate of infant mortality or the burden of homicide and violence or any of the other "health" problems that are borne by the poor in our society. If we are to extend the benefits of good health to all our people, it is crucial that we build in our most vulnerable populations what I have called a "culture of character," which is to say a culture, or a way of thinking and being, that actively promote responsible behavior and the adoption of lifestyles that are maximally conducive to good health. This is "prevention" in the broadest sense. It is also an absolute necessity, both because we are a humane and caring society and because, if we are to remain a vital society, we cannot afford to waste human resources. Good health must be an equal opportunity, available to all Americans.

Finally, health promotion and disease prevention comprise perhaps our best opportunity to reduce the ever-increasing portion of our resources that we spend to treat preventable illness and functional impairment. Smoking, for example, is the single most preventable cause of death and illness in this country. Smoking-related illnesses cost our health care system more than $65 billion annually.

AIDS is an almost entirely preventable disease. The cost of caring for a person with AIDS for his or her lifetime is, today, about $75,000. The annual cost of treating all diagnosed AIDS patients, about $4.3 billion this year, could climb as high as $13 billion by 1992, the Public Health Service estimates.

The yearly cost of treating alcohol and drug abuse is at least $16 billion. The total economic impact of alcohol and drug abuse, including not only treatment but premature death, accidents, crime, and lost productivity, is more than $110 billion annually.

We would be terribly remiss if we did not seize the opportunity presented by health promotion and disease prevention to dramatically cut health-care costs, to prevent the premature onset of disease and disability, and to help all Americans achieve healthier, more productive lives.

Healthy People 2000: National Health Promotion and Disease Prevention Objectives addresses these three points. It lays out a series of national opportunities. To support the development of these opportunities, a national consortium composed of nearly 300 national membership organizations and all of the State health departments joined the Department's Public Health Service to solicit and analyze comments and suggestions from people across the Nation. The Federal Departments of Agriculture, Education, Labor, and Transportation and the Environmental Protection Agency participated generously in the development of the national objectives. In regional and national hearings, the Public Health Service and its partner in this venture, the Institute of Medicine of the National Academy of Sciences, learned what people from many sectors of society consider to be the priorities for prevention in the coming decades.

This input has shaped the content of *Healthy People 2000* as it has evolved from its first drafts through extensive public review and comment to the final publication. Participants included health professionals and others in health-related industries. The Department has had the honor of serving as a convener and facilitator in developing these goals, but they truly belong to the Nation.

I commend this document for your consideration, to use as appropriate in your community. All those who participated in its development over the past three years can take pride in its clarity of vision. All of us can feel humility in the face of its monumental challenges, but we also can share a new sense of resolve to move forward to achieve a nation of healthy people.

Louis W. Sullivan, M.D.
Secretary

September 1990

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Contents of the Full Report

Note: This is the conference edition of ***Healthy People 2000****. Some minor corrections in certain baseline data, graphs, charts, or references may be made in the final edition.*

Part I

Healthy People 2000

Contents

1. Introduction

The year 2000 appears ahead on the calendar of our Nation's history as a turning point. It may well be like any other year in the ongoing lives of people who inhabit this country and the world. But from the perspective of history, the year 2000 will bring to its conclusion a tumultuous century, characterized by astounding scientific achievements, devastating world wars, and explosive population growth. It will inaugurate at once a new century and a new millennium, a future so vast in its human and historic dimensions that it defies prediction while posing momentous questions about social and economic viability and human vitality in the face of a new era.

The year 2000 connotes change. Its arrival contains enough power to shape that change, motivating actions that can improve American lives. The beginning of the twenty-first century beckons both with challenge and opportunity for improved health of Americans. We began the current century with a sense of fatalism about the Nation's health problems. As we reach its conclusion, we do so with confidence in our ability to control many of the events that form our health prospects. A century of biomedical research has made available sophisticated techniques for diagnosing and intervening against disease. Scientific studies of even the last generation have revealed much about the factors that predispose to various health threats and therefore about actions that each of us can take to control our risks for disease or disability.

We have learned that a fuller measure of health, a better quality of life, is within our personal grasp. If tobacco use stopped entirely today throughout the Nation, an estimated 390,000 fewer Americans would die before their time each year. If all Americans reduced their consumption of foods high in fat to well below current levels and engaged in physical activity no more strenuous than sustained walking for 30 minutes a day, additional results of a similar magnitude could be expected. If alcohol were never carelessly used in our society, about 100,000 fewer people would die from unnecessary illness and injury. Together, deaths from these causes comprise a sizable share of the 2.1 million deaths that occur annually and are examples of the impact of personal lifestyle choices on the health destiny of individual Americans and the future of the Nation.

New knowledge has brought with it both a keen sense of potential and a keen appreciation of how far most Americans, especially those with low incomes, are from that potential. Moreover, we are already feeling the effects of momentous new issues emerging on the horizon—the aging of our society, the prohibitive costs of many of the technologies developed for diagnosing and treating disease, and the ecologic consequences of industrialization and population growth.

These problems compel careful engagement on the national agenda. This report frames the elements of that agenda from the perspective of the potential to prevent unnecessary disease and disability and to achieve a better quality of life for all Americans. It grows out of a health strategy initiated in 1979 with the publication of *Healthy People: The Surgeon General's Report on Health Promotion and Disease Prevention* and expanded with publication in 1980 of *Promoting Health/Prevention Disease: Objectives for the Nation*, which set out an agenda for the ten years leading up to 1990.

Healthy People 2000 offers a vision for the new century, characterized by significant reductions in preventable death and disability, enhanced quality of life, and greatly reduced disparities in the health status of populations within our society. It is the product of a national effort, involving professionals and citizens, private organizations and public agencies from every part of the country. Work on the report began in 1987 with the convening of a consortium that has grown to include almost 300 national membership or-

ganizations and all the State health departments (see Appendix A). The Consortium, facilitated by the Institute of Medicine of the National Academy of Sciences, helped the United States Public Health Service to convene 8 regional hearings and received testimony from over 750 individuals and organizations. This testimony became the primary resource material for working groups of professionals to use in crafting the health objectives themselves. After extensive public review and comment, involving more than 10,000 people, the objectives were refined and revised to produce this report.

This report does not reflect the policies or opinions of any one organization, including the Federal government, or any one individual. It is the product of a national process. It is deliberately comprehensive in addressing health promotion and disease prevention opportunities in order to allow local communities and States to choose from among its recommendations in addressing their own highest priority needs.

The Year 2000: A Profile of The American People

Over the course of the 1990s, the profile of the American population will change. Barring unforeseeable major events, the demographic contrasts between 1990 and 2000 will be evident, if not dramatic. Based on the best available information:

- By the year 2000, the overall population of the United States will have grown about 7 percent to nearly 270 million people, with the slowest rate of growth in the Nation's history projected between 1995 and 2000.[12] Average household size is expected to decline from 2.69 in 1985 to 2.48 in 2000, with husband-wife households decreasing from 58 to 53 percent of all households.[1]

- By the year 2000, the American population will be older, continuing the aging trend of the present century, with a median age of more than 36 years, compared to 29 years in 1975. The number of children under age 5 will actually decline from more than 18 million to fewer than 17 million between 1990 and 2000. By 2000, the 35 million people over age 65 will represent about 13 percent of the population, in contrast to 8 percent in 1950. The population of the "oldest old"—those over age 85—will have increased by about 30 percent to a total of 4.6 million by 2000.[12]

- By the year 2000, the racial and ethnic composition of the American population will form a different pattern. Whites, not including Hispanic Americans, will represent a smaller proportion of the total, declining from 76 to 72 percent of the population. The fastest growing population group will be Hispanics, some estimates forecasting a rise from 8 to 11.3 percent, to more than 31 million Hispanic people by 2000. Blacks will increase their proportion from 12.4 to 13.1 percent. Other racial groups, including American Indian/Alaska Natives and Asian/Pacific Islanders, will increase from 3.5 to 4.3 percent of the total.[11,12]

- By the year 2000, economic expansion will create up to 18 million new jobs, but the number of young job seekers will decline due to a shift in birth rates. Reflecting changes in racial and ethnic populations, the entry rate of blacks, Hispanics, Asian/Pacific Islanders, and American Indians/Alaska Natives into the workforce will be higher than for whites. Women of all racial and ethnic groups will be the major source of new entrants into the labor force, comprising 47 percent of the total workforce by 2000, compared to 45 percent in 1988. Half of women in the workforce will be between the ages of 35 and 54, a shift from 1986 when the majority were between 25 and 44. Between 1988 and the year 2000, white men will comprise only 25 percent of the net growth of the labor force.[4] Occupations most likely to grow include service, professional, technical, sales, and executive and management positions.

- By the year 2000, the American population may have increased by up to 6 million persons through immigration. Certain States and cities, especially those on the east and west coasts, can be expected to receive a disproportionately large number of these immigrants.[6]

While 10 years in the history of a Nation seems a comparatively short time, it is long enough to alter population patterns in ways that are of great importance to current and future decision-makers seeking to design an effective program of health promotion and disease prevention. Informed estimates about the changes in households and family constellations, age groups, racial and ethnic populations, the workforce, and immigration can provide a context that is crucial to decisions and programs to achieve a nation of healthy people.

Promoting Health and Preventing Disease: Progress

Ten years is also long enough to bring about marked changes in the Nation's health. (Fig. 1.1) During the 1980s, there were major declines in death rates for three of the leading causes of death among Americans: heart disease, stroke, and motor vehicle crashes. Infant mortality also decreased, and some childhood infectious diseases were nearly eliminated. Gains in these areas give hope that the 1990s will see more progress, especially for diseases such as cancer that have so far not declined.

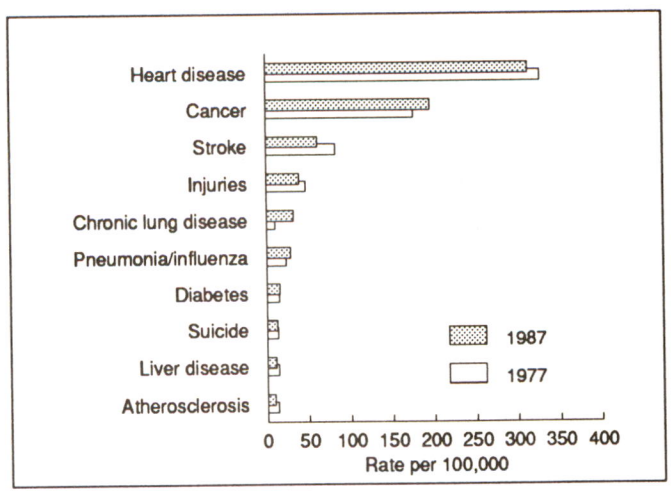

Fig. 1.1

Leading causes of death, U.S. population (crude rates)

Source: *Health, United States, 1989*

Much of our progress mirrors reductions in risk factors. The more than 40-percent drop in heart disease mortality since 1970 reflects dramatic increases in high blood pressure detection and control, a decline in cigarette smoking, and increasing awareness of the role of blood cholesterol and dietary fats. The precipitous drop in stroke death rates—over 50 percent in the same period—also reflects gains in hypertension control and declines in smoking.

Unintentional injuries have declined. In the last decade and a half, traffic fatalities dropped by one-third, partly reflecting increased use of seatbelts, lower speed limits, and declines in alcohol abuse. Recent reductions in fatal occupational injuries have been facilitated by enhanced occupational safety standards. Studies are beginning to yield promising approaches for alcohol and other drug problems.

Progress has been made in the health status of children as well. In 1987, we achieved a record low rate of 10.1 infant deaths per 1,000 live births.[5] Although still higher than rates in many other developed countries, this figure represents a 64-percent decline since 1950. Preventable childhood diseases, such as mumps, measles, and rubella, are now un-

usual in this country due to widespread use of vaccines. Immunization levels among school children exceed 95 percent for most of these diseases.

In other areas, progress is mixed. Lung cancer deaths have increased steadily since 1960, although rates among men aged 50 and younger began to turn around in the 1980s, a sign that changes in smoking patterns are beginning to have an effect. Breast cancer death rates remain stubbornly high, as they have for 35 years, despite the fact that early detection and treatment could reduce deaths due to breast cancer by an estimated 30 percent.[10] For cervical cancer, the widespread use of Pap tests has contributed to a 73-percent reduction in death rates from the disease since 1950.

Changing trends point to still other areas that require attention. In the past decade, rising rates of syphilis and the emergence of HIV infection point to the need for new strategies to address these public health problems. Air and water quality have improved since the Environmental Protection Agency and the States began regulating them in the early 1970s. However, the last decade has seen increasing concern expressed by individuals, communities, and public agencies about toxic substances, solid waste, and global environmental change.

When taken together, the progress of the last ten years has brought the Nation a considerable distance toward the health goals set forth in *Healthy People* in 1979. That report targeted for the year 1990 a 35-percent reduction in infant mortality, a 20-percent reduction in death rates for children aged 1 through 14, a 20-percent reduction in death rates for adolescents and young adults aged 15 through 24, and a 25-percent reduction in death rates for adults aged 25 through 64. For older adults, aged 65 and older, the target was a 20-percent reduction in days of disability. Figure 1.2 summarizes progress toward these goals, as of the most recent year for which data are available.

Life Stage	*1990 Target**	*1987 Status*
Infants	35% lower death rate	28% lower
Children	20% lower death rate	21% lower
Adolescents/ Young Adults	20% lower death rate	13% lower
Adults	25% lower death rate	21% lower
Older Adults	20% fewer days of restricted activity	17% lower

* relative to baseline (1977 data)

Fig. 1.2

Progress toward 1990 life stage goals—1987

Source: Office of Disease Prevention and Health Promotion

A more detailed record of national efforts in health promotion and disease prevention is provided by tracking progress toward achievement of the 226 measurable objectives that were laid out in *Promoting Health/Preventing Diseases: Objectives for the Nation* in 1980—objectives established to achieve the broad goals of *Healthy People*. As of 1987, it appeared that nearly half of the objectives had been achieved or were well on their way toward achievement by 1990; about one-quarter appeared unlikely to be achieved; and the status of the other quarter was uncertain because data were unavailable for tracking their progress. Among the 15 priority areas that were the focus of the 1990 objectives, areas in which progress seemed to be lagging included pregnancy and infant health, nutrition, physical fitness and exercise, family planning, sexually transmitted diseases, and occupational safety and health. On the other hand, priority areas related to high blood pressure control, immunization, control of infectious diseases, unintentional injury prevention and control, smoking, and alcohol and drugs showed substantial progress.

Healthy People: The Economics of Prevention

Despite the overall health improvements achieved as a result of preventive interventions, the Nation continues to be burdened by preventable illness, injury, and disability. In 1960 the share of the Gross National Product (GNP) going to medical services was 5 percent. It is estimated to reach nearly 12 percent in 1990.[2] Lost economic productivity attendant to illness and early death compounds the impact of this problem, so that in 1980 the total costs of illness equalled nearly 18 percent of GNP. Injury alone now costs the Nation well over $100 billion annually,[9] cancer over $70 billion, and cardiovascular disease $135 billion.

Sophisticated technology for the diagnosis and treatment of disease conditions has outstripped society's ability to pay for it. (Fig. 1.3) But many of these expenses are avoidable. Coronary artery disease affects approximately 7 million Americans and causes about 1.5 million heart attacks and 500,000 deaths a year. The number of

Condition	*Overall magnitude*	*Avoidable intervention* [1]	*Cost per patient* [2]
Heart disease	7 million with coronary artery disease 500,000 deaths/yr 284,000 bypass procedures/yr	Coronary bypass surgery	$30,000
Cancer	1 million new cases/yr 510,000 deaths/yr	Lung cancer treatment	$29,000
		Cervical cancer treatment	$28,000
Stroke	600,000 strokes/yr 150,000 deaths/yr	Hemiplegia treatment and rehabilitation	$22,000
Injuries	2.3 million hospitalizations/yr 142,500 deaths/yr 177,000 persons with spinal cord injuries in the United States	Quadriplegia treatment and rehabilitation	$570,000 (lifetime)
		Hip fracture treatment and rehabilitation	$40,000
		Severe head injury treatment and rehabilitation	$310,000
HIV infection	1-1.5 million infected 118,000 AIDS cases (as of Jan 1990)	AIDS treatment	$75,000 (lifetime)
Alcoholism	18.5 million abuse alcohol 105,000 alcohol-related deaths/yr	Liver transplant	$250,000
Drug abuse	Regular users: 1-3 million, cocaine 900,000, IV drugs 500,000, heroin Drug-exposed babies: 375,000	Treatment of cocaine-exposed baby	$66,000 (5 years)
Low birth weight baby	260,000 LBWB born/yr 23,000 deaths/yr	Neonatal intensive care for LBWB	$10,000
Inadequate immunization	Lacking basic immunization series: 20-30%, aged 2 and younger 3%, aged 6 and older	Congenital rubella syndrome treatment	$354,000 (lifetime)

[1]Examples (other interventions may apply).
[2]Representative first-year costs, except as noted. Not indicated are non-medical costs, such as lost productivity to society.

Fig. 1.3
Costs of treatment for selected preventable condtions

Source: Office of Disease Prevention and Health Promotion

coronary bypass procedures performed each year is approaching 300,000, each *one* of these procedures at a cost of approximately $30,000. Yet much of coronary artery disease is preventable. A representative cost for treating a single case of lung cancer is $29,000 and $28,000 for invasive cervical cancer. A liver transplant for alcoholic cirrhosis can cost $250,000 or more. The lifetime treatment costs per patient are $570,000 for quadriplegia from a spinal cord injury, $354,000 for congenital rubella syndrome, and $75,000 for Acquired Immunodeficiency Syndrome (AIDS). Yet virtually all of these conditions are preventable. Mobilizing the considerable energies and creativity of the Nation in the interest of disease prevention and health promotion is an economic imperative.

Healthy People 2000: The Challenge

The Nation has within its power the ability to save many lives lost prematurely and needlessly. Implementation of what is already known about promoting health and preventing disease is the central challenge of *Healthy People 2000*.

But *Healthy People 2000* also challenges the Nation to move beyond merely saving lives. The health of a people is measured by more than death rates. Good health comes from reducing unnecessary suffering, illness, and disability. It comes as well from an improved quality of life. Health is thus best measured by citizens' sense of well-being. The health of a Nation is measured by the extent to which the gains are accomplished for all the people. The purpose of *Healthy People 2000* is to commit the Nation to the attainment of three broad goals that will help bring us to our full potential, namely to:

- increase the span of healthy life for Americans
- reduce health disparities among Americans
- achieve access to preventive services for all Americans

The challenge of *Healthy People 2000* is to use the combined strength of scientific knowledge, professional skill, individual commitment, community support, and political will to enable people to achieve their potential to live full, active lives. It means preventing premature death and preventing disability, preserving a physical environment that supports human life, cultivating family and community support, enhancing each individual's inherent abilities to respond and to act, and assuring that all Americans achieve and maintain a maximum level of functioning.

We have a broad array of opportunities for prevention. This report presents many of these opportunities in the form of measurable targets, or objectives, to be achieved by the year 2000, organized into 22 priority areas. The first 21 of these areas are grouped into three broad categories: health promotion; health protection; and preventive services. (Fig. 1.4)

Health promotion strategies are those related to individual lifestyle—personal choices made in a social context—that can have a powerful influence over one's health prospects. These priorities include physical activity and fitness, nutrition, tobacco, alcohol and other drugs, family planning, mental health, and violent and abusive behavior. Educational and community-based programs can address lifestyle in a crosscutting fashion.

Health protection strategies are those related to environmental or regulatory measures that confer protection on large population groups. These strategies address issues such as unintentional injuries, occupational safety and health, environmental health, food and drug safety, and oral health. Interventions applied to address these issues are generally not exclusively protective in nature—there may be a substantial health promotion element as well—but the principal approaches involve a community-wide rather than individual focus.

Health Promotion

1. Physical Activity and Fitness
2. Nutrition
3. Tobacco
4. Alcohol and Other Drugs
5. Family Planning
6. Mental Health and Mental Disorders
7. Violent and Abusive Behavior
8. Educational and Community-Based Programs

Health Protection

9. Unintentional Injuries
10. Occupational Safety and Health
11. Environmental Health
12. Food and Drug Safety
13. Oral Health

Preventive Services

14. Maternal and Infant Health
15. Heart Disease and Stroke
16. Cancer
17. Diabetes and Chronic Disabling Conditions
18. HIV Infection
19. Sexually Transmitted Diseases
20. Immunization and Infectious Diseases
21. Clinical Preventive Services

Surveillance and Data Systems

22. Surveillance and Data Systems

Age-Related Objectives

Children
Adolescents and Young Adults
Adults
Older Adults

Fig. 1.4

Healthy People 2000 Priority Areas

Preventive services strategies include counseling, screening, immunization, or chemoprophylactic interventions for individuals in clinical settings. Priority areas for these strategies include maternal and infant health, heart disease and stroke, cancer, diabetes and chronic, disabling conditions, HIV infection, sexually transmitted diseases, and infectious diseases. Crosscutting professional and access considerations in the delivery of clinical preventive services are also addressed.

A special category has been established for surveillance and data systems. Given the centrality of monitoring progress toward the stated targets in the overall approach of *Healthy People 2000*, the integrity of our data collection efforts at every level is critical. Objectives have therefore been established to improve those efforts.

Finally, because issues and approaches vary by age, priority areas are presented for each of four age groups: children, adolescents and young adults, adults, and older adults. Objectives related to each of these age groups are found throughout the priority areas. To give them special emphasis, some of the key targets have been collected and presented according to these four ages.

The full set of objectives with commentary is presented as Part II of *Healthy People 2000*. The material presented here in Part I defines the overall national agenda and outlines goals, objectives, and strategies for change. Chapter 2 of Part I reviews the

challenges for people in various age groups. Chapter 3 addresses high risk populations. Chapter 4 presents the broad goals. Chapter 5 gives synopses of each of the priority areas with selected examples of the objectives addressed. Chapter 6 reviews the challenge for implementation for various groups throughout the Nation.

The last chapter deserves special comment. *Healthy People 2000* uses the three approaches of health promotion, health protection, and preventive services as organizing categories, but running through the priority areas and the objectives is a common theme of shared responsibility for carrying out this national agenda. Achievement of the agenda depends heavily on changes in individual behaviors. It requires use of legislation, regulation, and social sanctions to make the social and physical environment a healthier place to live. It calls on medical and health professionals to prevent, not just to treat, the diseases and conditions that result in premature death and chronic disability. All are necessary. None is sufficient alone to achieve *Healthy People 2000*'s goals and objectives.

The challenge spelled out in *Healthy People 2000* calls upon communities to translate national objectives into State and local action. To accomplish this, a new edition of Model Standards—*Healthy Communities 2000: Model Standards, Guidelines for Attainment of Year 2000 Objectives for the Nation*—provides a flexible planning tool to enable communities to share in the various efforts necessary to attain these objectives. The volume covers the priority areas of *Healthy People* and includes all of the national objectives that call for action at the community level. It offers community implementation strategies for putting the objectives of *Healthy People 2000* into practice and encourages communities to establish achievable community health targets.

References

1 Bureau of the Census. *Projections of the Numbers of Households and Families: 1986 to 2000.* Washington, DC: U.S. Department of Commerce, 1986.

2 Health Care Financing Administration, Office of the Actuary. Expenditures and percent of gross national product for national health expenditures, by private and public funds, hospital care, and physician services; calendar years 1960-87. *Health Care Financing Review* 10:2, Winter 1988.

3 Hodgson, T.A., and Rice, D.P. Economic impact of cancer in the United States. In: Schottenfeld, D., ed. *Cancer Epidemiology and Prevention.* Chapter 13, in press.

4 Kutscher, R.E. Projections 2000: Overview and implications of the projections to 2000. *Monthly Labor Review* September, 1987.

5 National Center for Health Statistics. *Health United States, 1989.* DHHS Pub. No. (PHS)90-1232. Hyattsville, MD: U.S. Department of Health and Human Services, 1990.

6 Passel, J.E., and Woodrow, K.A. " Immigration to the United States." Paper presented to the Census Table, August 1986.

7 Public Health Service. *Healthy People: Surgeon General's Report on Health Promotion and Disease Prevention.* Washington, DC: U.S. Department of Health and Human Services, 1979.

8 Public Health Service. *Promoting Health/Preventing Disease: Objectives for the Nation.* Washington, DC: U.S. Department of Health and Human Services, 1980.

9 Rice, D.P.; MacKenzie, E.J.; Jones, A.S.; Kaufman, S.R.; deLissovoy, G.V.; Max, W.; McLoughlin, E.; Miller, T.R.; Robertson, L.S.; Salkever, D.S.; and Smith, G.S. *Cost of Injury in the United States: A Report to Congress, 1989.* San Francisco, CA: Institute for Health and Aging, University of California and Injury Prevention Center, The Johns Hopkins University, 1989.

10 Shapiro, S., Venet, W. Strax, L., and Roeser, R. Selection, Followup, and Analysis in the Health Insurance Plan Study: A Randomized Trial With Breast Cancer Screening. *National Cancer Institute Monographs* 67:65-74, 1985.

11 Spencer, G. Projections of the Hispanic Population: 1983-2080. *Current Population Reports, Population Estimates and Projections.* Series P-25, No. 995. Washington, DC: U.S. Department of Commerce, Bureau of the Census, 1986.

12 Spencer, G. Projections of the population of the United States, by age, sex, and race: 1988 to 2080. *Current Population Reports, Population Estimates and Projections.* Series P-25, No. 1018. Washington, DC: U.S. Department of Commerce, Bureau of the Census, 1989.

2. The Nation's Health: Age Groups

Responding effectively to the health challenges of the 1990s will require a clear understanding of the health-related threats and opportunities facing all Americans. One way to grasp the dimensions and the realities of the tasks laid out in this report is to consider the special problems of infants, children, adolescents and young adults, adults, and older adults. The health profiles of these age groups can help us remember that the improvements envisioned here are not generalizations about the population, but prescriptions for healthier lives for each of us—newborn babies, boys and girls, teenagers and young people, women and men, and people in their retirement years.

Infants

One of the most heartening indicators of our Nation's improvement in health during the 20th century has been the steady decline in the infant mortality rate. Between 1950 and 1987, the infant mortality rate in the United States dropped from 29.2 per 1,000 live births to 10.1.[34] Eight years after *Healthy People* (1979) posed the challenge of a 35-percent reduction in infant mortality by 1990, we had achieved a reduction of 28 percent in that rate.[34]

Yet comparison of even our 1987 rate of infant mortality with that of other industrialized nations demonstrates the continued importance of efforts in this regard. Moreover, the continuing disparities between minority and majority populations represent a major health challenge. In 1987, the mortality rate for black infants was still over twice that of whites, and rates for some American Indian tribes and for Puerto Ricans were also considerably higher than for white infants.[34]

Infant mortality rates provide a summary measure of the effects of major health threats to the developing fetus and newborn baby. But for every 10 babies who die, 990 live. Some of those who live have been harmed, often permanently, by unhealthy beginnings. The quality, not just the quantity, of their lives is a function of health during both the prenatal and infant periods.

Technology has contributed significantly to the improved prospects for infant survival over the past several decades. Neonatal intensive care, new surgical techniques, and other medical interventions save lives and even overcome conditions that formerly guaranteed life-long disability. But opportunities for primary prevention offer new frontiers for improving infant health in the coming years. Some opportunities will result from breakthroughs in understanding the genetic origins of human diseases; most will be in areas of personal lifestyle and use of existing health interventions.

Major Health Concerns

No period of life is more important to good health than the months before birth. The prenatal period can be the starting time for good health or it may be the beginning of a lifetime of illness and shortened life expectancy. Each year in the United States, nearly 39,000 babies—about 1 percent of those born—die before the age of one, two-thirds during their first month.[35] Four causes account for more than half of all infant deaths: disorders relating to low birth weight, congenital anomalies, sudden infant death syndrome (SIDS), and respiratory distress syndrome. (Fig. 2.1)

Low birth weight (less than 2,500 grams) occurs in about 7 percent of all live births and is the greatest single hazard to infant health.[58] This dangerous condition has been linked to several preventable risks, including lack of prenatal care, maternal smoking, use of al-

cohol and other drugs, and pregnancy before age 18.[57] Approximately three-quarters of deaths in the first month and 60 percent of all infant deaths occurred among low-birth-weight infants. Low socioeconomic and educational levels are often associated with low birth weight.[57] Black infants are more than twice as likely as white babies to be born weighing less than 2,500 grams.[35]

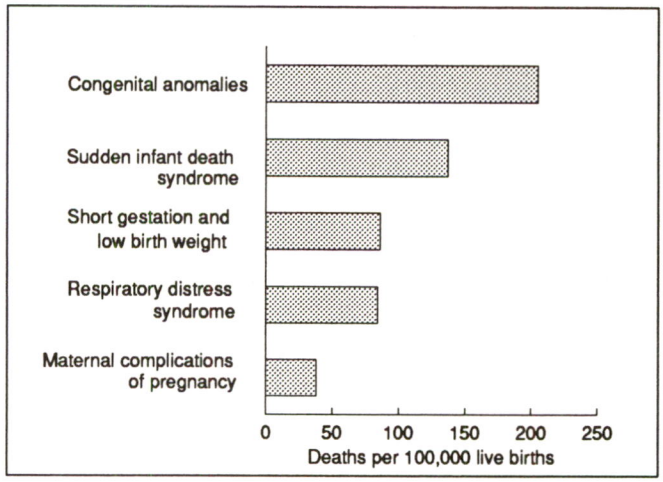

Fig. 2.1

Leading causes of infant mortality (1987)

Source: *Health, United States, 1989*

Very low birth weight (less than 1,500 grams) is associated with 40 percent of all infant deaths. Very low birth weight declined slightly from 1970 to 1981 but rose by about 0.9 percent per year from 1981 to 1986.[57] Low-birth-weight babies are nearly twice as likely to have severe developmental delay or congenital anomalies.[64] These babies are also at a significantly greater risk of such long-term disabilities as cerebral palsy, autism, mental retardation, and vision and hearing impairments, and other developmental disabilities.

Congenital anomalies (birth defects) most likely to be lethal include malformations of the brain and spine, heart defects, and combinations of several malformations. Infant mortality from congenital anomalies has been declining, although the last decade has seen slight increases in the incidence of some birth defects.[52] In 1985, about 11,000 babies were born with moderate to severe impairments. Congenital anomalies, when they do not result in death, may cause disability. One-fourth of all congenital anomalies are caused by genetic factors, suggesting a need for preconception genetic counseling for both men and women. Environmental hazards and alcohol use during pregnancy are other important factors. Fetal alcohol syndrome (FAS) affects as many as 1 to 3 infants per 1,000 live births.[35] In some populations, the incidence is higher. A similar syndrome has been observed in babies born to drug-addicted mothers.

After the first month of life, sudden infant death syndrome (SIDS) is the leading cause of infant mortality, accounting for about one-third of all deaths in this period.[50] The causes of SIDS are not known, but risk factors include maternal smoking and drug use, teenage birth, and infections late in pregnancy. Infants born to families with a history of SIDS are also at risk.

Respiratory distress syndrome occurs primarily in premature babies whose lungs are not fully developed. Therefore, risk factors for respiratory distress syndrome include those for prematurity.

Increasing rates of HIV infection and cocaine addiction in newborns are also of concern. By January 1990, more than 2,000 babies had been born with HIV infection, and some hospitals from urban communities reported rates of cocaine-addicted babies as high as 20 percent. The long term consequences of these alarming trends are inestimable.

Maternal Factors

Several major maternal risk factors are associated with low birth weight, as well as with other major causes of infant death and disability, including:

- Cigarette smoking;
- Alcohol and other drug use;
- Age;
- Nutrition;
- Socioeconomic status;
- Environmental hazards.

An estimated 25 percent of pregnant women smoke throughout their pregnancies.[61] There is some evidence that pregnant women are quitting smoking and that smoking prevalence during pregnancy is decreasing for some but not all groups. Women in the lowest age and socioeconomic groups have the highest likelihood of smoking during pregnancy.[29] Maternal cigarette smoking has been linked with from 20 to 30 percent of all low-birth-weight births in the United States.[30] If all pregnant women refrained from smoking, fetal and infant deaths would be reduced by approximately 10 percent, saving about 4,000 infants per year.

