CHAPTER 3

Public Health and the Health System

Chapter Learning Objectives

After completing Chapter 3, learners will be proficient in identifying public health and prevention strategies for prevalent health problems. Key aspects of this competency expectation include

- Describing three or more major issues that make the health system a public health concern
- Identifying five intervention strategies directed toward health and illness
- Identifying and describing three levels of preventive interventions
- Describing the approximate level of national expenditures for all health and medical services and for the population-based and clinical preventive service components of this total
- Citing important economic, demographic, and utilization dimensions of the health sector
- Accessing and utilizing current data and information resources available through the Internet's World Wide Web characterizing the roles and interests of key stakeholders in the health sector

This chapter picks up where Chapter 2 left off—with influences on health. The influences to be examined in Chapter 3, however, are the interventions and services available through the health system.

The relationship between public health and other health-related activities has never been clear, but in recent years, it has become even less well defined. Some of the lack of clarity may be due to the several different images of public health described in Chapter 1, but certainly not all. In addition to the U.S. health system remaining poorly understood by the public, there are different views among health professionals and policymakers as to whether public health is part of the health system or the health system is part of the public health enterprise. Most agree that these components serve the same ends but disagree as to the balance between the two and the locus for strategic decisions and actions. The issue of ownership—which component's leadership and strategies will predominate—underlies these different perspectives. In this text, the term health system will refer to all aspects of the organization, financing, and provision of programs and services for the prevention and treatment of illness and injury. The public health system is a component of this larger health system. This view conflicts with the image that most people have of our health system; the public commonly perceives the health system to include only the medical care and treatment aspects of the overall system. However, public health and the overall health sector will be referred to as *systems,* with the understanding that public health activities are part of a larger set of activities that focus on health, well-being, disease, and illness.

Although the relationships may not be clear, there is ample cause for public health interest in the health system. Perhaps most compelling is the sheer size and scope of the U.S. health system, characteristics that have made the health system an ethical issue. Nearly 12 million workers and $2.0 trillion in resources are devoted to health-related purposes.[1] However, this huge investment in fiscal and human resources may not be accomplishing what it can and should in terms of health outcomes. Lack of access to needed health services for an increasing number of Americans and inconsistent quality contribute to less than optimal health outcomes. Although access and quality have long been public health concerns, the excess capacity of the health system is a relatively new issue for public health.

This chapter examines the U.S. health system from several perspectives that consider the public health implications of

costs and affordability, as well as several other important public policy and public health questions:

- Does the United States have a rational strategy for investing its resources to maintain and improve people's health?
- Is the current strategy excessive in ways that inequitably limit access to and benefit from needed services?
- Is the health system accountable to its end-users and ultimate payers for the quality and results of its services?

It is these issues of health, excess, access, accountability, and quality that make the health system a public health concern.

Complementary, even synergistic, efforts involving medicine and public health are apparent in many of the important gains in health outcomes achieved during the 20th century. Progress since 1900 in improving pregnancy outcomes and promoting the health of mothers and infants (see "Public Health Achievements in 20th Century America: Improved Maternal and Infant Health" following) tells this story from one perspective. Another perspective will be drawn from a framework for linking various health strategies and activities to their strategic intent, level of prevention, relationship to medical and public health practice, and community or individual focus. Key economic, demographic, and resource trends will then be briefly presented as a prelude to understanding important themes and emerging paradigm shifts. New opportunities afforded by sweeping changes in the health system, many of which relate to managed care strategies, will be apparent in the review of these issues.

PREVENTION AND HEALTH SERVICES

As evidenced in improvements in pregnancy outcome and the health of mothers and children, the health system influences health status through a variety of intervention strategies and services.[2] Key relationships among health, illness, and various interventions intended to maintain or restore health are summarily presented in Table 3–2. As discussed in Chapter 2, health and illness are dynamic states that are influenced by a wide variety of biologic, environmental, behavioral, social, and health service factors. The complex interaction of these factors results in the occurrence or absence of disease or injury, which, in turn, contributes to the health status of individuals and populations. Several different intervention points are possible, including two general strategies that seek to maintain health by intervening prior to the development of disease or injury.[2] These are health promotion and specific protection strategies. Both involve activities that alter the interaction of the various health-influencing factors in ways that contribute to either averting or altering the likelihood of occurrence of disease or injury.

Health Promotion and Specific Protection

Health promotion activities attempt to modify human behaviors to reduce those known to affect adversely the ability to resist disease or injury-inducing factors, thereby eliminating exposures to harmful factors. Examples of health promotion activities include interventions such as nutrition counseling, genetic counseling, family counseling, and the myriad activities that constitute health education. However, health promotion also properly includes the provision of adequate housing, employment, and recreational conditions, as well as other forms of community development activities. What is clear from these examples is that many fall outside the common public understanding of what constitutes health care. Several of these are viewed as the duty or responsibility of other societal institutions, including public safety, housing, education, and even industry. It is somewhat ironic that activities that focus on the state of health and that seek to maintain and promote health are not commonly perceived to be "health services." To some extent,

EXAMPLE

Public Health Achievements in 20thCentury America: Improved Maternal and Infant Health

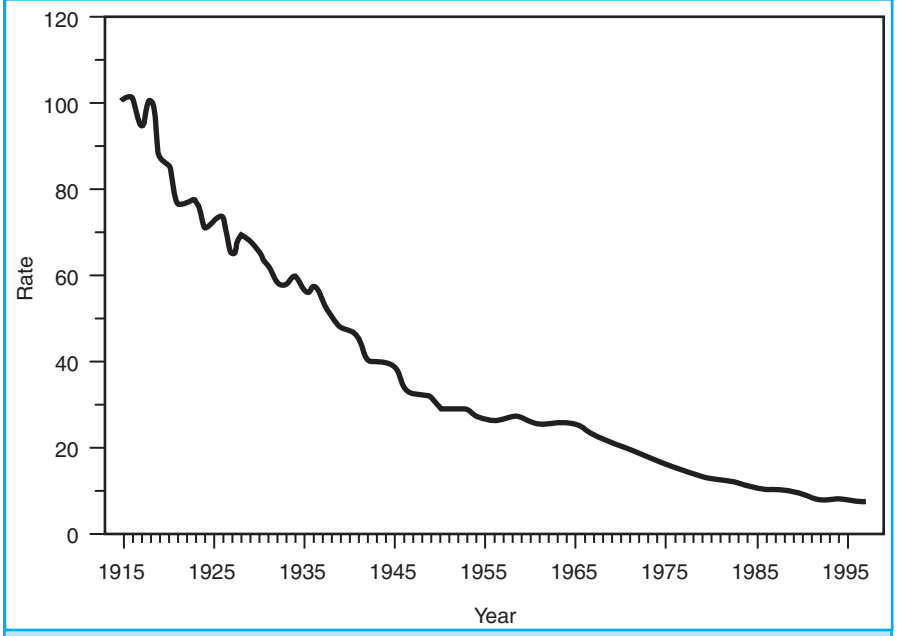
Both medical and public health strategies have contributed to the impressive improvement in maternal and infant health measures achieved over the 20th century. Reducing infant mortality, for example, calls for either decreasing the proportion of infants born at low birth weight (prevention) or by improving the chances of those infants to survive through more effective medical care. Prevention and treatment should not be considered mutually exclusive strategies. Key aspects of this public health achievement are captured in Table 3–1 and Figures 3–1, 3–2, and 3–3.

TABLE 3–1 Percentage Reduction in Infant, Neonatal, and Postneonatal Mortality, by Year—United States, 1915–1997*

Year	Percentage Reduction in Mortality		
	Infant (aged 0–364 days)	Neonatal (aged 0–27 days)	Postneonatal (aged 28–364 days)
1915–1919	13%	7%	19%
1920–1929	21%	11%	31%
1930–1939	26%	18%	35%
1940–1949	33%	26%	46%
1950–1959	10%	7%	15%
1960–1969	20%	17%	27%
1970–1979	35%	41%	14%
1980–1989	22%	27%	12%
1990–1997	22%	17%	29%
1915–1997	93%	89%	96%

*Percentage reduction is calculated as the reduction from the first year of the time period to the last year of the time period.
Source: Reprinted from Center for Disease Control and Prevention. Achievements in public health, United States, 1900–1999: healthier mothers and babies. *MMWR Morb Mortal Wkly Rep.* 1999;48:849–858.

FIGURE 3–1 Infant mortality rate (per 1,000 live births) by year—United States, 1915–1997.

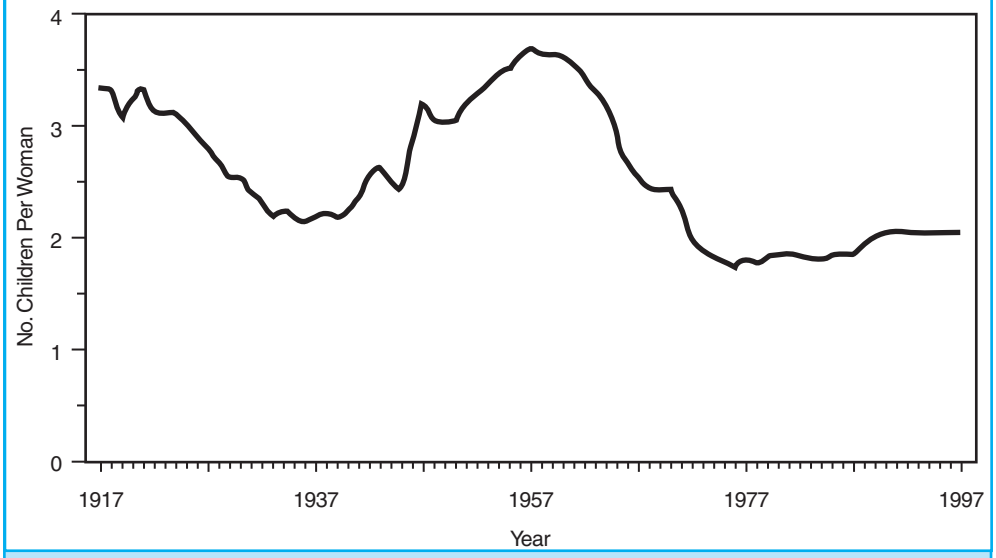


Source: Reprinted from Centers for Disease Control and Prevention. Achievements in public health, United States, 1900–1999: healthier mothers and babies. *MMWR Morb Mortal Wkly Rep.* 1999;48:849–858.

this is also true for the other category of health-maintaining strategies—specific protection activities.

