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Organization of Public Health Systems

Learning Objectives

Upon completion of this chapter, the student should be able to:

1. Define public health functions at different levels of government;
 2. Define methods available to governmental organizations for dealing with public health responsibilities and activities;
 3. Apply the principles of the New Public Health to activities at federal, state, and local levels of government.
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INTRODUCTION

Formal structures to ensure public health evolved over the centuries as local authorities addressed fundamental societal needs for sanitation, safe water and food safety business licensing and other issues. These structures developed in response to the challenges of industrialization and urbanization along with growing scientific and applied methodologies for disease prevention and health promotion. Non-governmental charitable, religious, and advocacy organizations pioneered many services that were part of addressing the broad spectrum of public health needs. With the widening range of public responsibilities, state and national governments took on increasing roles of leadership. These included financial support and professional development of public health and, in parallel, medical care systems to meet the growing public expectation for good health. These challenges remain important for current and future needs of both individual and population health. In the USA the high and rising cost of health care, and lack of universal insurance coverage are continuing political and public health issues, while many other industrialized countries have better health outcomes such as longer life expectancy (see Chapters 11 and 13).

This chapter examines the organization of public health and health care delivery services, illustrating how separate systems of service coexist and interact. Each system evolved in its own organizational and financing format, yet they come together, as medical care and prevention become more mutually interdependent. Traditional public health systems must increasingly develop intersectoral cooperation with other components of the health care industry, as well as with government and related fields, such as agriculture,

business, and social welfare, education, police, and community organizations.

Governments have legislative, regulatory, and taxation powers set out in constitution and law for common action for the public good, including powers to promote health and to restrict individual actions that may jeopardize the health of others. City-states in ancient Greece provided sanitation for the entire community and medical care for the poor. The Elizabethan Poor Laws in Britain in the early seventeenth century established the responsibility of the local authority for health and welfare. Subsequent developments brought local, state, and national government into sanitation, disease control, and other aspects of public health and health planning. Later this extended to assuring provision of comprehensive health care on a social-equity basis for all or to meet the specific needs of vulnerable groups within a society.

Societies have learned to prevent disease by social action and have learned that individual health depends on such action. Governments are involved in that process, whether the governmental structure is based on democratic and free market principles, or is centrally managed with a command economy. Society has accepted some limitations on individual rights for the public good. These limit the individual from attacking and harming another person, or damaging goods, whether private or public. A person is restricted from throwing garbage in the street, and industry is prohibited from polluting the environment or endangering its workers.

Public health policy, legislation, and action involve common measures to protect the individual and the community. Such measures may take the form of mandatory reporting of an infectious disease, chlorinating and fluoridating community water systems, sanitary waste disposal, regulating food and drug industries, requiring children to be immunized before entry to school, or fining or imprisoning industry managers whose negligence causes death and injury, or whose industry pollutes the environment.

Achievement of public health goals requires organization (Box 10.1). Public health organization requires a formal structure for a defined population in which finance, management, scope, and content are defined in law and regulations. It includes services contributing to people's health as well as health care to be delivered in many settings, such as homes, communities, educational institutions, workplaces, hospitals, and clinics. Public health also addresses

BOX 10.1 What Is a Public Health System?

“A network of public, private, and voluntary entities that contribute to the health and well-being of a community.”

Source: World Health Organization. World health report 2004. Geneva: WHO. Available at: <http://www.who.int/whr/2004/en/>

the policy, legislative, and regulatory functions of societal health, including the physical and psychosocial environment. A health system is organized at various levels, starting at the most peripheral, the community or primary level. It includes district, regional, state, and national levels as well as international aspects. International and national strategies for health and national health systems should be seen as investments that produce health gain rather than merely management of existing medical care institutions and services.

Function and structure are interdependent. Structure should evolve from the desired function; that is, to achieve national goals and objectives for health. This aim is fulfilled through legislative, regulatory, financing, and service functions, which provide the underpinnings to meet health needs in any country. Some countries provide universal health care through a governmental system. Others legislate financing of health care, while another approach focuses on financing for certain population subgroups, such as the elderly and the poor, placing greater emphasis on provision of facilities and research in health care.