Heavy alcohol consumption during pregnancy is associated with increased risk for fetal alcohol syndrome, including growth retardation, facial malformations, mental retardation, and central nervous system dysfunctions. A safe amount of alcohol consumption during pregnancy has not been documented; however, adverse effects are associated primarily with heavy consumption during the early months of pregnancy.

The effects of maternal drug use on pregnancy outcome have not been fully explored. Studies of the effects of maternal drug abuse are hampered by difficulties in distinguishing effects of drug exposure from those resulting from inadequate prenatal care or poor maternal health and nutrition. However, low birth weight and prematurity are the most serious known consequences of maternal illicit drug abuse. Risks due to maternal drug abuse are heightened by lack of prenatal care. Between 50 and 75 percent of substance-abusing women receive little or no prenatal care.[28] Reliable data on the prevalence of substance abuse by pregnant women is also difficult to obtain. Extrapolations of local studies suggest that perhaps as many as 10 percent of babies are born each year to women who have used one or more illicit substances during their pregnancy.[13,14,23]

Both pregnant women and newborn infants are particularly vulnerable to poor nutrition. Women who gain less than 21 pounds during pregnancy are more than twice as likely to deliver low-birth-weight infants than those who gain more.[66] Nutrition is also vital to growth and development of infants, including brain function. For most mothers, breastfeeding is an ideal way of nurturing their infants.

Maternal age is a risk factor at both ends of the childbearing years: under age 17 and over age 40. Teenage women, more than a million of whom become pregnant each year in the United States, are at particular risk of having low-birth-weight babies.[54] Birth rates for women aged 15 through 19 are virtually unchanged since 1980, remaining at more than 50 live births per 1,000 women.[2] Infants born to women over age 40 experience higher rates of congenital anomalies, such as Downs Syndrome.

Women with less than 12 years of education, one important indicator of socioeconomic status, are about 70 percent more likely to give birth to a low-birth-weight baby or experience an infant death than women with more than 12 years of education.[50] Similarly,

poor pregnancy outcomes have been linked to other indicators of socioeconomic status such as lack of health insurance, poor nutrition, and low educational level.[62]

An estimated one-tenth of congenital anomalies are caused by environmental factors such as viruses, chemicals, and radiation. Toxic substances can affect the fetus directly, through exposure of the mother, and indirectly, by altering maternal and paternal germ cell chromosomes. Industrial toxins, such as lead, vinyl chloride, and hydrocarbons, may affect workers in industrial plants. The reproductive effects of workplace toxins, however, are still uncertain and controversial.[62]

Prenatal Care

Numerous studies have demonstrated that early and comprehensive prenatal care reduces rates of infant death and low birth weight. An expectant mother with no prenatal care is three times as likely to have a low-birth-weight baby. The effect of early prenatal care is especially evident in studies of high-risk groups, such as adolescents and poor women.[54] About 76 percent of women receive prenatal care, but rates are considerably lower for many minority groups.[62]

The 1970s saw significant increases in early prenatal care, especially in groups with the lowest levels of care. Since 1980, however, the proportion of women who begin prenatal care in the first 3 months of pregnancy has reached a plateau among all racial and ethnic groups.[50]

Prenatal care can save money. The Office of Technology Assessment has studied the potential effectiveness of prenatal care for all pregnant women living in poverty. Its findings indicate that for every instance of low birth weight averted by prenatal care, the United States health care system saves between $14,000 and $30,000 in health care costs associated with this condition.[54]

Children

The health profile of American children has shifted markedly in the past 40 years. Once dominated by the threat of major infectious diseases, such as polio, diphtheria, scarlet fever, pneumonia, measles, and whooping cough, today, widespread immunization has virtually eliminated many of these diseases. Others are in steep decline.

Between 1977 and 1987, the rate of childhood deaths declined 21 percent, exceeding the 1990 target set in *Healthy People*. Unintentional injuries have now replaced infectious diseases as the cause of greatest concern for the health of children. But even for the leading cause of injury-related deaths among children—motor vehicle crashes—heartening progress has occurred. Since 1978, the rate of childhood deaths from motor vehicle crashes has declined 40 percent for children aged 1 through 4, and 20 percent for those aged 5 through 14, primarily due to the use of car seats and seatbelts.[34] Other causes of injury-related deaths among children—drowning, falls, poisoning, fires—have also declined as a result of improved protections, with the sole exception of child homicide.

Several threats to children's health are associated with low socioeconomic status. Mental retardation, learning disorders, emotional and behavioral problems, and vision and speech impairments all appear to be more prevalent among children living in poverty, often in inner cities, than among those at higher socioeconomic levels.[57] An accurate profile of the health of U.S. children, therefore, must go beyond mortality and morbidity data. It must also consider emotional, psychological, and learning problems, the social and environmental risks to which they are related, and the total costs to the Nation.

Major Health Concerns

The leading cause of death in childhood—unintentional injuries—not only accounts for the most deaths but also is among the most preventable. (Fig. 2.2) Other major, preventable problems include homicide, suicide, child abuse and neglect, developmental problems, and lead poisoning.

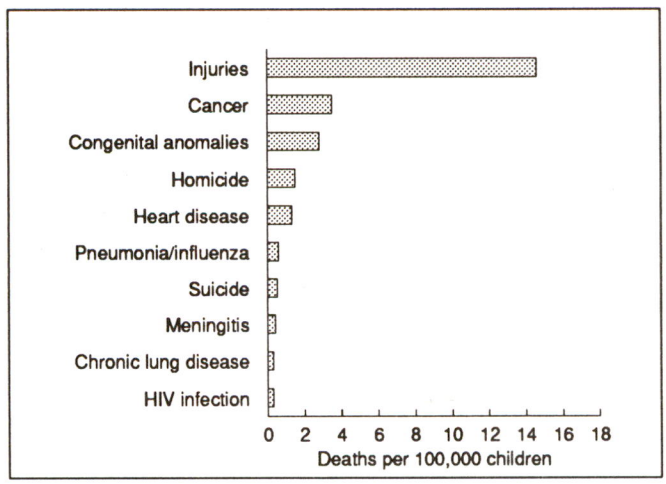

Fig. 2.2

Leading causes of death for children aged 1 through 14 (1989)

Source: National Center for Health Statistics

Nearly half of all childhood deaths are due to unintentional injuries, and about half of these stem from motor vehicle crashes. Declines in childhood deaths from motor vehicle crashes are due in part to increasing use of child safety seats and safer automobile design. In one of the major public health successes of the decade, all 50 States now require safety restraints for young children, contributing to a 36-percent decline in motor vehicle fatalities in this age group between 1980 and 1984.[52] However, many States still do not mandate child restraints for children over age 5, and in some States there is no requirement after age 3 or 4. Furthermore, although studies suggest that 4 out of 5 passengers under age 5 now use occupant protection systems, many of the child safety seats in use have been found to be either not attached to the car seat or attached incorrectly.[44]

Drownings and fires account for most other injury-related deaths among children. Drownings are most frequent in swimming pools and home spas among children under 5. Household fires are a particular risk to children because they have more difficulty escaping than adults and are less likely to survive fire-related injuries. Deaths from fires are often due to asphyxiation and traumatic injuries, as well as burns. Children under age 5 who live in substandard housing without smoke detectors are at special risk.[22]

Injuries from falls and poisonings are not major causes of death in children but do cause many nonfatal injuries. Playground equipment and upper-story windows are frequently implicated.

Many injuries can be and are being prevented. During the last decade, improved safety measures have reduced fatalities. These measures include swimming pool and spa covers and childproof enclosures; child-resistant packaging for prescription drugs and some other hazardous materials; safer playground equipment; and smoke detectors. All of these, plus increased public awareness of injuries and their prevention, have helped save lives, and their wider use could save many more.[52]

Some infections and respiratory illnesses remain problems for children. For example, influenza and other respiratory problems are the chief illness-related reasons that children miss school. In addition, the increased number of reports of asthma among children, especially those living in cities, have raised concern in recent years.[35]

Violence toward children has become of increasing concern as an American health issue, with rapidly rising rates of reported cases of child deaths due to violence.[34] The periodic Study of National Incidence of Child Abuse and Neglect estimated that, in 1986, nearly 2 percent of children—or more than 1,000,000—were demonstrably harmed by abuse or neglect. The most common kind of abuse identified was physical, followed by emotional and sexual; the most common kind of neglect was educational, followed by physical and emotional.[69] Substantial increases in reported physical and sexual abuse cases have occurred since 1980, but the 1986 study concluded that this was due more to improved reporting, reflecting greater public and professional awareness of the problem, than to an actual increase in child abuse. On the other hand, the study also demonstrated that many incidents of child maltreatment still go unreported.[69]

Developmental Problems

Psychological, emotional, and learning disorders are on the rise among children, as are chronic physical conditions such as hearing and speech impairment.[57] Low-income children are at a significantly higher risk for such problems.

One contributor to developmental problems in children is lead poisoning. In 1984, an estimated 3,000,000 children between 6 months and 5 years of age had blood lead levels above 15 μg/dL and 250,000 had levels above 25 μg/dL, making lead poisoning one of the Nation's most prevalent childhood threats.[1] Severe lead poisoning can lead to profound mental retardation, coma, seizures, and death. Even low levels of exposure can impair central nervous system function, causing delayed cognitive development, hearing problems, growth retardation, and metabolic disorders.[1] Reduced lead in gasoline, air, and food, and reduced industrial emissions have produced lower mean blood lead levels nationwide. Nevertheless, homes and play areas, particularly in substandard housing areas, remain a significant source of this toxin in children's blood. The chief sources of lead exposure are thought to be old flaking lead-based paint, dust, and soil.

Healthy Child Development

Childhood is the prime time of human development. This is no less true for development of good health than it is for social, educational, emotional, and moral development. It may be easier to prevent the initiation of some behaviors, such as smoking and alcohol and drug abuse, than to intervene once they have become established. Likewise, it may be easier to establish healthful habits, such as those related to basic hygiene and those related to dietary and physical activity patterns, during childhood than later in life. Childhood is the opportune period for such healthy development.

Early use of tobacco, alcohol, and marijuana is associated with alcohol and other drug abuse later in adolescence or adulthood.[16] While most smokers start when they are young teenagers, many start even earlier.[53] About one-quarter of high school seniors who have ever smoked report that they smoked their first cigarette by grade 6, over half by grades 7 or 8, and three-quarters by grade 9.[53] Although cigarette smoking is declining among all age groups, those who do smoke are starting at younger ages. A wide array of factors promote smoking by children, including peer pressure, parental smoking behavior, lack of knowledge and understanding of health consequences, advertising and promotion, and the easy availability of cigarettes in unsupervised vending machines.[53]

Although the average age of first use of alcohol and marijuana is 13, pressure to begin use starts at even younger ages. Elementary school students report peer pressure to try beer, wine, and distilled spirits. Moreover, 26 percent of 4th graders and 40 percent of 6th graders reported that many of their peers had tried beer, wine, distilled spirits, or wine coolers.[46]

Lifetime diet and exercise patterns may also be established in childhood. Fat makes up more than 36 percent of calories in the average American diet, a figure that is too high according to most experts. It is recommended that children over 2, as well as adults, reduce that figure to no more than 30 percent and that saturated fats be reduced to less than 10 percent of calories. Exercise habits established in childhood may help in maintaining a physically active lifestyle throughout adolescence and adulthood. Both moderate and vigorous physical activity on a regular basis help promote overall fitness and control weight. In 1984, a little more than two-thirds of children aged 10 through 17 engaged regularly in vigorous physical activity.[67] A comparison of body composition among children between 1965 and 1985 showed a steady increase in skinfold thicknesses, a measure of body fat.

Most schools provide some health education, although the amount and content vary among States and school districts. According to recent data:

- 75 percent of school districts have antismoking education in elementary schools;[48]
- 63 percent of school districts and private schools provide some instruction concerning alcohol and other drugs and 39 percent provide related counseling;[60]
- 12 States require nutrition education from preschool through grade 12;[4]
- 32 percent of children in grades 1 through 6 and 44 percent of those in grades 7 through 9 participate in daily physical education programs, but only 1 State requires daily physical education from kindergarten through grade 12;[67]
- 25 States require comprehensive school health education programs and 9 States recommend that local school districts implement such programs.[17]

Appropriate educational strategies vary according to community and age group, but health education curricula can change attitudes and behavior.

Schools can also be used to facilitate children's access to basic health services. Although the traditional childhood infectious diseases have declined steeply since vaccines became available, immunization is still incomplete. Better school-based programs, information for the public, and more immunization education for physicians and health professionals are needed.

Improving the health of American children requires a wide range of social and economic interventions. For example, more and better preschool education for disadvantaged children and children with disabilities could help to detect and prevent developmental problems. Educational and support programs for parents in high-risk environments hold promise for reducing child abuse and other health problems, such as lead poisoning. The complex developmental problems besetting children in these environments demand concerted efforts by many different sectors of society. Primary care health providers, social service professionals, health educators, housing officials, community groups, and concerned individuals can each make a difference in the health of American children.

Adolescents and Young Adults

The years from 15 through 24 are a time of changing health hazards. Caught up in change and experimentation, young people also develop behaviors that may become permanent. Attitudes and patterns related to diet, physical activity, tobacco use, safety, and sexual behavior may persist from adolescence into adulthood.

The dominant preventable health problems of adolescents and young adults fall into two major categories: injuries and violence that kill and disable many before they reach age 25, and emerging lifestyles that affect their health many years later.

Two major causes of death in older age groups, heart disease and cancer, have declined sharply among adolescents since 1950—heart disease by 65 percent and cancer by 40 percent.[52] Although they are still important threats in this age group, these diseases are overshadowed by the three leading causes of death: unintentional injuries, homicide, and suicide. (Fig. 2.3)

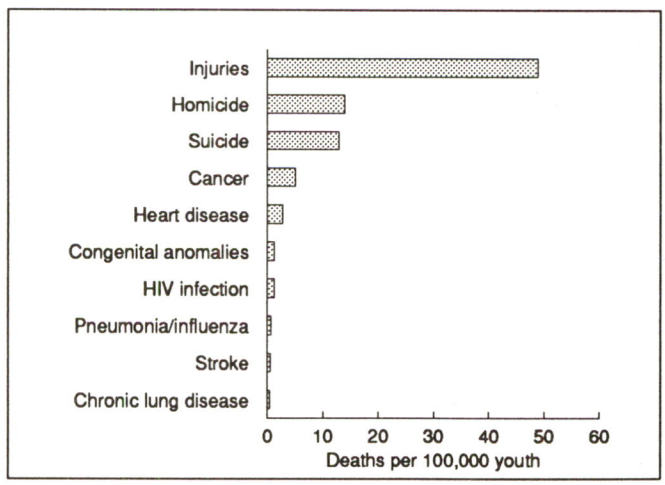

Fig. 2.3

Leading causes of death for youth aged 15 through 24 (1987)

Source: *Monthly Vital Statistics Report*, September 1989

Motor Vehicle Crash Injuries

Unintentional injuries continue for about half of all deaths among people aged 15 through 24; three-quarters of these deaths involve motor vehicles. More than half of all motor vehicle crashes involve alcohol. Young white men had the highest death rates for motor vehicle crashes in 1987, at 59 per 100,000. The rate for young black men was much lower: 36 per 100,000. The rate was lower yet for women of both races.[52]

Motor vehicle crash deaths decreased in this age group in the early 1980s, possibly because of the raised minimum drinking age in many States and decreasing alcohol use. The recent trend, however, is upward. The raised speed limit on rural interstate highways may be a factor in this trend.[52] Further, nearly 60 percent of 8th and 10th graders reported not using seatbelts on their most recent ride.[5]

Homicide and Suicide

Homicide is the second leading cause of death among all adolescents and young adults, and it is the number one cause among black youth. The homicide rate for young black men increased by 40 percent between 1984 and 1987 to nearly 86 per 100,000, more than 7 times the rate for young white men.[34] Race, however, appears not to be as important a risk factor for violent death as socioeconomic status. Racial differences in homicide rates are significantly reduced when socioeconomic factors are taken into account.

As with motor vehicle accidents, about half of all homicides are associated with alcohol use. Nationwide, 10 percent are drug-related, but in many cities this figure rate is substantially higher. Over half of all homicide victims are relatives or acquaintances of the perpetrators. Most are killed with firearms.[52]

Suicide is the second leading cause of death among young white men aged 15 to 24, and rates continue to climb. From 1950 to 1987 the death rate from suicide in this group increased from under 7 to about 23 per 100,000 population. The rate of suicides among black adolescents and young adults is half of that among whites. White men between 20 and 24 years of age are more likely to commit suicide than their counterparts aged 15 through 19, but the gap between these two groups is narrowing. In general, suicides have decreased among older youth and increased among the younger cohort.[35,52]

Both white and black young women have relatively low suicide rates (4.7 and 2.3 respectively in 1987), although young women attempt suicide unsuccessfully approximately three times more often than young men.[35,52] As is the case with homicides, 60 percent of suicides among adolescents and young adults are committed with firearms.

Tobacco, Alcohol, and Drugs

Many of the most important risk factors for chronic disease in later years also have their roots in youthful behavior. The earlier cigarette smoking begins, for example, the less likely the smoker is to quit.[52] Three-fourths of high school seniors who smoke report that they smoked their first cigarette by grade 9.[52] Young people, especially teenage girls, are taking up smoking at younger ages. The age of initiation for regular smoking among females is now roughly the same as for males.

In 1976, about 29 percent of high school seniors reported daily smoking. Between 1977 and 1981, the rate of smoking dropped to 19 percent and has since leveled off. The annual surveys of high school seniors do not gather information on school dropouts—about 15 percent of white youths and 23 percent of black youths[8]—among whom smoking is more prevalent.[56] But data for young adults aged 20 through 24 have shown a continued steady decline in cigarette smoking for young men and a recent equivalent decline for young women.

The use of snuff and chewing tobacco has increased dramatically in recent years among teenage boys. Between 1970 and 1986, snuff use increased fifteen-fold and chewing tobacco use increased fourfold among young men aged 17 through 19. In 1987, the prevalence of smokeless tobacco use among young men aged 18 through 24 was nearly 9 percent. Among younger adolescent boys aged 12 through 17, nearly 7 percent had used some form of smokeless tobacco within the last month.[53]

Alcohol consumption among teenagers and young adults is declining slowly, but it remains a major problem for both. It is a particular problem among school dropouts. Alcohol is a major contributor to both motor vehicle crashes and violence, two of the leading causes of death and disability among young people. In 1989, about 60 percent of high school seniors reported drinking alcohol in the previous month, while 33 percent reported occasions of heavy drinking—having five or more drinks on one occasion in the last 2 weeks; both figures represented slight declines from 1988 survey results.[43]

Alcohol use is also prevalent both among younger teenagers and those who are beyond high school age. In a 1987 national survey, 28 percent of 8th graders and 38 percent of 10th graders reported occasions of heavy drinking.[35] Among young people aged 18 to 24, drinking is more prevalent than in any other age group. In 1985, more than 71 percent of this group reported alcohol use during the past month.[35]

The use of illicit drugs among adolescents has been declining since the late 1970s, at least among young people who remain in school.[46] The number of high school seniors

reporting illicit drug use reached a record low of about 20 percent in 1989, indicating a 50 percent drop in drug use over the last decade. Marijuana use, which peaked in 1978 at 37 percent, was down to 17 percent at the close of the 1980s. Only 3 percent of the class of 1989 reported using cocaine at least once in the last 30 days, a significant decline from the 1985 peak of 6.7 percent. Use of crack cocaine declined slightly, from 1.6 percent of high school seniors in 1988 to 1.4 percent in 1989. A more dramatic drop occurred the previous year, however, when the percentage of seniors who reported having ever used crack declined by 20 percent.[43]

Experimentation with illicit drugs often starts early. For example, in a 1987 survey of 8th and 10th graders, 6 and 10 percent, respectively, reported using marijuana in the preceding month. Slightly smaller percentages reported trying cocaine, and about a third of these had tried crack. Students' attitudes toward drugs, as toward alcohol, underwent a change during the 1980s.[46]

Sexual Behavior

An estimated 78 percent of adolescent girls[49] and 86 percent of adolescent boys have engaged in sexual intercourse by age 20.[65] The risks of early sexual activity include not only unwanted pregnancy, but also infection by sexually transmitted diseases. Of the approximately 1.1 million girls aged 15 through 19 who become pregnant each year, an estimated 84 percent did not intend pregnancies. Many of these young women face serious health and psychosocial risks. Teenage mothers are more likely than others not to finish school, to be unemployed, to have low-birth-weight babies, and to lack parental skills.[27]

Clearly for young adolescents the most effective means of preventing possible physical and psychosocial problems related to sexual intercourse is to delay sexual activity. But, teenage sexual activity is a complex issue, embedded in family, social, and economic factors. Interventions to prevent associated negative health outcomes must address those factors if they are to succeed. For example, it has become clear to many that such interventions cannot be successful without the full support and involvement of parents and others who serve in advisory and role-model capacities with teenagers.

Although the 1980s brought some improvements in the health status of adolescents and young adults, many other young people still must confront a constellation of problems, including alcohol and other drug abuse, school failure, delinquency, peer group violence, and unwanted pregnancy. While education about risks to health is important, programs for adolescents and young adults must go beyond education to include in-depth counseling and support. Especially for youth in high-risk environments, comprehensive programs are needed to provide positive alternatives to alcohol and other drug abuse, teenage pregnancy, and lifestyles conducive to violence.

Lifelong Health Habits

It is important for adolescents and young adults to lay the foundation for chronic disease prevention by the promotion and maintenance of healthy lifestyles. The adoption of low-fat and low-salt dietary patterns are important for many people in the prevention of coronary heart disease and high blood pressure, and certain cancers. Further, the adoption of dietary and physical activity habits that will reduce the onset of obesity will help reduce the likelihood of coronary heart disease, diabetes, and high blood pressure. The case of physical activity is important because as students leave the school setting they lose the physical and social supports and incur time constraints that can result in decreased levels of physical activity. It is especially important for adolescents and young adults to recognize the importance of regular light to moderate physical activity in the prevention of weight gain associated with leaving the high school setting.

Adults

Perhaps more than any other age group, adults have the opportunity to assume personal responsibility for their health. Many of the leading causes of death for people between the ages of 25 and 65 are preventable, wholly or in part, through changes in lifestyle. Not only can adults change established lifestyles, social norms related to health can be changed as well.

Behavioral changes have saved many adult lives in the past two decades. For example, the declines, by more than 40 percent and 50 percent, respectively, in coronary heart disease and stroke death rates since 1970, are associated with reduced rates of cigarette smoking, lower mean blood cholesterol, and increased control of high blood pressure. In the same period, deaths from motor vehicle crashes declined by almost 30 percent. Lower rates of alcohol use, increased seatbelt use, and changes in speed limits contributed to this reduction. Accompanying these trends were reduced public acceptance of certain risks, such as smoking and drinking and driving.

As deaths from heart disease have declined, cancer has became the leading cause of death for people aged 25 through 64.[52] (Fig. 2.4) These and the other top causes of death between the ages of 25 and 65—unintentional injuries, stroke, and chronic liver disease and cirrhosis—have all been associated with risk factors related to lifestyle.

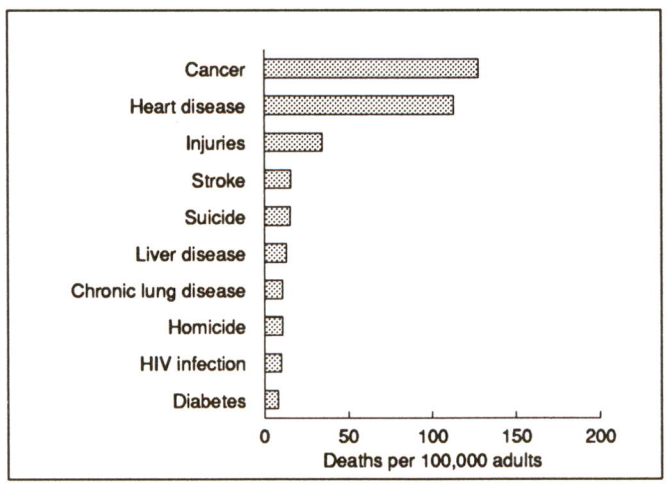

Fig. 2.4

Leading causes of death of adults aged 25 through 64 (1987)

Source: National Center for Health Statistics

Cancer

Cancer, which is actually not one but many diseases, is associated with a variety of risk factors. Although cancer mortality rates overall have changed little since 1950, there have been significant changes in mortality for some age groups and cancers. Several prevalent forms of cancer can be either prevented or diagnosed early enough to prevent spread to other organs. It is estimated that 30 percent of cancer deaths are linked to smoking and that another large proportion, perhaps 35 percent, may be associated with diet.[18]

- **Lung cancer** is the most common—and most preventable—cancer in the United States for both men and women, and is increasing as large numbers of smokers grow older. Smoking is responsible for more than 85 percent of all lung cancer deaths. Since 1975, lung cancer incidence has risen more than 15 percent for black men, about 12 percent for black women, 12 percent for white men, and 8 percent for white women.[53]
- **Colorectal cancer** is the second leading cause of death due to cancer. Some studies have suggested that high fat and/or low fiber diets increase the risk of colorectal cancer. Since 1969, death rates from these cancers have fallen among

white men and women, remained about the same for black women, and increased markedly for black men.[32] Although there is no general agreement that screening for colon cancer definitely reduces mortality among those not at high risk, consensus recommendations have suggested screening by digital rectal exams, fecal occult blood testing, and sigmoidoscopy for those over age 50.

- **Breast cancer** has become the second most common cause of cancer deaths among women, having been surpassed by lung cancer in the past decade. However, the incidence of breast cancer is more than twice that of lung cancer in women.[3] Early diagnosis of breast cancer improves the chance of survival significantly, with 90 percent of those diagnosed when the cancer was localized reaching the 5-year survival mark.[63] Breast cancer death rates could be reduced 30 percent with regular screening. Some evidence suggests that high-fat diets may increase the risk of breast cancer.
- **Cervical cancer** can be cured if detected early. Increased use of the Pap test has contributed to a 50-percent drop in cervical cancer deaths among both black and white women since 1969. However, black women continue to have 3 times the cervical cancer death rate of white women. Although the death rates have been decreasing, the *in situ* rates have risen in younger women aged 15 through 19.[3]
- **Oropharyngeal cancer**—cancer of the mouth and throat—accounts for 13.2 per 100,000 in 1987. Increased risk has been linked both to use of tobacco products and to heavy alcohol use.

Heart Disease and Stroke

Despite a recent decline, coronary heart disease still kills more than 500,000 Americans annually. Another 1,250,000 people suffer nonfatal heart attacks each year.[42] About 20 percent of those who die from heart attacks are between the ages of 24 and 64, and most are between 55 and 64.[52] Quitting smoking, reducing dietary fat (especially saturated fat), and controlling high blood pressure can reduce the risk of heart disease.

Approximately 13 percent of the nearly 150,000 Americans who died of stroke in 1986 were between the ages of 25 and 64, and the majority of these were aged 55 through 64. Black men have the highest rate of stroke among all population groups, with a death rate from stroke about twice that of white men and a substantially higher rate than for black women. A much smaller gap exists between the stroke death rates of white men and white women.[50]

High blood pressure is a well-defined risk factor for both heart disease and stroke among adults. Approximately half of all heart attack victims and two-thirds of all stroke victims have high blood pressure.[52] About 30 percent of adults have high blood pressure (over 140/90 mm Hg or taking high blood pressure medication), but most do not have it under control.[39] It is estimated that, during 1982-84, only about 24 percent of hypertensive adults between 20 and 75 had achieved blood pressure control for 2 or more years.[42] Weight control, physical activity, lower intake of alcohol and sodium, and if necessary, medication are means of controlling blood pressure.[41]

Health Habits

Several major health risk factors, sometimes alone and sometimes in combination, are associated with the 5 major causes of death in the United States: cancer, heart disease, stroke, injury, and chronic lung disease. Reducing these risks has already significantly reduced the number of years of life lost before age 65, and greater reductions are possible.

Certain eating patterns—especially excessive consumption of fats—are linked to a higher risk of heart disease, breast and colon cancer, and gallbladder disease.[59] Total dietary fat,

including saturated and unsaturated fats, now accounts for more than 36 percent of the total calories consumed in the United States. A fat intake of no more than 30 percent of calories is recommended by most groups, including the American Heart Association, the American Cancer Society, and the United States Departments of Agriculture and Health and Human Services.[59] These groups recommend that the major reduction in dietary fat come from saturated fats, which are common in foods from animal sources, such as meats and dairy products.

Overweight is a problem for about one-quarter of American adults, affecting about 27 percent of women and 24 percent of men.[37] This problem is associated with high blood pressure, elevated blood cholesterol, diabetes, heart disease, stroke, some cancers, and gall bladder disease. It also may be a factor in osteoarthritis of the weight-bearing joints.

Socioeconomic status has been linked to overweight. One national survey found that 37 percent of women below the poverty level were overweight, compared with 25 percent of those above the poverty level. Overweight is especially prevalent among members of some minority groups.[37]

To reduce this risk factor, both exercise and diet are important. As of 1985, however, only about 25 percent of overweight men and 30 percent of overweight women, among people 18 and over, were combining regular physical activity with sound dietary practices to lose weight.[61] Fewer than half of adult Americans exercise regularly (3 or more days a week, sustained for at least 20 minutes each time regardless of intensity)[7], a matter of concern because a sedentary lifestyle appears to be an independent risk factor for coronary heart disease. Older adults are less likely to be physically active than younger adults. Research increasingly suggests that even moderate physical activity can decrease the risk of coronary heart disease, especially among the sedentary. Regular physical activity can also help to prevent and manage hypertension, diabetes, osteoporosis, and obesity.[9] Further, it may play a role in mental health, having a favorable effect on mood, depression, anxiety, and self-esteem.

Cigarette smoking is an important risk factor for heart disease, stroke, and some forms of cancer. In 1965, 40 percent of all Americans smoked cigarettes. Today, that figure is below 30 percent. This dramatic decline is credited with saving nearly 800,000 lives between 1964 and 1985, with an average gain in life expectancy of 21 years for each death avoided or postponed.[53] Despite these gains, smoking is still responsible for one of every six deaths in the United States. Moreover, it is still placing certain groups at greater risk of disease than others, and it is still the single most important preventable cause of death in our society.[53]

More than 50 million Americans still smoke. In 1987, 29 percent of adults aged 20 years and older smoked cigarettes. Almost as many have quit. By 1987, nearly half of those who ever smoked cigarettes (45 percent) had stopped. Since 1974, the rate of change for quitting has been similar for blacks and whites and for men and women.[55] Though more men smoke than women, the gender gap is decreasing. Prevalence of cigarette smoking has declined sharply among men since 1965 (from 50 to 32 percent) but only slightly among women (32 to 27 percent).[21] In general, smoking rates are higher among blacks, Hispanics, blue-collar workers, and people with fewer years of education.[21]

Alcohol is a major factor in thousands of preventable deaths, including motor vehicle fatalities, homicides and suicides, cirrhosis of the liver, and some cancers, such as esophageal and liver cancer. Alcohol is also the leading preventable cause of birth defects.[34]

There is evidence that the use of alcohol is beginning to decline. Based on alcoholic beverage sales and tax data, the consumption of hard liquor declined 21 percent between 1978 and 1986. Wine sales increased and beer sales remained about the same. While the

overall trend in the consumption of alcoholic beverages is down, it is estimated that about 9 percent of people aged 21 and older consume more than two drinks daily.[45]

Increasing public concern about alcohol and other drugs, evident in many opinion polls, has helped galvanize organized action on the part of parent groups, government agencies, community groups, schools, and businesses.[6] Drinking and driving has been the focus of much of the attention: the Surgeon General has called for stricter regulation of advertising for alcoholic beverages; citizen groups have lobbied for and legislators have passed laws raising the drinking age and establishing stiff penalties for driving while intoxicated; the news media have devoted much coverage to the problem, and even the entertainment media have incorporated messages about drinking and driving into television programs.[51]

This widespread public concern and the programs that accompany it have had an impact. The proportion of motor vehicle deaths related to alcohol dropped by 10 to 15 percent between 1982 and 1986.[34] More recently, however, the decline has slowed, indicating the need for continued efforts.