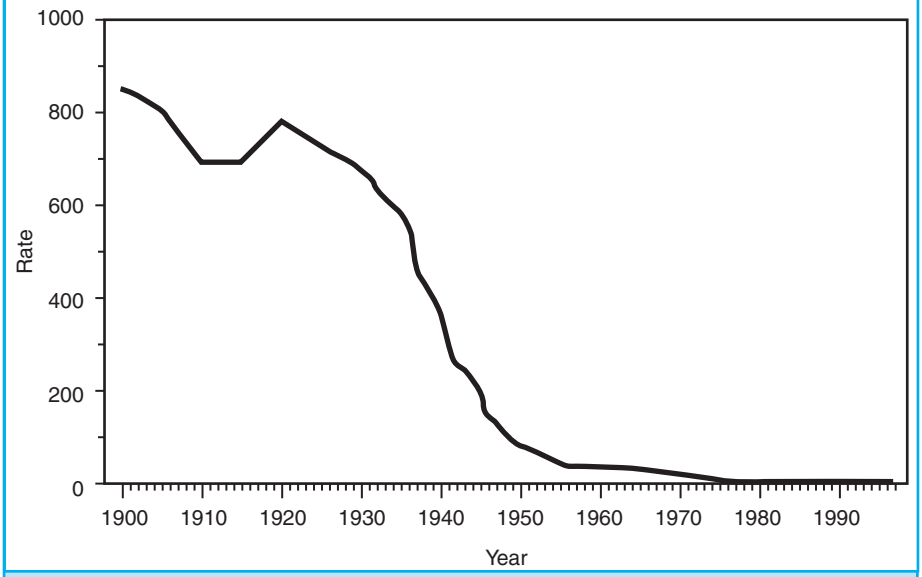
Specific protection activities provide individuals with resistance to factors (such as microorganisms like viruses and bacteria) or modify environments to decrease potentially harmful interactions of health-influencing factors (such as toxic exposures in the workplace). Examples of specific protection include activities directed toward specific risks (e.g., the use of protective equipment for asbestos removal), immunizations, occupational and environmental engineering, and regulatory controls and activities to protect individuals from environmental carcinogens (such as exposure to second-hand or side-stream smoke) and toxins. Several of these are often identified with settings other than traditional health care settings. Many are implemented and enforced through governmental agencies. Table 3–3 presents a catalog of health-related prevention organizations, agencies, and institutions.

FIGURE 3–2 Fertility rates, United States, 1917–1997.



Source: Reprinted from Center for Disease Control and Prevention. Achievements in public health, United States, 1900–1999: family planning. *MMWR Morb Mortal Wkly Rep*. 1999;48:1073–1080.

FIGURE 3–3 Maternal mortality rates (per 100,000 live births) by year, United States, 1900–1997.



Source: Reprinted from Achievements in Public Health, United States, 1900–1999: Healthier Mothers and Babies, *Morbidity and Mortality Weekly Report*. Vol. 48, No. 38, pp. 849–858, the Centers for Disease Control and Prevention, 1999.

TABLE 3–2 Health Strategies, Prevention Levels, Practice Domains, and Targets

Strategy	State Addressed	Prevention Level	Practice Domain	Target
Health promotion	Health	Primary	Public health	Community
Specific protection	Health	Primary	Public health	Community or risk group
Early case finding and prompt treatment	Illness	Secondary	Public health and primary medical care	Individual
Disability limitation	Illness	Tertiary	Secondary/tertiary medical care	Individual
Rehabilitation	Illness	Tertiary	Long-term care	Individual and group

Source: Data from Leavell HR, Clark EG. *Preventive Medicine for the Doctor in His Community*. 3rd ed. New York: McGraw-Hill; 1965.

TABLE 3–3 Example of Health-Related Prevention Organizations, Agencies, and Institutions

Federal Agencies

Department of Agriculture
Department of Transportation
Department of Energy
Department of Health and Human Services
Department of Homeland Security
Department of Labor
Department of Education
Department of Justice
Department of the Interior
Department of Veterans Administration
Department of Commerce
Department of Treasury
Department of Housing and Urban Development
Environmental Protection Agency
Consumer Product Safety Commission
Federal Mine Safety and Health Review Commission
National Transportation Safety Board
Nuclear Regulatory Commission
Occupational Safety and Health Review Commission
Federal Emergency Management Agency

State Agencies (different agency names in different states)

Aging
Agriculture
Alcoholism and Substance Abuse
Children and Family Services
Council on Health and Fitness
Emergency Services and Disaster Agency
Energy and Natural Resources
Environmental Protection Agency
Guardianship and Advocacy Commission
Health Care Cost Containment Agency
Health Facilities Planning Board and Agency
Mental Health and Developmental Disabilities
Nuclear Safety
Pollution Control Board
Professional Regulation Agency
Public Health
Rehabilitation Services
State Fire Marshall
State Board of Education
State Board of Higher Education
Veterans Affairs

Miscellaneous Organizations and Sites

Foundations
Corporations
Voluntary Health Associations
United Way of America
Physician Office Visits
HMO visits
Dental Visits

Early Case Finding and Prompt Treatment, Disability Limitation, and Rehabilitation

Although health promotion and specific protection both focus on the healthy state and seek to prevent disease, a different set of strategies and activities is necessary if the interaction of factors results in disease or injury. When disease occurs, the strategies that become necessary are those facilitating early detection, rapid control, or rehabilitation, depending on the stage of development of the disease.

In general, early detection and prompt treatment reduce individual pain and suffering and are less costly to both the individual and society than treatment initiated only after a condition has reached a more advanced state. Interventions to achieve early detection and prompt treatment include screening tests, case-finding efforts, and periodic physical exams. Screening tests are increasingly available to detect illnesses before they become symptomatic. Case-finding efforts for both infectious and noninfectious conditions are directed at populations at greater risk for the condition on the basis of criteria appropriate for that condition. Periodic physical exams, such as those mentioned in the age-specific recommendations of the U.S. Preventive Health Services Task Force,[3] incorporate these practices and are best provided through an effective primary medical care system. Primary care providers who are sensitive to disease patterns and predisposing factors can play substantial roles in the early identification and management of most medical conditions.

Another strategy targeting disease is disability limitation through effective and complete treatment. It is this set of activities that most Americans equate with the term *health care*, largely because this strategy constitutes the lion's share of the U.S. health system in terms of resource deployment. Quite appropriately, these efforts largely aim to arrest or eradicate disease or to limit disability and prevent death. The final intervention strategy focusing on disease—rehabilitation—is designed to return individuals who have experienced a condition to the maximum level of function consistent with their capacities.

Links with Prevention

There are several useful aspects of this framework. It emphasizes the potential for prevention inherent in each of the five health service strategies. Prevention can be categorized in several ways. The best-known approach classifies prevention in relation to the stage of the disease or condition.

Preventive intervention strategies are considered primary, secondary, or tertiary. Primary prevention involves prevention of the disease or injury itself, generally through reducing exposure or risk factor levels. Secondary prevention attempts to identify and control disease processes in their early stages, often before signs and symptoms become apparent. In this case, prevention is akin to preemptive treatment. Tertiary prevention seeks to prevent disability through restoring individuals to their optimal level of functioning after damage is done. The selection of an intervention point at the primary, secondary, or tertiary level is a function of knowledge, resources, acceptability, effectiveness, and efficiency, among other considerations.

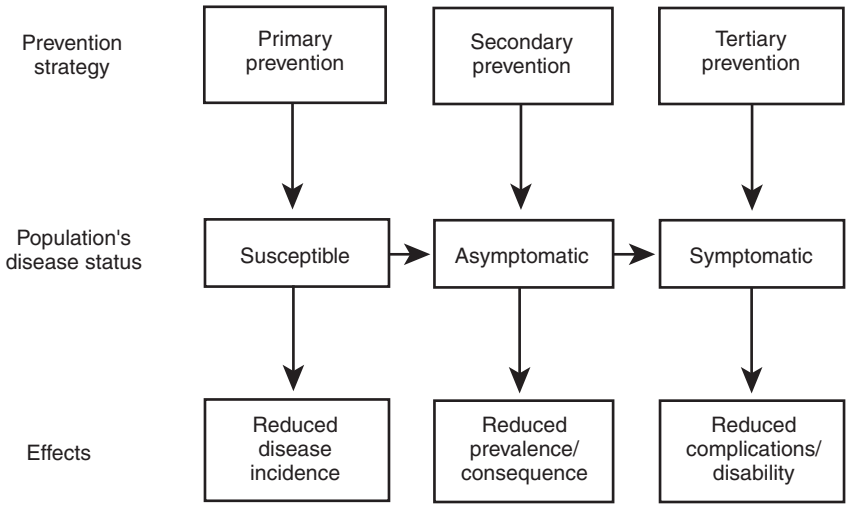
The relationship of health promotion and specific protection to these levels of prevention is also presented in Table 3–2. Health promotion and specific protection are primary prevention strategies seeking to prevent the development of disease. Early case finding and prompt treatment represent secondary prevention, because they seek to interrupt the disease process before it becomes symptomatic. Both disability limitation and rehabilitation are considered tertiary-level prevention in that they seek to prevent or reduce disability associated with disease or injury. Although these are considered tertiary prevention, they receive primary attention under current policy and resource deployment.

Figure 3–4 illustrates each of the three levels of prevention strategies in relation to population disease status and effect on disease incidence and prevalence. The various potential benefits from the three intervention levels derive from the basic epidemiologic concepts of incidence and prevalence. Prevalence (the number of existing cases of illness, injury, or a health event) is a function of both incidence (the number of new cases) and duration. Reducing either component can reduce prevalence. Primary prevention aims to reduce the incidence of conditions, whereas secondary and tertiary prevention seek to reduce prevalence by shortening duration and minimizing the effects of disease or injury. It should be apparent that there is a finite limit to how much a condition's duration can be reduced. As a result, approaches emphasizing primary prevention have greater potential benefit than do approaches emphasizing other levels of prevention. This basis for understanding the differential impact of prevention and treatment approaches to a particular health problem or condition cannot be overstated.

These same considerations are pertinent to the idea of postponement of morbidity as a prevention strategy, as illustrated in Figure 3–5. As demonstrated in Model I, increased life expectancy without postponement of morbidity may actually increase the burden of illness within a population, as measured by prevalence. However, postponement may result in the development of a condition so late in life that it results in either no or less disability in functioning.

Another approach to classifying prevention efforts groups interventions by the nature of the intervention into clinical,

FIGURE 3–4 Levels of prevention with effects.



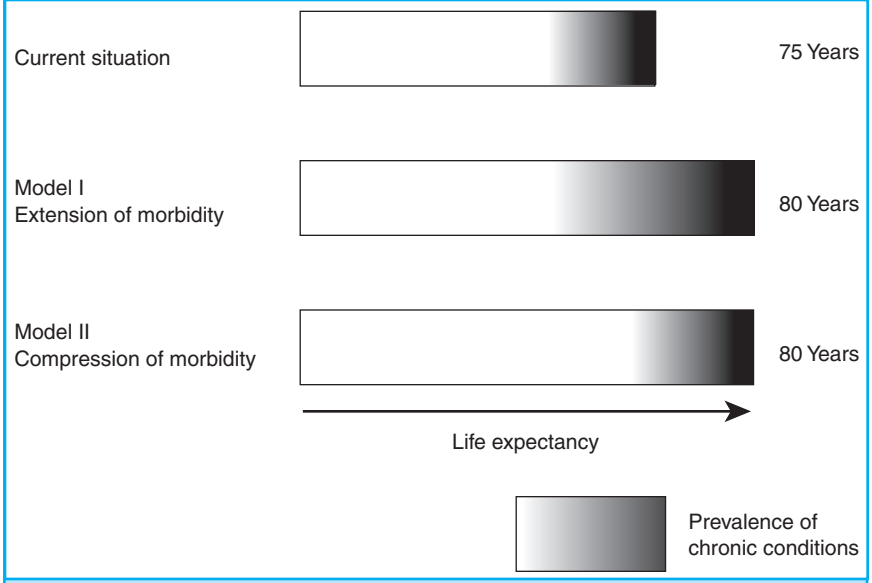
Source: Reprinted from Brownson RC, Remington PL, Davis JR, eds. *Chronic Disease Epidemiology and Control*. 2nd ed. Washington, DC: American Public Health Association; 1998.