This chapter describes public health organization primarily using examples from the USA, including federal, state, and local public health authorities. In contrast to most industrialized countries, the USA lacks universal health care. As a result, health care is provided through a mix of independent, private, and public agencies. While this is sometimes described as a “non-system”, it is in fact a complex network of interactive services. Yet, it lacks universality, leaving many individuals without access to even basic private health care. As a result, public health organizations in the USA play a very important role in providing essential services for people or needs not otherwise met. Yet there are socioeconomic, ethnic, and regional variations and inequalities in insurance coverage and resource allocation, leaving substandard access and outcomes for many in the US health system. Public health has played a leadership role particularly in advocacy, development, and achievement in promoting health, partly to compensate for this fragmentation of health care in the USA. In many ways medium and low income countries are similar in lacking universal care, so that the institutions of US public health provide examples of infrastructure development needed to meet deficiencies in any health system.

GOVERNMENT AND HEALTH OF THE NATION

Public health involves a wide variety of issues that should be directly under governmental responsibility as they require legislation, enforcement, and taxing powers. These

include environment, nutrition, food and drug control, sanitation, immunization, traffic laws, firearms control, and health education. Many of these functions are promoted by non-governmental organizations (NGOs), with delegated governmental regulatory powers.

Financing and allocation of public funds for health care provide important means of influencing health activities, which may mean direction of public funds to support research, teaching facilities, and provision of services. National governments may directly provide services, but increasingly this is being decentralized to lower levels of government (regional, district, municipal) or to non-governmental health care providers. Academic, professional, and public advocacy organizations play important roles in the New Public Health, such as in personnel training, education, research, and professional standards setting. These functions can be diffused to a variety of professional, consumer, and academic institutions, enabling governments to act through direct regulatory functions. Governments can also act indirectly, setting standards and norms through financial and other incentives or sanctions, and involving an organized system of accountability, accreditation, licensing activities, and quality guidelines.

Federal and Unitary States

Public health requires a basis in law, public administration, and financing. The constitution, law and form of government may differ from country to country, some being federal, others unitary.

In a federal system, three levels of government – federal, state, and local – have separate but overlapping responsibilities for public health. Federal states have constitutions conceived and written in a historical period when state rights were emphasized and health care was perceived mainly as a private activity between patient and doctor. Consequently, primary responsibility for health rested with a combination of the state, provincial, regional, or local levels of government. However, because of greater resources at the national level, federal government roles have increased in the health field over the years. National governments have a responsibility to ensure equity of social policy. A growing federal or national role has been a historical process common to many countries. At a minimum, the federal level is responsible for national health policy, planning, and setting national health targets. The USA, Canada, Russia, Argentina, and Nigeria are examples of countries with federal forms of government.

A unitary state is a form of government that has a central national level and local governments, but no intermediary legislating level. The UK despite having four constituent units of England, Scotland, Northern Ireland and Wales with semi independent health services is constitutionally a unitary state. Countries with governments based on the French Napoleonic Code, including most Spanish-speaking countries, are examples. In these countries, the central government has great responsibility for health, but here,