Hospital emergency room visits related to use of illicit drugs, one indication of the health impact of drug abuse, rose sharply in the 1980s, and this high rate is expected to continue for some years. Cocaine is responsible for many of these visits. In 1987, cocaine-related emergency room visits constituted 32 percent of all visits related to drugs.[19] Other data indicate that young men between the ages of 25 and 44 are at a higher risk than the total population of being killed or injured by illicit drugs. In addition, drugs are implicated in about 10 percent of all homicides, many of which occur in this age group.

Seatbelt use is an important health habit, saving an estimated 4,000 lives in 1987, a year in which only about 42 percent of motor vehicle passengers used their seatbelts. Most of the crashes in which lives were saved by seatbelts occurred in States with mandatory seatbelt laws.[36] Passage of such laws in other States should increase usage and save many more lives. In addition, beginning with 1990 models, automobile manufacturers are equipping all passenger vehicles with automatic crash protection—automatic belts or airbags—in response to a new Federal requirement. Automatic belts are expected to increase overall usage to about 85 percent.[36]

Health Services

Preventing chronic disease depends often on individual decisions—to quit smoking, to drink in moderation if at all, to consume less saturated fat, to increase physical activity. What then is the role of health services?

One answer is patient education and counseling. Clinical studies have demonstrated that counseling by health professionals is effective in helping people change dietary and smoking behaviors. The U.S. Preventive Services Task Force, in surveying the effectiveness of 169 clinical interventions to prevent disease, concluded that counseling may be even more valuable overall than conventional clinical activities to prevent disease, such as many screening tests.[68]

Screening can be extremely important, when tailored appropriately to an individual's age and risk. Early diagnosis of disease can have a significant impact on mortality rates, as shown by the results of screening for high blood pressure and high blood cholesterol. The means are also available to detect various cancers when they are still curable, such as the Pap test for cervical cancer, mammography and physical examination for breast cancer, fecal occult blood testing and sigmoidoscopy for colorectal cancer, and skin examination for skin cancer.

None of these procedures is widespread. In 1987, just 75 percent of women aged 18 and over had received a Pap test in the preceding one to three years, and this was by far the highest proportion of adults screened for any type of cancer.[33]

Only about 25 percent of women aged 50 and older surveyed in 1987, had received a mammogram and clinical breast exam in the preceding two years.[33] The percentage of adults aged 50 and older who received a digital rectal exam and fecal occult blood testing in the preceding two years was estimated at 27 percent.[33]

Increasing awareness about preventive services by both health professionals and the public is essential to increasing their use. More and better insurance coverage for screening and counseling would also encourage wider use of these services. Expansion of managed care systems such as health maintenance organizations (HMOs) and preferred provider organizations (PPOs) can also provide basic preventive services to more people.

The challenge facing adults as individuals is to modify their lifestyles to maintain health and prevent disease. But even in adulthood, individual decisions are subject to many forces. Lifestyles once established are difficult to change, addictions even more difficult. Resolution of many of these difficulties is compounded by factors beyond the control of individuals. Socioeconomic status, the environment, community norms, media images and coverage, advertising, worksite standards, access to health care and counseling are powerful influences on adult behavior. So the other challenge facing adults, as members of society, is to work together to create an environment that facilitates and supports healthful behavior.

Many sectors of society have made a beginning. Some employers support smoking cessation, stress management, nutrition and exercise, screening for high blood pressure and high blood cholesterol, and other health-related programs. Hospitals provide patient education services and community health promotion programs. Community groups and churches sponsor classes and support groups. State agencies have initiated community-based prevention programs in many areas. In particular, minority communities, rural communities, and people with low incomes need relevant information and programs that address their particular risks and their need for preventive services.

Older Adults

In 1900, people over 65 constituted 4 percent of the population. By 1988, that proportion was up to 12.4 percent, by 2000 it will be 13 percent and by 2030, 22 percent. The most rapid population increase over the next decade will be among those over 85 years of age.[25]

People who reach the age of 65 can now expect to live into their eighties.[35] However, it is likely that not all those years will be active and independent ones. Thus, improving the functional independence, not just the length, of later life is an important element in promoting the health of this age group.

One measure of health that considers quality as well as length of life is the years of healthy life. While people aged 65 and older have 16.4 years of life remaining on average, they have about 12 years of healthy life remaining.[35] (Fig. 2.5) Another indicator of quality of life is an individual's ability to perform activities required for daily living, such as bathing, dressing, and eating. Difficulty in performing these necessary tasks leads to the need for assistance and often limits opportunity for remaining independent in the community. People aged 85 and older constitute a substantial share of all people who are not independent in physical functioning.[35]

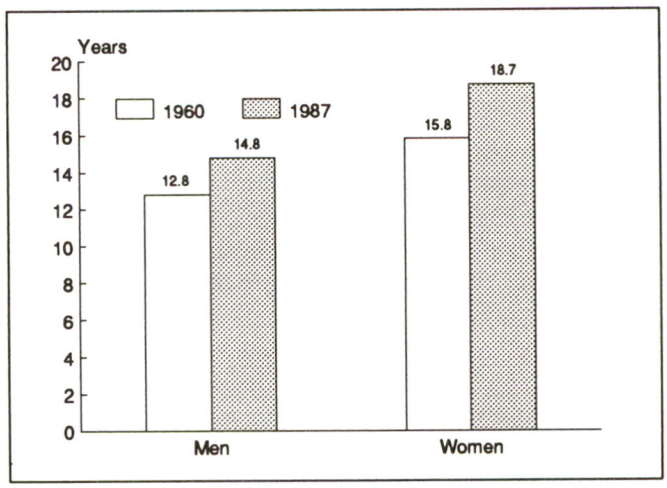

Fig. 2.5

Life expectancy at age 65 by gender

Source: *Health, United States, 1989*

While many people think of health problems in old age as inevitable, a substantial number are either preventable or can be controlled. The major causes of death among people aged 65 and older are heart disease, cancer, stroke, chronic obstructive pulmonary disease, pneumonia, and influenza. Chronic problems, such as arthritis, osteoporosis, incontinence, visual and hearing impairments, and dementia, are of equal concern because of their significant impact on day-to-day living. To accommodate the changing needs of an increasingly older society, we must prevent the ill from being disabled and help people with disabilities preserve function and prevent further disability.[24]

A growing body of evidence shows that changing certain health behaviors, even in old age, can benefit health and quality of life. Cigarette smoking is one of these habits. Studies have shown that when older smokers quit, they increase their life expectancy, reduce their risk of heart disease, and improve respiratory function and circulation.[53] Good nutrition is also important in the promotion and maintenance of health for older adults. Diet can play an important role in mitigating existing health problems with older people. Reducing sodium intake and losing weight, for example, can help keep blood pressure under control, and there is growing evidence that nutrition counseling and food programs can reduce the risk of disease among older adults.[25]

Physical Activity

A key ingredient to healthy aging is physical activity. Often physiological decline associated with aging may actually be the result of inactivity. Over 40 percent of people over age 65 report no leisure time physical activity.[7] Less than a third participate in regular moderate physical activity, such as walking and gardening, on a regular basis, and less than 10 percent engage routinely in vigorous physical activity. Yet regular physical activity and exercise are critical elements of health promotion for older adults. Increased levels of physical activity are associated with a reduced incidence of coronary heart disease, hypertension, noninsulin-dependent diabetes mellitus, colon cancer, and depression and anxiety which are diseases prominent in older adult populations.[9]

Moreover, increased physical activity increases bone mineral content, reduces the risk for osteoporotic fractures, helps maintain appropriate body weight, and increases longevity. It may also be that increased physical activity levels can improve balance, coordination, and strength, factors that may reduce the likelihood of falls in the older adult. Recent studies of exercise training among this age group have shown that older persons can adapt to increased levels of exercise with positive health benefits resulting from both high and low intensity exercise. In addition to these health benefits, a more important

result of regular physical activity appears to be the maintenance of functional independence throughout the later years of life.

Health Services

People over age 65 need regular primary health care services to help them maintain their health and prevent disabling and life-threatening diseases and conditions. Clinical preventive services include the control of high blood pressure, screening for cancers, immunization against pneumonia and influenza, counseling to promote healthy behaviors, and therapies to help manage chronic conditions such as arthritis, osteoporosis, and incontinence. For example, skin cancer screening can detect the majority of malignant melanomas and basal cell carcinomas.

Especially important among these clinical services are those to detect breast cancer: screening mammography and clinical breast examination. These screening interventions are estimated to reduce mortality from breast cancer in women over age 50 by about 30 percent.[63] In addition, Pap tests to detect cervical cancer are important for older as well as for younger women.

Because pneumococcal disease is 3 times more prevalent among those over 65 than among younger people and takes many older lives, immunization of older adults is an important preventive service. Pneumonia was responsible for an average 48 days of restricted activity per 100 people aged 65 and older in 1987.[38] Likewise, immunization against influenza is recognized now as a basic preventive intervention for older adults. During 6 flu epidemics from 1972 to 1982, the death rate was 34 to 104 times higher in this age group than in younger people.[50] Only about 10 percent of older adults living in the community receive pneumococcal vaccine and 20 percent receive influenza vaccines.[11,12]

The number of medicines prescribed to persons over the age of 65 increases the risk of adverse drug reactions, drug interactions, and other health problems associated with the use and misuse of medications. The risk of adverse reactions may be exacerbated by the physiological changes associated with aging. For example, decreased kidney and liver function can change the way the body processes medications. In some cases, the adverse effects of medication can be prevented by using a different drug or lower dose. Physicians, nurses, pharmacists and other health professionals can help reduce this risk through careful reviews of medication use and patient counseling.

Primary health care providers are necessary partners in the maintenance of good health and functional independence for older adults. In addition to ensuring appropriate screening, counseling, and immunization, they can monitor health status to detect early signs of other health problems that can threaten independence such as dementia or depression, as well as ensure an accurate distinction between the two in diagnosis. Alzheimer's disease is the best known and leading cause of cognitive impairment in older adults, but there are other, more treatable forms of dementia, characterized by deterioration of memory, orientation, general intellect, specific cognitive capacities, and social functioning. The prevalence of dementia ranges from about 5 to 10 percent of people over age 65, to 20 to 40 percent of those who have reached age 80. While most cases are not treatable, 10 to 20 percent of them—those caused by drug toxicity, metabolic disorders, depression, or hyperthyroidism—may be reversible.[15,31]

Providers can play an important role in identifying patients at risk for conditions for which interventions may be appropriate, e.g., counseling women at high risk for osteoporosis about the benefits and risks of estrogen replacement therapy. Urinary incontinence is another condition that can have serious consequences for functional independence. It affects many noninstitutionalized older adults and about half of all nursing home residents.[47] The risk of incontinence increases with age but it often is a sign of

other problems. Various treatments are available, including pelvic muscle exercises and other behavioral treatments, drug therapy, and surgery. A major impediment is that only about half the people with incontinence report it to their physicians. Increased awareness of available treatments could reduce this often incapacitating problem.

Social Networks

Social isolation is both a risk factor for disease and a measure of reduced functional independence. Social support networks are of critical importance in promoting the health and independence of older adults.[25] Life changes common to the seventh and eighth decades can increase the risk of social isolation. Retirement and changes in social roles can affect systems of contact and support, as can the loss of spouses and close friends.

Depression, a frequent outcome of such changes, is of particular concern among older adults because of its impact on functional independence and its importance as a risk factor for suicide. Men aged 65 through 74 have the highest suicide rate in the United States.[10] Depression is treatable but often goes unsuspected by families and undiagnosed by physicians, perhaps because it is often only one of several health problems besetting an older adult. However, primary care providers who recognize the clinical signs and risk factors for depression—bereavement, loneliness, and low self-esteem—can help reduce suicide among older adults. Illness and disrupted marital status have also been linked to suicide in this age group.

Community support networks that provide services to help older adults maintain independence are also critical interventions for reducing social isolation. Primary care providers can also play a critical role, not only in the identification of individuals at risk, but also by supplying information and referral to available services.

References

1 Agency for Toxic Substances and Disease Registry. *The Nature and Extent of Lead Poisoning in Children in the United States: A Report to Congress*. Washington, DC: U.S. Department of Health and Human Services, 1988.

2 The Alan Guttmacher Institute. Teenage Pregnancy: The Problem that Hasn't Gone Away. New York: the Institute, 1981.

3 American Cancer Society. *Cancer Facts and Figures - 1989*. New York: the Society, 1990.

4 American School Health Association.

5 American School Health Association, Association of the Advancement of Health Education and Society for Public Health Education. *National Adolescent Student Health Survey*. Oakland, CA: Third Party Press, 1989.

6 Bachman, J.G.; Johnston, L.D.; O'Malley, P.M.; and Humphrey, R.H. Explaining the recent decline in marijuana use: Differentiating effects of perceived risks, disapproval, and general lifestyle factors. *Journal of Health and Social Behavior* 29:92-112, 1988.

7 Behavioral Risk Factor Surveillance System, Centers for Disease Control, Public Health Service, U.S. Department of Health and Human Services, Atlanta, GA.

8 Bureau of the Census. *Educational Attainment in the United States: March 1987 and 1986*. Current Population Report, Series P-20, No. 428. Washington, DC: U.S. Department of Commerce, 1988.

9 Caspersen, C.J. Physical activity epidemiology: Concepts, methods, and applications to exercise science. *Exercise and Sport Sciences Reviews* 17:423-473, 1989.

10 Centers for Disease Control. *Suicide Surveillance, 1970-1980*. Atlanta, GA: Center for Health Promotion and Education, 1985.

11 Center for Infectious Diseases, Centers for Disease Control, Public Health Service, U.S. Department of Health and Human Services, Atlanta, GA.

12 Center for Prevention Services, Centers for Disease Control, Public Health Service, U.S. Department of Health and Human Services, Atlanta, GA.

13 Chasnoff, I.J. Drug use in women: Establishing a standard of care. *Annals of New York Academy of Sciences* 562:208, 1989.

14 Chasnoff, I.J.; Landress, H.J.; and Barrett, M.E. The prevalence of illicit drug and alcohol use during pregnancy and discrepancies in mandatory reporting in Pinellas County, Florida. *New England Journal of Medicine* 322:1202-6, 1990.

15 Clarfield, A.M. The reversible dementias: Do they reverse? *Ann Intern Med* 109:476-86, 1988.

16 Clayton, R.R. The delinquency and drug use relationship among adolescents: A critical review. In: National Institute on Drug Abuse (NIDA). Drug abuse and the American adolescent, edited by Lettieri, D.J. and Ludford, J. *NIDA Research Monograph 31*. Washington, DC: U.S. Department of Health and Human Services, 1981.

17 Division of Adolescent and School Health, Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control, Public Health Service, U.S. Department of Health and Human Services, Atlanta, GA.

18 Doll, R. and Peto, R. The causes of cancer: Quantitative estimates of avoidable risks of cancer in the United States today. *Journal of the National Cancer Institute* 66:1191-1308, 1981.

19 Drug Abuse Warning Network, National Institute on Drug Abuse, Alcohol, Drug Abuse, and Mental Health Administration, Public Health Service, U.S. Department of Health and Human Services, Rockville, MD.

20 Reference omitted.

21 Fiore, M.C.; Novotny, T.E.; Pierce, J.P.; Hatziandreu, E.J.; Patel, K.M.; and Davis R.M. Trends in cigarette smoking in the United States: The changing influence of race and gender. *JAMA* 261:49-55, 1989.

22 Hall, J.R. A decade of detectors: Measuring the effect. *Fire Journal* :37-43, 1985.

23 Hollinshead, W.H. et al. Statewide prevalence of illicit drug use by pregnant women - Rhode Island. *MMWR* 39(14):225-7, 1990.

24 Institute of Medicine. *Disability in America: A National Agenda for Prevention*. edited by Pope, A. and Tarloff, A. Washington DC: National Academy Press, in press.

25 Institute of Medicine. *The Second Fifty Years: Promoting Health and Preventing Disability*. Washington DC: National Academy Press, in press.

26 Institute of Medicine, National Academy of Sciences. *The Future of Public Health*. Washington, DC: National Academy Press, 1988.

27 Jones, E.F. and Forrest, J.D. Contraceptive failure in the United States: Revised estimates from the 1982 National Survey of Family Growth. *Family Planning Perspectives* 21(3):103-9, 1989.

28 Keith, L.G.; McGregor, S.N.; and Sciarra, J.J. Drug abuse in pregnancy. In: Chasnoff, I.J. ed. *Drugs, Alcohol, Pregnancy and Parenting*. Hingham, MA: Kluwer Academic Publishers, 1988.

29 Kleinman, J.C. and Kopstein, A. Smoking during pregnancy, 1967-1980. *American Journal of Public Health* 77:823-25, 1987.

30 Kleinman, J.C. and Madans, J.H. The effects of maternal smoking, physical stature, and educational attainment on the incidence of low birth weight. *American Journal of Epidemiology* 121(6):832-55, 1985.

31 Larson, E.B.; Reifler, B.V.; Featherstone, H.J.; et al. Dementia in elderly outpatients: A prospective study. *Ann Intern Med* 100:417-23, 1984.

32 National Cancer Institute. *1987 Annual Cancer Statistics Review*. DHHS Pub. No. (NIH)88-2789. Bethesda, MD: U.S. Department of Health and Human Services, 1988.

33 National Cancer Institute and the National Center for Health Statistics. Unpublished data from the Cancer Control Supplement to the 1987 National Health Interview Survey.

34 National Center for Health Statistics. *Health United States, 1989*. DHHS Pub. No. (PHS)90-1232. Hyattsville, MD: U.S. Department of Health and Human Services, 1990.

35 National Center for Health Statistics. *Prevention profile. Health, United States, 1989*. DHHS Pub. No. (PHS)90-1232. Hyattsville, MD: U.S. Department of Health and Human Services, 1990.

36 National Center for Statistics and Analysis. *Occupant Protection Facts*. Washington, DC: U.S. Department of Transportation, 1989.

37 National Health and Nutrition Examination Survey (NHANES), National Center for Health Statistics, Centers for Disease Control, Public Health Service, U.S. Department of Health and Human Services, Hyattsville, MD.

38 National Health Interview Survey, National Center for Health Statistics, Centers for Disease Control, Public Health Service, U.S. Department of Health and Human Services, Hyattsville, MD.

39 National Heart, Lung, and Blood Institute. Hypertension prevalence and the status of awareness, treatment, and control in the U.S.: Final report of the subcommittee on definition and prevalence of the 1984 joint national committee. *Hypertension* 7(3): 457-468, 1985.

40 National Heart, Lung, and Blood Institute. *Report of the Expert Panel on Detection, Evaluation, and Treatment of High Blood Cholesterol Adults*. National Cholesterol Education Program. Washington, DC: U.S. Department of Health and Human Services, 1988.

41 National Heart, Lung, and Blood Institute. *The 1988 Report of the Joint National Committee on Detection, Evaluation, and Treatment of High Blood Pressure*. Washington, DC: U.S. Department of Health and Human Services, 1988.

42 National Heart, Lung, and Blood Institute, National Institutes of Health, Public Health Service, U.S. Department of Health and Human Services, Bethesda, MD.

[43] National High School Seniors Survey, National Institute on Drug Abuse, Alcohol, Drug Abuse, and Mental Health Administration, Public Health Service, U.S. Department of Health and Human Services, Rockville, MD.

[44] National Highway Traffic Safety Administration's 19 Cities Survey, Department of Transportation, Washington, DC.

[45] National Institute on Drug Abuse. *National Household Survey on Drug Abuse: Population Estimates, 1988*. DHHS Pub. No. (ADM)89-1636. Washington, DC: U.S. Department of Health and Human Services, 1989.

[46] National Institute on Drug Abuse. *National Survey Results from High School, College, and Young Adult Populations, 1975-1988*. DHHS Pub. No. (ADM)89-1638. Washington, DC: U.S. Department of Health and Human Services, 1989.

[47] National Institute of Health. Consensus Development Conference Statement: Urinary Incontinence in Adults, October 3-5, 1988.

[48] National School Boards Association. *Smoke-free Schools: A Progress Report*. Alexandria, VA: the Association, 1989.

[49] National Survey of Family Growth. National Center for Health Statistics, Centers for Disease Control, Public Health Service, U.S. Department of Health and Human Services, Hyattsville, MD.

[50] National Vital Statistics, National Center for Health Statistics, Centers for Disease Control, Public Health Service, U.S. Department of Health and Human Services, Hyattsville, MD.

[51] Office of Disease Prevention and Health Promotion. *Mass Communications and Health*. Washington, DC: U.S. Department of Health and Human Services, 1990.

[52] Office of Disease Prevention and Health Promotion. *Prevention 89/90: Federal Programs and Progress*. Washington DC: U.S. Department of Health and Human Services, 1990.

[53] Office on Smoking and Health. *Reducing the Health Consequences of Smoking: 25 Years of Progress. A Report of the Surgeon General*. DHHS Publication No. (CDC)89-8411. Washington, DC: U.S. Department of Health and Human Services, 1989.

[54] Office of Technology Assessment. *Healthy Children: Investing in the Future*. Washington, DC: U.S. Congress, 1988.

[55] Pierce, J.P.; Fiore, M.C.; Novotny, T.E.; Hatziandreu, E.J.; and Davis, R.M. Trends in cigarette smoking in the United States: Projections to the year 2000 *JAMA* 261:61-65, 1989.

[56] Pirie, P.L.; Murray, D.M.; and Luepker, R.V. Smoking prevalence in a cohort of adolescents, including absentees, drop outs, and transfers. *American Journal of Public Health* 78:176-78, 1988.

[57] President's Committee on Mental Retardation. *Preventing the New Morbidity: A Guide for State Planning for the Prevention of Mental Retardation and Related Disabilities Associated with Socioeconomic Conditions*. Washington, DC: U.S. Deaprtment of Health and Human Services, 1988.

[58] Public Health Service. *The Surgeon General's Report on Health Promotion and Disease Prevention*. DHEW Pub. No.(PHS) 79-55071. Washington, DC: U.S. Department of Health, Education and Welfare, 1979.

[59] Public Health Service. *Surgeon General's Report on Nutrition and Health*. Washington, DC: U.S. Department of Health and Human Services, 1988.

[60] Report to Congress and the White House on the Nature and Effectiveness of Federal, State, and Local Drug Prevention/Education Programs. Washington, DC: U.S. Department of Education, 1987.

[61] Schoenborn, C.A. *Health Promotion and Disease Prevention: United States, 1985*. Public Health Service. Vital and Health Statistics, Series 10, No. 163. DHHS Pub. No. (PHS)88-1591, 1988.

[62] Secretary's Task Force on Black and Minority Health. *Report of the Secretary's Task Force on Black and Minority Health*. Washington, DC: U.S. Department of Health and Human Services, 1985.

[63] Shapiro, S.; Venet, W.; Strax, L.; and Roeser, R. Selection, follow-up, and analysis in the Health Insurance Plan Study: A randomized trial with breast cancer screening. *National Cancer Institute Monographs* 67:65-74, 1985.

[64] Shapiro S.; McCormick, M.C.; Starfield, B.H.; Krischer, J.P.; and Bross, D. Relevance of correlates of infant deaths for significant morbidity at one year of age. *American Journal of Obstetrics and Gynecology* 136:363-373, 1980.

[65] Sonnenstein, F.L.; Pleck, J.H.; and Ku, L.C. Sexual activity, condom use, and AIDS awareness among adolescent males. *Family Planning Perspectives* 21(4):152-8, 1989.

[66] Taffel, S.M. *Maternal Weight Gain and the Outcome of Pregnancy. Vital and Health Statistics*, Series 21, No. 44, DHHS Pub. No. (PHS)86-1922. Washington, DC: U.S. Department of Health and Human Services, 1986.

[67] U.S. Department of Health and Human Services. National children and youth fitness study II. *Journal of Physical Education, Recreation, and Dance* 58:50-96, 1987.

[68] U.S. Preventive Services Task Force. *Guide to Clinical Preventive Services: An Assessment of the Effectiveness of 169 Interventions*. Baltimore, MD: Williams and Wilkins, 1989.

[69] Westat, Inc. *Study Findings: Study of National Incidence of Child Abuse and Neglect*. Washington, DC: U.S. Department of Health and Human Services, 1988.

3. The Nation's Health: Special Populations

Progress toward a healthier America will depend substantially on improvements for certain populations that are at especially high risk. For that reason, *Healthy People 2000* sets specific targets to narrow the gap between the total population and those population groups that now experience above average incidences of death, disease, and disability. These population groups include people with low incomes, people who are members of some racial and ethnic minority groups, and people with disabilities. Likewise, it sets specific targets for controlling some of the risk factors that contribute to the disease burden of groups at highest risk. Special population groups often need targeted preventive efforts, and such efforts require understanding the needs and the particular disparities experienced by these groups. General solutions cannot always be used to solve specific problems.

This section provides profiles of the at-risk population groups addressed by *Healthy People 2000*: low-income groups, minority groups, and people with disabilities. At the outset, it is necessary to point to two caveats that limit these profiles and pose major health challenges in themselves.

First, data are limited; sometimes, and for some groups, the data may be severely limited. Without data, targets cannot be set, even though professional consensus exists that a population group is at considerably higher risk than the total population. A challenge of the coming years is to build better data systems, at national and State levels, in order that the scope of health threats facing various groups within our society can be adequately defined and appropriate preventive interventions can be effectively focused.

Second, the special populations themselves are extremely heterogenous. Whether the group is defined as low income, black, Hispanic, Asian and Pacific Islander Americans, American Indians/Alaska Natives, or people with disabilities, the variations within each group are extensive. Generalizations, which characterize population profiles by definition, are dangerous because the exceptions are many. The challenge is to refine our knowledge and our understanding even further, especially as basic health policies are translated into community-based prevention programs and clinical preventive services.

With these two caveats in mind, profiles of special populations can be used, together with those in the preceding section that address age groups, to provide the human context for the health strategy laid out in this report.

People with Low Income

Nearly 1 of every 8 Americans lives in a family with an income below the Federal poverty level. Nearly a quarter of children younger than 6 are members of such families.[10] Low income itself (or low socioeconomic status) is a shorthand label that encompasses family groups with individuals who have poorly paid jobs or are unemployed, families living in substandard housing, and families more likely to have only a single parent in residence. Health disparities between poor people and those with higher incomes are almost universal for all dimensions of health.[1] Those disparities may be summarized by the finding that people with low income have death rates that are twice the rates for people with incomes above the poverty level.

For virtually all of the chronic diseases that lead the Nation's list of killers, low income is a special risk factor. For example, the risk of death from heart disease is more than 25 percent higher for low income people than for the overall population.[14] The incidence of cancer increases as family income decreases, and survival rates are lower for low-income

cancer patients. The association of cancer and low income varies by cancer site; lung, esophageal, oral, stomach, cervical, and prostate cancers are more frequent among the poor, while breast and colorectal cancers are not.[1,24] Infectious diseases, like HIV infection and tuberculosis, are also often found disproportionately among the poor.

Similar vulnerability for low income people is found with some causes of traumatic injury and death. These individuals, more than those with higher incomes, are the victims of violent crime. Poverty appears to be a major predisposing factor associated with a higher risk for murder of acquaintances and family members, as well as robbery-motivated killings of strangers. Injuries and deaths among children from fires, drowning, and suffocation are strongly related to low socioeconomic status.[24]

No single indicator of health status makes the connection between poverty and poor health more clear than does infant mortality. Poor pregnancy outcomes including prematurity, low birth weight, birth defects, and infant death are linked to low income, low educational level, low occupational status, and other indicators of social and economic disadvantage.[24]

Poverty reduces a person's prospects for long life by increasing the chances of infant death, chronic disease, and traumatic death; poverty is also often associated with significant developmental limitations. For example, iron deficiency is more than twice as common in low income children, aged 1 and 2, as it is among the total population of that age.[12] Growth retardation affects 16 percent of low income children younger than age 6. In the mid-1980s, an estimated 3 million children, virtually all of them from low income families, had blood lead levels that exceeded 15 µg/dL, sufficient to place them at risk for impaired mental and physical development. The rate of mental retardation is reported to be higher among children in poverty. Poor children experience more sickness from infection and other debilitating conditions than the total population. Children in families with incomes below $5,000 per year had an average of 9.1 disability days in 1980 compared to only 4 days for children in families with incomes of $25,000 or more.[13]

The pattern of increased vulnerability to injury, disease, and death continues into adulthood. People in families with incomes of less than $10,000 a year are twice as likely as the total population to be limited in some activities of daily living. (Fig.3.1) Activity limitations are four times more common among people with 8 years or less of education than among those with 16 years or more. Bed disability days increase as income decreases.[19]

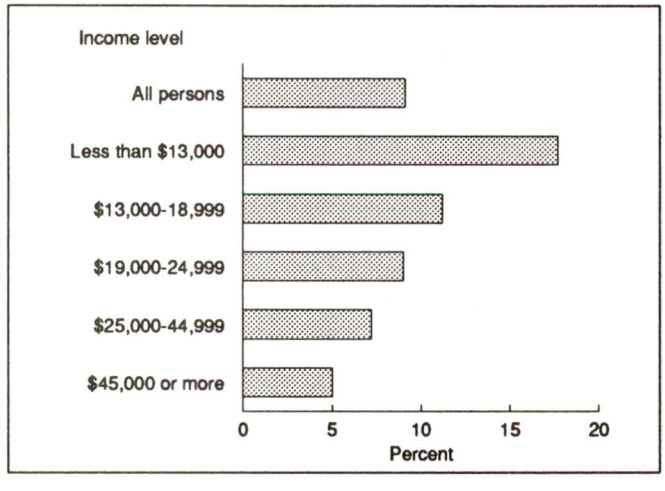

Fig. 3.1

Percentage of people who experience limitation of major activity, by income level (1988, age adjusted)

Source: National Health Interview Survey

Just as poor health is more likely among persons of low income, so are some, but not all, of the major risk factors for poor health. Higher-than-average rates of obesity and high blood pressure, which are major risks for heart disease and stroke, have been linked directly with low income status.[24] Tobacco use, which has declined dramatically in the past two decades for the population as a whole, has remained virtually constant since 1966 for those who completed less than 12 years of schooling. Smoking levels among blue-collar workers are about 20 percent higher than among others.[20]

Whereas in 1987 about 15 percent of people under age 65 had no health insurance either by private or public forms of coverage, lack of health insurance coverage was a problem for nearly twice as many who lived in families in which the principal wage earners made $3.50 an hour or less. Two-thirds of children from families below the poverty level are uninsured or insured only part of the year, and one-fourth of women aged 16 to 24 have no health insurance.[19]

In 1987 only 22 percent of low-income women over age 40 had ever received a clinical breast examination and a mammogram, as compared to 36 percent of women in the total population.[13] Relatively low survival rates for breast cancer among low-income women point to the need for earlier diagnosis and treatment. While the benefits of prenatal care for low-income women are well documented, with a savings-cost ratio on the order of 3-to-1, low utilization rates are characteristic of groups at high risk of low birth weight and other maternal and infant health problems.[24] Approximately 40 percent of children from low-income families have untreated dental caries, another indicator of the lack of preventive and primary health care.[18]

For the coming decade, perhaps no challenge is more compelling than that of equity. The disparities experienced by people who are born and live their lives at the lowest income levels define the dimensions of that challenge. The relationships between poverty and health are complex and cannot be reduced to a simple one-to-one relationship between dollars available and level of health. Low income may, in fact, be a product of poor health, just as poor health may be caused by environmental exposures, material deficiencies, and lack of access to health services that adequate income might correct or improve. While, from a public health perspective, the leverage available to effect improvements is limited largely to the availability and the quality of health services, improvements in education, job training, and other social services are necessary to erase the health effects of current income disparities.