Links with Public Health and Medical Practice

Another useful aspect of this framework is in its allocation of responsibilities for carrying out the various interventions. Three practice domains can be roughly delineated: public health practice, medical practice, and long-term care practice.[2] The framework assigns public health practice primary responsibility for health promotion, specific protection, and a good share of early case finding. It is important to note that the concept of public health practice here is a broad one that accommodates the activities carried out by many different types of health professionals and workers, not only those working in public health agencies. Although many of these activities are carried out in public health agencies of the federal, state, or local government, many are not. Public health practice occurs in voluntary health agencies, as well as in behavioral, or environmental categories. Clinical interventions are provided to individuals, whereas environmental interventions are organized for populations or groups. Behavioral interventions can be provided either for individuals or for populations, including subgroups identified as being at higher risk for a particular condition.

Within this framework for considering intervention strategies aimed at health or illness, the potential for prevention as an element of all strategies is clear. There are substantial opportunities to use primary and secondary prevention strategies to improve health in general and reduce the burden of illness for individuals and for society. As noted in Chapter 2, reducing the burden of illness carries the potential for substantial cost savings. These concepts serve to promote a more rational intervention and investment strategy for the U.S. health system.

FIGURE 3–5 Alternative models of extension or compression of morbidity as life expectancy is extended.



Source: Reprinted from Brownson RC, Remington PL, Davis JR, eds. *Chronic Disease Epidemiology and Control*. 2nd ed. Washington, DC: American Public Health Association; 1998.

settings such as schools, social service agencies, industry, and even traditional medical care settings. In terms of prevention, public health practice embraces all of the primary prevention activities in the model, as well as some of the activities for early diagnosis and prompt treatment.

The demarcations between public health and medical practice are neither clear nor absolute. In recent decades, public health practice has been extensively involved in screening and has become an important source of primary medical care for populations with diminished access to care. At the same time, medical practice has also been extensively involved with early case finding while traditionally providing the major share of primary care services to most segments of the population.

Medical practice, meaning those services usually provided by or under the supervision of a physician or other traditional health care provider, can be viewed as including three levels (Table 3–4). Primary medical care has been variously defined but generally focuses on the basic health needs of individuals and families. It is first-contact health care in the view of the patient; provides at least 80% of necessary care; includes a comprehensive array of services, on site or through referral, including health promotion and disease prevention, as well as curative services; and is accessible and acceptable to the patient population. This comprehensive description of primary care differs substantially from what is commonly encountered as primary care in the U.S. health system. Often lacking from current so-called primary care services are those relating to health promotion and disease prevention.

The concept of *disease management* has evolved from efforts to provide a more integrated approach to health care delivery in order to improve health outcomes and reduce costs, often for defined populations such as Medicaid enrollees. Disease management focuses on identifying and proactively monitoring high-risk populations, assisting patients and providers to adhere to treatment plans that are based on proven interventions, promoting provider coordination, increasing patient education, and preventing avoidable medical complications.

Beyond primary medical care are two more specialized types of care that are often termed *secondary care* and *tertiary care*. Secondary care is specialized care serving the major share of the remaining 20% of the need that lies beyond the scope of primary care. Physicians or hospitals generally provide secondary care, ideally upon referral from a primary care source. Tertiary medical care is even more highly specialized and technologically sophisticated medical and surgical care for those with unusual or complex conditions (generally no more than a few percent of the need in any service category). Tertiary care is frequently provided in large medical centers or academic health centers.

Long-term care is appropriately classified separately because of the special needs of the population requiring such services and the specialized settings where many of these services are offered. This, too, is changing as specialized long-term care services increasingly move out of long-term care facilities and into home settings.

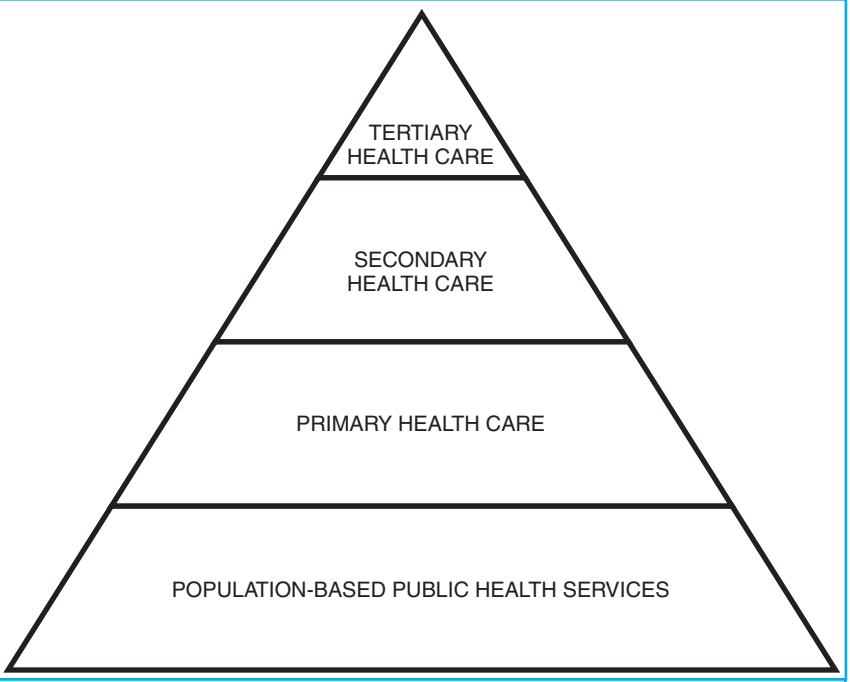
Within the health services pyramid presented in Figure 3–6, primary prevention activities are largely associated with population-based public health services at the base of the pyramid, although some primary prevention in the form of clinical preventative services is also associated with primary medical care services. Secondary prevention activities are split somewhat more evenly between the population-based public health services and primary medical care. Tertiary prevention activities fall largely in the secondary and tertiary medical care components of the pyramid. The use of a pyramid to represent health services implies that each level serves a different proportion of the total population. Everyone should be served by population-wide public health services, and nearly everyone

TABLE 3–4 Health Care Pyramid Levels

- Tertiary Medical Care
  Subspecialty referral care requiring highly specialized personnel and facilities
- Secondary Medical Care
  Specialized attention and ongoing management for common and less frequently encountered medical conditions, including support services for people with special challenges due to chronic or long-term conditions
- Primary Medical Care
  Clinical preventive services, first-contact treatment services, and ongoing care for commonly encountered medical conditions
- Population-Based Public Health Services
  Interventions aimed at disease prevention and health promotion that shape a community's overall health profile

Source: Reprinted from U.S. Public Health Service. *For a Healthy Nation: Return on Investments in Public Health*. Hyattsville, MD: PHS; 1994.

FIGURE 3–6 Health services pyramid.



Source: Reprinted from U.S. Public Health Service. *For a Healthy Nation: Return on Investments in Public Health.* Washington, DC: PHS; 1994.

should be served by primary medical care. However, increasingly smaller proportions of the total population require secondary- and tertiary-level medical care services. In any event, the system should be built from the bottom up. It would not be rational to build such a system from the top down; there might not be enough resources to address the lower levels that served as the foundation for the system. Nonetheless, there is evidence in later sections of this chapter that this is exactly what has occurred with the U.S. health system.

Targets of Health Service Strategies

A final facet of this model characterizes the targets for the strategies and activities. Generally, primary preventive services are community-based and are targeted toward populations or groups rather than individuals. Early case-finding activities can be directed toward groups or toward individuals. For example, many screening activities target groups at higher risk when these are provided through public health agencies. The same screening activities can also be provided for individuals through physiciansí offices and hospital outpatient departments. Much of primary and virtually all of secondary and tertiary medical care is appropriately individually oriented. It should be noted that there is a concept, termed *community-oriented primary care*, in which primary care providers assume responsibility for all of the individuals in a community, rather than only those who seek out care from the provider. Even in this model, however, care is provided on an individual basis. Long-term care involves elements of both community-based service and individually oriented service. These services are tailored for individuals but often in a group setting or as part of a package of services for a defined number of recipients, as in a long-term care facility.

Public Health and Medical Practice Interfaces

This framework also sheds light on the potential conflicts between public health and medical practice. Although the two are presented as separate domains of practice, there are many interfaces that provide a template for either collaboration or conflict. Both paths have been taken over the past century. Public health practitioners have traditionally deferred to medical practitioners for providing the broad spectrum of services for disease and injuries in individuals. Medical practitioners have generally acknowledged the need for public health practice for health promotion and specific protection strategies. The interfaces raise difficult issues. For example, for one specific protection activity—childhood immunizations—it can be argued that the extensive role of public health practice has served to fragment health services for children. It would be logical to provide these services within a well-functioning primary care system, where they could be better integrated with other services for this population. Despite occasional differences as to roles, in most circumstances, medical practice has supported the role of public health to serve as the provider of last resort in ensuring medical care for persons who lack financial access to private health care. This, too, has varied over time and from place to place.

Advances in bacteriologic diagnoses in public health laboratories, for example, fostered friction between medical practitioners and public health professionals for diseases such as tuberculosis and diphtheria that were often difficult to identify from other common but less serious maladies. Clinicians

feared that laboratory diagnoses would replace clinical diagnoses and that, in highly competitive medical markets, paying patients would abandon private physicians for public health agencies. Issues of turf and scope of practice persist in many communities.

Some of the most serious conflicts have come in the area of primary care services, including early case-finding activities. Because of the increased yield of screening tests when these are applied to groups at higher risk, public health practice has sought to deploy more widely risk group or community case-finding methods (including outreach and linkage activities). This has, at times, been perceived by medical practitioners as encroachment on their practice domain for certain primary care services, such as prenatal care. Although there has been no rule that public health practice could not be provided within the medical practice domain and vice versa, the perception that these are separate, but perhaps unequal, territories has been widely held by both groups.

It is important to note that this territoriality is not based only on turf issues. There are significant differences in the world views and approaches of these two domains. Medical practice quite properly seeks to produce the best possible outcome through the development and execution of individualized treatment plans. Seeking the best possible outcome for an individual suggests that decisions are made primarily for the benefit of that individual. Costs and resource availability are secondary considerations. Public health practice, on the other hand, seeks to deploy its limited resources to avoid the worst outcomes (at the level of the group). Some level of risk is tolerated at the collective level to prevent an unacceptable level of adverse outcomes from occurring. These are quite different approaches to practice: maximizing individual positive outcomes, as opposed to minimizing adverse collective outcomes. As a result, differences in perspective and philosophy often underlie differences in approaches that initially appear to be concerns over territoriality.