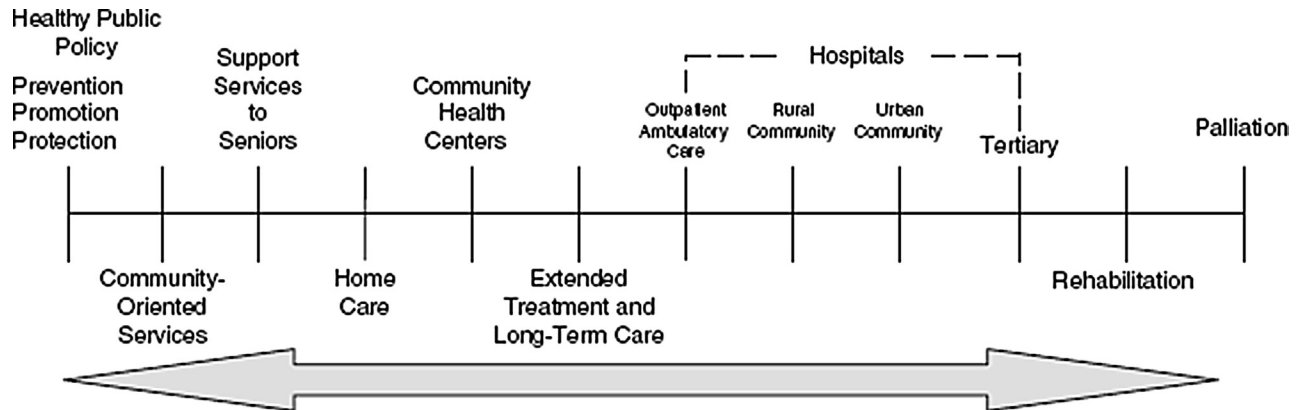


FIGURE 10.1 The continuum of health services.

too, local government is still a major factor in sanitation and local public health. The powers of regional and local authorities are derived from the national structure. Public health grew initially at the local level with regulations for sanitation, business premises and product licensing, food safety, and the like. In the UK, the national government promoted local public health organization, later organizing personal health services programs for the entire population in the centrally controlled National Health Service (NHS) (UK National Audit Office 2012).

Diffusion of authority is common to all health systems to differing degrees, mainly based on historical precedents. In recent years, national health authorities have largely been responsible for overall policy, law, financing, standards, monitoring, research, and assurance of services to meet national health goals. Management of services is generally decentralized, with responsibility at the state, regional, and local health authority or institutional level. Diffusion or sharing of responsibility from each level of authority is common in current planning to cope with the wide range of activities and interests that make up the health sector of a society. Non-governmental agencies (NGOs) often precede governmental authority in the field, and their presence and participation make up important elements of the health complex, whether as providers of services, as advocates, or as fundraisers for programs that a government cannot manage to include in its “basket of services”.

Local authorities often delegate administration of services to independent institutions or other public or private agencies. Diffusion of responsibilities occurs to different degrees in administration of services, in education, in training, as well as registry of health professionals including the related professional and accreditation organizations. Diffusion also occurs in research, in intersectoral cooperation between governmental agencies, along with NGOs, or advocacy groups, and in academic as well as research facilities. Legislation may initiate and direct changes in health programs using regulatory and financing measures, but implementation also requires a broad spectrum of participation of individuals and organizations of consumers, providers, and other health interest groups. Health is not an isolated

service, but a reflection of the social values and standards and economic development of a society, with a large degree of interdependence and interaction between health agencies and other governmental and non-governmental elements of that society.

Checks and Balances in Health Authority

The balance between government intervention and private organization, between regulation and self-governance, is not easy to define or to achieve in health. Historically, elements of health care developed at different times and with different degrees of political, economic, and public support. The accumulated experience of modern public health indicates that all elements of health need to be considered as part of a spectrum of services (Figure 10.1). Weakness in one area threatens the well-being of the totality. Poor levels of nutrition and sanitation breed disease, for which treatment is more expensive and less effective than prevention. At the same time, low medical care standards due to inadequate training, motivation, resources, and supervision can lead to low standards of health among large segments of the population.

Public health services have developed separately from curative services by providing care for special needs populations such as maternal and child care, primarily for the poor. However, there is growing recognition that health promotion, health protection, and preventive care are interwoven and at least partially integrated with curative service systems. Where health care is provided by private services, a public-private mix is essential in delivery of specific preventive services, such as screening and immunization. This leaves out part of the population, so that health promotion and outreach services are also required. When such services are provided by private medical care services, there will always be a need for special provision to the uninsured, those lacking financial and physical access, and those lacking information or awareness of the need for such services.

Organization for public health services, whether integrated into a total care system or separate from curative

service systems, requires a combination of centralized and decentralized responsibilities. The overriding national responsibility requires political leaders to set policy goals and standards, including measures to promote regional and social equity in health. Decentralization in public health allows local authorities to take direct operational responsibility, with resources and accountability, in some cases such as in Scandinavian countries with direct management of health services, and most commonly in sanitation, business licensing, and disaster planning and management.