Minorities

The United States has been called a "melting pot" of ethnic and racial groups. In recent decades, it has become clearer that the image is no longer an appropriate one. Rather than amalgamating into one single group, we have come to recognize and even celebrate our diversity as a basis for national strength. Nevertheless, our health care programs are characterized by unacceptable disparities linked to membership in certain racial and ethnic groups.

The predominant minority populations of the United States can be categorized as blacks, Hispanics, Asian and Pacific Islander Americans, and American Indians/Alaska Natives. From a total population perspective, the categories simplify the difficulties of assessing health status and making plans to improve health. But they are gross simplifications. Within each racial or ethnic category, significant subgroup differences exist. Demarcations among minority populations are not absolute. There are black Hispanics. Many nonblack Hispanics share historic roots and genetic endowments that are closely related to those of many American Indian groups, while others have European roots and do not share the genetic make-up which may predispose to adult-onset diabetes. Alaska Natives

may have more in common with some Asians than they do with American Indians in the lower 48 States. In short, differences within the principal population groups must always temper generalizations about their health needs.

The extent of disparities suffered by minority groups in America was documented in the mid-1980s by the *Report of the Secretary's Task Force on Black and Minority Health.* This report found that black Americans suffered nearly 60,000 excess deaths per year in the period 1979-1980, with "excess deaths" defined as the difference between the number of deaths observed in that minority population and the number of deaths that would have been expected if that population had the same age- and gender-specific death rate as the white population.

A compelling disparity of most minority populations in the United States is socioeconomic. The discussion on low-income people describes a small portion of the white American population. It applies to much larger portions of those from black, Hispanic, Asian and Pacific Islander, and American Indian and Alaska Native communities. Poverty and near-poverty appear as underlying elements of many health problems experienced by these groups. But if the socioeconomic effects are set aside, many disparities experienced by these population groups will still be observed. Simply put, some differences in survival and health are not solely explained by poverty or other environmental factors.[4] For that reason, *Healthy People 2000* assesses disparities not only in terms of income level and educational attainment, but also in terms of the Nation's racial and ethnic population groups. Special population targets for improvements to be achieved by 2000 are set for those groups with higher risks than the total population, where data are available to establish such targets.

Black Americans

African Americans make up 12 percent of the United States population, thereby constituting the Nation's largest minority group. Members of this group live in all regions of the country and are represented in every socioeconomic group. One-third of blacks live in poverty, a rate three times that of the white population. Over half live in central cities, in areas often typified by poverty, poor schools, crowded housing, unemployment, exposure to a pervasive drug culture and periodic street violence, and generally high levels of stress. Life expectancy for blacks has lagged behind that for the total population throughout this century; since the mid-1980s the gap has actually widened, with the life expectancy rising to 75 years for the overall population while falling slightly for blacks, from a high of 69.7 years in 1984 to 69.4 years in 1987.[3] The leading chronic diseases as causes of death for black Americans are the same as those for the majority population. (Fig. 3.2) However, black men die from strokes at almost twice the rate of men in the total population, and their risk of nonfatal stroke is also higher. Coronary heart disease death rates do not show such disparate levels, although death rates are higher for black women than for white women. On the other hand, when heart disease rates are compared within income levels, black rates are lower than those for whites.[24]

Black men also experience a higher risk of cancer than nonblack men, with a 25-percent higher risk of all cancers and a 45-percent higher incidence of lung cancer. Only 38 percent of blacks with cancer survive 5 years after diagnosis, compared to 50 percent of whites.[24]

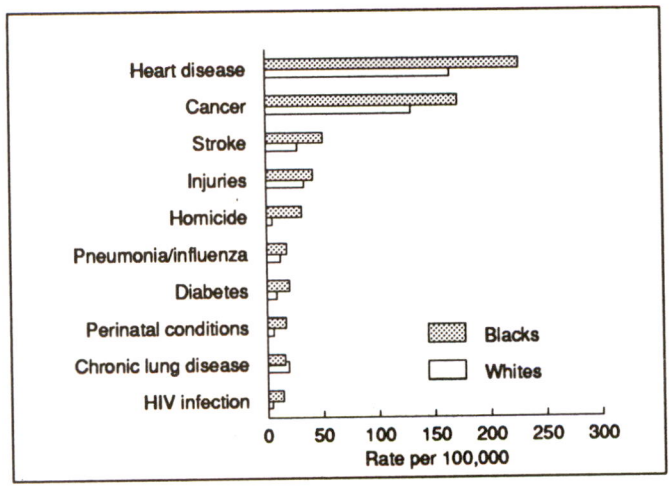

Fig. 3.2

Leading causes of death for blacks compared to whites (1987, age-adjusted rates)

Source: National Center for Health Statistics

Diabetes is 33 percent more common among blacks than whites. The highest rates are among black women, especially those who are overweight. The complications of diabetes—heart disease, stroke, kidney failure, and blindness—all are more prevalent among blacks with diabetes than whites with diabetes.[24]

Black babies are twice as likely as white babies to die before their first birthday. High rates of low birth weight among black babies account for many of these deaths, but even normal-weight black babies have a greater risk of death. Black infant mortality rates are higher not only for babies in the first month of life, but also for those between 1 month and 1 year of age. The major killer in this period is sudden infant death syndrome (SIDS). Other causes of death that are more prevalent for black infants than for the total population include respiratory distress syndrome, infections, and injuries.[17]

Homicide is the most frequent cause of death for black men between the ages of 15 and 34. The homicide rate for those between ages 25 and 34 is 7 times that of whites. A black man has a 1-in-21 lifetime chance of being murdered, and black women are more than four times as likely to be homicide victims as white women.[24] Most young black murder victims are killed with firearms in the course of an argument. It is estimated that about half of all homicides in the United States are related to alcohol use and 10 percent or more to the use of illegal drugs.

The rate of AIDS among blacks is more than triple that of whites. Among women and children, the gaps are even wider. Black women face between 10 and 15 times the risk of AIDS as compared to white women. Black children account for more than 50 percent of all children with AIDS. The proportion of AIDS cases associated with intravenous drug abuse is greater for blacks than for other AIDS victims, and higher rates of heterosexual transmission of the HIV virus and transmission of the virus from mother to infant occur as a consequence.[25]

Disparities in the experience of health risks mirror some of the most striking disparities in health outcomes. High blood pressure is much more common among blacks of both genders than among the total population. Severe high blood pressure is present 3 times more often among blacks than among whites.[19] Overweight is a problem for 44 percent of black women aged 20 and older, compared to 37 percent for low income women and 27 percent for all women. Poor nutrition, smoking, alcohol and drug abuse, and other risk factors appear more commonly among blacks with low incomes.[24]

Adolescent pregnancy is a major concern among the black population, for its social and economic consequences as much as for its health effects. There are higher risks of infant

mortality and low birth weight, especially for very young pregnant girls. But even greater risks indirectly threaten the health of both mother and baby because of the patterns of poverty and low educational attainment that often become solidified as a result of early childbearing. Actual rates of childbirth among black teenagers have dropped since the 1960s, but because the number of girls in this population has risen by 20 percent, the total number of births has increased. In 1987, births among girls aged 15 through 17 and also among girls younger than age 15 were 3 times as likely among black girls as among white girls. Birth rates among black girls younger than 15 were nearly 5 times higher, than the rate for white girls.[24]

Statistics demonstrate with sharp clarity that blacks do not receive enough early, routine, and preventive health care. Early prenatal care can reduce low birth weight and prevent infant deaths. Early detection of cancers can increase survival rates. Appropriate medical care can reduce the frequency and severity of the complications of diabetes, which blacks experience at higher rates than others. Information about actual use of health care services confirm these indications. Blacks make fewer annual visits to physicians than whites, and black mothers are twice as likely as white mothers to receive no health care or care only in the last trimester of their pregnancies.[24] Hospital emergency rooms and clinics are a much more common source of medical care for blacks than for whites, and 20 percent of blacks compared to 13 percent of whites report no usual source of medical care.[24] Though recent statistics are not available to assess immunization coverage by race, children in central cities—many of whom are black Americans—lagged as much as 20 percent behind immunization rates for children living in other places. About 18 percent of blacks have no private or public medical insurance, compared to 9 percent of whites.[24]

Hispanic Americans

The Hispanic subgroups—Mexican Americans, Puerto Ricans, Cuban Americans, Central and South American immigrants, and other Spanish surname/Spanish-speaking communities—compose the second largest minority group in the United States. At the beginning of the 1990s, they constitute about 8 percent of the total population and are the fastest growing minority group. Over 70 percent of Hispanics were born in this country. Within the Hispanic populations, Mexican Americans are nearly two-thirds of the total, Puerto Ricans (excluding those who live in Puerto Rico) are 12 percent, Cuban Americans are 5 percent, people of Central and South American origin are 11 percent, and others (including Spanish-speaking immigrants from Caribbean islands) make up 9 percent. Eighty-seven percent of Hispanics live in urban areas. The largest concentrations of Mexican Americans are in Western States, notably California and Texas. More Puerto Ricans reside in East Coast States, led by New York. Cuban Americans more often reside in Florida.[11]

Hispanics experience perhaps the most varied set of health issues facing a single minority population. Whereas Mexican Americans have low rates of cerebrovascular disease, stroke rates among New York Puerto Ricans are high. Cuban Americans have high utilization rates for prenatal care, but lower rates prevail among Mexican Americans and Puerto Ricans. Infant mortality rates vary substantially from group to group. (Fig. 3.3) In short, the Hispanic health profile is marked by diversity. This diversity is intertwined with the ever-present effects of socioeconomic status, and with geographic and cultural differences.

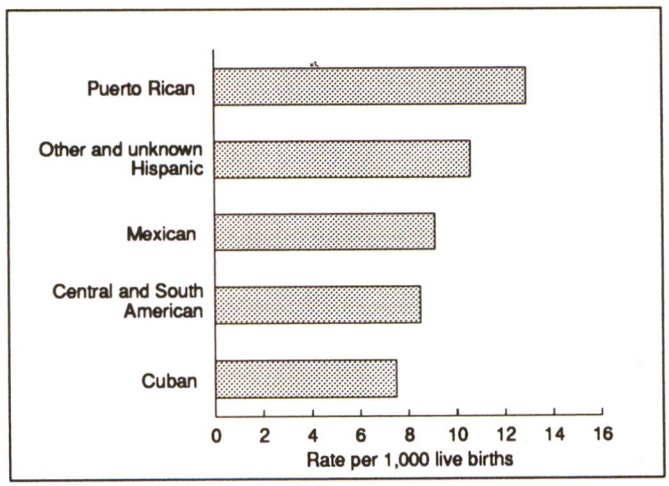

Fig. 3.3
Infant mortality rates for selected Hispanic groups

Source: National Linked Infant Birth and Death Record File

Two related demographic facts are especially important for the health issues and prospects of the Hispanic population: its youthfulness and its high birth rate. The median Hispanic age is less than 26, compared to about 33 for the total population. Approximately 38 percent of all Hispanics are aged 19 and younger.[21] The Hispanic birth rate was 94 births per 1,000 women in 1987, while that of the total population was 69 births per 1,000 women.

The leading causes of death among Hispanic Americans document several differences between their health experience and that of the total population. (Fig. 3.4) Heart disease and cancer lead the list, as is the case for other Americans, but death rates from these 2 causes are actually lower than for non-Hispanics.[24] Unintentional injuries, homicide, chronic liver disease and cirrhosis, and AIDS rank higher on the Hispanic list; suicide, stroke, and chronic obstructive pulmonary disease rank lower.[11] In the case of homicide, the great majority of victims are young men. In the southwest, Hispanic men aged 20 through 24 have 4 times the homicide rate of their non-Hispanic, white counterparts. In the case of AIDS, Hispanics' rate is nearly 3 times higher than for non-Hispanic whites, with rates among Puerto Rican-born Hispanics as much as 7 times higher.[26] The cumulative incidence of AIDS among Hispanic women is about 8 times higher than among non-Hispanic women, and the rate for HIV infection over 6 times higher for Hispanic children. As with black Americans, HIV transmission among Hispanic women is primarily linked to intravenous drug abuse by these women or their sexual partners.[26] Diabetes is especially prevalent among Mexican Americans.[11]

Hispanics		*Rank*	*White non-Hispanics*	
Heart disease	25%	1	Heart disease	37%
Cancer	17%	2	Cancer	23%
Injuries	9%	3	Stroke	7%
Stroke	6%	4	Chronic lung disease	4%
Homicide	5%	5	Injuries	4%
Liver disease	3%	6	Pneumonia/ influenza	4%
Pneumonia/ influenza	3%	7	Diabetes	2%
Diabetes	3%	8	Suicide	2%
HIV infection	3%	9	Atherosclerosis	1%
Perinatal conditions	3%	10	Liver disease	1%

Note: National death rate data unavailable for Hispanics

Fig. 3.4

Leading causes of death for Hispanics and white non-Hispanics in 18 States and the District of Columbia, as a percent of total deaths (1987)

Source: *Health, United States, 1989* and National Center for Health Statistics

Among the risks to health, smoking continues among 43 percent of Hispanic men, and Hispanic teenagers of both genders smoke more than do either non-Hispanic black or non-Hispanic white teenagers.[11] Likewise, Hispanic teenagers report heavy drinking of alcoholic beverages more frequently than do white or black teenagers.[11] Puerto Ricans and Cuban Americans aged 12 through 17 report higher rates of cocaine use than do either whites or blacks, and Mexican Americans have higher rates of marijuana use. Cocaine-related deaths tripled between 1982 and 1984 among Hispanics, while they were doubling among non-Hispanic whites.[11]

Overweight is common among Hispanics, especially among Mexican American women. This disparity cannot be accounted for completely by socioeconomic differences. Likewise, Mexican Americans participating in a San Antonio Heart Study were found to have physical activity rates lower than those in the total population, even after differences in socioeconomic status, residential location, and gender were taken into account.[11]

Like black Americans, Hispanic Americans receive less preventive health care, including prenatal care, than the total population. In 1987, 13 percent of Hispanic mothers had late or no prenatal care compared to 4 percent of non-Hispanic whites.[11] Barriers to care include language differences between Spanish-speaking patients and English-speaking health professionals, logistical barriers posed by rural residence of some Hispanic families, and costs of services. In 1986, nearly 22 percent of Hispanics had no health insurance, either public or private, compared to 10 percent of blacks and less than 8 percent of whites.[27]

Migrant farmworkers, a small but important subset of Hispanic Americans, deserve special attention. Migrant farmworkers may also belong to white, black, Haitian, or other ethnic groups, but one of the largest sources is Hispanic. Their infant mortality rate is about 25 percent greater than that of the national average; their life expectancy is 49 years rather than 75 years; the rate of parasitic infection among some sets of farm workers approaches 50 times that of the total population.[16] The health care needs of these farmworkers are particularly challenging, given their migratory patterns, low incomes, poor education, and lack of health insurance.

Asian and Pacific Islander Americans

The diversity that characterizes the more than 11 million people who are Asian and Pacific Islanders is striking. As a whole, they are the Nation's third largest minority group, but this single label is an oversimplification. They speak over 30 different languages and bring with them a similar number of distinct cultures. Approximately three-quarters of them are immigrants, mostly from Southeast Asia, and many of them are refugees. A small proportion are either immigrants from South Pacific islands or Native Hawaiians.[3]

From the perspective of their health prospects, those born within the United States and established here for generations are virtually undistinguishable from the population as a whole. Indeed, their median income is higher than that of the overall United States population, with Japanese families having annual incomes 38-percent higher than the national median income. Yet, some groups, particularly recent immigrants, are extremely poor. For example, Laotian immigrants have one of the highest poverty rates of any group in the Nation. Even within subgroups, diversity characterizes both socioeconomic and health profiles. While Chinese Americans generally enjoy adequate incomes and relatively good health, communities such as Chinatown in San Francisco have higher poverty levels. Elimination of the disparities between Asian and Pacific Islander Americans and the general population may parallel integration of the newer immigrants into both the economy and the society of the United States.

An adequate depiction of the health of Asian and Pacific Islander Americans is constrained by limited data. (Fig. 3.5) Many national data systems are unable to make estimates of this minority population because of its relatively small size. This prevents accurate assessment of the leading causes of death, disease, and disability that it experiences. Generalizations from local studies may be inaccurate and misleading due to the profound differences among Asian and Pacific Islander American groups, for example the difference in perinatal mortality among the groups. (Fig. 3.6) From those local studies, however, it is possible to recognize certain diseases as posing higher than normal risks for specific Asian and Pacific Islander Americans. Most of the studies are based in California, which has the largest Asian and Pacific Islander American population.

Disparities in rates of cancer exist for several subgroups and selected cancer sites. For example, the breast cancer incidence rate among Native Hawaiians is 111 per 100,000 women, as compared to 86 per 100,000 among whites. The lung cancer rate is 18 percent higher among Southeast Asian men than for the white population. And the liver cancer rate is more than 12 times higher among Southeast Asians than in the white population.[2,23] Higher rates of high blood pressure have been found among Filipinos aged 50 and older living in California (61 percent for men and 65 percent for women) than among the total California population (47 percent).[24]

Asians and Pacific Islanders		*Rank*	*Whites*	
Heart disease	28%	1	Heart disease	35%
Cancer	24%	2	Cancer	23%
Stroke	9%	3	Stroke	8%
Injuries	7%	4	Chronic lung disease	5%
Pneumonia/ influenza	4%	5	Pnuemonia/ influenza	4%
Chronic lung disease	3%	6	Injuries	4%
Suicide	2%	7	Suicide	2%
Diabetes	2%	8	Liver disease	2%
Perinatal conditions	2%	9	Diabetes	1%
Liver disease	1%	10	Atherosclerosis	1%

Note: Asian and Pacific Islander category consists of 93 percent Asians and 7 percent Other (Native Americans, Eskimos, and Alaskan Aleuts.) National death rate data are unavailable for Asians and Pacific Islanders. In 1980, 35.2 percent of all Asian Americans lived in California.

Fig. 3.5

Leading causes of death for Asians and Pacific Islanders and whites in California, as a percent of total deaths (1987)

Source: California State Department of Health and Asian American Health Forum

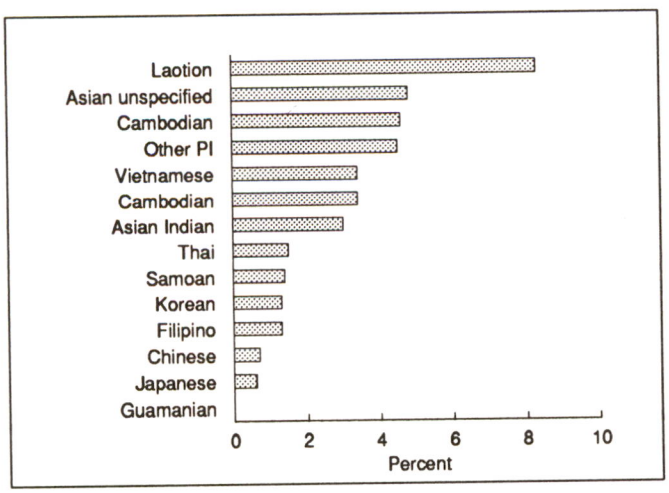

Fig. 3.6

Percent of deaths attributed to conditions originating in the perinatal period, for selected Asian groups

Source: California State Department of Health and Asian American Health Forum

The two infectious diseases that have followed immigrant Asian and Pacific Islander population subgroups to this country are tuberculosis and hepatitis B. Tuberculosis is still the leading cause of death in some Asian countries and has become a serious health problem in some Asian communities in large American cities. Among Southeast Asian immigrants, the incidence is 40 times higher than in the total population. Rates are particularly high among those over age 45.[2] Higher rates of hepatitis B are also found among Asian immigrants. This infection is associated with chronic liver disease, cirrhosis, and liver cancer. The overall carrier rate in the United States is estimated to be 0.3 percent of the population; among immigrants from Southeast Asia the estimated rate is 4 percent. Infection is spread from mother to infant and from child to child. Refugee transit camps now screen pregnant women and vaccinate infants of those who are carriers of hepatitis B and all children under age 6.[5]

Among the risk factors of greatest concern is smoking. Among California immigrant groups, smoking rates among men are 92 percent for Laotians, 71 percent for Cambodians, and 65 percent for Vietnamese, compared to 30 percent for the overall American population.[2,24]

Faced with western medicine and a health care system that is unfamiliar, Americans of Asian and Pacific Island heritage experience unique access barriers to primary care. In addition to linguistic and cultural differences, financial problems beset many subgroups, especially recent immigrants and refugees.

American Indians and Alaska Natives

Descendants of the original residents of North America now number approximately 1.6 million and compose the smallest of the defined minority groups. Diversity characterizes this group, too, encompassing numerous tribes and over 400 federally recognized nations, each with its own traditions and cultural heritage. Eskimos, Aleuts, and Indians residing in Alaska are referred to as Alaska Natives; those residing in other States are referred to as American Indians. The Federal Government collects detailed data on American Indians and Alaska Natives in 33 States that include reservations; health care services are provided through the Indian Health Service to those living in these reservation States. Thus, it is possible to derive a composite profile of this population group. However, only about one-third of this group lives on reservations or historic trust lands, while about 50 percent live in urban centers.

In general, the American Indian and Alaska Native population is youthful. The median age of those living in the reservation States is about 23, compared to over 32 for the United States population as a whole. Income and educational levels tend to be low, with more than 1 in 4 living below the poverty level and fewer than 8 percent having college degrees.[6]

One reason for the youthfulness of the population is the large proportion of the population who die before age 45. Most of the excess deaths—those that would not have occurred if American Indian death rates were comparable to those of the total population—can be traced to 6 causes: unintentional injuries, cirrhosis, homicide, suicide, pneumonia, and complications of diabetes.[24] (Fig. 3.7) Heart disease and cancer are not among the sources of excess deaths, perhaps because these are generally diseases of older age.[24] Cancer rates are lower overall, but are twice as high as the total population for lung cancer among Oklahoma Indians. Southwest Indians have high rates of gallbladder cancer, and Alaska Natives suffer high rates of liver cancer.[24]

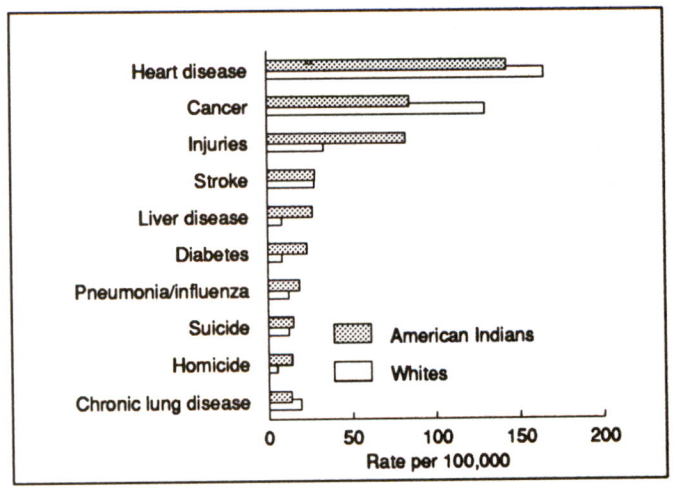

Fig. 3.7

Leading causes of death for American Indians compared to whites (1987, age adjusted rates)

Source: Indian Health Service and National Center for Health Statistics

The second leading cause of death among American Indian men, and the first cause for those younger than age 44, is unintentional injuries, accounting for over one-fifth of all their deaths each year.[24] An estimated 75 percent of these injuries are alcohol-related, and 54 percent involve motor vehicle crashes.[19] Alcohol is also a factor in a homicide rate that is 60 percent higher than that of the total population. Suicide, the third of the four alcohol-related causes of death among American Indians, occurs at an overall rate that is 28 percent higher than the national rate, but among some tribes the suicide rate is 10 times higher than the total population rate.[24]

Cirrhosis and diabetes are the two chronic diseases that afflict American Indians more frequently than other groups. Cirrhosis deaths occur at about three times the total population rate, and cirrhosis is the fourth alcohol-related health effect contributing significantly to death and disability among American Indians.[22] Diabetes is now so prevalent that in many tribes more than 20 percent of the members have this disease.[24] Among two tribes in Arizona, the rate is 40 percent of adults. Obesity contributes to the high incidence of diabetes experienced by many American Indian communities, and it is also linked to hypertension and cardiovascular disease. The increase in obesity among American Indians in the last 50 years has paralleled the increasing rates of diabetes.

Alcohol and obesity are risk factors that stand out as problems for the American Indian population. One estimate is that 95 percent of American Indian families are affected either directly or indirectly by a family member's alcohol abuse.[22] While American Indians living on reservations and tribal members with access to reservation health facilities are served by the Indian Health Service, access to health care is still a problem for many. Many live in rural areas where the availability of physicians is about half that of the national average and where the Indian Health Service may not provide health care services. Health problems may appear especially intractable, but gains achieved among a number of tribes in reducing infant mortality rates to levels below those of the population as a whole provide testimony to the possibility of major improvement in the coming decade.

People With Disabilities

Throughout this document, the preventive actions implicit in targets to be achieved by 2000 seek not only to reduce unnecessary deaths and the immediate suffering and costs of infectious and chronic diseases; they also seek to prevent the longer-term consequences of functional impairments that can severely affect the quality of one's life. As a prevention plan for the 1990s, *Healthy People 2000* addresses not only the prevention of premature death and disease, but also with the prevention of disabilities. Even when data

are unavailable to define health outcomes except in terms of death, the thrust of objectives for the year 2000 is aimed at the living consequences of unhealthy behaviors, unsafe environments, and illness-causing infections. Disabilities may be defined, as distinct from illness or disease, in terms of limited ability to function. Disabilities may be physical or mental; and they may include motor or sensory limitations. The focus is on effects, rather than causes, since a similar functional limitation, such as a limitation in ability to walk, may be caused by a congenital birth defect, an injury, or a leg amputation resulting from complications of diabetes.

When the focus is on prevention of disabilities, another group of Americans who face special health risks becomes evident: those who already experience serious and chronic disability. The health promotion and disease prevention needs of people with disabilities are not nullified because they were born with an impairing condition or have experienced a disease or injury that has long-term consequences. In fact, those needs for health promotion are accentuated. People with disabilities are at higher risk of future problems that can only increase the limitations that they experience. For that reason, *Healthy People 2000* addresses people with disabilities as a special population, and where data are available, sets specific targets to address their needs and enhance their health.

Secondary conditions—health problems that arise from, or are related to, the main cause of disability—are common among people with disabilities and are the principal targets of health promotion and disease prevention efforts for this special population. Some, such as decubitus ulcers (pressure sores) and genitourinary disorders, are associated with living conditions linked to the disability, i.e., confinement to a wheel chair or bed. Immobility or inactivity also increases the risk of metabolic, circulatory, respiratory, and musculoskeletal problems.[7] Other secondary health problems can be seen as a progression of the original disabling condition. Diabetes, for example, can lead to serious foot problems and vision impairment.

Many secondary health problems are preventable. For others, the risks can be reduced. For example, pressure sores are a major health risk for all people with spinal cord injuries yet can be prevented through improved health care, properly designed seating, and personal hygiene. Remediable genitourinary tract disorders are also a problem for people whose major motor function is severely restricted. Inadequate health care is implicated in the development of these disorders. Other factors include nutritional disorders, alcohol and drug abuse, inadequate personal hygiene, and acute and chronic illness. Cardiovascular disorders and stroke, brought on by hypertension, nutritional problems, smoking, and lack of physical activity, may be particular problems for people with disabilities.[7]

Musculoskeletal disorders caused by a lack of physical activity and injuries are especially prevalent among people with disabilities. Many respiratory problems for people with disabilities are thought to be preventable. They can result from tobacco use, lack of physical activity, and inadequate immunization.[7]

Alcohol and other drug abuse often are associated with emotional problems. For some people with disabilities, special risks may stem from negative family and cultural attitudes.

As with minority populations, the elements of this report that explicitly call for improvements for people with disabilities are limited by the availability of data with which to set targets. Disabilities vary in their type and their intensity; those with disabilities include all age, racial, and ethnic groups. One of the major challenges of the coming years is to improve our understanding of the needs of the full range of people with disabilities by improving the effectiveness of data systems.

Estimates of the number of people with chronic, significant disabilities vary from 34 million to 43 million. These estimates include the almost 4 percent of the total population of

the Nation who are unable to perform their major activity (play, school, work, self-care); about 6 percent whose ability to perform major activities is limited in some fashion; and over 4 percent who are limited in nonmajor activities.[8] Many more people, of course, have impairments that are not yet, but could become, disabling; and still more have chronic conditions, such as hypertension or alcoholism, that can lead to impairment and disability. Many people have several disabling conditions. About 27 percent of people with disabilities report more than one cause of their limited function and over 7 percent report three or more.[8]

Activity limitations are most common among older people, the poor, and those Americans who are less educated. In comparison to the total population, about twice as many people in families with incomes of less than $10,000 a year report some activity limitation.[15] Education too is clearly linked to disability; about 40 percent of people with 8 years or less of education have activity limitations compared to under 11 percent of those with 16 years or more.[15]

The prevalence of disability increases with age, as one would expect. (Fig. 3.8) More than one out of every five people aged 65 and older is limited in one or more of his or her major activities, and nearly half of those aged 85 and older need assistance in activities of daily living. On the other hand, people who are under age 65 and living in the community, i.e., not institutionalized, make up about 40 percent of those who need assistance in activities of daily living.[8]

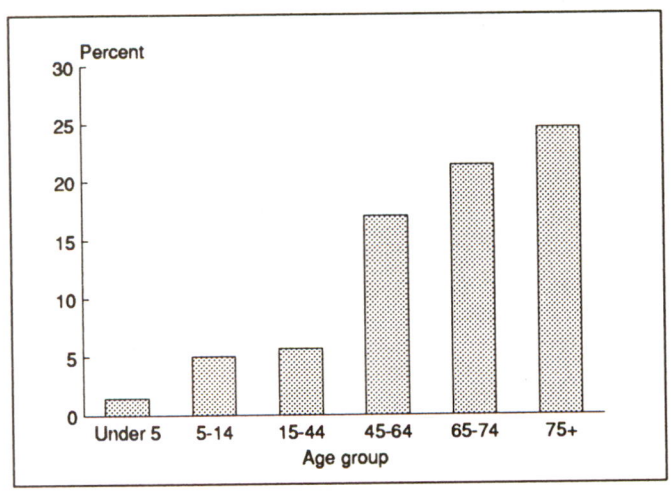

Fig. 3.8

Percentage of people experiencing limitation of major activity, by age (1987)

Source: *Health, United States, 1989*

The major causes of activity limitation vary with age. People under age 18 are most likely to have disabilities associated with mental impairment, asthma, mental illness, deafness and other ear disorders, and speech impairments. Among young adults, orthopedic impairments, such as spinal curvature and other back impairments, are most common, while at older ages degenerative diseases, led by arthritis and heart disease, predominate.[8]

Among ethnic groups, American Indians have the highest rates of activity limitation and Asian and Pacific Islander Americans the lowest.[15] Activity limitations are slightly higher among blacks than among non-Hispanic whites, and both have higher rates of disability than Hispanics.

It is evident from this list that people with disabilities face many of the same risks as other people—nutritional problems, physical inactivity, alcohol and other drug abuse, and stress. But for people with disabilities reducing risks may be a particular challenge. Physical activity, considered especially important in preventing secondary health problems, offers a compelling example. To establish fitness regimens, people with

disabilities often need to learn new skills, have access to special equipment, and be part of a support network that enables participation.[7]

Lack of adequate rehabilitation, maintenance therapies, and personal assistance increases the risk of secondary health problems among people with disabilities. Inadequate health insurance, especially among those without access to work-related group insurance, also poses a significant problem for this group.