An example that illustrates these differences is apparent in approaches to widespread use of human immunodeficiency virus (HIV) antibody testing in the mid- and late 1980s. Medical practitioners perceived that HIV antibody testing would be very useful in clinical practice and that its widespread use would enhance case finding. As a result, medical practitioners generally opposed restrictions on use of these tests, such as specific written informed consent and additional confidentiality provisions. Public health practitioners perceived that widespread use of the test without safeguards and protections would actually result in fewer persons at risk being tested and decreased case finding in the community. With both groups focusing on the same science in terms of the accuracy of the specific testing regimen, these differences in practice approaches may be difficult to understand. However, in view of their ultimate aims and concerns as to individual versus collective outcomes, the conflict is more understandable.

Perspectives and roles may differ for public health and medical practice, but both are important and necessary. The real question is what blending of these approaches will be most successful in improving health status throughout the population. There is sufficient cause to question current policy and investment strategies. Table 3–5 examines the potential contributions of various strategies (personal responsibility, health care services, community action, and social policies) toward reducing the impact of the actual causes of death identified in Chapter 2. This table suggests that more medical care services are not as likely to reduce the toll from these causes as are public health approaches (community action and social policies). Yet, there are opportunities available through the current system and perhaps even greater opportunities in the near term as the system seeks to address the serious problems that have brought it to the brink of major reform.

Medicine and Public Health Collaborations

The need for a renewed partnership between medicine and public health generated several promising initiatives in the final years of the 20th century. Just as bacteriology brought together public health professionals and practicing physicians at the turn of the 20th century to battle diphtheria and other infectious diseases, technology and economics may become the driving forces for a renewed partnership at the dawn of the 21st century. In pursuit of this vision, the American Medical Association and the American Public Health Association established the Medicine/Public Health Initiative in 1994 to provide an ongoing forum to define mutual interests and promote models for successful collaborations. Regional and state meetings followed a National Congress in 1996. A variety of collaborative structures were identified and promoted through the widely circulated monograph, *Medicine and Public Health: The Power of Collaboration*.[4] More than 400 examples of collaborations are highlighted in the monograph. General categories of collaboration include coalitions, contracts, administrative/management systems, advisory bodies, and intraorganizational platforms. This initiative represents a major breakthrough for public health interests, one long overdue and welcome; in fact, it represents the first time that these two major professional organizations have met around mutual interests.

Collaborations between public health and hospitals have also gained momentum. Increasingly, hospitals and managed care organizations have begun to pursue community health goals, at times in concert with public health organizations and

TABLE 3–5 Actual Causes of Death in the United States and Potential Contribution to Reduction

	Deaths		Potential Contribution to Reduction*			
Causes	Estimated No.	%	Personal	Health Care System	Community Action	Social Policy
Tobacco	435,000	19	++++	+	+	++
Diet/activitypatterns	400,000	14	+++	+	+	++
Alcohol	85,000	5	+++	+	+	+
Microbial agents	75,000	4	+	++	++	++
Toxic agents	55,000	3	+	+	++	++++
Motor vehicles	43,000	1	++	+	+	++
Firearms	29,000	2	++	+	+++	+++
Sexual behavior	20,000	1	++++	+	+	+
Illicit use of drugs	20,000	<1	+++	+	++	++

*Plus sign indicates relative magnitude (4+ scale).
Source: Data from Fielding J, Halfon L. Where is the health in health system reform? *JAMA*. 1994; 272:1292–1296 and Mokdad AH, Marks JS, Stroup DF, Gerberding JL. Actual causes of death in the United States, 2000. *JAMA*. 2004:291:1238–1245.

at other times filling voids that exist at the community level. In many parts of the United States, hospitals have taken the lead in organizing community health planning activities. More frequently, however, they participate as major community stakeholders in health planning efforts organized through the local public health agency. A variety of positive interfaces with managed care organizations have been documented.[5] Hospital boards and executives now commonly include community benefit objectives in their annual performance evaluations. Examples of community health strategies include:

- Establishing "boundary spanner" positions that report to the chief executive officer but focus on community-wide, rather than institutional, interests
- Changing reward systems in terms of salaries and bonuses that executives and board members linked to the achievement of community health goals
- Educating staff on the mission, vision, and values of the institution, and linking these with community health outcomes
- Exposing board to the work of community partners
- Engaging board members with the staff and community
- Reporting on community health performance (report cards)[6]

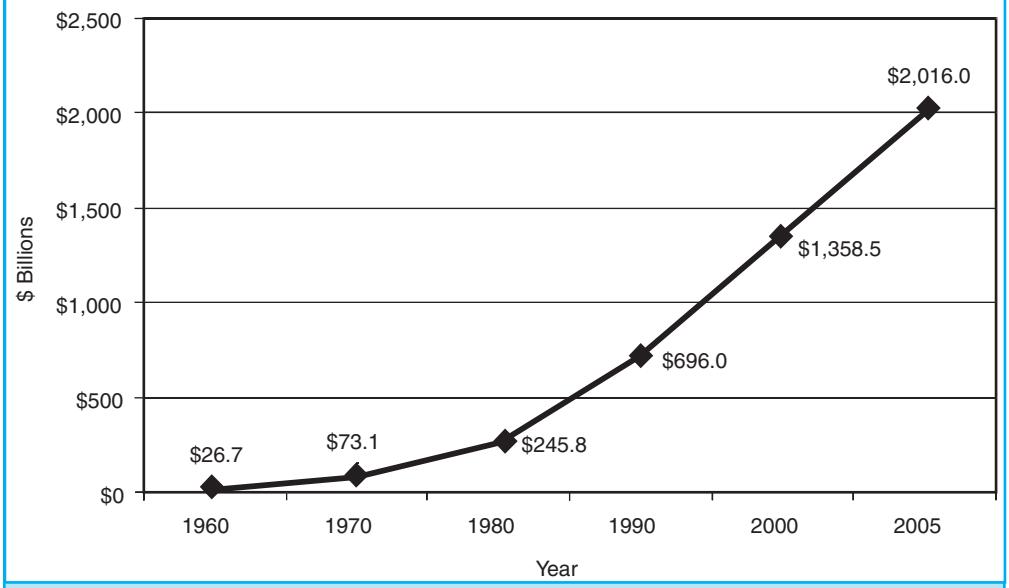
THE HEALTH SYSTEM IN THE UNITED STATES

There are many sources of more complete information on the health system in the United States than will be provided in this chapter. Here, the intent is to examine those aspects of the health industry and health system that interface with public health or raise issues of public health significance. There is no shortage of either. This section will examine some of the issues facing the health system in the United States, with a special focus on the problems of the system that are fueling reform and change. Interfaces with public health will be identified and discussed, as will possible effects of these changes on the various images of public health. Throughout these sections, data from the *Health, United States* series, published annually by the National Center for Health Statistics, will be used to describe the economic, demographic, and resources aspects of the American health system.

Economic Dimensions

The health system in the United States is immense and growing rapidly, as shown in Figure 3–7. Total national health expenditures in the United States nearly doubled during the 1990s to nearly $1.4 trillion by 2000, more than four times the sum expended in 1980 and nearly 50 times more than in 1960. In 2005, health expenditures exceeded $2.0 billion. It is naive to consider the possible public health interfaces with the health system in the United States without understanding the context in which they take place—the health sector of modern America. In the early years of the new century, economic growth and employment in the United States weakened after nearly two decades of prosperity and improved productivity. The health care sector is now a powerful component in the overall U.S. economy. By the year 2005, the health care sector represented nearly one sixth of the total

FIGURE 3–7 National health expenditures, United States, 1960–2005.



Sources: 1960–2000 data adapted from National Center for Health Statistics. *Health, United States, 2005.* Hyattsville, MD: NCHS, 2005. Data for 2005 from Centers for Medicare and Medicaid Services, Office of the Actuary.

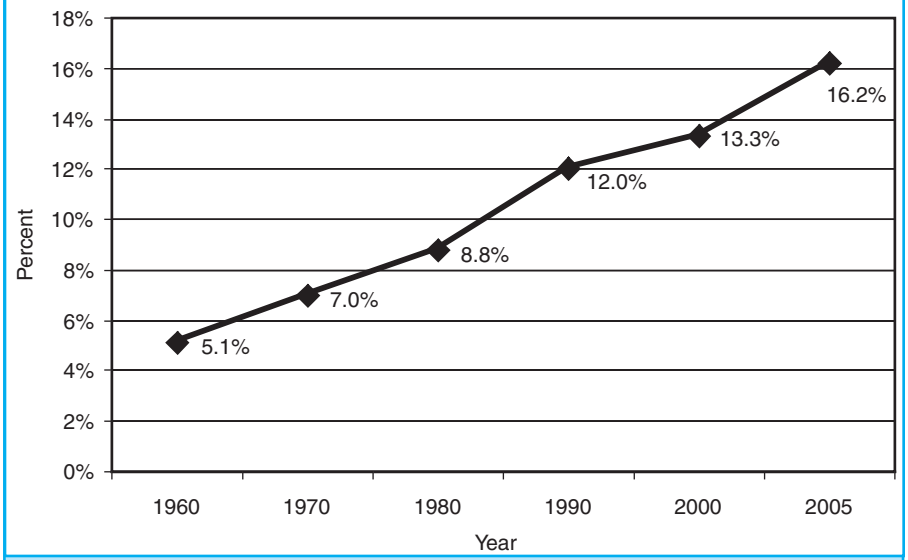
far less; and the opportunity costs are considerable.

Expenditures for personal health care services comprise 87% of all health expenditures. Administrative costs in both the public and private sector account for 6.4% and investments (research and construction) comprise another 3.4%. The remaining 3.4% is devoted to government public health activities (about $8.3 billion in 2000), including personal health care services provided directly by government.[1] Chapter 4 further examines governmental health and public health expenditure trends for the various levels of government in the United States.

national gross domestic product (GDP); Figure 3–8 traces the growth in health expenditures as a proportion of GDP.

The United States spends a greater share of the GDP on health care services than any other industrialized nation. Health expenditures in the United Kingdom and Japan are about one half and in Germany and Canada about three fourths the U.S. figure (16.2%). Per capita expenditures on health show the same pattern, with more than $4,600 per capita spent on health in the United States in 2000, compared with about $2,500 per capita in Germany and Canada, and only $1,600–1,800 per capita in Japan and the United Kingdom.[1] Several factors suggest that this is too much: the current system is reaching the point of no longer being affordable; the U.S. population is no healthier than other nations that spend

FIGURE 3–8 Percent of national gross domestic expenditures spent for health-related purposes, U.S. 1960–2005.



Sources: 1960–2000 data adapted from National Center for Health Statistics. *Health, United States, 2005.* Hyattsville, MD: NCHS; 2005. Data for 2005 from Centers for Medicare and Medicaid Services, Office of the Actuary.

There are three general sources for personal health care expenditures: government at all levels pays 44%; private health insurance covers 36%;individuals pay about 16% out of pocket; and the remaining 4% is covered by other private funds.[1] The rapidly increasing costs for health services have hit all these sources in their pocketbooks, and each is reaching the point at which further increases may not be affordable. The largest single purchaser of health care in the United States remains the federal government, but the ultimate payers are individuals. Even those individuals covered by health insurance plans are experiencing a steady increase in the triple burden of higher premiums, increased cost sharing, and reduced benefits.