Diffusion of responsibility means that many agencies operate at different levels of a nation state, with some overlapping functions and some gaps. Each level has its own sphere of responsibility, working in cooperation and under regulation set by the higher level of government, but linking together to form a working whole, with checks, balances, and cooperation among them. Even in highly centralized organizations of health services, cooperation with other governmental agencies such as social welfare, education, environmental, and other agencies is essential to modern public health.

A centralized health organization that controls policy, administration, financing, services, personnel training, research, and regulation may lack checks and balances needed to prevent authoritarian control. Formerly highly centralized health systems are now seeking decentralization as a means of infusing additional funding, local identification, pride, privacy, and quality in their health systems. They are combining this with universal access and regional, ethnic, and social equity. Comprehensiveness and cost constraint are the challenges of organization of public health systems.

A federal structure of government divides health responsibilities with the senior level of government as the overall policy level with financing and regulatory roles. The state or provincial level is responsible for public health and, in many cases, health insurance systems serving its population, while the local government is responsible for public health at the community level. National and state or provincial funding, regulations, support services, and policy direction guidelines and accountability provide backing to promote community health interests.

The New Public Health is a population health model which seeks a balance and cooperation between government-operated health services and the diffused network of private, often competing, organizations, working together to use resources effectively to achieve common health targets that meet the needs of the individual and the population as a whole.

Government and the Individual

Conflicting ideas as to the overall role that government should play affect public health in many ways. In 1869, John Stuart Mill, the founder of modern economics, wrote in the introduction to *On Liberty*, “The only purpose for

which power can rightfully be exercised over any member of a civilized society, against his will, is to prevent harm to others. His own good, either physical or moral, is not a sufficient warrant”. This philosophy has been adapted to a recognized and essential role for government in public health, as in education and other essential services.

The institutions of basic sanitation and community hygiene have had to contend with such individualistic ideas. The issue of governmental interference in “private matters”, such as in health, is not new and is actively debated in industrialized western societies, in the post-Soviet countries, and in developing nations alike. *Laissez-faire* economists promote the idea of minimal governmental involvement in all economic affairs including social services such as health.

During the nineteenth and increasingly in the twentieth centuries, it became apparent and imperative for protection and promotion of health that the state intervene to set and enforce public health measures in all societies. At the other extreme, disillusionment occurred when governments assumed total responsibility for health and total central management of health services. Most countries have their own balance between the two extremes. Paradoxically, the most decentralized and privatized of all national health systems, that of the USA, has been proactive in, and has emphasized development of, national and professional standards, monitoring, setting national targets and regulation in health, and is in the process of profound change from individual care towards managed care systems.

FUNCTIONS OF PUBLIC HEALTH

The American Public Health Association (APHA), founded in 1872, periodically issues policy statements on the mission and essential services of public health organizations. These guidelines help government to provide or assure provision of services through other agencies. The 1994 APHA statements of the overall vision and the mission of public health in the USA were endorsed by the Association of State and Territorial Health Officials, the National Association of County and City Health Officials, the Institute of Medicine, the Association of Schools of Public Health, the US Public Health Service, and others. Periodic review and revision, with consensus among the many professional organizations concerned with public health, help to maintain relevance for local and central public health organizations. The mission and essential services of public health in the USA as published by the Centers for Disease Control and Prevention (CDC) are shown in [Box 10.2](#).

For many of the responsibilities legislated for public health agencies at the national, state, provincial, or local health authority levels, a combination of methods and approaches is needed. Regulatory functions are those based on the legal authority of a public health agency to set and enforce standards. Setting health targets, policies and financing, and national or state standards is important

BOX 10.2 Mission and Essential Services of Public Health, USA**Public Health Responsibilities or Mission**

- Prevent epidemics and spread of disease.
- Protect against environmental hazards.
- Prevent injuries.
- Promote and encourage healthy behaviors.
- Respond to disasters and assist communities in recovery.
- Assure quality and accessibility of health services.