A clear opportunity exists for health promotion and disease prevention efforts to improve the health prospects and functional independence of people with disabilities. Efforts to adapt existing preventive services and programs are underway. For example, exercise videotapes have been developed for people with paraplegia, quadriplegia, amputation, cerebral palsy, and other physical impairments. Some fitness centers offer modified aerobics, mild exercise in warm water, and other exercises designed to meet the needs of individuals with disabilities. But fitness services are just one of many that are needed. Preventing the occurrence of secondary health problems depends on the availability of a variety of health and social services. Gaps, overlaps, inconsistencies, and inequities in existing programs require the effective coordination of existing services if the health of people with disabilities is to be promoted.[7]

References

1 Amler, R.W. and Dull, H.B., *Closing the Gap: The Burden of Unnecessary Illness*. New York: Oxford University Press, 1987.

2 Asian American Health Forum. Year 2000 Strategic Health Development Program for Asian and Pacific Islander Americans. April 1989.

3 Bureau of the Census. *U.S. Census of Population: 1980*. Washington DC: U.S. Department of Commerce.

4 Council on Ethical and Judicial Affairs. Black-white disparities in health care. *JAMA* 263:2344-2346, 1990.

5 Franks, A.L.; Berg, C.J.; Kane. M.A.; Browne, B.B.; et al. Hepatitis B virus infection among children born in the United States to Southeast Asian refugees, *New England Journal of Medicine* 321(9):1301-5, 1989.

6 Indian Health Service, *Indian Health Service Chart Series Book*, Washington, DC: U.S. Department of Health and Human Services 1988.

7 Institute of Medicine. *Disability in America: A National Agenda*. edited by Pope, A. and Tarloff, A. Washington, DC: National Academy Press, in press.

8 LaPlante, M.P., *Data on Disability from the National Health Interview Survey, 1983-1985*, Washington, D.C.: National Institute on Disability and Rehabilitation Research, 1988.

9 National Cancer Institute and National Center for Health Statistics. Unpublished data from the Cancer Control Supplement to the 1987 National Health Interview Survey.

10 National Center for Children in Poverty. *A Statistical Profile of Our Poorest Young Citizens*. New York: The Center, 1990.

11 National Coalition of Hispanic Health and Human Services Organizations. *Delivering Preventive Health Care to Hispanics: A Manual for Providers*, Washington, DC: the Coaltion, 1988.

12 National Health and Nutrition Examination Survey (NHANES) II, National Center for Health Statistics, Centers for Disease Control, Public Health Service, U.S. Department of Health and Human Services, Hyattsville, MD.

13 National Health Interview Survey, National Center for Health Statistics, Centers for Disease Control, Public Health Service, U.S. Department of Health and Human Service, Hyattsville, MD.

14 National Heart, Lung, and Blood Institute, National Cholesterol Education Program. *Report of the Expert Panel on Population Strategies for Blood Cholesterol Reduction*. Washington, DC: U.S. Department of Health and Human Services, 1990.

15 National Institute on Disability and Rehabilitation Research, *Chartbook on Disability in the United States*, Washington, DC: the Institute 1989.

16 National Migrant Resource Program and the Migrant Clinicians Network. *Migrant and Seasonal Farmworker, Health Objectives for the Year 2000: Document in Progress, April 1990*. Austin, TX: National Migrant Resource Program, Inc., 1990.

17 National Vital Statistics System, National Center for Health Statistics, Centers for Disease Control, Public Health Service, U.S. Department of Health and Human Services, Hyattsville, MD.

18 North Carolina Oral Health School Survey. North Carolina Division of Dental Health, Raleigh, North Carolina and the University of North Carolina School of Public Health, Chapel Hill, North Carolina.

[19] Office of Disease Prevention and Health Promotion. *Disease Prevention/Health Promotion: The Facts*. Washington, DC: U.S. Department of Health and Human Services, 1987.

[20] Office on Smoking and Health. Unpublished data from the 1987 National Health Interview Survey.

[21] Office of Substance Abuse Prevention (OSAP). Communicating about alcohol and other drugs: Strategies for reaching populations at risk. *OSAP Prevention Monograph 4*. Washington, DC: U.S. Department of Health and Human Services, in press.

[22] Rhoades, E.R.; Hammond, J.; Welty, T.K.; Handler, A.O.; and Amler, R.W. The Indian burden of illness and future health interventions. *Public Health Reports 102(4)*:361-8, 1987.

[23] Schwartz, S.M. and Thomas, D.B. "Estimates of Cancer Incidence Among Southeast Asian Refugees in the United States." Paper presented at the Annual Meeting of the American Public Health Association, New Orleans, LA October 1987.

[24] Secretary's Task Force on Black and Minority and Health, Report of the Secretary's Task Force on Black and Minority and Health, Washington, DC: U.S. Department of Health and Human Services, 1985.

[25] Selik, R.M.; Castro, K.G.; and Papaionnou, M. Racial/ethnic differences in the risk of AIDS in the United States. *American Journal of Public Health* 78(12):1539-1544, 1988.

[26] Selik, R.M.; Castro, K.G.; Papaionnou, M.; and Ruehler, J.W. Birthplace and the risk of AIDS among Hispanics in the United States. *American Journal of Public Health* 79(7):836-9, 1989.

[27] U.S. House of Representatives, Select Committee on Children, Youth, and Families. *A Key to Our Nation's Future: A Fact Sheet*.

4. Goals for the Nation

The promise embodied in *Healthy People 2000* involves people in all their variety: age, gender, family relationships, racial and ethnic identity, income level, education, and occupation. It involves birth and death, two sentinel health events. Birth frames the potential for a healthy lifetime; death often summarizes how that potential was used. It involves the values of family, neighborhood, community, and Nation, enabling or undermining the health course that a life takes. It involves an array of risks—some posing apparent, immediate danger and others invisible and delayed in their effects. Finally, it involves medical science and medical care, with its ability to thwart infections, reverse the course of some chronic diseases, and enhance ability to function where limitations exist.

Three overarching goals emerge from the complexity of the health challenge of the 1990s. They permeate the structure and the content of this report. They further define the challenge, especially for health planners, policy-makers, and providers.

Goal I: Increase the Span of Healthy Life for Americans

A central purpose of *Healthy People 2000* is to increase the proportion of Americans who live long and healthy lives. The first goal underlying our strategy for the coming decade clearly states this intention. It encompasses the essential elements of health promotion and disease prevention: prevention of premature death, disability, and disease, and enhancement of the quality of life.

From an individual perspective, healthy life extends into the final quarter of a full century, free from chronic, disabling diseases and conditions, from preventable infections, and from serious injury. It means a full range of functional capacity at each life stage, from infancy through old age, allowing one the ability to enter into satisfying relationships with others, to work, and to play. From a national perspective, healthy life means a vital, creative, and productive citizenry contributing to thriving communities and a thriving nation.

In the course of this century, average life expectancy at birth has increased by almost 60 percent, from 47 years in 1900 to 75 years in 1987. (Fig. 4.1) This progress has been largely due to the advances of science and public health in conquering life-threatening communicable diseases. The aging of the population and the evolution from communicable diseases to chronic diseases and injuries as the leading causes of death direct our attention to quality of life issues. Both chronic diseases and injuries can be measured by the

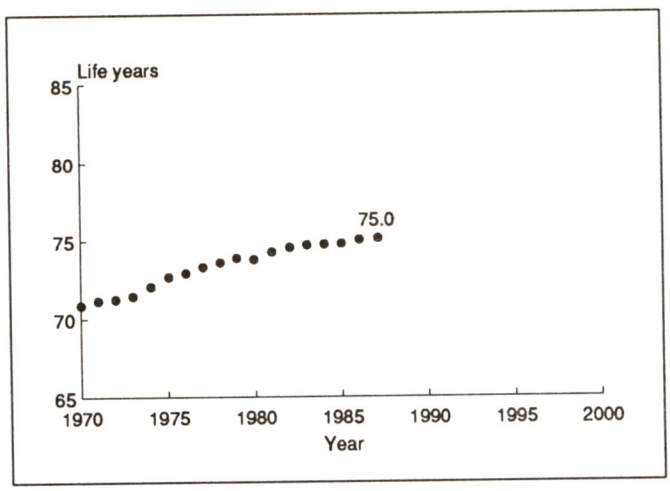

Fig. 4.1

Life expectancy at birth, U.S. population

Source: *Health, United States, 1989*

death certificates that they generate; but the numbers reflecting human suffering and costs associated with heart disease, cancer, nonfatal strokes, diabetes, and lung diseases far outstrip mortality statistics. The results of injury caused both by unintentional trauma and by interpersonal violence are not limited to lives cut short; they also include lives that must overcome brain damage, motor limitations, and other permanent impairments.

We can measure our progress in increasing the span of healthy life in several ways. One measure offered here indicates the rate of deaths before age 75 per 100,000 people (Fig. 4.2), in 1990 the approximate average life expectancy at birth. Infant mortality, a traditional tool for judging the efficacy and compassion of health systems, can indicate national progress at the early end of the age spectrum. (Fig. 4.3) Another measure uses a formula that combines death rates with acute and chronic illnesses, impairments, and handicaps to define average years of healthy life. Using this measure, life expectancy can be separated into two distinct measures. (Fig. 4.4) One is the average life expectancy at birth that will be spent in a healthy state; these are years of healthy life. The other indicates the average amount of time spent in a dysfunctional state due to either chronic or acute limitation. One of the major indicators of dysfunction is defined as limitation of major activity due to chronic conditions. (Fig. 4.5)

Years of healthy life uses a life expectancy model in which standard life table data are adjusted for level of well-being of a population. Measures of well-being represent individual functioning and include measures of mental, physical, and social functioning. For example, social functioning may be measured in terms of an individual's limitation in performing his or her usual social role, whether this be work, school, or housework; physical functioning may be measured in terms of being confined to bed, chair, or couch due to health reasons, or in terms of health-related limitation in mobility. Because years of healthy life is a relatively new type of measure, both the baseline and target estimates may change. Nonetheless it should prove an informative indicator as we track the Nation's health progress.

Over the course of the decade, we will be able to use each of these measures as indicators of our overall progress in increasing the span of healthy life. To explain the basis for that progress, it is necessary to move beyond the broad goals that are proposed here and look to the priorities for preventive action. Healthy life will be expanded to more years and more Americans as a result of efforts to address the priorities defined in the next chapter.

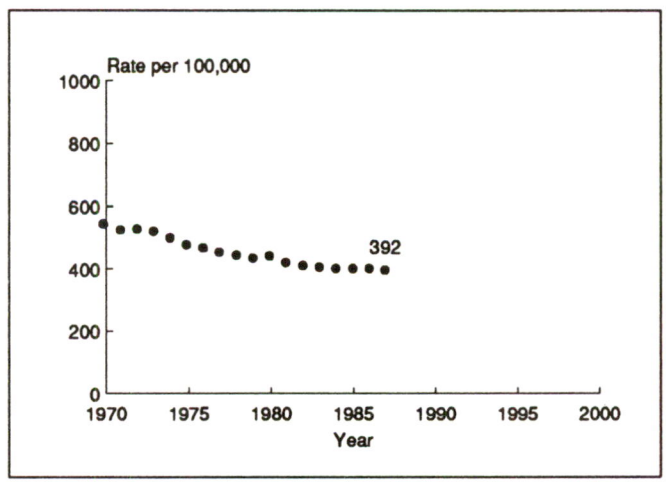

Fig. 4.2

Death rates for people aged 74 and younger, U.S. population

Source: National Vital Statistics System

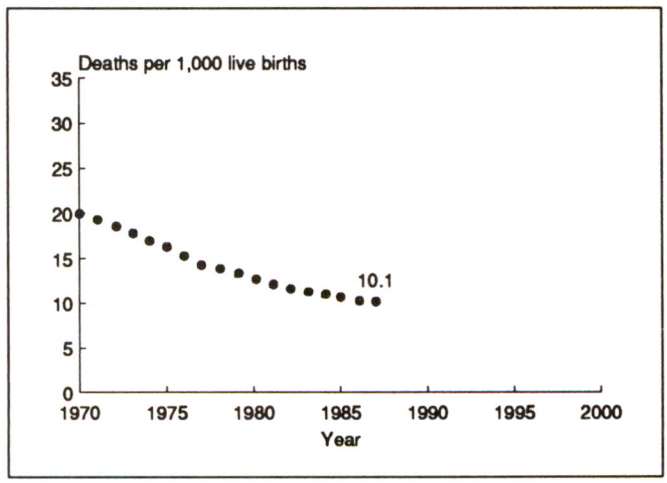

Fig. 4.3

Infant mortality rate, U.S. population

Source: National Vital Statistics System

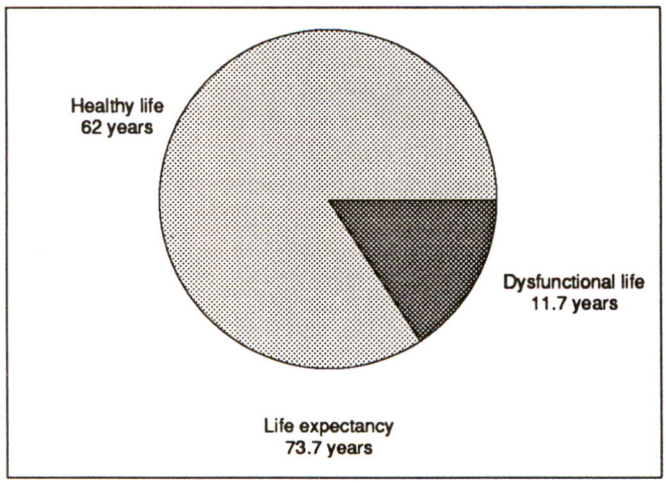

Fig. 4.4

Years of healthy life as a proportion of life expectancy, U.S. population (1980)

Source: National Vital Statistics System and National Health Interview Survey

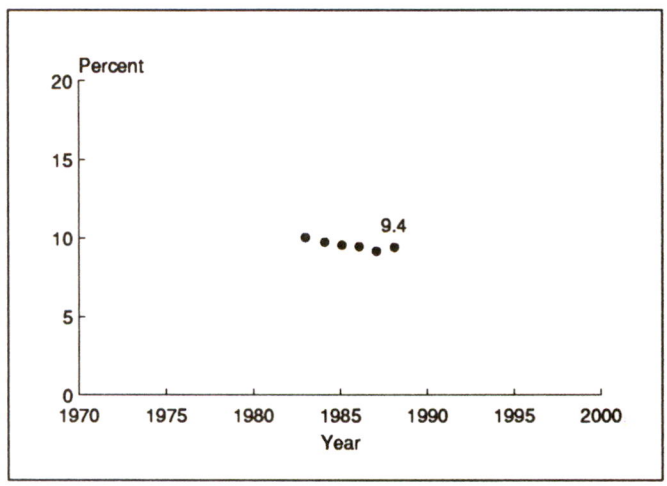

Fig. 4.5

Percentage of people experiencing limitation of major activity, U.S. population (crude rate)

Source: National Health Interview Survey

Goal II: Reduce Health Disparities Among Americans

Achieving a healthier America depends on significant improvements in the health of population groups that now are at highest risk of premature death, disease, and disability. The particular health problems of those high risk groups were presented in the previous two chapters. In some instances and for some health risks, they are age groups. In most cases and for virtually all health risks, they are members of certain racial and ethnic groups, people with low income, and people with disabilities. Special attention is needed to close the gap that exists between the majority of the population and the various minority populations. Whether the issue is chronic diseases, infectious diseases, unintentional injuries, or violence-related injuries, the services and protection that might most effectively bring about improvements in their circumstances must be made available.

Although health statistics that take race and ethnicity into account are sparse, the ones that do exist leave no doubt about disparities. The greatest opportunities for improvement and the greatest threats to the future health status of the Nation reside in population groups that have historically been disadvantaged economically, educationally, and politically. These must be our first priority.

Even as average life expectancy at birth edged into the upper 70s, the expected life span for black American male babies born in 1986, 1987, and 1988 actually shrank.[1] The disparities appear across the spectrum of health concerns, not just in average life expectancy. (Fig. 4.6) One perspective on these differences is death rates before age 75. (Fig. 4.7) A particularly sensitive and compelling measure of disparity is infant mortality. Although America's infant mortality rate is at an all-time low, a persistent racial gap remains. Black babies continue to die at twice the rate of white babies (Fig. 4.8).

Another is potential years of life lost before age 65 among white and black men from chronic diseases, calculated as years lost per 1,000 population. Rates for black men are 55 percent higher for heart disease, 26 percent higher for cancer, 180 percent higher for stroke, and 100 percent higher for lung disease. For homicide, years of potential life lost are 630 percent higher for black men than for white men. Among women of both races, death rates for all causes are lower, but comparisons of premature death of white and black women are equally startling. Lost years of life before age 65 are 134 percent higher among black women for heart disease, 166 percent higher for stroke, and 360 percent higher for homicide.[1] Statistics are scarce for other racial and ethnic populations, for low income groups, and for people with disabilities, but analyses of local data from small area studies confirm disparities among these groups as well.

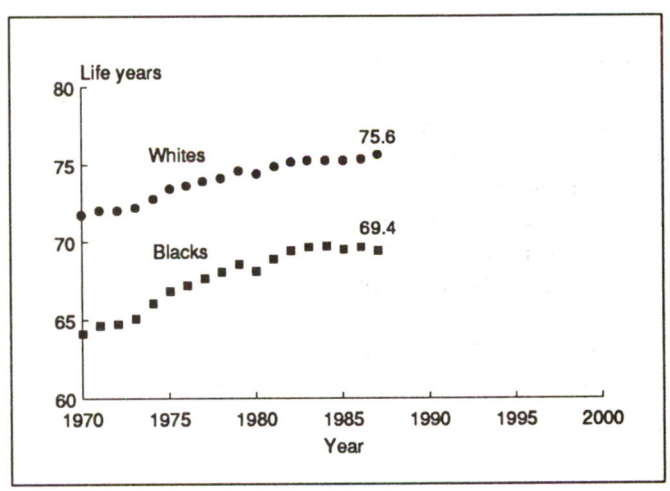

Fig. 4.6

Life expectancy at birth, blacks and whites

Source: *Health, United States, 1989*

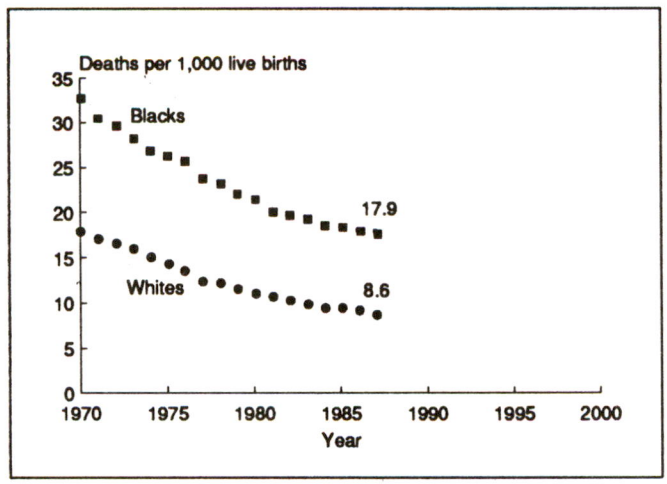

Fig. 4.7

Infant mortality rates, blacks and whites

Source: National Vital Statistics System and National Linked Infant Birth and Death Record File

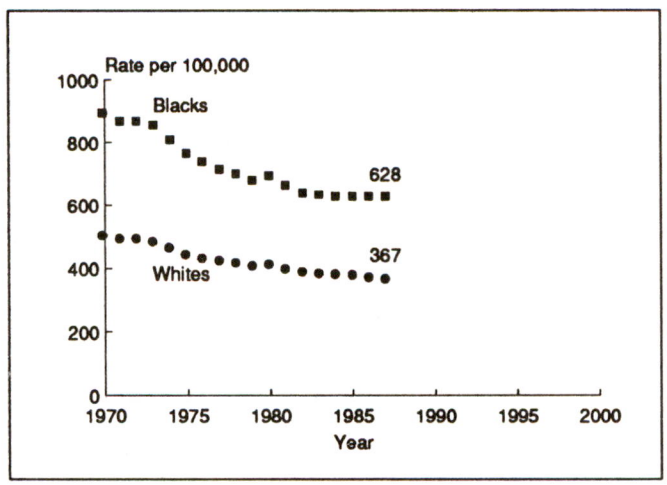

Fig. 4.8

Death rates for people aged 74 and younger, blacks and whites (1987)]

Source: National Vital Statistics System

Contrasting death rates are mirrored by statistics that depict disability outcome, as well as death. Statistics on years of healthy life reflect the gap between our racial and ethnic groups in the United States. (Fig. 4.9) Similarly, rates of disability, measured in terms of limitation of major activity, confirm the fact of inequity in health. The most striking aspect of these comparative rates is the great gap between low-income people and all other groups. (Fig. 4.10)

Healthy People 2000 thus calls for special attention to reducing—and finally eliminating—disparities among population groups of Americans. In the priorities for preventive action, this report sets separate, challenging targets when baseline data are available. Usually the targets are sufficient to narrow the gap between the death, disease, or disability rates for population groups and the total population; where trends have been worsening for population groups, targets may appear less challenging but may, in fact, be difficult to achieve because of recent setbacks. In many instances, targets cannot be set in 1990 because measurement tools are not available to provide baselines from which to set realistic, achievable targets for 2000. For this reason, the health status of black Americans, for whom data are most readily available, is used to provide proxy measures of our progress in moving toward the basic goal of equity in health for all our Nation's people.

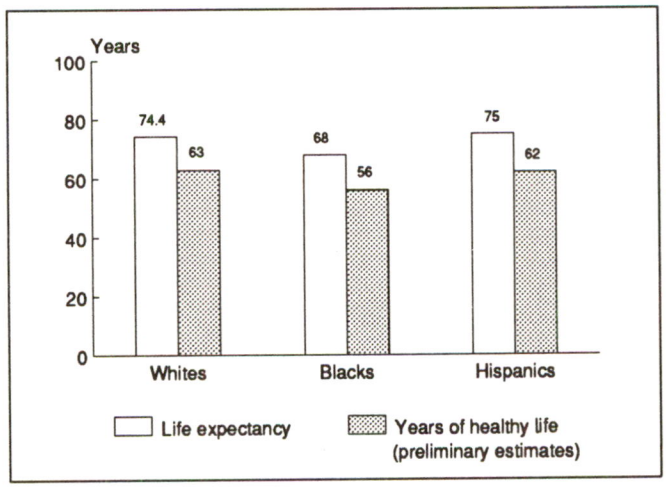

Fig. 4.9

Life expectancy and years of healthy life, whites, blacks, and Hispanics (1980)

Source: National Vital Statistics System and National Health Interview Survey

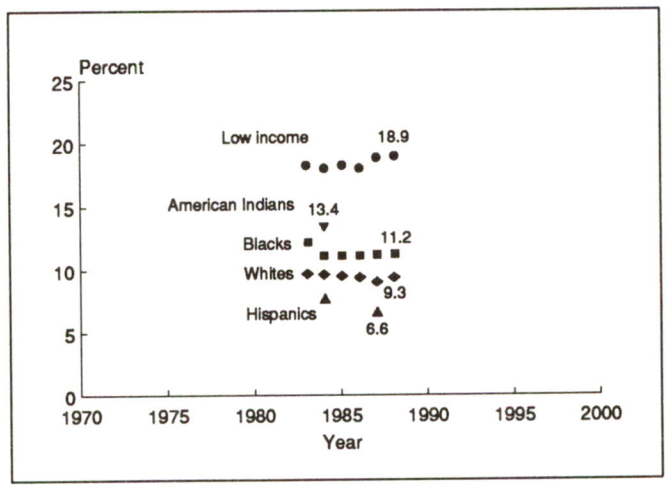

Fig. 4.10

Percentage of people experiencing limitations of major activity, by race and ethnicity (crude rates)

Source: National Health Interview Survey

Goal III: Achieve Access to Preventive Services for All Americans

Healthy People 2000 calls for a comprehensive strategy to support the improvements in health that are possible through prevention. This report defines the major parts of that strategy as Health Promotion, Health Protection, and Preventive Services. The priorities for prevention are grouped under these three categories. They are not precise or mutually exclusive categories, but they serve to underscore an important point. Major improvements depend on all three approaches to prevention, not just one. We cannot rely solely on success in persuading people to change their health-related behaviors through health promotion efforts, any more than we can rely solely on environmental improvements or expanded and enhanced clinical interventions.

A health strategy for the 1990s, however, must put particular emphasis on the arena where health professionals in both the private and public sectors have most responsibility, namely the arena of preventive services. Those services, made available to all Americans, can provide the foundation for achievement of other parts of our health strategy. An example, which we will use to track our effectiveness in moving toward this goal, relates to the birth of healthy babies. Prenatal health care is a vital, fundamental ingredient in attaining this sentinel health event. (Fig. 4.11) Early and regular prenatal visits to qualified health care providers can ensure greater likelihood that low birth

weight and other perinatal complications will be prevented. Prenatal health care services can also serve as a resource and a reinforcer for health promotion efforts that are equally important to healthy pregnancies. The role of prenatal preventive services in education and counseling about parental behaviors, including nutrition, abstinence from tobacco, alcohol, and other drugs, and, even before conception, behaviors that involve risks of sexually transmitted diseases, including HIV infection, is crucial. Likewise, preventive services for pregnant women can serve as the means of monitoring protection against toxic exposures, such as lead, dangerous prescription medications, and radiation.

Other preventive services are equally fundamental to our national prevention plan. Basic monitoring of child growth and development; immunization against childhood diseases (Fig. 4.12); appropriate immunization for vulnerable adults against pneumonia and influenza; screening to detect high blood pressure and high blood cholesterol, breast, cervical, oropharyngeal, and colorectal cancers; counseling on nutrition, smoking cessation, and injury prevention; all these services are indispensable parts of prevention. Achievement of this goal clearly requires that health care providers offer, and patients receive, these services. Objectives throughout this report focus on increasing the proportion of primary care providers who routinely offer preventive services to their patients.

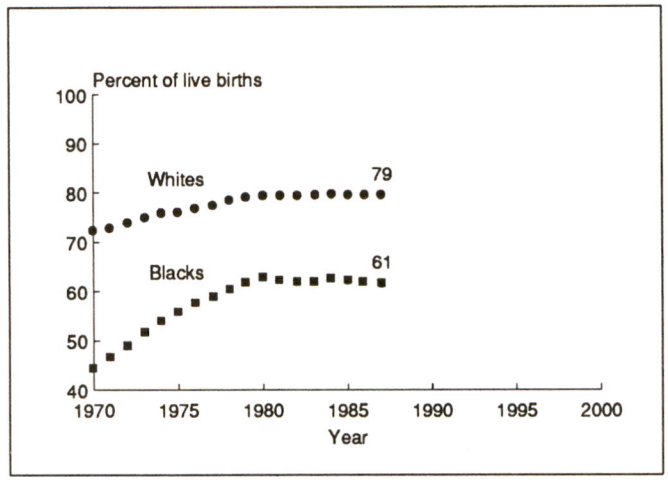

Fig. 4.11

Percentage of pregnant women receiving first trimester prenatal care, blacks and whites

Source: National Vital Statistics System

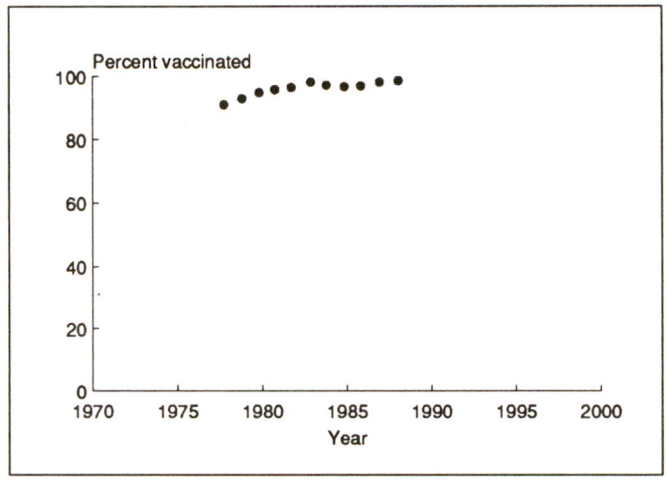

Fig. 4.12

Percentage of children receiving school entry immunizations

Source: Center for Prevention Services, CDC

Access to preventive services involves more than just availability of services. Preventive services cannot, and should not, be separated from basic primary health care. Approximately 18 percent of all Americans and 31 percent of those without either private or public health insurance have no source of primary health care. (Fig. 4.13) Thus, tracking of progress to achieve access to preventive services over the coming decade must focus on increases in the number of people who have a source of primary health care and those who have adequate insurance coverage (Fig. 4.14), with particular attention to the extension of health insurance and managed health care systems to cover preventive services such as immunizations, screening, and patient education and counseling.

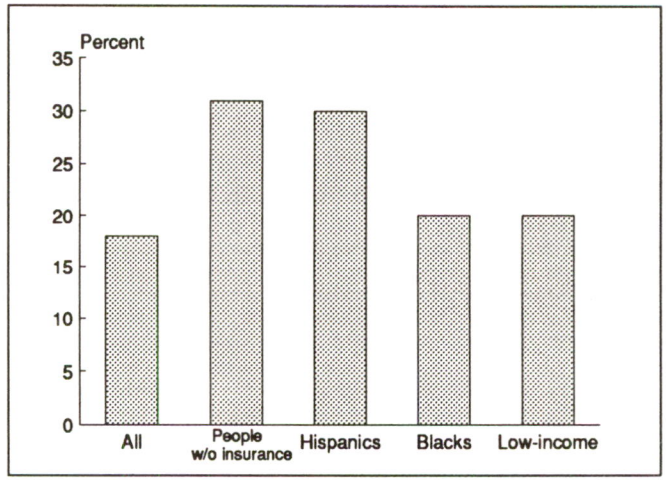

Fig. 4.13

Percentage of people who lack a source of primary care (1986)

Source: Robert Wood Johnson Foundation

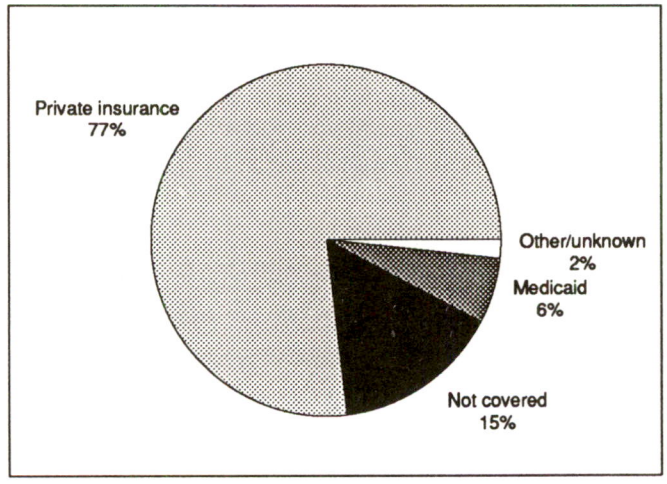

Fig. 4.14

Health insurance coverage for people aged 64 and younger, by type of coverage

Source: *Health, United States, 1989*

Note: Percent distribution approximate due to overlap among categories

* * * * * * *

These three goals—healthy lives for more Americans, elimination of disparities among population groups, access to necessary preventive services for everyone—are our broad national aspirations for health improvements. They can serve as a shared set of values that underpin all of our health promotion and disease prevention work. They can inform our public policy, whether at the Federal, State, or local levels. But taken alone, they do not provide us with adequate direction to guide actual decisions about programs, resource allocation, or professional and personal commitments. The goals are insufficient, unless they are buttressed by a framework of specific and substantive preventive actions that will move us steadily in the direction of their achievement. The next chapter lays out the specifics of the *Healthy People 2000* plan and gives substance to the goals for the Nation.

Reference

1 National Center for Health Statistics. *Health United States, 1989. DHHS Pub. No. (PHS)90-1232.* Hyattsville, MD: U.S. Department of Health and Human Services, 1990.