Only limited information is available on expenditures for prevention and population-based public health services. A study using 1988 data estimated that total national expenditures for all forms of health-related prevention (including clinical preventive services provided to individuals and population-based public health programs, such as communicable disease control and environmental protection) amounted to $33 billion.[7] The analysis sought to include all activities directed toward health promotion, health protection, disease screening, and counseling. As a result, the $33 billion figure approximates expenditures for primary and secondary prevention efforts. Included in this total, however, was $14 billion for activities not included in the calculation of national health expenditures (such as sewage systems, water purification, and air traffic safety). The remaining $18 billion in prevention-related health expenditures was included in the calculation of total national health expenditures but represented only 3.4% of all national health expenditures for that year.

Nearly one half (48%) of the health-related prevention resources identified in this analysis came from the federal government; another 31% represented expenditures for clinical preventive services, often paid out of pocket by individuals.[7] Preventive health services were the largest category of health-related prevention expenditures (36%), although health protection (30%) and health promotion services (23%) were also significant targets of prevention-related expenditures. The share of these expenditures that represents population-based preventive services cannot be directly determined from this study. However, it appears that population-based services constituted about $6–7 billion in 1988, in view of the prominence of health protection and health promotion services.

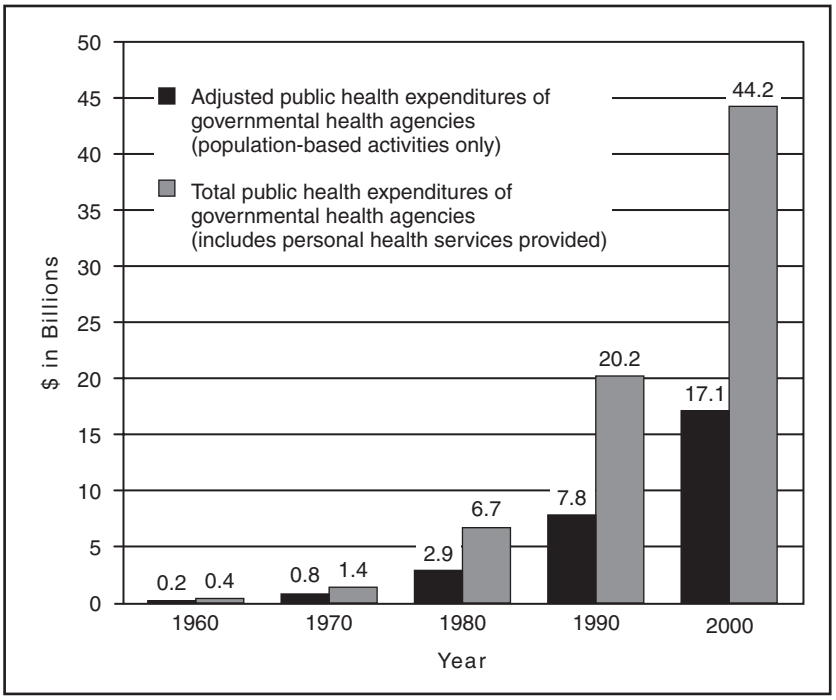
As part of the development of a national health reform proposal in 1994, federal officials developed an estimate of national health expenditures for population-based services.[8] On the basis of expenditures in 1993, this analysis concluded that about 1% of all national health expenditures ($8.4 billion) supported population-based programs and services. Based on data available, this analysis found that the proportion of all health expenditures attributed to population-based services declined slightly during the 1980s from 1.2% in 1980 to 0.9% a decade later. U.S. Public Health Service (PHS) agencies spent $4.3 billion for population-based services in 1993, and state and local health agencies expended another $4.1 billion. PHS officials estimated that achieving an "essential" level of population-based services nationwide would require doubling 1993 expenditure levels and that achieving a "fully effective" level would require tripling the 1993 levels.

Consistent with these earlier analyses, data from the National Health Accounts identify levels of population-based health expenditures by federal, state, and local governments to have been $7.8 billion in 1990, $12.3 billion in 1995, and $17.1 billion in 2000 (see Figure 3–9).[9,10] On a per capita basis, governmental expenditures for population-based public health activities increased more than 1,200% between 1960 and 2000 (Figure 3–10), but governmental public health agencies continue to spend more of their resources on providing personal health care series than on population-based public health activities, as Figure 3–9 illustrates.

The implications of these expenditure patterns will be discussed in Chapter 4. Here, however, these gross figures are presented in order to demonstrate the very small slice of the national health expenditure pie devoted to population-based preventive services and the public health system. As shown in Figure 3–11, governmental public health spending as a percent of total national health expenditures grew from 1960 through 1975, then declined from 1975 to 1985, and has been increasing steadily since 1985. The availability of resources from the 1998 settlement between states and the major tobacco companies, together with bioterrorism preparedness funding from Congress beginning in 2002, presented an opportunity to achieve the doubling of expenditures for population-based prevention deemed necessary to achieve an essential level of services by the PHS in 1994. Although such a doubling would require only a small shift in resource allocation strategies within a $2.0 trillion dollar enterprise, there was little hope for increased resources for population-based public health activities until the tobacco settlement and bioterrorism preparedness funds appeared. Subsequent chapters will provide additional information as to the effect these additional resources are having on the public health system.

But macro-economic trends tell only part of the story. The disparities between rich and poor in the United States are also growing, leaving an increasing number of Americans without financial access to many health care services. These and other important aspects will be examined as we review the demands on and resources of the U.S. health system.

FIGURE 3–9 Total expenditures (in $ billions) of governmental health agencies (including personal health services) and adjusted total governmental public health spending (population-based services only), United States, 1960–2000.



Sources and Notes: Data compiled from National Center for Health Statistics, *Health, United States, 2002*. Hyattsville, MD: NCHS; 2002 and Centers for Medicare and Medicaid Services, National Health Accounts (NHA) 1960–2000. The NHA breaks down health spending by source of funding and by activity and type of service provided. Adjusted total public health expenditures include expenditures at both the federal and state/local level. State/local public health expenditures are adjusted in an attempt to include only funding for essential (i.e., population-based) public health services and to exclude personal health care services.

Demographic and Utilization Trends

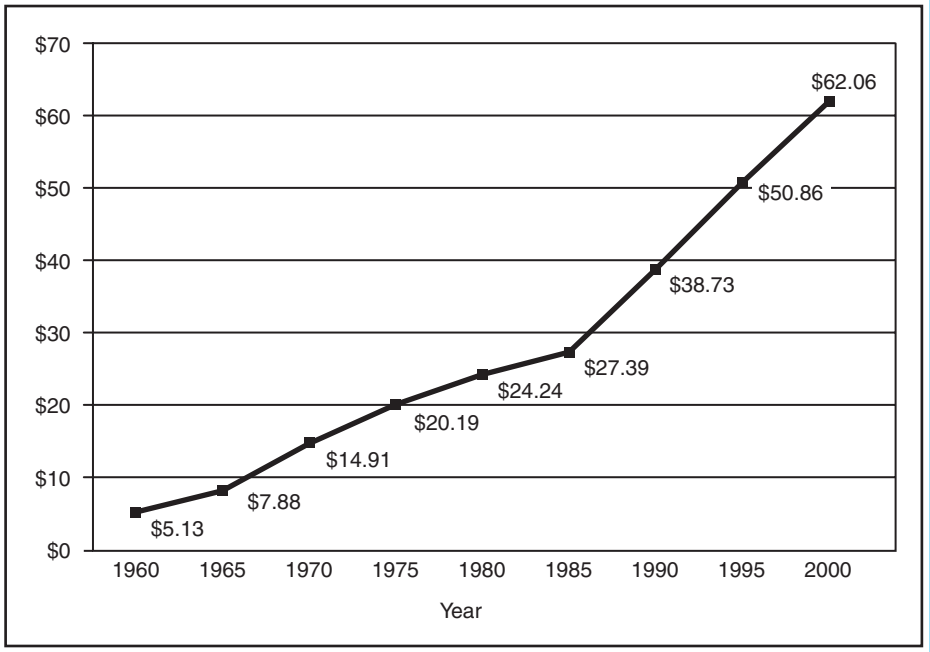
Several important demographic trends affect the U.S. health care system. These include the slowing population growth rate, the shift toward an older population, the increasing diversity of the population, changes in family structure, and persistent lack of access to needed health services for too many Americans. The relative prevalence of particular diseases is another demographic phenomenon but will not be addressed here, although recent history with diseases such as HIV infections illustrates how specific conditions can place increasing demands on fragile health care systems.

Census studies document that the growth of the U.S. population has been slowing, a trend that would be expected to restrain future growth in demand for health care services. However, this must be viewed in light of projected changes in the age distribution of the U.S. population. Between 2000 and 2030, the population older than age 65 will double, whereas the younger age groups will grow little, if at all.

Utilization of health care services, in general, is closely correlated with the age distribution of the population. For example, adults age 75 years and older visit physicians three to four times as frequently as do children younger than age 17. Because older persons utilize more health care services than do younger people, their expenditures are higher. Obvious reasons for the higher utilization of health care resources by the elderly include the high prevalence of chronic conditions, such as arteriosclerosis, cerebrovascular disease, diabetes, senility, arthritis, and mental disorders. As the population ages, it is expected that the prevalence of chronic disorders and the treatment costs associated with them will also increase. This could be minimized through prevention efforts that either avert or postpone the onset of these chronic diseases. Nonetheless, these important demographic shifts portend greater use of health care services in the future.

Another important demographic trend is the increasing diversity of the population. The nonwhite population is growing three times faster than the white population, and the Hispanic population is increasing at five times the rate for the entire U.S. population. Between 1980 and 2000, Hispanics increased from 6.4% to 12.5% of the U.S. population. African Americans increased from 11.5% to 14.5% of the total population, while the number of Asian/Pacific Islanders more than doubled from 1.6% to 3.7%. The white population declined from 79.7% to 69.1% of the total population over these 2 decades. Figure 3–12 projects these trends through the years 2025 and 2050. These trends reflect differences in fertility and immigration patterns and disproportionately affect the younger age groups, suggesting that services for mothers and children will face considerable challenges in their ability to provide culturally sensitive and acceptable services. At the same time, the considerably less diverse baby boom generation will be increasing its ability to affect public policy decisions and resource allocations in the early years of the 21st century. These trends also underscore the importance of cultural competence for health professionals. Cultural competence is a set of be-

FIGURE 3–10 Per capita adjusted total governmental public health expenditures, United States, 1960–2000.



Sources and Notes: Data compiled from National Centers for Health Statistics, *Health, United States, 2002*. Hyattsville, MD: NCHS; 2002 and Centers for Medicare and Medicaid Services, National Health Accounts (NHA) 1960–2000. The NHA breaks down health spending by source of funding and by activity and type of service provided. Adjusted total public health expenditures include expenditures at both the federal and state/local level. State/local public health expenditures are adjusted in an attempt to include only funding for essential (i.e., population-based) public health services and to exclude personal health care services.

haviors and attitudes, as well as a culture within an institution or system that respects and takes into account the cultural background, cultural beliefs, and values of those served and incorporates this into the way services are delivered.

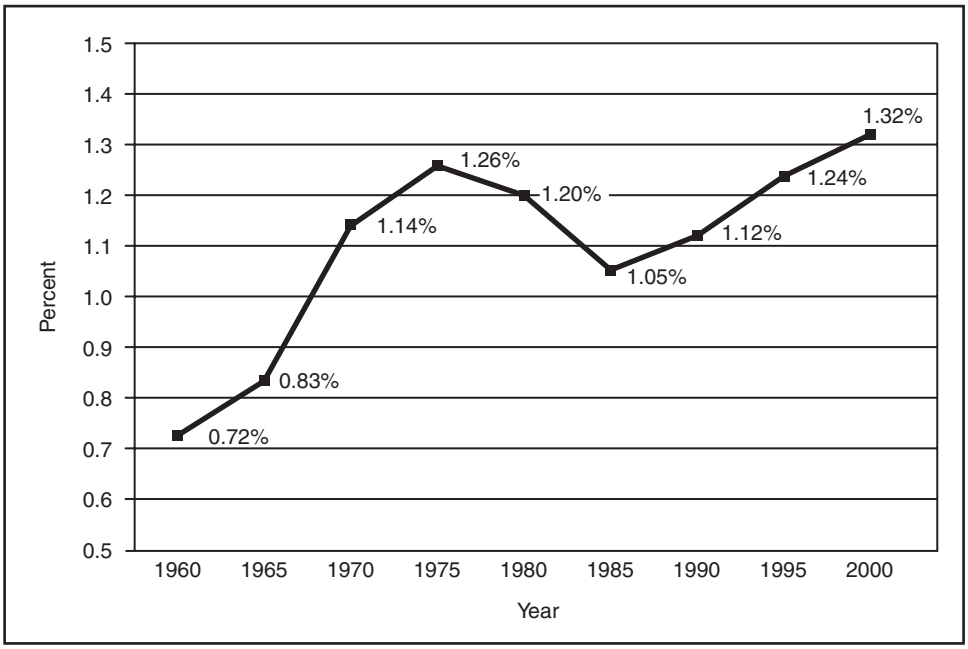
Changes in family structure also represent a significant demographic trend in the United States. There is only a 50% chance that married partners will reach their 25th anniversary. One in three children live part of their lives in a one-parent household; for black children, the chances are two in three. Labor force participation for women more than doubled from under 25% in 1950 to 54% by 1985. Even more indicative of gender changes in the labor market, the proportion of married women in the work force with children under age five grew from 44%in 1975 to 64% in 1987. Many American households have maintained their economic status over the past 2 decades with the second paychecks from women in the work force. As the nature of families changes, so do their needs for access, availability, and even types of services (such as substance abuse, family violence, and child welfare services).

Intermingled with many of these trends are the persistent inequalities in access to services for low-income populations, including blacks and Hispanics. For example, despite higher rates of self-reported fair or poor health and greater utilization of hospital inpatient services, low-income persons are 50% more likely to report no physician contacts within the past 2 years than are persons in high-income households. Utilization rates for prenatal care and childhood immunizations are also lower for low-income populations.

Despite outspending other developed countries on health services, the United States leads other industrialized nations by a wide margin in the rate of its citizens who lack health insurance coverage. Various studies since 1998 place the figure at approximately 45 million Americans and rising. Health insurance coverage of the population has been declining since 1980 for all age groups except those younger than age five, whose access was improved through Medicaid eligibility changes. The age-adjusted percentage of persons who were not covered by health insurance increased from 14% in 1984 to almost 17% in 2000. Young adults 18–24 years of age were most likely (30%) to be uninsured in 2000.[1]

Blacks were two thirds more likely than whites, and Hispanics were almost three times as likely as whites to be uninsured in 2000. Individuals in households at 150%or less of the poverty level were more than four times more likely to be uninsured than were persons living in households at 200% or more of the poverty level (Figure 3–13). Still, of the 41 million uninsured people younger than age 65, about two thirds are 15–44 years of age, three fourths are white, and one third live in families earning $25,000 or more. Lack of insurance coverage may disproportionately affect minority low-income individuals, but its growth in recent years has affected individuals in almost all groups. About two thirds of uninsured individuals in the United States are either employed or are dependents of an employed family member. Part-time workers

FIGURE 3–11 Adjusted total public health spending as a percent of total health spending, United States, 1960–2000.



Sources and Notes: Data compiled from National Centers for Health Statistics, *Health, United States, 2002*. Hyattsville, MD: NCHS; 2002 and Centers for Medicare and Medicaid Services, National Health Accounts (NHA) 1960–2000. The NHA breaks down health spending by source of funding and by activity and type of service provided. Adjusted total public health expenditures include expenditures at both the federal and state/local level. State/local public health expenditures are adjusted in an attempt to include only funding for essential (i.e., population-based) public health services and to exclude personal health care services.

and the self-employed are as likely as the unemployed to be uninsured. Access to health services is one of the 10 leading indicators of the health status of the United States; Figure 3–14 illustrates targets set for the nation as part of the Healthy People 2010 initiative.

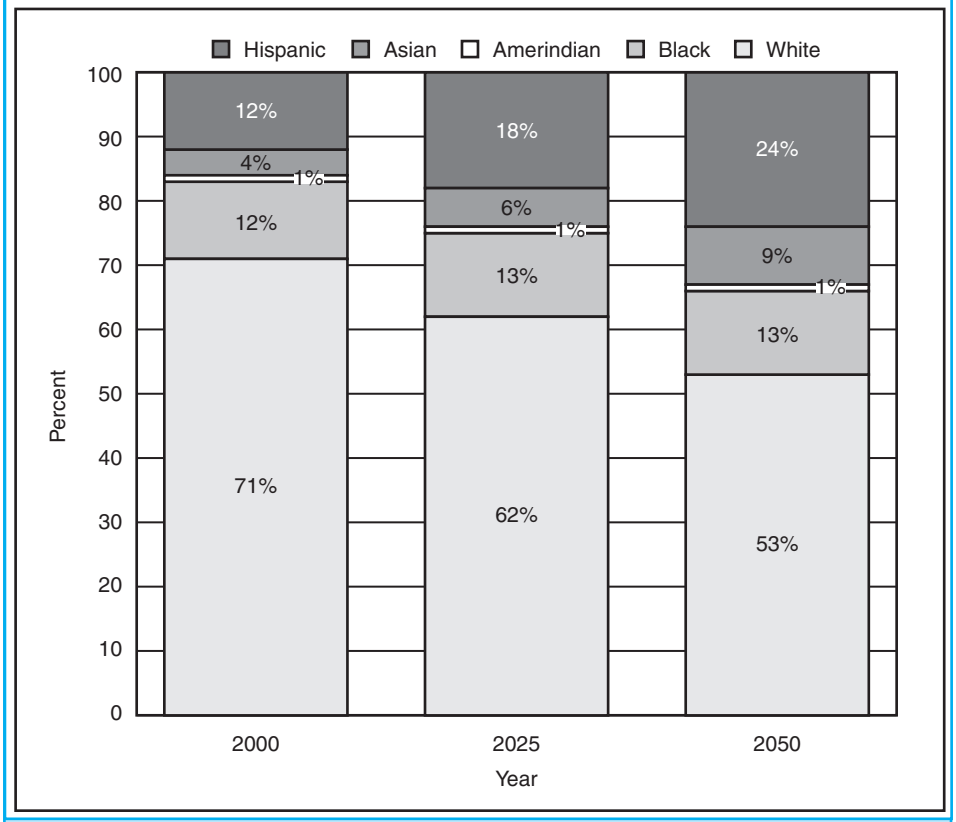
Health Care Resources

The supply of health care resources is another key dimension of the health care system. During the past quarter-century, the number of active U.S. physicians increased by more than two thirds, with even greater increases among women physicians and international medical graduates. The specialty composition of the physician population also changed during this period, as a result of many factors, including changing employment opportunities, advances in medical technology, and the availability of residency positions. Suffice it to say that medical and surgical subspecialties grew more rapidly than did the primary care specialties. Recent projections suggest that the early 21st century will see a substantial surplus of physicians, primarily those trained in the surgical and medical specialties.

Health care delivery models have also experienced major changes in recent years. For example, hospital-based resources have changed dramatically. Since the mid-1970s, the number of community hospitals has decreased, and the numbers of admissions, days of care, average occupancy rates, and average length of stay have all declined, as well. On the other hand, the number of hospital employees per 100 average daily patients has continued to increase. Hospital outpatient visits have also been increasing since the mid-1970s.

The growth in the number and types of health care delivery systems in recent years is another reflection of a rapidly changing health care environment. Figure 3–15 traces changes in the types of health plan options available to workers with health insurance coverage between 1988 and 2001. Increasing competition, combined with cost containment initiatives, has led to the proliferation of group medical practices, health maintenance organizations (HMOs), preferred provider organizations, ambu-

FIGURE 3–12 Current and projected racial and ethnic composition of U.S. population, 2000, 2025, 2050.



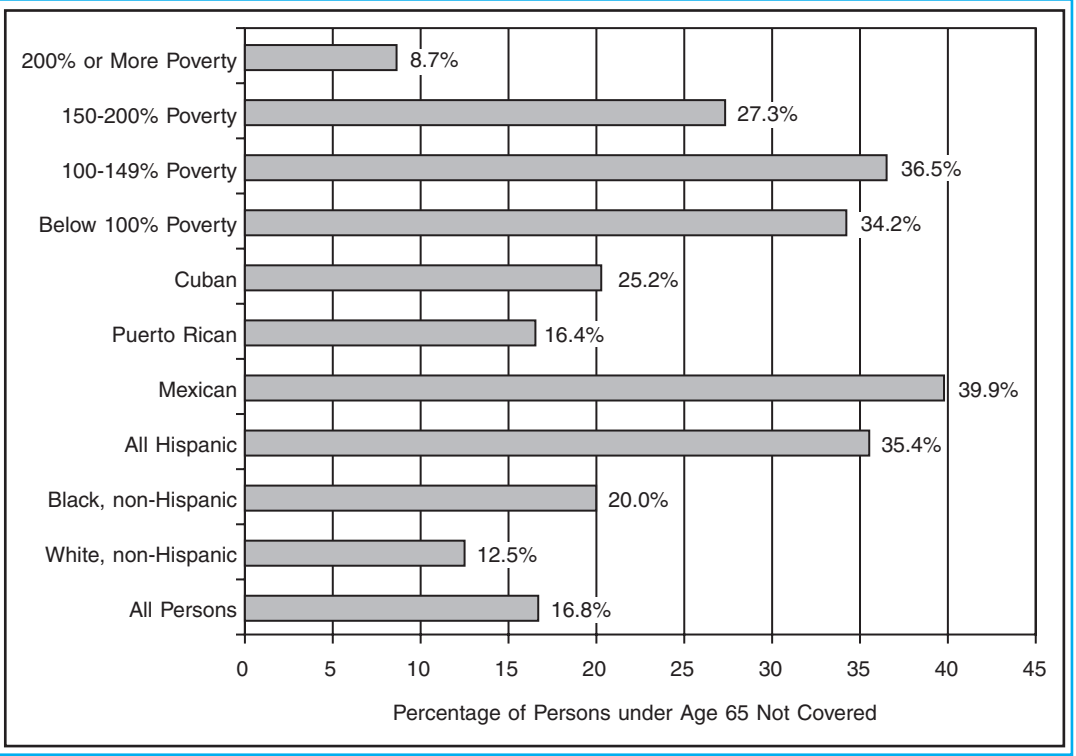
Source: U.S. Census Bureau, 2001.