5. Priorities for Health Promotion and Disease Prevention

Healthy People 2000 is a platform for action. The information it contains may be interesting; the statistical data on which it is based may be analytically useful; and the objectives-oriented structure that it employs may serve as a practical model for other planning endeavors. But its value must finally be judged by how well it helps to shape what we do to improve the health of the Nation in the coming decade.

This chapter summarizes the priorities for preventive action. Organized in three basic categories—Health Promotion, Health Protection, and Preventive Services—it moves to specific behavioral risks, disease conditions, and health outcomes that must be effectively addressed if in the coming years we are to take advantage of our opportunities for better health. In addition, a cross-cutting priority that supports each of the others is improvement of our surveillance and data systems to foster more effective decision-making.
Each specific priority is summarized in the following pages, together with representative health objectives drawn from Part II of *Healthy People 2000*. These representative objectives serve as abbreviated examples of the measurable targets that are more fully stated and discussed in greater detail in Part II. While they cannot completely summarize all aspects of the health improvements, risk reductions, and service enhancements that are contained in the chapters of Part II, these examples demonstrate the magnitude and importance of the change envisioned in *Healthy People 2000*.

Health Promotion

Physical Activity and Fitness

Nutrition

Tobacco

Alcohol and Other Drugs

Family Planning

Mental Health and Mental Disorders

Violent and Abusive Behavior

Educational and Community-Based Programs

Physical Activity and Fitness

Regular physical activity increases life expectancy,[72] can help older adults maintain functional independence, and enhances quality of life at each stage of life.[32] The beneficial impact of physical activity touches widely on various diseases and conditions. Regular physical activity can help to prevent and manage coronary heart disease, hypertension, diabetes, osteoporosis, and depression.[26] It has also been associated with a lower rate of colon cancer[75] and stroke[81], and may be linked to reduced back injury.[8] It is an essential component of weight loss programs.

Physical activity is a complex behavior and its relationship with health is multifaceted. Regular vigorous physical activity promotes cardiorespiratory fitness and helps prevent coronary heart disease.[5,73] Activity that builds muscular strength, endurance, and flexibility may protect against injury and disability. And any activity that expends energy is important in weight control. Physical activity can also produce changes in blood pressure, blood lipids, clotting factors, and glucose tolerance, that may help prevent and control high blood pressure, coronary heart disease and diabetes.[37]

While activity should be habitual, it need not be unduly strenuous. People who engage daily in light to moderate exercise, equivalent to sustained walking for about 30 minutes a day, can achieve substantial health gains. Increasing evidence suggests that even small increases in light to moderate activity by those who are least active will produce measurable health benefits.[38,80]

Of particular importance is the role of physical activity in preventing coronary heart disease, the leading cause of death in the United States. A sedentary lifestyle appears to be an independent risk factor for coronary heart disease, nearly doubling a person's risk.[76] Its effect on coronary heart disease risk is almost as great as the better known risk factors, such as cigarette smoking and high blood pressure. Because more people are at risk of coronary heart disease due to physical inactivity than to any other single risk factor, it has an especially great public health impact.

Few Americans engage in regular physical activity despite the potential benefits. Currently, only 22 percent of adults engage in at least 30 minutes of light to moderate physical activity 5 or more times per week, and only 12 percent report that they are this active 7 or more times a week. Less than 10 percent of the population exercises 3 or more times a week at the more vigorous level necessary to improve cardiorespiratory fitness. Nearly 25 percent of adults report no leisure-time physical activity, and the prevalence of sedentary behavior increases with advancing age.

To increase physical activity and fitness, by the year 2000 . . .

1.3 Increase moderate daily physical activity to at least 30% of people (a 36% increase)

1.5 Reduce sedentary lifestyles to no more than 15% of people (a 38% decrease)

Other objectives target development of sustained combined changes in diet/activity patterns for those who are overweight; physical education in schools; sponsorship by employers of worksite physical activity programs; increasing accessibility of community resources like trails and pools; and a stronger focus by primary care providers on the physical activity patterns of their patients.

Nutrition

In ways often interrelated with patterns of physical inactivity, dietary factors are associated with 5 of the 10 leading causes of death in the United States: coronary heart disease, some types of cancer, stroke, noninsulin-dependent diabetes mellitus, and atherosclerosis. The 1988 *Surgeon General's Report on Nutrition and Health*[77] found that for the 2 out of 3 Americans who neither smoke nor drink, eating patterns may shape their long-term health prospects more than any other personal choice. In general, excesses and imbalances of some food components in the diet have replaced once-prevalent nutrient deficiencies as the principal concern.

While many dietary components are involved in diet and health relationships, chief among them is the disproportionate consumption of foods high in fats (especially saturated fats), often at the expense of foods high in complex carbohydrates and dietary fiber that may be more conducive to health.[77] To help promote health and prevent chronic disease, the *Dietary Guidelines for Americans*,[90] issued by the United States Departments of Health and Human Services and Agriculture, recommend eating a variety of foods; maintaining healthy weight; choosing a diet low in fat, saturated fat, and cholesterol; choosing a diet with plenty of vegetables, fruits, and grain products; using sugars only in moderation; using salt and sodium only in moderation; and, if alcoholic beverages are consumed, do so in moderation.

Overweight affects about 26 percent of the population. It is a particular problem for poor and minority populations, affecting 44 percent of black women over age 20 and 37 percent of all women below the poverty level. Obesity has been linked to increased risk for diabetes mellitus, high blood pressure and stroke, coronary heart disease, some types of cancer, and gallbladder disease.[77]

Dietary fat contributes more than twice as many calories per unit weight as carbohydrate or protein, and currently constitutes over 36 percent of the calories in the average American diet. Considerable evidence associates diets high in fat with increased risk of obesity, some types of cancer, and possibly gallbladder disease.[77] Strong and consistent evidence relates saturated fat intake to high blood cholesterol and increased risk for coronary heart disease. Moreover, Americans eat only about half of the dietary fiber recommended by the National Cancer Institute to help reduce the risk for some types of cancer. Dietary fiber is readily available from a variety of foods such as vegetables, fruits, and grains, which are also low in fat.

To improve nutrition, by the year 2000 . . .

2.3 Reduce overweight to a prevalence of no more than 20% of people (a 23% decrease)

2.5 Reduce dietary fat intake of an average of 30% of calories (a 17% decrease)

Other objectives target increasing consumption of vegetables, fruits, and grain products; decreasing sodium consumption; increasing calcium intake, in particular for young people and pregnant or lactating women; increasing breastfeeding; reducing iron deficiency in children; useful and uniform nutrition labeling for all food products; increasing availability of low-fat food products; better identification of low-fat choices in restaurants; more attention to nutrition education and food choices in schools; better use of worksites for nutrition education and services; and a stronger focus by primary care providers on the nutritional practices of their patients.

Tobacco

Tobacco use is the single most important preventable cause of death in the United States, accounting for one of every six deaths, or some 390,000 deaths annually.[71] It is a major risk factor for diseases of the heart and blood vessels; chronic bronchitis and emphysema; cancers of the lung, larynx, pharynx, oral cavity, esophagus, pancreas, and bladder; and other problems such as respiratory infections and stomach ulcers.[71] Cigarette smoking is responsible for an estimated 21 percent of all coronary heart disease deaths (40 percent of those under age 65), 30 percent of all cancer deaths, and 87 percent of lung cancer deaths in the United States. The risk of dying from lung cancer is 22 times higher for men and 12 times higher for women who smoke as for lifetime nonsmokers. Passive or involuntary smoking causes lung cancer and other diseases in healthy nonsmokers and severe respiratory problems in children. Middle ear infections in children have been linked to passive smoking.

Cigarette smoking during pregnancy is a risk factor for low birth weight, prematurity, miscarriage, sudden infant death syndrome, and other maternal and infant health problems. Between 20 and 30 percent of the incidence of low birth weight,[35] up to 14 percent of preterm deliveries, and about 10 percent of all infant deaths are attributable to maternal cigarette smoking.[71] Yet 25 percent of pregnant women smoke throughout their pregnancy.[49]

Cigarette smoking has declined dramatically since 1964, when the first Surgeon General's report on smoking appeared. In 1987, 29 percent of adults smoked compared to 40 percent in 1965. Nearly half of all living adults who ever smoked have quit. Nevertheless, smoking rates remain high in certain populations, including blacks, blue collar workers, and people with fewer years of education. In 1987, 34 percent of blacks smoked. It is a special problem for workers with exposure to hazardous substances that may compound the risk of smoking.

Among youth, more than half of 8th graders and nearly two-thirds of 10th graders report having tried cigarettes.[4] More than a fourth of 10th graders report having smoked a cigarette during the preceding month and nearly one in five reports smoking a pack or more in the previous month.

To reduce use of tobacco, by the year 2000...

3.4 Reduce cigarette smoking prevalence to no more than 15% of adults (a 48% decrease)

3.5 Reduce initiation of smoking to no more than 15% by age 20 (a 50% decrease)

Other objectives target increasing smoking cessation during pregnancy; reducing use of smokeless tobacco; prevention education and tobacco-free environments in schools; restrictions on smoking in the workplace and other public places; enforcement of prohibition of sales of tobacco products to youth; restrictions on tobacco advertising and promotion targeting youth; State plans to reduce tobacco use; and more smoking cessation assistance to patients by primary care providers.

Alcohol and Other Drugs

Approximately two-thirds of American adults drink alcohol at least occasionally. Of these, it is estimated that about 18 million currently experience problems as a result of alcohol use, and about 7 percent of drinkers experience moderate levels of dependence symptoms.[63] Alcohol is a factor in approximately half of all homicides, suicides, and motor vehicle fatalities.[74] With fetal alcohol syndrome affecting as many as 3 infants per 1,000 live births in some hospital reports, it is the leading preventable cause of birth defects.[63] Alcohol is also responsible for numerous deaths due to liver disease. Of special concern are the problems for young people. Nine out of ten high school seniors report using alcohol at least once.

Drug use is also a dominant societal concern. Surveys in 1988 found that 21 million Americans had ever used cocaine at least once, and 21 million also had used marijuana in the last year.[61] Among high school seniors, almost 44 percent report having tried marijuana, and 10 percent report ever using cocaine.[44] It has been estimated that one in four American adolescents is at very high risk of alcohol and other drug problems, and their consequences.[20] The data may underestimate the problem because existing surveys fail to count high risk youth who have dropped out of school. Drug abuse is linked to high rates of violent crime in the Nation, to transmission of the HIV virus, and to developmental problems in infants.

These are the immediate health problems posed by alcohol and other drugs. Their abuse, however, is closely related to a host of other social and health problems, such as early unwanted pregnancy, delinquency, and school failure. The economic cost of problems attendant to alcohol abuse was estimated in 1983 to be $116 billion, and another $60 billion for drug problems.[27] Alcohol and other drug abuse appears to be declining across the total population. Use of crack cocaine, however, is on the rise, especially in some urban centers. Homeless people are at special risk of alcohol abuse.[62]

In the past decade, public awareness of this problem grew, uniting diverse groups in the common goal. Businesses, schools, parent groups, and minority organizations have developed ways to fight the pervasive dangers of alcohol and other drugs. A changing social climate has been accompanied by legislative and policy actions, particularly concerning drinking and driving.

To reduce alcohol and other drug abuse, by the year 2000...

4.1 Reduce alcohol-related motor vehicle crash deaths to no more than 8.5 per 100,000 people
(a 12% decrease)

4.6 Reduce alcohol use by school children aged 12 to 17 to less than 13%; marijuana use by youth aged 18 to 25 to less than 8%; and cocaine use by youth aged 18 to 25 to less than 3%
(50% decreases)

Other objectives target increasing the average age of first use of addictive substances; reducing occasions of heavy drinking by young people; reducing aggregate per capita alcohol consumption nationally; increasing awareness of the harmful effects of addictive substances; better access to treatment programs; stronger and better enforced laws related to driving under the influence of intoxicants; better access of workers to assistance for problems; policies to reduce minors' access to alcohol; and greater involvement of primary care providers in dealing with these problems.

Family Planning

Families are the bedrock of our society. Decisions about forming a family are of critical importance. Decisions made today may have long-term consequences. Safe and healthful childbearing both contributes to, and is a result of, effective family planning. Miscarriage, stillbirth, and infant mortality are tragic examples of problems more frequently associated with unwanted pregnancies. Family planning is therefore defined here as the process of establishing the preferred number and spacing of children in one's family and selecting the means by which these preferences are achieved. It presupposes the importance of family and the importance of planning. It requires that fundamental questions be addressed concerning an individual's relationship to the lives, health, and well-being of others.

Successful implementation of family planning choices requires mature, thoughtful decisions accompanied by motivation to carry out those decisions. It requires the exercise of personal responsibility. There are many effective means by which family planning choices can be implemented. Childbearing, adoption, abstinence from sexual activity outside of a monogamous relationship, use of contraception methods, natural family planning, and treatment of infertility are all means of reaching desired family planning goals.

Despite the fundamental importance of these decisions to each individual and to society as a whole, problems attendant to poor family planning choices exert a tremendous toll on our Nation. In 1988, nearly half of American women surveyed reported that their pregnancies in the last 5 years had been mistimed or unwanted—56 percent if adjustment is made for unreported abortions.[67]

The problem is most pressing among young people. More than three out of four young women and 85 percent of young men have had sexual intercourse by age 20.[67,85] Each year, one out of ten young women in this age group becomes pregnant. By age 20, approximately 40 percent of women have been pregnant while 63 percent of black women have been pregnant.[89] An estimated 84 percent of these pregnancies were unintended,[31] and abortion rates among American teenagers are considerably higher than for many other countries.

To improve family planning, by the year 2000...

5.1 Reduce teenage pregnancies to no more than 50 per 1,000 girls 17 and younger (a 30% decrease)

5.2 Reduce unintended pregnances to no more than 30% of pregnancies (a 46% decrease)

Other objectives target reducing sexual intercourse among teenagers; reducing nonuse of contraceptives among those who are unmarried and sexually active; increasing effectiveness with which contraceptives are used; improving communication between adolescents and parents on human sexuality; increasing availability of appropriate preconception counseling; increasing referral rates to appropriate services; increasing availability of information on adoption for unmarried pregnant patients; and reducing rates of infertility.

Mental Health and Mental Disorders

Mental health refers to an individual's ability to negotiate the daily challenges and social interactions of life, without experiencing undue emotional or behavioral incapacity. It can be affected by numerous factors ranging from exogenous stresses presenting in ways that may be difficult to manage to organic disease or genetic defects that impair brain function. An estimated 23 million noninstitutionalized adults in the United States have cognitive, emotional, or behavioral disorders, not including alcohol and other drug abuse. Schizophrenic disorders most often result in functional disabilities, but depression is the most common of the major disorders, affecting about 5 percent of the population at any one time.

Suicide is clearly the most serious of the potential outcomes of these disorders and it claims more than 30,000 lives each year.[68] Injuries from firearms are directly responsible for a majority of suicidal deaths, and much of the increase in suicide that has taken place since the 1950s is specific to firearm deaths.[6,45] There has been a steady increase in deaths from suicide among youth aged 15 to 19 and by the mid-1980s suicide was the second leading cause of death in this age group.

A variety of approaches have been proposed to reduce the impact of mental health problems. Stress, whether stemming from life events, chronic strain, or environmental pressures, is associated with biological changes linked to cognitive, emotional, and behavioral dysfunctions. Healthful habits, such as good nutrition and adequate amounts of exercise, and relaxation techniques may be useful in helping to relieve stress. Because people with low levels of control over their environment (actual or perceived) appear to be at greater risk, interventions have also been directed at increasing individuals' resources and coping skills through education and social support. For those needing more aggressive attention, medical interventions are available that include antidepression drugs, psychotherapeutic agents, and biofeedback.

Childhood developmental delays and specific skill disorders have also been linked to learning and adjustment problems in adolescence and early adulthood. Early interventions with parents and children that address prenatal care, parental skills, and remedial help in early school programs may help prevent developmental problems and their progression to mental health problems.

To improve mental health and prevent mental disorders, by the year 2000...

6.1 Reduce suicides to no more than 10.5 per 100,000 people (a 10% decrease)

6.5 Reduce adverse effects of stress to less than 35% of people (an 18% decrease)

Other objectives target reducing prevalence of mental disorders; increasing utilization of community support programs; increasing treatment for those with major depressive disorders; increasing use of broad social support mechanisms for those with trouble coping; more attention by employers to services related to managing employee stress; better access to mutual-help clearinghouses; and more attention by primary care providers to the cognitive, emotional, and behavioral needs of their patients.

Violent and Abusive Behavior

Violent and abusive behavior (intentional injury) exacts a large toll on the physical and mental health of Americans. Child abuse, spouse abuse, and other forms of intrafamilial violence continue to threaten the health of thousands of American families. Homicide and suicide account for over one-third of the more than 145,000 injury deaths that occur in the United States each year. Because of its growing prominence as a source of the leading health problems experienced by Americans, violent and abusive behavior has been increasingly recognized as an important public health problem.

Homicide is the 11th leading cause of death in the United States, accounting for nearly 21,000 deaths in 1986.[50] Men, teenagers, young adults, and minority group members, particularly blacks and Hispanics, are most likely to be murder victims. It is the leading cause of death for blacks between the ages of 15 and 34.[13] Overall homicide rates for blacks have declined since 1970, while the rates for whites have increased.[13] Most homicides are committed with a firearm, occur during an argument, and occur among people who are acquainted with one another. Homicide rates in the United States far exceed those of any other developed country.

Assault injuries are another consequence of interpersonal violence. Each year between 1979 and 1986 more than 2.2 million people suffered nonfatal injuries from violent and abusive behavior. Of these injured victims, 1 million received medical care and 500,000 were treated by emergency medical facilities.[25] More than 25 percent of the Nation's 10,000 to 15,000 spinal cord injuries each year are the result of assaultive violence. Firearms account for 60 percent of all homicides and suicides, and a substantial proportion of all traumatic spinal cord injuries.[43]

Intrafamily violence is more prevalent than often recognized. In 1986 an estimated 1.6 million children nationwide experienced some form of abuse or neglect.[86] Physical abuse accounted for the greatest portion of abuse incidents, followed by emotional and then sexual abuse. Studies also suggest that between 2 and 4 million women are physically battered each year by partners including husbands, former husbands, boyfriends, and lovers. Between 21 and 30 percent of all women in the United States are estimated to have been beaten by a partner at least once. More than 1 million women seek medical assistance for injuries caused by battering each year, and the vast majority of domestic homicides are preceded by episodes of violence.[54]

To reduce violent and abusive behavior, by the year 2000...

7.1 Reduce homicides to no more than 7.2 per 100,000 people (a 15% decrease)

7.6 Reduce assault injuries to no more than 10 per 1,000 people (a 10% decrease)

Other objectives target reducing weapon-related injury deaths; reducing child and spouse abuse, reducing rape; reducing weapon-carrying by adolescents; reducing inappropriate storage of weapons; improving emergency treatment, housing, and referral services for battered women, children, and older people; improving school programs for conflict resolution; and strengthening State-based efforts in violence prevention.

Educational and Community-based Programs

A supportive social environment may be the most important factor in changing behaviors that contribute to many of today's leading health threats. Consequently activity and leadership at the community level is fundamental to progress. Educational and community-based programs, developed to reach people outside of traditional health care settings, may address one risk factor in one setting, but increasingly they use multiple interventions in a variety of settings.

Many involve various sectors and levels of society. Changes in the social and physical environment call for the involvement of social institutions, businesses, legislative and judicial bodies, the media, and other parts of the community. Because comprehensive, communitywide programs aim to draw upon and become involved in as many aspects of community life as possible, they require a high degree of cooperation and coordination between groups that are often not traditional partners: environmental citizen groups and manufacturers, health professionals and churches, employers and hospitals. Important to the success of these partnerships are information networks and coordinating mechanisms, both of which can help streamline services and interventions.

Schools offer a natural locus for the provision of crosscutting educational interventions in health, and studies have now shown that school health education is an effective means of helping children improve their health knowledge and develop attitudes that facilitate healthier behaviors. Yet only 25 States currently mandate comprehensive school health education programs, and implementation is spotty in even these States.

Similarly, the workplace can be an excellent site for health promotion programs. More than 85 percent of adult Americans spend much of their day at their workplace. Numerous studies have shown the benefits of worksite health promotion programs in improving employee health, reducing insurance claims, improving morale, reducing absenteeism and reducing employee turnover. Among workplaces with more than 50 employees, about two-thirds report offering at least one health promotion activity.69 A much smaller share offers a comprehensive package to employees, and even fewer include special activities for family members or retirees.

To enhance educational and community-based programs, by the year 2000...

8.5 Provide quality K-12 school health education in at least 75% of schools

8.7 Provide employee health promotion activities in at least 85% of workplaces with 50 or more employees (a 31% increase)

Other objectives target increasing reading levels and high school graduation rates; increasing child development programs for low-income preschool children; improving the school environment as well as health education; increasing accessibility of health promotion programs for older people; development of broad State-based strategies for health promotion; stronger focus on the health promotion needs of minorities; and involvement of religious institutions in health promotion efforts.

Health Protection

Unintentional Injuries

Occupational Safety and Health

Environmental Health

Food and Drug Safety

Oral Health

Unintentional Injuries

Unintentional injuries are the fourth leading cause of death in the United States, killing about 100,000 people a year, and are a major cause of disability.[50] Nonfatal injuries are responsible for one of every six hospital days and one of every 10 hospital discharges.[79] Nearly two-thirds of all injury deaths and 84 percent of all injuries resulting in hospitalization involve unintentional injuries. Motor vehicle crashes account for approximately one-half of the deaths from unintentional injuries. Deaths from falls rank second, followed by deaths from poisoning, drowning, and residential fires.[17]

At highest risk are the young and older adults. During the first four decades of life injuries account for more deaths than either chronic or infectious diseases, taking more than 2 million potential years of life from Americans every year. Males are more than twice as likely to die from unintentional injuries than females, and blacks have higher death rates than whites.[50] American Indian and Alaska Natives have disproportionately higher injury death rates.[29]

Injuries have been estimated to cost the United States more than $100 billion annually due to lost productivity and medical care, with a third of these costs attributable to falls and 28 percent to motor vehicle crashes.[79]

About 46,000 people die and 3,500,000 people are injured annually in motor vehicle crashes. By themselves, motor vehicle crashes rank as the fifth leading cause of death in the United States, and approximately half of these are alcohol-related. Alcohol-related traffic crashes are the leading cause of death and spinal cord injury for young Americans.[58]

Although use of automobile safety restraints has increased in recent years, only 42 percent of people currently report using them. Increasing this share to 85 percent could save about 10,000 lives per year. Given the fact that almost 30 percent of motor vehicle fatalities are related to motorcycle, pedestrian, and bicycle causalities, increasing helmet use could also prove of substantial benefit.59,60

Many injuries are multifactorial in nature. Alcohol use is a factor in numerous unintentional injuries, including about half of all motor vehicle fatalities and a sizable share of drownings. Of the 33,000 firearm-related deaths in 1987, nearly 3,400 were children aged 1 to 19. Of these, about 15 percent were unintentional and often due to improper handling, accessibility to children, and lack of safety mechanisms. Progress in reducing unintentional injuries will require full participation of the fields of education, transportation, law, engineering, architecture, and safety sciences.

To reduce unintentional injuries, by the year 2000...

9.1 Reduce unintentional injury deaths to no more than 29.3 per 100,000 people (a 15% decrease)

9.12 Increase automobile safety restraint use to at least 85% of occupants (a 102% increase)

Other objectives target death from motor vehicle crashes, falls, drownings, and residential fires; occurrence of hip fractures, poisonings, head injuries, and spinal cord injuries; use of protective helmets; extension of safety belt and motorcycle helmet use laws; handgun design; expanded installation of fire sprinklers and smoke detectors; better roadway design and markers; injury prevention instruction in schools; and involvement of primary care providers in counseling on safety.

Occupational Safety and Health

Approximately 110 million people make up the American workforce, with most spending major portions of their days in their work environments. Of the estimated 10 million injuries that occur annually among workers, about 3 million are severe and include some 3,400 to 11,000 deaths. Although the number of fatal occupational injuries has gradually declined in recent years, work-related illnesses and nonfatal injuries appear to be increasing. During 1987, permanent impairments suffered on the job grew from 60,000 to 70,000, total disabling injuries numbered 1.8 million, and combined occupational illnesses and injuries in the manufacturing industries increased by 12 percent.[7]

Approximately 40 percent of fatal injury victims were between 25 and 44 years old. More than 20 percent of fatal occupational injuries in the mid-1980s involved highway vehicles, which were the leading cause of death in seven of eight industry divisions. Other causes included falls (13 percent), nonhighway industrial vehicular injuries (11 percent), blows other than by vehicles or equipment (8 percent), and electrocutions (7 percent). Other leading work-related problems include occupational lung diseases, musculoskeletal injuries, and occupational cancers.[7]

Those occupations with relatively higher rates of injury include mining, agriculture, construction, manufacturing, trucking, and warehousing. The largest numbers (as opposed to rates) of injuries occur in industries with large total workforces such as eating and drinking establishments, grocery stores, hospitals, trucking companies, nursing homes, department stores, and hotels/motels. While employees in occupations related to these enterprises comprise about one-fifth of the total workforce, they report one-fourth of the injuries.[7]

Prevention of occupational health hazards rests on the basic principles of control technology: engineering controls, work practices, personal protective equipment, and monitoring of the workplace for emerging hazards. Despite the number of occupational injuries, effective prevention is practiced in many workplaces, and approximately 48 percent of all establishments report no injuries in a given year.

To improve occupational safety and health, by the year 2000...

10.1 Reduce work-related injury deaths to no more than 4 per 100,000 workers (a 33% decrease)

10.2 Reduce work-related injuries to no more than 6 per 100 workers (a 22% decrease)

Other objectives target reductions in cumulative trauma disorders (e.g., from repetitive motion, pressure, or noise), occupational skin disorders, and, among health workers, hepatitis B infection; use of occupant protection systems by workers; reducing workplace exposure to lead; State implementation of plans for identification and control of major work-related illnesses and injuries; State standards to prevent work-related lung disease; increasing worksites with formal plans for worker health and safety; including back injury prevention programs; expanded State assistance to small businesses in implementation of worker health and safety programs; and greater attention by primary health care providers to occupational health exposures.

Environmental Health

Environmental Measures Have Long Been A Mainstay Of Public health. State and local efforts to assure safe supplies of food and water, to manage sewage and municipal wastes, and to control or eliminate vector-borne illnesses have contributed substantially to public health improvements in the United States. The most difficult challenges for environmental health today come from uncertainties about the toxic and ecologic effects of the use of fossil fuels and synthetic chemicals in modern society. An estimated 82 percent of major industrial chemicals have not been tested for their toxic properties and links to specific diseases, and only a small proportion of chemicals have been adequately tested for their ability to cause or promote cancer.[66] Still, enough is known to target improvement in several areas.

Exposure to lead, air pollutants, and radon are good examples. Exposure to high levels of lead is toxic to the central nervous system and can be fatal. Even low levels of exposure can result in persistent impairments in central nervous system function, especially in children, including delayed learning, impaired hearing, and growth deficits. Yet an estimated 2 out of 3 poor inner-city black children aged 6 months through 5 years have blood lead levels above 15 ug/dl and 1 out of 10 has levels above 25 ug/dl. For the Nation as a whole, nearly 3 million children are at some risk from elevated lead levels.[1] Decreased levels of lead in gasoline, air, and food and releases from industrial sources have resulted in lower mean blood lead levels. However, lead in paint, dust, and soil in inner-city urban areas has been lowered only to a limited extent. A strong national effort is needed to reduce lead in the home environment.

Airborne pollutants have been shown to contribute to lung diseases, bronchial asthma, cancer, neural disorders, and eye irritation.[21] Standards have been set by the Environmental Protection Agency for ozone, carbon monoxide, particulates, sulfur dioxide, nitrogen dioxide, and lead. Air quality has improved greatly since 1970, but in 1988 less than 50 percent of Americans lived in counties that met all the EPA standards for air quality for the previous 12 months.[22] Additional measures are necessary to reduce contamination from motor vehicles and other sources.

Radon comes from rock and soil, enters buildings through cracks in foundations or basements, and when inhaled releases ionizing radiation that can damage lung tissue and lead to lung cancer. Along with tobacco smoke, it is a leading indoor air hazard, and as many as an estimated 8 million homes may have radon at a level requiring correction.[21] Low-cost test kits are available to identify exposures, but only about 5 percent of homes have been tested.[70]

To improve environmental health, by the year 2000...

11.4 Eliminate blood lead levels above 25 µg/dL in children under age 5

11.5 Increase protection from air pollutants so that at least 85% of people live in counties that meet EPA standards (a 72% increase)

11.6 Increase protection from radon so that at least 40% of people live in homes tested by homeowners and found to be/made safe (a 700% increase)

Other objectives target reducing infectious agent and chemical contamination of drinking water supplies and surface water; reducing human exposure to toxic agents released into the air, water, and soil; reducing environmental burden of solid waste contamination; eliminating immediate risks from hazardous waste sites; improving household management of recyclable materials and toxic waste materials; and better State-based systems to track environmental exposures and diseases.

Food and Drug Safety

American consumers currently benefit from extensive food and drug safety assurance systems. Microbial contamination of food in the production process is rare. Inspections of foods for pesticide residues consistently find that between 96 and 98 percent of foods tested do not contain pesticides in excess of legal limits—and those limits are typically set with a wide margin for error, 100 to 1,000 times lower than a level causing toxic effects in animals.[23] Similarly, careful procedures are established to test new drugs and each year FDA officials inspect one-third of 18,000 drug and biologics establishments in the United States to ensure proper manufacture and handling.[24]

Nevertheless, outbreaks of foodborne disease and incidents involving drugs continue to occur and cause illness or death. Some problems are caused by failures in the protective systems established at the Federal, State, and local levels. In many cases, problems are caused by foods improperly handled by consumers, the misuse of a prescribed drug, and drug interactions that occur when different health care providers unknowingly prescribe different drugs for the same patient.9

Based on the number and severity of cases that occur, *Salmonella*, *Campylobacter*, *Escherichia coli*, and *Listeria* are four of the most important foodborne pathogens in the United States—largely related to time and temperature abuse of foods. One problem that has increased markedly over the decade of the 1980s is illness due to infection with *Salmonella enteritidis*. This foodborne disease is often traced to contaminated eggs and results in severe diarrhea, fever, vomiting, and can even cause death. The 77 outbreaks occurring in 1989 involved nearly 2,400 cases and 14 deaths.[14] Expanded efforts are needed both to reduce source exposure (e.g., sale of contaminated eggs) and to improve food preparation and handling techniques that can protect against this problem.

The principal drug safety issue of the coming years is related to polypharmacy, the use of multiple prescription and over-the-counter medications, especially by older people with chronic health problems. This problem calls for a coordinated prevention approach, involving care on the part of those who prescribe medications to ensure that they will not adversely interact with previously prescribed drug regimens still in use; attentiveness on the part of pharmacists to spot potential medication problems as their customers purchase new prescription drugs; and education for consumers to help them comply with prescribed pharmacologic therapies.

To ensure food and drug safety, by the year 2000...

12.2 Reduce salmonella infection outbreaks to fewer than 25 yearly (a 68% decrease)

Other objectives target reductions in the incidences of foodborne diseases; improving food handling techniques on the part of consumers; better pharmacy-based systems to provide alerts to customers of potential adverse drug interactions; and more regular review by primary care providers of all medications used by their older patients.

Oral Health

Although the prevalence of dental caries or cavities among children has declined steadily since the 1940s, oral diseases remain a prevalent health problem in the United States. On average, among adults 40 through 44, about 1 out of 4 tooth surfaces have been affected by decay.[64] Currently 53 percent of children aged 6 to 8 and 78 percent of 15 year olds have caries.[65] Tooth loss is a major problem among people aged 65 and older, with nearly 40 percent of those aged 65 and older having no natural teeth in 1986.[52] Periodontal diseases, especially gingivitis, also affects many adults. The total cost of dental care to the Nation was more than $27 billion in 1988.[78]

Regular care is a factor in maintaining oral health. However, nearly half the population in the United States does not obtain regular oral health care, and among low-income people the proportion not receiving care is higher.[52] The proportions of black and Hispanic adolescents with untreated decay is approximately 65 percent higher than for the total population.[55,65] One out of every four American Indians/Alaska Natives aged 35 to 44, and nearly three out of four age 55 and older, has fewer than 20 natural teeth.

Among preventive measures, community water fluoridation is the single most effective and efficient means of preventing dental caries in children and adults, regardless of race or income level. Yet more than one-third of people with community water systems do not have adequate fluoride, and only about half of those without fluoridated water receive fluoride from other sources.[10] Improvements are needed. Other factors that can improve oral health include regular self-care, avoiding foods that promote caries, and not using tobacco. Excessive alcohol consumption also may affect oral health.

Oral cancer is also a serious problem, with 30,000 new cases and 8,600 deaths a year.[68] In fact, oral cancer deaths are more numerous than deaths from cervical cancer. Because 75 percent of oral cancers can be attributed to tobacco and alcohol use, it is preventable. Moreover, because early treatment can reduce mortality, attention is needed for its early detection.

To improve oral health, by the year 2000...

13.1 Reduce the incidence of dental caries to no more than 35% of children by age 8
(a 44% decrease)

13.5 Reduce edentulism to no more than 20 percent in people aged 65 and older (a 44% decrease)

Other objectives target expanding treatment of dental caries; reducing periodontal disease and tooth loss; increasing use of protective sealants on permanent teeth in children; improving parental practices that prevent baby bottle tooth decay; and improving use of oral health screening and follow-up services for all age groups.

Preventive Services

Maternal and Infant Health

Heart Disease and Stroke

Cancer

Diabetes and Chronic Disabling Conditions

HIV Infection

Sexually Transmitted Diseases

Immunization and Infectious Diseases

Clinical Preventive Services

Maternal and Infant Health

Of every 1,000 babies born in the United States each year, about 10 die before they reach their first birthday.[68] Although the infant mortality rate in the United States is declining and has reached an all-time low, the pace of progress has slowed. Mortality is also higher for black infants, who die at twice the rate of white infants, and data from the National Birth Cohort Study of 1983 indicate that other minorities may have higher rates than had been estimated previously. Leading causes of deaths among infants are congenital anomalies, sudden infant death syndrome (SIDS), respiratory distress syndrome, and disorders relating to short gestation.[48]

The most prominent risk factor for infant death, low birth weight (less than 2,500 grams), occurred among nearly 7 percent of all births in 1987 and was associated with more than half of all infant deaths. Black babies have twice the risk of having low birth weight. Low birth weight is also linked to a variety of nonfatal disorders, including neurodevelopmental conditions, learning and behavior problems, and lower respiratory tract infections. In 1985, approximately 11,000 low-birth-weight infants were born with moderate to severe disabilities. From 1970 to 1981 low birth weight declined about 1.3 percent per year, but has since been stagnant.[68] A number of risk factors have been identified for low birth weight, including: younger and older maternal age, high parity, poor reproductive history (especially history of low birth weight), low socioeconomic status, low level of education, late entry into prenatal care, low pregnancy weight gain, smoking, and other substance abuse.[34] Smoking is estimated to be associated with from 20 to 30 percent of all low-birth-weight births in this country.[35] Illicit drug use as a contributor to low birth weight has increased in some urban areas.

An expectant mother with no prenatal care is three times more likely to have a low-birth-weight baby. Despite the importance of early prenatal care in protecting against low birth weight and infant deaths, nearly one of every four pregnant women in the United States received no care in the first trimester of her pregnancy.[68] A disproportionate share of these mothers were low income, had less than a high school education, or were very young.[84] Between 1970 and 1980 there was a significant trend toward increasing early entry into prenatal care, but that trend has since plateaued.[68] Contributing to this problem is the fact that an estimated 14 million women of reproductive age have no insurance to cover maternity care.[2]

To improve maternal and infant health, by the year 2000...

14.1 Reduce infant mortality to no more than 7 deaths per 1,000 births (a 31% decrease)

14.5 Reduce low birth weight to no more than 5% of live births (a 28% decrease)

14.11 Increase first trimester prenatal care to at least 90% of live births (an 18% increase)

Other objectives target reducing rates of fetal death, maternal mortality, and fetal alcohol syndrome; increasing abstinence from tobacco, alcohol, cocaine, and marijuana during pregnancy; increasing the proportion of mothers who gain enough weight during their pregnancies, as well as increasing the number who breastfeed their babies; reducing severe complications of pregnancy and cesarean delivery rates; increasing the availability of preconception care and counseling, as well as of genetic services and counseling; improving the management of high risk cases; and increasing the proportion of babies who receive the recommended primary care services.

Heart Disease and Stroke

Despite dramatic declines in mortality from heart disease and stroke in the past two decades, about 7 million Americans have symptomatic coronary artery disease, and cardiovascular diseases still cause more deaths in the United States than all other diseases combined.[50] Reductions in major risk factors—high blood pressure, high blood cholesterol, and smoking—are having a significant impact on cardiovascular mortality.

Approximately 30 percent of adults in America have high blood pressure.[56] People with uncontrolled high blood pressure are at 3 to 4 times the risk of developing coronary heart disease and as much as 7 times the risk of developing a stroke as do those with normal blood pressures.[18] Overall, blacks have a higher prevalence of high blood pressure than whites (38 percent versus 29 percent).[56] Although surveys indicate that 54 percent of adults with high blood pressure are aware of their condition, only about a quarter to a third have their blood pressure under control.[55] This remains a problem despite the fact that many can reduce their blood pressure to normal through programs of physical activity and weight loss, reduced sodium and alcohol intake, and stress management; and medications are available for those who cannot.

The National Heart, Lung, and Blood Institute regards a blood cholesterol level below 200 mg/dL as desirable.[56] Yet the mean cholesterol level for Americans is 213 mg/dL,[53] and about 60 million adults in this country are estimated to have blood cholesterol levels that place them at high risk for coronary heart disease.[82] The Coronary Primary Prevention Trial showed that men at high risk were able to reduce coronary heart disease by about 2 percent for every 1 percent lower blood cholesterol level.[39] Most people can lower their high blood cholesterol by reducing their intake of saturated fat, total fat, and dietary cholesterol, and by normalizing their weight and increasing physical activity. Medications are available for those whose blood cholesterol levels remain significantly elevated despite diet modification.

Tobacco use, which may account for as much as 40 percent of heart disease deaths among people under age 65, is discussed elsewhere. Other contributors to cardiovascular disease include obesity, physical inactivity, and diabetes mellitus.

To reduce heart disease and stroke, by the year 2000...

15.1 Reduce coronary heart disease deaths to no more than 100 per 100,000 people
(a 26% decrease)

15.2 Reduce stroke deaths to no more than 20 per 100,000 people
(a 34% decrease)

15.4 Increase control of high blood pressure to at least 50% of people with HBP
(a 108% increase)

15.6 Reduce blood cholesterol to an average of no more than 200 mg/dL
(a 6% decrease)

Other objectives target increasing awareness of their condition by those with high blood cholesterol and high blood pressure; reducing dietary fat intake; reducing overweight and increasing physical activity; reducing tobacco use; increasing numbers of adults who have recently been screened for high blood pressure or high blood cholesterol; better use of worksites for detection and followup programs; and improving adherence to recommended protocols and standards for primary care providers and laboratories involved in cholesterol testing and management.

Cancer

Cancer accounts for about one of every five deaths in the United States each year.[3] About 75 million Americans now living, nearly one in three, will eventually have cancer. While the incidence of cancer has increased in the past two decades, death rates for those under 55 have fallen.[46] More people are surviving cancer now than several decades ago. However not everyone has benefitted equally from this trend. Blacks are less likely than whites to survive 5 years from the time of diagnosis. The five-year survival rate for all cancer sites combined is 50 percent for white patients and 37 percent for black patients.

Once surrounded by fear and fatalism, cancer has been the focus of nationwide educational campaigns to inform the public that the risk of cancer can be significantly reduced when adequate preventive measures are taken. Tobacco has been estimated to account for 30 percent of cancers, and dietary factors another 35 percent.[47] For example, the leading cause of cancer deaths, lung cancer, can be prevented by not smoking, and epidemiological research suggests that diets relatively low in fat and higher in foods containing fiber may help prevent colon, rectal, breast, prostate, and other cancers. High levels of alcohol use have been linked to esophageal and oral cancers. Limiting sun exposure, use of sunscreens and protective clothing when exposed to sunlight, and avoidance of sun lamps and tanning booths can reduce the risk of skin cancer.

Early detection also can have an important impact on cancer death rates. Procedures such as mammography and clinical breast examination, the Pap test, sigmoidoscopy, and oral, skin, and digital rectal examinations make it possible to treat cancers before they spread. For example, research suggests than breast cancer deaths could be reduced by 30 percent among women aged 50 and older through the use of mammography and clinical breast examination.[83,88,92] Yet in 1987 only 25 percent of such women had these tests within the preceding 2 years.[52] A Pap test could reduce cervical cancer deaths by an estimated 75 percent, but one out of every five women with family incomes less than $10,000 has never had a Pap test and relatively few have had the test within the most recent 3 years. Despite the fact that fecal occult blood testing and sigmoidoscopy are important to facilitate early diagnosis of colorectal cancer, especially among those at high risk, only 27 percent of people aged 50 and older report receiving a fecal occult blood test within the preceding 2 years.

To prevent and control cancer, by the year 2000...

16.1 Reverse the rise in cancer deaths no more than 130 per 100,000 people

16.11 Increase clinical breast exams and mammography every 2 years to at least 60% of women aged 50 and older (a 140% increase)

16.12 Increase Pap tests every 1-3 years to at least 85% of women aged 18 and older (a 13% increase)

16.13 Increase fecal occult blood testing every 1-2 years to at least 50% of people aged 50 and older (an 85% increase)

Other objectives target reducing dietary fat intake; increasing consumption of vegetables, fruits, and grain products; reducing tobacco use; decreasing sun exposure; more counseling by primary care providers on diet and tobacco use and offering of screening procedures according to established protocols; and improving the quality of Pap tests and mammograms.

Diabetes and Chronic Disabling Conditions

As the population of the United States grows older, the problems posed by chronic and disabling conditions increasingly demand the Nation's attention. Chronic conditions such as heart disease, cancer, stroke, and lung and liver disease are joined in importance by other chronic and disabling conditions, such as diabetes, arthritis, deformities or orthopedic impairments, hearing and speech impairments, and mental retardation.

Chronic and disabling conditions have a profound effect not only on mortality rates but also on quality of life. Disability, defined by its impact on the kinds and level of activities one is able to perform, affected more than 13 percent of Americans in 1988.[49] About 33 million people have functional limitations that interfere with their daily activities, and more than 9 million have limitations that prevent them from working, attending school, or maintaining a household. The underlying conditions most often responsible for these conditions are arthritis, heart disease, back conditions (including spinal curvature), lower extremity problems, and intervertebral disk disorders.[36] For those under aged 18 the most frequent causes of activity limitation are asthma, mental retardation, mental illness, and hearing and speech impairments.

Diabetes is one of the most prevalent chronic conditions among Americans. Approximately 7 million people in the United States have been diagnosed with diabetes and each year some 650,000 new cases are identified. In 1987, diabetes was the underlying cause of death for more than 37,000 Americans and contributed to over 100,000 additional deaths. In addition to death, diabetes is accountable for 30 percent of kidney failure cases, is the second leading cause of blindness in aged 45 to 74, causes half of all nontraumatic amputations, and causes a threefold increase in risk for congenital malformations and perinatal mortality among babies of diabetic mothers. Insulin-dependent diabetes mellitus (IDDM, or Type I) is the most severe form, but comprises no more than 10 percent of all cases of diabetes. Noninsulin-dependent diabetes mellitus (NIDDM, or Type II), while serious, has less severe consequences, usually appears after age 40, is often associated with obesity, and may often be controlled by diet and exercise, sometimes in combination with oral hypoglycemic agents. Careful control of diabetes is critical to prevention of its complications. Diet and physical activity are important to the management of both types of diabetes, and NIDDM can often be prevented through these measures.

To reduce diabetes and chronic disabling conditions, by the year 2000...

17.2 Reduce disability from chronic conditions to no more than 8% of people (a 15% decrease)

17.9 Reduce diabetes-related deaths to no more than 34 per 100,000 people (an 11% decrease)

Other objectives target reducing reducing complications of diabetes; reducing disability from asthma, chronic back conditions, osteoporosis, hearing impairment, vision impairment, and mental retardation; increasing physical activity; reducing overweight; improving early diagnosis and referral for disabling conditions among the very young and older people; improving community and self-help resources for people with chronic and disabling conditions; and improving employer policies related to the needs of people with disabilities.

HIV Infection

The human immunodeficiency virus (HIV) epidemic is a multifaceted national and international problem. People with HIV infection can develop acquired immunodeficiency syndrome (AIDS), including severe opportunistic infections, Kaposi's sarcoma, and multiple-system medical complications. Without treatment about 50 percent of people develop AIDS within 10 years of becoming infected with HIV, and another 40 percent or more develop other clinical illnesses associated with HIV infection.[28] By the end of 1989, reported cases of AIDS had reached 115,000,[12] but the projected figure is expected to more than triple or quadruple by the end of 1993. It has become the seventh leading cause of potential years of life lost in the United States.[14] By the end of 1993, a projected total of 390,000 to 480,000 cases of AIDS will have been diagnosed in the United States and 285,000 to 340,000 people will have died from the disease.14 Annual costs of AIDS are projected to climb as high as $5 to $13 billion by 1992.[42]

An estimated 1 million people in the United States are infected with HIV and of these approximately 40,000 became infected in 1989. Groups at special risk have been identified and include: intravenous drug abusers and their sex partners; people with large numbers of sex partners; men who have sex with men, and their female partners; and people who exchange sex for money or drugs. Of current AIDS patients, more than three-fourths are male, and two-thirds are male homosexuals and bisexuals;[12] but the most rapid increases are occurring among intravenous drug-abusers, women, and babies born to women in high risk groups. An estimated 20 to 35 percent of infants of infected mothers develop HIV infection. Approximately 60 percent of AIDS patients are white, 25 percent are black, and 15 percent are Hispanic.[12]

Although some therapeutic agents may extend survival, there is currently no available treatment to prevent death among people with AIDS. The survival rate in the early 1980s was only about 15 percent, before the licensure of antiviral drugs, such as zidovudine (AZT). AZT has been shown to slow replication of the virus and improve survival prospects, as have selected other agents now under study.

The development of a safe and effective HIV vaccine is a high priority for the coming decade, although the prospects for the availability of such a vaccine are uncertain. Other prevention and control strategies are vital to stopping the spread of HIV infection. Most HIV-infected people in the United States do not know they harbor the virus, and increased counseling, testing, and follow-up services are needed. Public education efforts on risks and precautions are essential to slowing the spread of the disease.

To prevent and control HIV infection, by the year 2000...

18.2 Confine HIV infection to no more than 800 per 100,000 people

Other objectives target reducing experience with sexual intercourse among adolescents; increasing use of condoms among sexually active, unmarried people; increasing outreach and access to treatment programs for intravenous drug abusers; expanding testing and counseling for people at risk of HIV infection, including improved skills among primary care providers; increasing education in schools and colleges about HIV infection and its prevention; and extension of regulations to protect workers at risk for occupational transmission of HIV.

Sexually Transmitted Diseases

Sexually transmitted diseases affect almost 12 million Americans each year, 86 percent of whom are aged 15 through 29.[11] About one-fifth of all young people, by the time they reach 21, have needed treatment for a sexually transmitted disease. Because only some teenagers are sexually active, this amounts to an effective rate of at least 25 percent among those who are.[93] The sexually transmitted diseases encompass more than 50 recognized organisms and syndromes, including, in addition to syphilis and gonorrhea, *chlamydia trachomatis* infections, genital herpes, hepatitis B, chancroid, cytomegalovirus, and human immunodeficiency virus (HIV). After AIDS, the most serious complications of sexually transmitted diseases are pelvic inflammatory disease (PID), sterility, ectopic pregnancy, blindness, cancer associated with human papillomavirus, fetal and infant death, birth defects, and mental retardation. The total societal cost of sexually transmitted diseases exceeds $3.5 billion annually, with the cost of PID and PID-associated ectopic pregnancy and infertility alone exceeding $2.6 billion.[93]

Gonorrhea is the most frequently reported communicable disease in the United States. In 1989, some 733,000 cases were reported and the incidence was an estimated 300 per 100,000 people. Youth, low-income, and minority populations are at particular risk. In 1989, adolescents aged 15 to 19 had an infection rate of 1,125 per 100,000 and blacks a rate of 1,990 per 100,000. Despite the fact that since 1981, cases of gonorrhea in males have declined 29 percent and declined 24 percent in females, the rates have not declined among racial and ethnic minorities or among teenagers. Furthermore, the percent of all gonorrhea organisms that are antibiotic-resistant grew from less than 1 percent in 1985 to 7 percent in 1989.[10]

In 1989, nearly 45,000 cases of syphilis were also reported. Syphilis is the first sexually transmitted disease for which control measures were developed and tested. Since the initiation of Federal assistance for syphilis control in the 1940s, reported cases of all stages of syphilis declined from an all-time high of 575,600 cases in 1943 to fewer than 68,000 cases in 1985. In recent years, however, the number of syphilis cases has increased dramatically, due in part to an increase in the exchange of sex for drugs, to an increased number of crack cocaine users, and to increased sexual activity among adolescents. Between 1986 and 1989, the number of reported syphilis cases increased over 55 percent, to the highest level in the United States since the early 1950s.[10]

To reduce sexually transmitted diseases, by the year 2000...

19.1 Reduce gonorrhea infection to no more than 225 per 100,000 people (a 25% decrease)

19.3 Reduce syphilis infection to no more than 10 per 100,000 people (a 45% decrease)

Other objectives target reducing infections with *chlamydia trachomatis*, genital herpes and genital warts, and hepatitis B; reducing occurrence of pelvic inflammatory disease; increasing use of condoms among sexually active, unmarried people; fuller availability of comprehensive sexually transmitted disease-related services in clinics and centers that provide family planning, maternal and child health care, drug treatment, and primary care to low income families; increasing partner tracing and notification; improving primary care provider management of STD cases; and inclusion of instruction on STD transmission and prevention as part of school health education for middle and secondary school students.

Immunization and Infectious Diseases

The reduction in incidence of infectious diseases is the most significant public health achievement of the past 100 years. This success is most notably embodied in the global eradication of smallpox, achieved in 1977. Other gains in control of infectious diseases are nearly as striking, however, including the virtual elimination of diphtheria and poliomyelitis in the United States. Much of the progress made has been a result of improvements in basic hygiene, food production and food handling, and water treatment. The development and use of antimicrobial drugs have reduced the morbidity and mortality of a number of infectious diseases. The other major factor in reducing the toll from infectious diseases has been the development and widespread use of vaccines, which are among the safest and most effective measures for the prevention of infectious diseases.

Nevertheless, infectious diseases still cause many preventable illnesses and deaths. Flu and pneumonia, for example, shorten the lives of many older adults despite the availability of vaccines. Approximately 80 to 90 percent of all influenza-associated deaths in the United States occur in people 65 years or older.[68] The childhood diseases, although they have declined dramatically due to new vaccines, remain problems among certain high-risk, under-immunized groups. Moreover, newly recognized diseases, such as Legionnaire's disease, toxic shock syndrome, Lyme disease, and the many diseases associated with human immunodeficiency virus, have emerged as threats to public health.

The occurrence of measles in the United States is an example of an infectious disease problem that ought to be readily controlled. A viral infection that in countries with poor nutritional status and intense crowding may be associated with death rates in children of 5 percent or higher, measles is a disease for which a vaccine has been available since 1963. Use of that vaccine helped to reduce the number of reported measles cases in this country to an all-time-low of under 1,500 in 1983. However, due to inadequate immunization of low income preschool children, as well as of young people, the disease has had something of a resurgence, with over 16,000 cases reported in 1989, including 41 deaths.[41] In response, the measles immunization protocol recommended by the Immunization Practices Advisory Committee has called for a two-dose schedule of measles vaccine, but effective control will also require better outreach in low income communities, strong enforcement of school entry laws, and efficient identification and intervention in disease outbreaks.

To increase immunization and prevent infectious diseases, by the year 2000...

20.1 Eliminate measles

20.2 Reduce epidemic-related pneumonia and influenza deaths to no more than 7.3 per 100,000 people aged 65 and older (a 20% decrease)

20.11 Increase childhood immunization levels to at least 90% of 2 year-olds (a 20% increase)

Other objectives target eliminating diphtheria, tetanus, polio, and rubella; reducing viral hepatitis, tuberculosis, bacterial meningitis; reducing infectious diarrhea among children in licensed child care centers; reducing middle ear infections; increasing immunization levels for pneumococcal pneumonia and hepatitis B; expanding immunization laws for schools, preschools, and day care settings; eliminating financial barriers to immunizations; full involvement of primary care providers in meeting the immunization needs of their patients; and expanding laboratory capabilities for rapid viral diagnosis of influenza.

Clinical Preventive Services

Clinical preventive services refer to those disease prevention and health promotion services—immunizations, screening, and counseling—delivered to individuals in a health care setting. The effectiveness of preventive services in reducing disease, disability, and premature death is now well documented. The dramatic declines observed for childhood infectious diseases and early death from strokes and cervical cancer are largely attributed to the widespread application of three preventive services: childhood immunizations, high blood pressure detection and control, and Pap tests. Several other preventive services, such as screening mammography, have also been shown to be effective. In 1989, the U.S. Preventive Services Task Force reported on its review of the scientific evidence on 169 clinical preventive services for 60 target conditions. Based on well-established criteria, it published in the *Guide to Clinical Preventive Services*[91] its recommendations on the basic services that should be provided.

Despite their proven effectiveness, clinical preventive services are rarely covered under health insurance or delivered as recommended. The few studies that have examined the receipt of clinical preventive services have found the delivery to be less than optimal. For example, although 93 percent of newborns studied had received at least one well-child examination, less than half had received three or more doses of diphtheria-pertussis-tetanus (DPT) vaccine and three or more doses of polio vaccine by age 18 months.[40] The National Health Interview Survey found an increase in the use of eight routine preventive services among adults and children between 1973 and 1982, but low-income people, people with low levels of education, and people of Hispanic origin were among the least likely to have ever received all eight procedures.[19] A related study found that only 42 percent of women had adequately received a blood pressure check, clinical breast examination, Pap test, and glaucoma screening.[94] Screening was less adequate among the poor, the less educated, and those living in rural areas, with only 33, 34, and 38 percent, respectively, screened for all four conditions.

Barriers specific to the delivery or use of preventive services include uncertainty among health care providers about which services to offer, practice organization characteristics that are not conducive to delivery of preventive services (e.g., lack of time, too few allied health professionals, and limited access to medical record systems organized for prevention), and inadequate knowledge among consumers to create the necessary demand. Another important barrier is the lack of reimbursement or financing. In addition to the fact that few insurance plans cover preventive services, a substantial proportion of Americans—some 30 to 37 million—are without any form of health insurance. And many more are underinsured or are covered by insurance programs with requirements and payments that providers are increasingly reluctant to accept.

To expand access and use of clinical preventive services, by the year 2000...

21.4 Eliminate financial barriers to clinical preventive services

Other objectives target increasing the proportion of people with a specific source of primary care; increasing the number of people who receive recommended clinical preventive services; increasing delivery of preventive services to patients of publicly funded providers of primary care; increasing focus by primary care providers on the delivery of recommended preventive services; and increasing representation of minorities among primary care providers.

Surveillance and Data Systems

Surveillance and Data Systems

Systematically collecting, analyzing, interpreting, disseminating, and using health data is essential to understanding the health status of a population and to planning effective prevention programs. Public health surveillance and data systems collect information on morbidity, mortality, disability, injuries, risk factors, services, and costs. Systems used in the United States include vital statistics and disease reporting systems as well as sample surveys, such as the continuous National Health Interview Survey (NHIS).

Although the United States Public Health Service takes the lead role in national public health data collection, it is only one partner within the larger structure necessary to collect national public health data. Surveillance often requires active cooperation among Federal, State, and local agencies. For example, the National Vital Statistics System obtains information on births, deaths, marriages, and divorces from all 50 States, New York City, the District of Columbia, Puerto Rico, the United States Virgin Islands, and Guam. Programs in each State collect vital information from many sources in local communities, including funeral directors, medical examiners, coroners, hospitals, religious authorities, and justices of the peace. Other surveys, like the National Health Interview Survey, are based on interviews with thousands of individual citizens nationwide. Still others, like the Centers for Disease Control's Behavioral Risk Factor Surveillance System, are based on State reports of telephone interviews with individual citizens.

The Institute of Medicine's report, *The Future of Public Health*, recognized the importance of surveillance and data system for guiding public health into the 21st century, in recommending the creation and use of methods for the collection of "...national data that will permit comparison of local and State health data with those of the Nation and of other States and localities and that will facilitate progress towards the national health objectives..."[30] A set of indicators and methods, arrived at through a consensus process, would facilitate comparability of data on health status within and among State and local areas and would permit the valid comparison of local and State health data with national data. Further, the use of a minimum set of indicators would facilitate communication among public health officials and with others involved in programs and activities that affect the Nation's health (e.g., employers and school administrators). Though complete comparability across data systems is not possible given the differences in purposes and approaches (e.g., direct interviews v. telephone v. mail), differences can be minimized.

To improve surveillance and data systems, by the year 2000...

22.1 Develop and implement common health status indicators for use by Federal/State/local health agencies

Other objectives target creation of data sources to track the year 2000 objectives; expanded State-based activity to track the progress of the population toward the year 2000 objectives; improvement of related data for blacks, Hispanics, American Indians and Alaska Natives, Asian Americans, and people with disabilities; improvement of information transfer capabilities among Federal, State, and local agencies; and more speedy processing of survey and surveillance data.

References

1 Agency for Toxic Substances and Disease Registry. *The Nature and Extent of Lead Poisoning in Children in the United States: A Report to Congress.* Washington, DC: U.S. Department of Health and Human Services, July 1988.

2 The Alan Guttmacher Institute. *Blessed Events and the Bottom Line: The Financing of Maternity Care in the United States.* New York: the Institute, 1987.

3 American Cancer Society. *Cancer Facts and Figures - 1989.* New York: the Society, 1990.

4 American School Health Association; Association for the Advancement of Health Education; and Society for Public Health Education, Inc. *The National Adolescent Student Health Survey.* Oakland, CA: the Third Party Publishing Company, 1989.

5 Blair, S.N.; Kohl, H.W.; Paffenbarger, R.S.; Clark, D.G.; Cooper, K.H.; and Gibbons, L.W. Physical fitness and all-cause mortality: A prospective study of healthy men and women. *JAMA* 262:2395-2401, 1989.

6 Boyd, J.H., and Moscicki, E.K.. Firearms and youth suicide. *American Journal of Public Health* 76:1240-1242, 1986.

7 Bureau of Labor Statistics. *Annual Survey of Occupational Injuries and Illnesses.* Washington, DC: Department of Labor, 1988.

8 Cady, L.D.; Bischoff, D.P.; O'Connell, E.R.; Thomas, P.C.; and Allan, J.H. Strength and fitness and subsequent back injuries in firefighters. *Journal of Occupational Medicine* 21:269-272, 1979.

9 Center for Infectious Diseases, Centers for Disease Control, Public Health Service, U.S. Department of Health and Human Services, Atlanta, GA.

10 Center for Prevention Services, Centers for Disease Control, Public Health Service, U.S. Department of Health and Human Services, Atlanta, GA.

11 Centers for Disease Control. *Division of STD/HIV Prevention Annual Report, 1989.* Atlanta, GA: U.S. Department of Health and Human Services, 1990.

12 Centers for Disease Control. *HIV/AIDS Surveillance Report.* May:1-18, 1990.

13 Centers for Disease Control. *Homicide Surveillance: High-Risk Racial and Ethnic Groups/Blacks and Hispanics, 1970 to 1983.* Atlanta, GA: U.S. Department of Health and Human Services, 1986.

14 Centers for Disease Control, Public Health Service, U.S. Department of Health and Human Services, Atlanta, GA.

15 Centers for Disease Control In: U.S Preventive Services Task Force. *Guide to Clinical Preventive Services: An Assessment of the Effectiveness of 169 Interventions.* Baltimore, MD: Williams and Wilkins, 1989.

16 Centers for Disease Control. Years of potential life lost before age 65: United States, 1987. *MMWR* 38:27-9, 1989.

17 Committee on Trauma Research, Commission on Life Sciences, National Research Council, and Institute of Medicine. *Injury in America: A Continuing Public Health Problem.* Washington, DC: National Academy Press, 1988.

18 Dawber, T.R. *The Framingham Study: The Epidemiology of Atherosclerotic Disease.* Cambridge, MA: Harvard University Press, 1980.

19 Dawson, 1987

20 Dryfoos, J.G. *Working Paper on Youth At Risk: One in Four in Jeopardy.* Hastings-on-the-Hudson, New York: Report submitted to the Carnegie Corporation, 1987.

21 Environmental Protection Agency. *Environmental Progress and Challenges: EPA's Update.* Washington, DC: U.S. Environmental Protection Agency, August 1988.

22 Environmental Protection Agency. *National Air Quality and Emissions Trends Report, 1988.* EPA-450/4-90-002. Washington, DC: U.S. Environmental Protection Agency, 1990.

23 Farley, D. *Setting Safe Limits on Pesticide Residues, Safety First: Protecting America's Food Supply, a special report of FDA Consumer.* Washington, DC: U.S. Department of Health and Human Services, 1988.

24 Food and Drug Administration. *From Test Tube to Patient: New Drug Development in the United States, an FDA Consumer Special Report.* Washington, DC: U.S. Department of Health and Human Services, 1988.

25 Harlow, C.W. *Injuries from Crime.* Washington, DC: U.S. Department of Justice, 1989.

26 Harris, L. and Associates, Inc. *The Prevention Index '89: Summary Report.* Emmaus, PA: Rodale Press, 1989.

27 Harwood, H.J.; Napolitana, D.M.; Kristiansen, P.L.; and Collins, J.J. *Economic Costs to Society of Alcohol and Drug Abuse and Mental Illness: 1980.* Research Triangle Park, NC: Research Triangle Institute, 1984.

28 Hessol, N.A.; Rutherford, G.W.; Lifson, A.R.; et al. "The Natural History of HIV Infection in a Cohort of Homosexual and Bisexual Men: A Decade of Follow Up." Abstract 4096. Proceedings of the IV International Conference on AIDS, Stockholm, Sweden, June 14, 1988.

29 Indian Health Service. *Trends in Indian Health, 1989*. Washington, DC: U.S. Department of Health and Human Services, 1989.

30 Institute of Medicine, National Academy of Sciences. *The Future of Public Health*. Washington, DC: National Academy Press, 1988.

31 Jones, E.F., and Forrest, J.D. Contraceptive failure in the United States: Revised estimates from the 1982 National Survey of Family Growth. *Family Planning Perspectives* 21(3):103-9 1989.

32 Katz, S.; Branch, L.G.; Branson, M.H.; Papsidero, J.A.; Beck, J.C.; and Greer, D.S. Active life expectancy. *New England Journal of Medicine* 309:1218-1224, 1983.

33 Kleinman, J.C.; and Kopstein, A. Smoking during pregnancy 1967-1980. *American Journal of Public Health* 77:823-825, 1987.

34 Kleinman, J.C., and Kessel, S.S. Racial differences in low birthweight: Trends and risk factors. *New England Journal of Medicine* 317:749-53, 1987.

35 Kleinman, J.C., and Madans, J.H. The effects of maternal smoking, physical stature, and educational attainment on the incidence of low birthweight. *American Journal of Epidemiology* 121(6):843-55, 1985.

36 LaPlante, M.P. *Data on Disability from the National Health Interview Survey, 1983-85*. An InfoUse Report. Washington, D.C.: National Institute on Disability and Rehabilitation Research, 1988.