latory surgery centers, and emergency centers. Common to many of these delivery systems since the early 1990s have been managed care strategies and methods that seek to control the utilization of services. Managed care represents a system of administrative controls intended to reduce costs through managing the utilization of services. Elements of managed care strategies generally include some combination of the following:

- Risk sharing with providers to discourage the provision of unnecessary diagnostic and treatment services and, to some degree, to encourage preventive measures
- To attract specific groups, designing of tailored benefit packages that include the most important (but not necessarily all) services for that group; cost sharing for some services through deductibles and copayments can be built into these packages
- Case management, especially for high-cost conditions, to encourage seeking out of less expensive treatments or settings
- Primary care gatekeepers, generally the enrollee's primary care physician, who control referrals to specialists
- Second opinions as to the need for expensive diagnostic or elective invasive procedures
- Review and certification for hospitalizations, in general, and hospital admissions through the emergency department, in particular
- Continued-stay review for hospitalized patients as they reach the expected number of days for their illness (as determined by diagnostic related groupings)
- Discharge planning to move patients out of hospitals to less expensive care settings as quickly as possible

The growth and expansion of these delivery systems has significant implications for the cost of, access to, and quality of health services. These, in turn, have substantial impact on public health organizations and their programs and services.[5] By the year 2000, more than one half of the U.S. population was served through a managed care organization. Within the next

FIGURE 3–13 Persons under age 65 not covered by health insurance by selected characteristics, United States, 2000.



Source: Adapted from National Center for Health Statistics. *Health, United States, 2002*. Hyattsville, MD: NCHS; 2002.

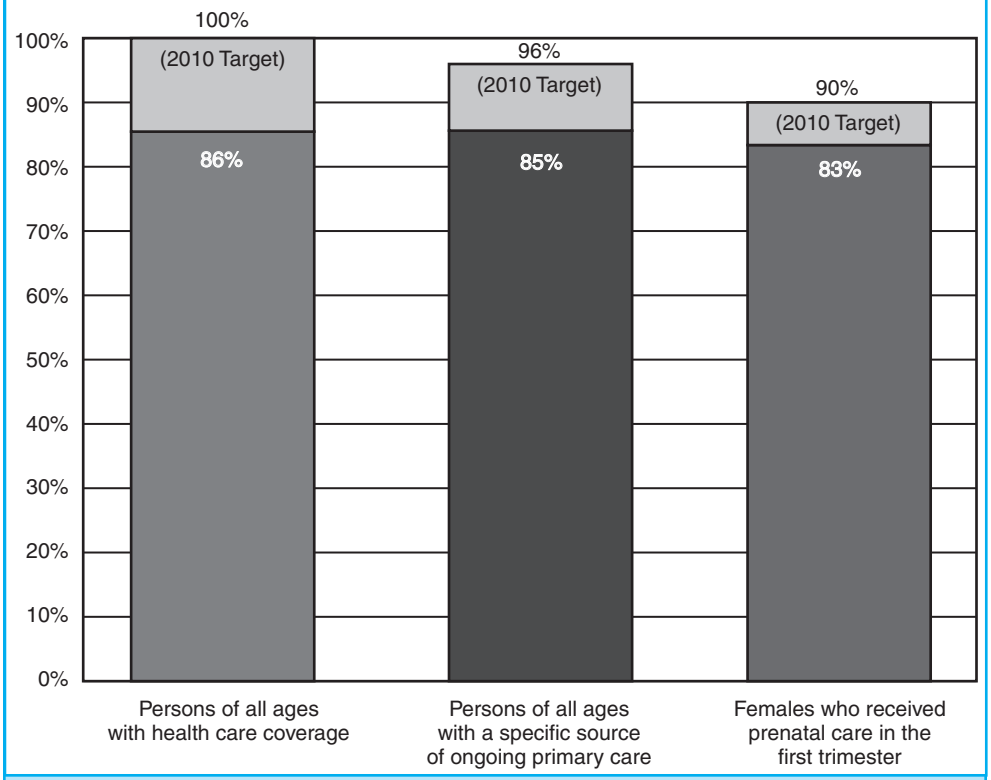
decade, managed care will capture 80%–90% of the market. The growth of managed care also has significant implications for both the population-based services of governmental public health agencies and the clinical services that have been provided in the public sector.

The dramatic growth in the number of HMOs during the early and mid-1980s was followed by a period of slower growth and consolidations and mergers. Rapid growth resumed in the 1990s, with more than one third of the population (about 80 million Americans) enrolled in HMOs in 2001, up from only 4% in 1980. Considerable variation is apparent across regions of the country, ranging from 35%–40% in the West and Northeast to 21%–22% in the Midwest and South. The structure of HMOs varies as well, with about 80% of enrollees found in independent practice and mixed-model HMOs; only about 20% are served by group-model HMOs. Recent growth has come largely in the form of the mixed-model HMOs, which include aspects of both the staff and independent models. In general, cost-control measures are more effectively implemented through group-model HMOs.

CHANGING ROLES, THEMES, AND PARADIGMS IN THE HEALTH SYSTEM

Even a cursory review of the health sector requires an examination of the key participants or key players in the health industry. The list of major stakeholders has been expanding as the system has grown and now includes government, business, third-party payers, health care providers, drug companies, and labor, as well as consumers. The federal government has grown to become the largest purchaser of health care and, along with business, has attempted to become a more prudent buyer by exerting more control over payments for services. Government seeks to reduce rising costs by altering the economic performance of the health sector through stimulation of a more competitive health care market. Still, budget problems at all levels make it increasingly difficult for government to fulfill commitments to provide health care services to the poor, the disadvantaged, and the elderly. Over recent years, new and expensive medical technology, inflation, and unexpected increases in utilization forced third parties to pay out more for health care than they anticipated when premiums were deter-

FIGURE 3–14 Access to health care, United States, 1997, and year-2010 targets.



Source: Reprinted from Office of Disease Prevention and Health Promotion. *Healthy People 2010: Understanding and Improving Health*. Rockville, MD: ODPHP; 2000.

mined. As a result, insurers have joined government in becoming more aggressive in efforts to contain health care costs. Many commercial carriers are exploring methods to anticipate utilization more accurately and to control outlays through managed care strategies. Business, labor, patients, hospitals, and professional organizations are all trying to restrain costs while maintaining access to health services.

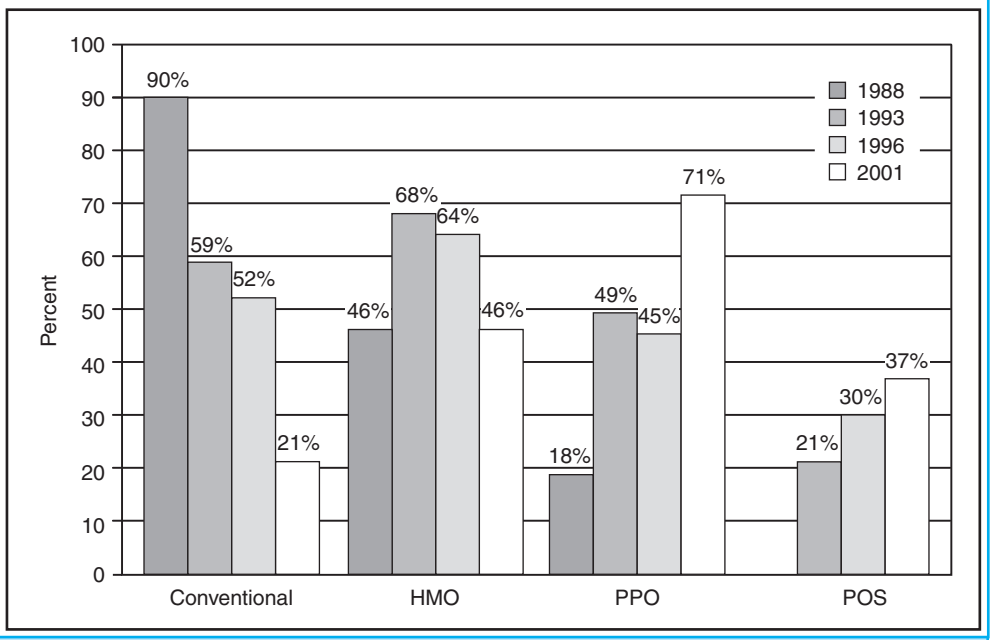
Reducing the national deficit and balancing the federal budget will look in part to proposals that will control costs within Medicare and Medicaid, as well as in discretionary federal health programs. Except for Medicare, these recommendations are likely to be politically popular, even though the public has little understanding of the federal budget. For example, a 1994 poll[11] found that Americans believe health care costs constitute 5% of the federal budget, although these costs actually constitute 16%. At the same time, Americans believed that foreign aid and welfare constitute 27% and 19%, respectively, of the federal budget when, in fact, they constituted only 2% and 3%, respectively. When the time comes to balance the federal budget and reduce the national deficit, the American public will face difficult choices as to which programs can be reduced. Public health programs, largely discretionary spending, may not fare well in this scenario.

As these stakeholders search for methods to reduce costs and as competition intensifies, efforts to preserve the quality of health care will become increasingly important. An Institute of Medicine study concluded that medical errors account for as many deaths each year as motor vehicle crashes and breast cancer (Figure 3–16).[12] Public debate will continue to focus on how to define and measure quality. Despite the difficulty in measuring quality of medical care, it is likely that quality measurement systems will increase substantially. Dialogue and debate among the major stakeholders in the health system will be influenced by the tension between cost containment and regulation; the interdependence of access, quality, and costs; the call for greater accountability; and the slow but steady acceptance of the need for health reform.

Almost certainly, health policy issues will become increasingly politicized. The debate on health care issues will continue to expand beyond the health care community. Many health policy issues may no longer be determined by sound science and practice considerations, but rather by political factors. Changes in the health sector may lead to unexpected divisions and alliances on health policy issues. The intensity of economic competition in the health sector is likely to continue to increase because of the increasing supply of health care personnel and because of the changes in the financing of care. Increased competition is likely to cause realignments among key participants in the health care sector, often depending on the particular issue involved.