37 Leon, A.S. Effects of physical activity and fitness on health. In: National Center for Health Statistics. *Assessing Physical Fitness and Physical Activity in Population-Based Surveys*. DHHS Pub. No. (PHS)89-1253. Hyattsville, MD: U.S. Department of Health and Human Services, 1989.

38 Leon, A.S.; Connett, J.; Jacobs, D.R.; and Raurama, R. Leisure-time physical activity levels and risk of coronary heart disease and death: The multiple risk factor intervention trial. *JAMA* 258:2388-2395, 1987.

39 Lipid Research Clinics Program. The lipid research clinics coronary primary prevention trial results: I. Reduction in the incidence of coronary heart disease. *JAMA* 251:351-364, 1984.

40 Lurie, N.; Manning, W.G.; Peterson, C.; Goldberg, G.A.; Phelps, C.A.; and Lillard, L. Preventive care: Do we practice what we preach? *American Journal of Public Health* 77:801-804, 1987.

41 Markowitz, L.E., et al. Patterns of transmission in measles outbreaks in the United States, 1985-1986. *New England Journal of Medicine* 320(2):75-81, 1989.

42 Mason. Public Health Considerations: A Progress Report. Presented at AIDS/Frontline Health Care Conference.

43 Mercy, J.A., and Houk, V.N. Firearm injuries: A call for science. *New England Journal of Medicine* 319:1283-85, 1988.

44 Monitoring the Future Study (High School Senior Survey), Alcohol, Drug Abuse, and Mental Health Administration, Public Health Service, U.S. Department of Health and Human Services, Rockville, MD.

45 Moscicki, E.K., and Boyd, J.H. Epidemiologic trends in firearm suicides among adolescents. *Pediatrician* 12:52-62, 1985.

46 National Cancer Institute. *1987 Annual Cancer Statistics Review*. DHHS Pub.No. (NIH)88-2789. Bethesda, MD: U.S. Department of Health and Human Services, 1988.

47 National Cancer Institute. Cancer control objectives for the nation: 1985-2000. *National Cancer Institute Monographs* 2 (1986). DHHS Pub. No. (NIH)86-2880. Bethesda, MD: U.S. Department of Health and Human Services, 1986.

48 National Center for Health Statistics. Advance Report of Final Mortality Statistics, 1987. *Monthly Vital Statistics Report*. Vol. 38 No. 5 (Supp.) Hyattsville, MD: U.S. Department of Health and Human Services, 1989.

49 National Center for Health Statistics. Current Estimates from the National Health Interview Survey, United States, 1988. *Vital and Health Statistics*. Series 10, No. 173, DHHS Pub. No. (PHS)89-1501. Hyattsville, MD: U.S. Department of Health and Human Services, 1989.

50 National Center for Health Statistics. *Health United States, 1989*. DHHS Pub. No. (PHS)90-1232. Washington, DC: U.S. Department of Health and Human Services, 1990.

51 National Center for Health Statistics. *Hispanic Health and Nutrition Examination Survey, 1983-84*. Hyattsville, MD: U.S. Department of Health and Human Services.

52 National Center for Health Statistics. *National Health Interview Survey, 1986*. Hyattsville, MD: U.S. Department of Health and Human Services.

[53] National Center for Health Statistics. "Total Serum Cholesterol Levels of Adults 20-74 Years of Age, United States, 1976-80." Data from the National Health Survey, Series II, No. 236. Hyattsville, MD: U.S. Department of Health and Human Services, 1986.

[54] National Family Violence Survey 1985, National Institute of Mental Health, Alcohol, Drug Abuse, and Mental Health Administration, Public Health Service, U.S. Department of Health and Human Services, Rockville, MD.

[55] National Health and Nutrition Examination Survey, National Center for Health Statistics, Centers for Disease Control, Public Health Service, U.S. Department of Health and Human Services, Hyattsville, MD.

[56] National Heart, Lung and Blood Institute. Hypertension prevalence and the status of awareness, treatment, and control in the United States: Final report of the subcommittee on definition and prevalence of the 1984 joint national committee. *Hypertension* 7(3):457-468, 1985.

[57] National Heart, Lung, and Blood Institute. *Report of the Expert Panel on Detection, Evaluation, and Treatment of High Blood Cholesterol Adults.* National Cholesterol Education Program. Bethesda, MD: U.S. Department of Health and Human Services, 1988.

[58] National Highway Traffic Safety Administration. *The Economic Cost to Society of Motor Vehicle Accidents.* Technical Report DOT HS 809-195, p. 1. Washington, DC: U.S. Department of Transportation, 1987.

[59] National Highway Traffic Administration. *The Effectiveness of Motorcycle Helmets in Preventing Fatalities.* Technical Report DOT HS 807-416. Washington, DC: U.S. Department of Transportation, 1989.

[60] National Highway Traffic Safety Administration. *Motorcycle Accident Cause Factors and Identification of Countermeasures.* Technical Report DOT HS 805-862. Washington, DC: U.S. Department of Transportation, 1981.

[61] National Household Survey of Drug Abuse, National Institute on Drug abuse, Alcohol, Drug Abuse, and Mental Health Administration, Public Health Service, U.S. Department of Health and Human Services, Rockville, MD..

[62] National Institute on Alcohol Abuse and Alcoholism. *Seventh Special Report to the U.S. Congress on Alcohol and Health.* Washington, DC: U.S. Department of Health and Human Services, 1988.

[63] National Institute on Alcohol Abuse and Alcoholism. *Sixth Special Report to the U.S. Congress on Alcohol and Health.* Washington, DC: U.S. Department of Health and Human Services, 1987.

[64] National Institute of Dental Research. *The Oral Health of United States Adults. The National Survey of Oral Health in U.S. Employed Adults and Seniors: 1985-1986.* DHHS Pub. No. (PHS)87-2868. Bethesda, MD: U.S. Department of Health and Human Services, 1987.

[65] National Institute of Dental Research. *Oral Health of United States Children. The National Survey of Dental Caries in U.S. School Children, 1986-1987.* DHHS Pub. No. (PHS)89-2247. Bethesda, MD: U.S. Department of Health and Human Services, 1989.

[66] National Research Council. *Toxicity Testing: Strategies to Determine Needs and Priorities.* Washington, DC: National Academy Press, 1984.

[67] *National Survey of Family Growth.* National Center for Health Statistics, Centers for Disease Control, Public Health Service, U.S. Department of Health and Human Services, 1988.

[68] National Vital Statistics System, National Center for Health Statistics, Centers for Disease Control, Public Health Service, U.S. Department of Health and Human Services, Hyattsville, Maryland.

[69] Office of Disease Prevention and Health Promotion. *National Survey of Worksite Health Promotion Activities: A Summary.* Washington, DC: U.S. Department of Health and Human Services, 1987.

[70] Office of Radiation Programs, U.S. Environmental Protection Agency, Washington, DC.

[71] Office on Smoking and Health. *Reducing the Health Consequences of Smoking: 25 Years of Progress. A Report of the Surgeon General.* DHHS Publication No. (CDC)89-8411. Washington, DC: U.S. Department of Health and Human Services, 1989.

[72] Paffenbarger, R.S.; Hyde, R.T.; Wing, A.L.; and Hsieh, C.C. Physical activity, all-cause mortality, and longevity of college alumni. *New England Journal of Medicine* 314:605-613, 1986.

[73] Paffenbarger, R.S.; Wing, A.L.; and Hyde, R.T. Physical activity as an index of heart attack risk in college alumni. *American Journal of Epidemiology* 108:161-175, 1978.

[74] Perrine, M.; Peck, R.; and Fell, J. Epidemiologic perspectives on drunk driving. In: *Surgeon General's Workshop on Drunk Driving: Background Papers.* Washington, DC: U.S. Department of Health and Human Services, 1988.

[75] Powell, K.E.; Caspersen, C.J.; Koplan, J.P.; and Ford, E.S. Physical activity and chronic disease. *American Journal of Clinical Nutrition* 49:999-1006, 1989.

[76] Powell, K.E.; Thompson, P.D.; Caspersen, C.J.; and Kendrick, J.S. Physical activity and the incidence of coronary heart disease. *Annual Review of Public Health* 8:253-287, 1987.

[77] Public Health Service. *The Surgeon General's Report on Nutrition and Health.* DHHS Pub. No. (PHS)88-50210. Washington, DC: U.S. Department of Health and Human Services, 1988.

[78] Reisine, S., and Miller, J. A longitudinal study of work loss related to dental diseases. *Social Science and Medicine* 21(12):1309-1314, 1985.

[79] Rice, D.P.; MacKenzie, E.J.; Jones, A.S.; Kaufman, S.R.; deLissovoy, G.V.; Max, W.; McLoughlin, E.; Miller, T.R.; Robertson, L.S.; Salkever, D.S.; and Smith, G.S. *Cost of Injury in the United States: A Report to Congress, 1989.* San Francisco, CA: Institute for Health and Aging, University of California and Injury Prevention Center, The Johns Hopkins University, 1989.

[80] Sallis, J.F.; Haskell, W.L.; Fortmann, S.P.; Wood, P.D.; and Vranizan, K.M. Moderate-intensity physical activity and cardiovascular risk factors: The Stanford five-city project. *Preventive Medicine* 15:561-568, 1986.

[81] Salonen, J.T.; Puska, P.; and Tuomilehto, J. Physical activity and risk of myocardial infarction, cerebral stroke and death: A longitudinal study in Eastern Finland. *American Journal of Epidemiology* 115:526-537, 1982.

[82] Sempos, C.; Fulwood, R.; Haines, C.; Carroll, M.; Anda, R.; Williamson, B.F.; Remmington, P.; and Cleeman, J. The Prevalence of High Blood Cholesterol Levels Among Adults in the United States. *JAMA* 262:45-52, 1989.

[83] Shapiro, S.; Venet, W.; Strax, L.; and Roeser; R. Selection, Followup, and Analysis in the Health Insurance Plan Study: A Randomized Trial With Breast Cancer Screening. *National Cancer Institute Monographs* 67:65-74, 1985.

[84] Singh, S.; Torres, D.; and Forrest, J.D. The need for prenatal care in the United States: Evidence from the 1980 national natality survey. *Family Planning Perspectives.* 17:118-124, 1985.

[85] Sonnenstein, F.L.; Pleck, J.H.; Ku, L.C. Sexual activity, condom use, and AIDS awareness among adolescent males. *Family Planning Perspectives* 21(4):152-158, 1989.

[86] Study of the National Incidence of Child Abuse and Neglect, National Center on Child Abuse and Neglect, Administration for Children, Youth, and Families, Office of Human Development Services, DHHS, Washington, DC.

[87] Surveillance, Epidemiology, and End Results Program, 1987. National Cancer Institute, National Institutes of Health, Public Health Service, U.S. Department of Health and Human Services, Bethesda, MD.

[88] Tabar, L.; Gad, A.; Holmberg L.H.; Ljungquist, V.; Eklund, G.; Fagorberg, C.J.G.; Baldetorp, L.; Grontoft, O.; Lundstrom, B.; Manson, J.C.; Day, N.E.; and Pehersson, F. Reduction in mortality from breast cancer after mass screening with mammography. *Lancet* 1:829-832, 1985.

[89] Tanfer, K., and Horn, M.C. Contraceptive use, pregnancy, and fertility patterns among single American women in their 20s. *Family Planning Perspectives* 17(1):10-19, 1985.

[90] U.S. Department of Agriculture and U.S. Department of Health and Human Services. *Dietary Guidelines for Americans.* Washington, DC: the Departments, 1985.

[91] U.S. Preventive Services Task Force. *Guide to Clinical Preventive Services: An Assessment of the Effectiveness of 169 Interventions.* Baltimore, MD: Williams and Wilkins, 1989.

[92] Verbeek, A.L.M.; Hendricks, J.H.C.L.; Holland, R.; Mravunac, M.; Sturmans, F.; and Day, N.E. Reduction of breast cancer mortality through mass screening with modern mammography: First results of the Nijmegan Project, 1975-1981. *Lancet* 1:1222-1224, 1984.

[93] Washington, A.E.; Arno, P.S.; and Brooks, M.A. The economic costs of pelvic inflammatory disease. *JAMA* 255:1735-1738, 1986.

[94] Woolhandler, S., and Himmelstein, D.U. Reverse targeting of preventive care due to lack of health insurance. *JAMA* 259:2872-2874, 1988.

6. Shared Responsibilities

The challenge set out through *Healthy People 2000* is one directed to people throughout the Nation. Each of us, whether acting as an individual, an employee or employer, a member of a family, community group, professional organization, or government agency, has both an opportunity and an obligation to contribute to the effort to improve the Nation's health profile. To arrive at the established goals and objectives, we must chart a common course that depends upon commitment and action from every level of our society. Then, together, the challenge can be met.

Personal Responsibility

The individual is both the starting point and the ultimate target of the campaign towards *Healthy People 2000*. Through the many roles that each of us fulfills in our daily lives, we are afforded numerous opportunities for promoting health and preventing disease. With these opportunities, though, comes responsibility, and the first role we must all undertake is responsibility for our own personal health habits. Improving personal health behavior can count among the most potent means to prevent disease and promote health. Measurable decreases in risks to health can result from changes in diet, exercise, tobacco use, alcohol and other drug use, injury prevention behavior, and sexual habits, but each of us must choose to make these changes a personal priority.

Our worksites can provide a smoking cessation program and a fitness center, for example, but we have to enroll. Fast food chains can offer salads, but we have to choose them. Legislators can mandate food labeling, but we must care enough to read the labels. Our health care providers can provide the necessary screening tests and immunizations, but we must take the initiative to obtain them.

While the responsibility for change lies with each of us, it also lies with all of us, and individuals cannot be expected to act alone.

The Family

The family is the primary context in which health promoting activities occur and is therefore potentially the most immediate source of health-related support and education for the individual. It is in the context of the family that attitudes and behaviors regarding diet, physical activity, hygiene, smoking, and alcohol and other drug use are often learned and maintained. Therefore, the family offers the primary opportunity for change in these areas. Parents can teach children healthy habits and offer the supportive environment necessary to sustain them. In addition, parents can ensure that their children receive needed preventive services—immunizations, screening tests, as well as counseling and education about health risks and behaviors.

Although the family plays a key role in meeting the challenge of *Healthy People 2000*, the family also should not be expected to assume these responsibilities in isolation. Families need and deserve the support of their communities in achieving and maintaining standards of good health. When families experience stresses that can result in self-destruction through abuse, neglect, and addiction, the community's responsibility becomes increasingly urgent. Single-parent homes, children in poverty, and an aging society are all factors that threaten the family's viability. As the burdens of a family increase, its very spirit is threatened and the need for community support becomes still more crucial, not only to the well-being of its members but also to its survival.

Community

In today's society, a supportive community can make a vital difference in the well-being of its members. Accordingly, there is evidence that community-based health programs can play a strong role in improving the health status of their citizens. Multiple opportunities exist for community health promotion efforts on the part of government, voluntary and self-help groups, businesses, and schools. Such local community programs can often deliver services more efficiently than centralized programs managed far from the point of delivery. Furthermore, indigenous programs maintain the sensitivity to family and neighborhood values that is vital to encourage change successfully towards healthier lifestyles within the community.

Local health officials can contribute to the challenge of *Healthy People 2000* by working to ensure that health department clinics provide appropriate preventive and health promotion services for the people they serve—in addition to their historic roles of providing and monitoring traditional community health services related to public sanitation, clean water, and water fluoridation. Local governments can form partnerships with grassroots organizations, such as neighborhood associations and tenant councils, in a cooperative effort to reach specific populations on topics of special local concern.

Voluntary organizations have long worked to improve health through research, public education, and other program activities. In fact, the spirit of volunteerism is the essence of our national traditions. Groups that have not traditionally been involved in reducing health risks should now begin to define their role in community health education. For example, local organizations serving their youth can collaborate on alcohol and other drug abuse-reduction programs or on discouraging the use of tobacco. Groups representing special populations—people with disabilities, racial and ethnic minorities, older people—can work together to achieve needed changes both within their memberships and in the community at large.

Business, community leaders, and labor can work together for mutual benefit to enhance the well-being of employees and the community. Management, unions, and employee groups can sponsor wellness and employee assistance programs; coverage for effective preventive services can be sought in contract negotiations; and employees can work to make community health promotion services available at the worksite for themselves, their dependents, and retirees. Many important disease prevention and health promotion activities, such as smoking cessation, diet modification, and physical conditioning, can be accomplished at the worksite in an effective and efficient manner. Company policies can help create a healthy work and living environment and contribute to the ecology of the communities in which they are based. From enforcing safety procedures, to mandating smoke-free workplaces, to ensuring that healthful food choices are available in employee cafeterias, employers have multiple opportunities to improve the health prospects of their employees. Companies also have a responsibility to contribute to the community leadership in maintaining a healthy environment through responsible waste disposal policies.

Schools have a special role in enhancing and maintaining the health of their community's children, since roughly one-quarter of a young person's time is spent in this environment. School health education can foster healthful behaviors and help prevent hazardous ones, particularly in the areas of physical fitness, smoking, and nutrition. Standard course curricula can be modified to include health promotion, as, for example, through the addition of environmental health components to science classes. Provision of healthy meals, safe work and play areas, and physical education courses that stress the acquisition of lifetime exercise habits can be instituted as well to foster the long-term health of our youth. In partnership with parents and other community groups, schools can help to create health promotion programs and enhance health education curricula. Schools can, in addition,

open their facilities and health curricula to the adults of the community, thereby serving as an even greater local resource.

Churches and other religious institutions may also offer important resources for enhancing access to health promotion and disease prevention services, especially for populations that may otherwise be difficult to reach. Churches are often strong in the same communities where the health care system is weak and overburdened. In poor black communities, for example, the church has met not only the spiritual but also the educational, physical, and social needs of its members and their families and friends. Increasingly, religious institutions are sponsoring health fairs and establishing blood pressure education, screening, and control programs. They offer individual and family counseling and are often involved in adolescent pregnancy prevention efforts. These are important contributions.

Health Professionals

Responsibility also falls to physicians and other health care providers, who are for many Americans the primary sources of health information. Their professional training gives them the skill to translate science into practice. Practice can take the form of partnerships with nonprofessionals in the pursuit of individual, family, and community health care. The effectiveness and efficiency of preventive services—screening tests, immunizations, and counseling—will be enhanced by such partnerships.

Health education and counseling, in particular, provide opportunities for interdisciplinary consulting among educators, administrators, social workers, health and other professionals in order to integrate healthy practices into the daily lives of individuals, their families, and communities. Professional associations can facilitate dissemination of the health promotion and disease prevention knowledge base through their established information exchange and professional education networks. A special opportunity and responsibility exists for the teachers of health professionals to select students, design curricula, and allocate educational resources which will equip the profession with prevention expertise and with the skills to share their knowledge with the public.

America's physicians, dentists, nurses, pharmacists, medical technicians and other health professionals must be not only knowledgeable in the basic and clinical sciences; they also must be life-long learners, excellent communicators, good team players, managers of scarce resources, health care visionaries, and community leaders. The day of the solo practitioner, dealing with the patient in isolation from other professionals is past.

Media

The day of the print and electronic media is, however, very much here, and these media can contribute to the exchange of health information between health professionals and the public, as well as among health professionals themselves. The average American is exposed to many different kinds of health-related messages, some explicit in news, public affairs, and documentaries, and some buried in the plots and characters seen in entertainment programs through the mass media. In partnerships with the media, voluntary and professional organizations can expand the reach of their programs while performing an important service to the community.

Partnerships can also be created between community groups and the increasing number of cable television stations, radio stations, and regional magazines that are aimed at very specific audiences and therefore have a unique opportunity to tailor their messages directly to the target audience. New opportunities will also unfold through the evolving integration of telecommunications media—telephone, television, computer—to make customized health information more accessible than ever before.

Government

Policy decisions are made regularly that can assist health professionals and the public in reaching our national health goals. These decisions range from health care legislation to legislation that bears on the environment, business, farming, production, energy, housing, information dissemination, education, and the economy. The health interests of Americans are directly and indirectly shaped by such policy decisions. Local, State, and Federal governments can ensure that health promotion and disease prevention activities receive adequate attention and support. The accomplishment of this task can be effectively bridged through partnerships with each other and with the private sector.

With the increasing decentralization of government health services, the States have taken on new roles as conveners, fostering alliances and common interests among many potential participants in disease prevention and health promotion activities. These alliances can occur both horizontally, among statewide organizations, and vertically, among community, State, and national groups. Particularly important is their role in maintaining surveillance systems on the occurrence of disease, exposure to risks, and delivery of services. They are in this respect the keepers of the tools most important to charting our progress.

The Federal Government supports basic biomedical research on disease prevention and sponsors demonstration projects to help identify effective health promotion strategies. It provides financial support for many State and local government initiatives in health promotion and disease prevention, and directly serves some of the population groups most in need. On issues of particular prominence, it sponsors the development of national educational campaigns and the formation of coalitions for action. In order to address public health issues that are in flux with changing social, behavioral, and economic environments, sustained Federal leadership is necessary to improve the health of the American people.

Healthy People: The Vision

Clearly, to meet the challenge of the *Healthy People 2000* goals and objectives, we must work both individually and collectively. Alone, no one person, family, business, organization, or government has the resources to bring about the changes needed to implement this broad program, and yet the program cannot succeed unless each of us contributes individually. In essence, *Healthy People 2000* offers hope that through cooperative efforts all Americans can live longer, healthier lives.

There are existing examples of cooperative programs which, if replicated, could propel us toward our health goals for the year 2000. Promising efforts are emerging in programs that have taken deep roots in neighborhoods across America and focus upon the early developmental needs of children. In many areas, these programs are the chief, if not the only, agents of family and community. Through these efforts, parents can both receive support and become active participants and leaders within the community. Where such programs are successful, they demonstrate that by working together—by mobilizing families, neighborhoods, schools, businesses, churches, the media, and government—we can make great strides toward helping Americans become healthier, more productive, and more fulfilled.

Thus, the final message of this report is one of shared responsibility—among the many partners in prevention, but most importantly among ourselves individually. It is what we do, the steps that we take not only collectively, but personally, that will move us as individuals and as a Nation towards a healthier future.

Appendices

Contents

A. Healthy People 2000 Consortium

National Organizations

Academy of General Dentistry
Aerobics and Fitness Association of America
Alcohol and Drug Problems Association of North America
Alliance for Aging Research
Alliance for Health
Amateur Athletic Union
American Academy of Child and Adolescent Psychiatry
American Academy of Ophthalmology
American Academy of Orthopaedic Surgeons
American Academy of Pediatric Dentistry
American Academy of Pediatrics
American Alliance for Health, Physical Education, Recreation, and Dance
American Association for Clinical Chemistry
American Association for Dental Research
American Association for Marriage and Family Therapy
American Association for Respiratory Care
American Association for the Advancement of Science
American Association of Certified Orthoptists
American Association of Colleges of Pharmacy
American Association of Dental Schools
American Association of Homes for the Aging
American Association of Occupational Health Nurses
American Association of Pathologists' Assistants
American Association of Public Health Dentistry
American Association of Public Health Physicians
American Association of Retired Persons
American Association of School Administrators
American Association of Suicidology
American Association of University Affiliated Programs
American Association on Mental Retardation
American Cancer Society
American College of Cardiology
American College of Clinical Pharmacy
American College of Health Care Administrators
American College of Healthcare Executives
American College of Nurse-Midwives
American College of Nutrition
American College of Occupational Medicine
American College of Physicians
American College of Preventive Medicine
American College of Radiology
American College of Sports Medicine
American Council on Alcoholism, Inc.
American Dental Association
American Dental Hygienists' Association
American Diabetes Association, Inc.
American Federation of Teachers
American Heart Association
American Home Economics Association
American Hospital Association
American Indian Health Care Association
American Institute for Preventive Medicine
American Institute of Nutrition
American Kinesiotherapy Association
American Lung Association
American Meat Institute
American Medical Association
American Medical Student Association
American Nurses' Association, Inc.
American Nutritionists Association
American Optometric Association
American Orthopaedic Society for Sports Medicine
American Osteopathic Academy of Sports Medicine
American Osteopathic Association
American Osteopathic Hospital Association
American Pharmaceutical Association
American Physical Therapy Association
American Podiatric Medical Association
American Psychiatric Association
American Psychiatric Nurses Association
American Psychological Association
American Public Health Association
American Red Cross
American Rehabilitation Counseling Association
American School Food Service Association
American School Health Association
American Social Health Association
American Society for Microbiology

American Society for Parenteral and Enteral Nutrition
American Society of Acupuncture
American Society of Addiction Medicine
American Society of Allied Health Professions
American Society of Hospital Pharmacists
American Society of Human Genetics
American Society of Ocularists
American Society for Psycoprophylaxis in Obstetrics
American Speech-Language-Hearing Association
American Spinal Injury Association
American Statistical Association
American Thoracic Society
Arthritis Foundation
Asian American Health Forum, Inc.
Association for Applied Psychophysiology and Biofeedback
Association for Fitness in Business
Association for Hospital Medical Education
Association for Practitioners in Infection Control
Association for Retarded Citizens of the U.S.
Association for the Advancement of Automotive Medicine
Association for the Advancement of Health Education
Association for Vital Records and Health Statistics
Association of Academic Health Centers
Association of American Indian Physicians, Inc.
Association of American Medical Colleges
Association of Clinical Scientists
Association of Community Health Nursing Educators
Association of Food and Drug Officials
Association of Maternal and Child Health Programs
Association of Pediatric Oncology Nurses
Association of Rehabilitation Nurses
Association of Schools of Public Health
Association of State and Territorial Directors of Nursing
Association of State and Territorial Directors of Public Health Education
Association of State and Territorial Health Officials
Association of State and Territorial Public Health Laboratory Directors
Association of State and Territorial Public Health Nutrition Directors
Association of State and Territorial Public Health Social Work
Association of Teachers of Preventive Medicine
Association of Technical Personnel in Ophthalmology
Black Congress on Health, Law, and Economics
Blue Cross and Blue Shield Association
Boys Scouts of America
Camp Fire, Inc.
Cardiovascular Credentialing International
Children's National Medical Center
College of American Pathologists
Council for Responsible Nutrition
Council of Medical Specialty Societies
Dairy and Food Nutrition Council of the Southeast
Emergency Nurses Association
Eye Bank Association of America
Federation of American Societies for Experimental Biology
Federation of Nurses and Health Professionals
Food Marketing Institute
Future Homemakers of America
Girl Scouts of the United States of America
Great Lakes Association of Clinical Medicine, Inc.
Grocery Manufacturers of America, Inc.
Group Health Association of America, Inc.
Health Industry Manufacturers Association
Health Insurance Association of America
Highway Users Federation for Safety and Mobility
Institute of Food Technologists
International Association for Enterostomal Therapy, Inc.
International Lactation Consultant Association
International Patient Education Council
La Leche League International
Learning Disabilities Association of America
March of Dimes Birth Defects Foundation
Maternal and Child Health Network
Maternity Center Association
Midwives' Alliance of North America
Migrant Clinicians Network
Mothers Against Drunk Driving
NAACOG—The Association of Obstetric, Gynecologic, and Neonatal Nurses
NARD—formerly National Association of Retail Druggists
National AIDS Network
National Alliance of Black School Educators
National Association for Hispanic Elderly
National Association for Home Care

National Association for Human Development
National Association for Music Therapy
National Association for Sport and Physical Education
National Association of Biology Teachers
National Association of Childbearing Centers
National Association of Community Health Centers, Inc.
National Association of Counties
National Association of County Health Officials
National Association of Elementary School Principals
National Association of Governors Council on Physical Fitness and Sports
National Association of Neonatal Nurses
National Association of Optometrists and Opticians, Inc.
National Association of Pediatric Nurse Associates and Practitioner
National Association of RSVP Directors
National Association of School Nurses, Inc.
National Association of Social Workers, Inc.
National Association of State Alcohol and Drug Abuse Directors
National Association of State Boards of Education
National Association of State NET Program Coordinators
National Black Nurses' Association, Inc.
National Board of Medical Examiners
National Center for Health Education
National Coalition of Hispanic Health and Human Services Organization
National Commission Against Drunk Driving
National Committee for Adoption
National Committee for Prevention of Child Abuse
National Conference of State Legislatures
National Consumers League
National Council for International Health
National Council for the Education of Health Professionals in Health Promotion
National Council on Alcoholism and Drug Dependence
National Council on Disability
National Council on Health Laboratory Services
National Council on Patient Information and Education
National Council on Self-Help and Public Health
National Dairy Council
National Environmental Health Association
National Extension Homemakers Council, Inc.
National Family Planning and Reproductive Health Association, Inc.
National Federation of State High School Associations
National Food Processors Association
National Head Injury Foundation, Inc.
National Health Council, Inc.
National Health Lawyers Association
National Hearing Aid Society
National Institute for Fitness and Sport
National Kidney Foundation
National League for Nursing
National Lesbian and Gay Health Foundation, Inc.
National Medical Association
National Mental Health Association
National Museum of Health and Medicine
National Nurses Society on Addictions
National Organization for Women
National Organization on Adolescent Pregnancy and Parenting, Inc.
National Osteoporosis Foundation
National Pest Control Association, Inc.
National Pressure Ulcer Advisory Panel
National Recreation and Park Association
National Safety Council
National School Boards Association
National Society of Allied Health
National Society to Prevent Blindness
National Strength and Conditioning Association
National Stroke Association
National Wellness Institute, Inc.
National Women's Health Network
NEA Health Information Network
Nursing Network on Violence Against Women
Oncology Nursing Society
Paralyzed Veterans of America
People's Medical Society
Pharmaceutical Manufacturers Association
Planned Parenthood Federation of America, Inc.
Population Association of America
Produce Marketing Association, Inc.
Salt Institute
Society for Nutrition Education
Society for Public Health Education, Inc.
South Cove Community Health Center
State Family Planning Administrators
The American Academy of Family Physicians
The American Art Therapy Association, Inc.

The American College Health Association
The American College of Obstetricians and Gynecologists
The American Dietetic Association
The American Geriatrics Society
The American Occupational Therapy Association, Inc.
The American Physiological Society
The American Society for Clinical Nutrition
The Association of State and Territorial Dental Directors
The Business Roundtable
The Catholic Health Association of the United States
The Gerontological Society of America
The National Alliance for the Mentally Ill
The National Alliance of Nurse Practitioners
The National Association of Secondary School Principals
The National Council on the Aging, Inc.
The National PTA
The Salvation Army
The Society of Behavioral Medicine
The Society of Hospital Epidemiologists of America
The Society of Prospective Medicine
The Society of State Directors of Health, Physical Education, and Recreation
The United States Conference of Mayors
United States Chamber of Commerce
United Way of America
Visiting Nurse Associations of America
Voluntary Hospitals of America, Inc.
Washington Business Group on Health
Wellness Councils of America—WELCOA
Western Consortium for Public Health
Women's Sports Foundation

State and Territorial Health Departments

Alabama
Alaska
American Samoa
Arizona
Arkansas
California
Colorado
Connecticut
Delaware
District of Columbia
Florida
Georgia
Guam
Hawaii
Idaho
Illinois
Indiana
Iowa
Kansas
Kentucky
Louisiana
Maine
Maryland
Massachusetts
Michigan
Minnesota
Mississippi
Missouri
Montana
Nebraska
Nevada
New Hampshire
New Jersey
New Mexico
New York
North Dakota
Ohio
Oklahoma
Oregon
Pennsylvania
Puerto Rico
Rhode Island
South Carolina
South Dakota
Tennessee
Texas
Utah
Vermont
Virginia
Washington
West Virginia
Wisconsin
Wyoming

B. Priority Area Lead Agencies

1.	Physical Activity and Fitness	President's Council on Physical Fitness and Sports
2.	Nutrition	National Institutes of Health Food and Drug Administration
3.	Tobacco	Centers for Disease Control
4.	Alcohol and Other Drugs	Alcohol, Drug Abuse, and Mental Health Administration
5.	Family Planning	Office of Population Affairs
6.	Mental Health and Mental Disorders	Alcohol, Drug Abuse, and Mental Health Administration
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