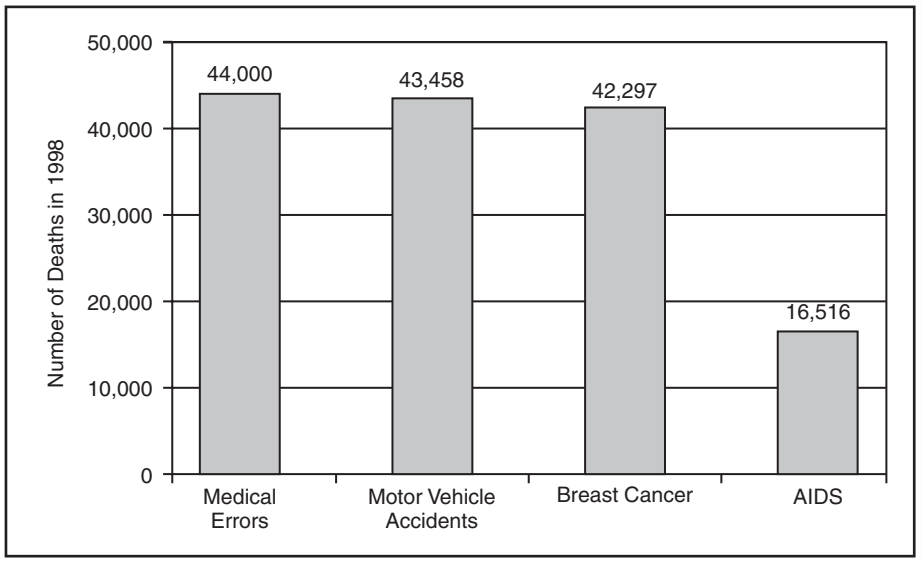
The failure of health reform at the national policy level in 1994 did not preclude the implementation of significant

FIGURE 3–15 Percent of covered workers with a choice of conventional, HMO, PPO, or POS plans, 1988–2001.



Sources: Data from Kaiser Family Foundation/Health Research and Education Trust Survey of Employer-Sponsored Health Benefits: 2001; KPMG Survey of Employer-Sponsored Health Benefits: 1988, 1993, 1996. Information was not obtained for POS plans in 1988. HMO refers to health maintenance organizations; PPO refers to preferred provider organizations; and POS refers to point-of-service plans.

FIGURE 3–16 Selected causes of death in the United States, 1998.



Source: Institute of Medicine. *To Err is Human*. Washington, DC: National Academy of Sciences, 1999.

improvements in either the public or the private components of the health sector. With or without changes in national health policies, the health system in the United States is clearly reforming itself. With the persistence of cost and access as the system's twin critical problems, new approaches and models were both needed and expected. The federal, as well as state, governments have moved to control the costs of Medicaid services, primarily through attempts to enroll nondisabled Medicaid populations (largely, mothers and children) into capitated managed care programs. The rapid conversion of Medicaid services to managed care operations and the growth of private managed care organizations pose new issues for the delivery of clinical preventive and public health services.[5] Although it is anticipated that these changes will result in fewer clinical preventive and treatment services being provided through public health agencies, both the extent and impact of these shifts remain unclear. In any event, the underlying investment strategy of the U.S. health system appears to remain unchanged, with 97% of the available resources allocated for treatment services, approximately 2% for clinical preventive services, and 1% for population-based public health services. Without at least some additional investment in prevention and public health approaches, the long-term prospects for controlling costs within the U.S. health system are bleak. In the meantime, some 40–45 million Americans remain outside the system and will continue to incur excessive costs when they inappropriately access needed services. Universal access is a prerequisite for eventual control of costs. However, it is not clear how true reform can be effected without reform of both our medical care and public health subsystems.

Although progress along this road has been painfully slow, there is evidence that a paradigm shift is already under way. The Pew Health Professions Commission argues that the American health care system of the 21st century will be quite different from its 1990s counterpart.[13] The health system of the 21st century will be

- More managed, with better integration of services and financing
- More accountable to those who purchase and use health services
- More aware of and responsive to the needs of enrolled populations
- More able to use fewer resources more effectively
- More innovative and diverse in how it provides for health
- More inclusive in how it defines health
- Less focused on treatment and more concerned with education, prevention, and care management
- More oriented to improving the health of the entire population
- More reliant on outcomes data and evidence

These gains, however, are likely to be accompanied by pain. The number of hospitals may decline by as much as 50% and the number of hospital beds by even more than that. There will be continued expansion of primary care in community and other ambulatory settings; this will foster replication of services in different settings, a development likely to confuse consumers. These forces also suggest major traumas for the health professions, with projected deficits of some professions, such as nurses and dentists, and surpluses of others, such as physicians and pharmacists.[13] An estimated 100,000–150,000 excess physicians, mainly specialists, could be joined by 200,000–300,000 excess nurses as the hospital sector consolidates and by as many as 40,000 excess pharmacists as drug dispensing is automated and centralized. The massive fragmentation among 200 or more allied health fields will cause consolidation into multiskilled professions to meet the changing needs of hospitals and other care settings. One of the few professions likely to flourish in this environment will be public health, with its focus on populations, information-driven planning, collaborative responses, and broad definition of health and health services.

Where these forces will move the health system is not yet known. To blend better the contributions of preventive and treatment-based approaches, several important changes are needed. There must be a new and more rational understanding of what is meant by "health services." This understanding must include a broad view of health promotion and health protection strategies, and must afford these equal standing with treatment-based strategies. Once and for all, health services must be seen to include services that focus on health, as well as those that focus on ill health. This should result in support for a more comprehensive approach to defining a basic benefit package that would be provided to all Americans. A second and companion change needed is to finance this enhanced basic benefit package from the same source, rather than funding public health and most prevention from one source (government resources) and treatment and the remaining prevention activities from private sources (business, individuals, insurance). With these changes, a gradual reallocation of resources can move the system toward a more rational and effective investment strategy.

The sheer size and scope of the American health system make it a force to be reckoned with, engendering comparisons with a similar force that existed in the United States in the 1950s and 1960s. At that time, and as he left office, President Eisenhower warned the nation of the potentially dangerous

influence of the nation's "military industrial complex." His observations were both ominous and insightful as he decried a powerful industry whose self-interest was coloring the nation's view of other countries and their people. The plight of the American health system raises the specter of a modern analogue in a "medical industrial complex." One danger posed by these complexes is their ability to influence the way we address (or even think about) a major public policy problem or issue. This occurs through interpreting and recasting the issues involved, sometimes even to the extent of altering public perceptions as to what is occurring and why.

Public understanding of the meaning of the terms *health reform* and *health care* is a case in point. Although, as a society, we have come to substitute the term health care for what is really medical or treatment care, these are simply not the same. The health status of a population is largely determined by a different set of considerations, as discussed in Chapter 2. Those considerations are very much the focus of the public health system. If the ultimate goal is a healthier population and, more specifically, the prevention of disease and disability, the national health system must aggressively balance treatment with population- and community-based prevention strategies.

There is a term for when an organization finds that it is unable to achieve its primary objectives and outcomes (bottom line), then justifies its existence in terms of how well it does the things it is doing. *Outcome displacement* is that term; it means that the original outcome (here, improved health status) has been displaced by a focus on how well the means to that end (the organization, provision, and financing of services) are being addressed. These, then, become the new purpose or mission for that system. Instead of "doing the right things" to affect health status, the system focuses on "doing things right" (regardless of whether they maximally affect health). It is possible to have the best medical care services in the world but still have an inadequate health system.

CONCLUSION

Every day in America, decisions are made that influence the health status of individuals and groups of individuals. The aggregate of these decisions and the activities necessary to carry them out constitute our health system. It is important to view interventions as linked with health and illness states, as well as with the dynamic processes and multiple factors that move an individual from one state to another. Preventive interventions act at various points and through various means to prevent the development of a disease state or, if it occurs, to minimize its effects to the extent possible. These interventions differ in their linkages with public health practice, medical practice, and long-term care, as well as in their focus on individuals or groups. The framework represents a rational one, reflecting known facts concerning each of its aspects and their relationships with each other.

As this chapter has described, current health policy in the United States reflects a different view of the factors incorporated in the model. Current policy focuses unduly on disease states and strategies for restoring, as opposed to promoting or protecting, health. It directs the vast majority of human, physical, and financial resources to tertiary prevention, particularly to acute treatment. It focuses disproportionately on individually-oriented secondary and tertiary medical care. In so doing, it raises questions as to whether these policies are effective and ethical.

Characterized in the past largely by federalism, pluralism, and incrementalism, the health sector in the United States is undergoing fundamental change, primarily in response to economic realities that have invested a trillion dollars in a model that equates medical care with health care. We are now realizing that this investment strategy is not producing results commensurate with its resource consumption. Health indicators, including those characterizing large disparities in outcomes and access among important minority groups, are not responding to more resources being deployed in the usual ways. The major problems have been widely characterized as cost and access, with the former being considered a cause of the latter. How to fix the cost question without aggravating the access issue has yet to be addressed, although managed care approaches are serving to place some controls on the utilization of specific services. A better representation of the twin problems facing the U.S. health sector might be excess and access, suggesting a return to the strategic drawing boards for approaches that reduce and redeploy resources, rather than only reducing them. Within this reexamination of purpose and strategies for the health sector, the need to address health, as well as disease and prevention, as well as treatment, should be apparent. To accomplish these aims, there must be consensus that basic health services include population-based public health services and clinical preventive services, as well as diagnostic and treatment services. To facilitate rational policy making and investment decisions, these services should be funded from a common source. This may require that health insurance premiums replace governmental appropriations as the source of funding for public sector activities. It is to be hoped that these realizations will take place before the health sector reaches its meltdown point.

Discussion Questions and Exercises

1. What are the most critical issues facing the health care system in the United States today? Before answering this question, see what insights you can find at the Web sites of these major health organizations: American Medical Association <http://www.ama-assn.org>, American Hospital Association <http://www.aha.org>, American Nurses Association <http://www.ana.org>, and the American Association of Medical Colleges <http://www.aamc.org>.
2. What forces are most likely to fuel further movement toward major health care reform in America?
3. Why is there less concern over national policy solutions (or "health reform") today than there was in 1994?
4. Select an important health problem (disease or condition) related to maternal and infant health (see "Public Health Achievements in 20th Century America: Improved Maternal and Infant Health") and describe interventions for this problem across the five strategies of health-related and illness-related interventions (health promotion, specific protection, early detection, disability limitation, rehabilitation) presented in Chapter 3.
5. For the same health problem related to maternal and infant health (see "Public Health Achievements in 20th Century America: Improved Maternal and Infant Health") selected in Question 4, describe interventions for this problem across the three levels of preventive interventions (primary, secondary, tertiary) presented in Chapter 3.
6. Table 3-3 lists organizations, agencies, and institutions that might be considered part of an overall national prevention effort. Identify those elements that should be included in a compilation of health-related prevention efforts. On the basis of what you know of these agencies, which of their programs or services should be included? Explain the reasons for your choices in terms of categories of preventive activities (e.g., health promotion, health protection, clinical preventive services). Identify those that you would include if you had the task of quantifying the scope and cost of all health-related prevention activities and expenditures in the United States. Which would you choose to leave off this list? Why?
7. Examine the data on the health system in a city or county of interest that is available through a state or local health agency. What elements from this site are most useful?
8. Great Debate: This debate examines contributors to improvement in health status in the United States since 1900. There are two propositions to be considered. Proposition A: Public health interventions are responsible for these improvements. Proposition B: Medical care interventions are responsible for these improvements. Select one of these positions to argue and submit a summary of arguments.
9. Is an ounce of prevention still worth a pound of cure in the United States? If not, what is the relative value of prevention in comparison with treatment?
10. Has the recent growth of managed care strategies within the health sector had a positive or a negative impact on the public's health? How? Why?

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