Essential Public Health Services

- Monitor health status to identify and solve community health problems.
- Diagnose and investigate health problems and health hazards in the community.
- Inform, educate, and empower people about health issues.
- Mobilize community partnerships and action to solve health problems.
- Develop policies and plans that support individual and community health efforts.
- Enforce laws and regulations that protect health and ensure safety.
- Link people to needed personal health services and assure provision of health care when otherwise unavailable.
- Assure an expert public health workforce.
- Evaluate effectiveness, accessibility, and quality of health services.
- Research for new insights and innovative solutions to health problems.

Source: Centers for Disease Control and Prevention. National public health performance standards program. 10 essential public health services [updated December 2010]. Available at: <http://www.cdc.gov/nphsp/essentialservices.html> [Accessed 26 October 2012].

in promoting new program initiatives. Health promotion includes not only direct and formal teaching, but also promotion of awareness of public health problems to the general public, health care providers, and other agencies. Services may be provided directly or may be funded and supervised by the public health agency. Direct service is the provision of services to the public, especially useful in areas where universal coverage is essential (e.g., immunizations), or for high-risk groups not able to access other services (e.g., prenatal care for the poor).

Intersectoral cooperation is the coordination with other agencies of government, NGOs, or service providers to work towards common objectives that will improve public health. This is an area where public health advocacy is important in that the public health authority tries to engage other agencies, as in the development of water and sewage systems or the policing of highways, to reduce road accident deaths and related morbidity. NGOs, voluntary organizations, and advocacy groups have in the past and will in the future play a vital role in developing health programs.

BOX 10.3 Examples of Regulated Aspects of Public Health in the USA

- *Regulation and processing data* from birth and death certificates and other data sources from local, state, and national authorities – National Center for Health Statistics (NCHS)
- *Business premises and product licensing approval* – local health authorities
- *Building code compliance* – local health authorities under state and federal codes
- *Sanitation and environmental health* – municipal, state, and national agencies, such as the Environmental Protection Agency (EPA)
- *Regulation of health professionals* – state boards
- *Licensing and certification of health facilities* – local, state, and federal authorities
- *Communicable disease control* – local, state, and federal authorities with the Centers for Disease Control and Prevention (CDC)
- *Food safety* – local, state, and federal standards and inspections by the Food and Drug Administration (FDA)
- *Pharmaceutical standards* – safety, efficacy, labeling, and manufacturing standards by the FDA
- *Occupational health and safety* – local, state, and federal standards and inspections within the Occupational Safety and Health Administration (OSHA), for standards, regulation, and enforcement, and the National Institute for Occupational Safety and Health (NIOSH), for research.

Regulatory Functions of Public Health Agencies

Regulatory function in public health is based on a legal mandate to protect the public from health hazards and to assure certain standards for provision of care. Whatever degree of decentralization occurs, there are key central standards in public health that must be maintained at the federal level in essential areas such as nutrition, sanitation, food and drug control, and others over which the individual citizen or health provider has no direct control. The regulatory function covers a wide range of public health activities (Box 10.3).

Investigative Functions of Public Health

Public health reporting in addition to vital statistics includes communicable diseases (see Chapter 4). The purpose of such reporting is to monitor health and to investigate unusual events such as infectious disease outbreaks, which may be due to many sources, including food or water contamination, hospital-acquired infections, sexually transmitted infections (STIs), and tuberculosis (TB). Investigation of disease in a population includes non-communicable

diseases, cancers, injuries, birth defects, suicides, and suspicious deaths. Cardiovascular diseases and cancers as the leading causes of death are discussed in Chapter 5, along with many other health risk factors.

Many examples of such reporting and investigation have led to the identification of new diseases, including human immunodeficiency virus/acquired immunodeficiency syndrome (HIV/AIDS) in the 1980s, Lyme disease, Legionnaires' disease, West Nile fever, and the spread of dengue and chikungunya to new parts of the world. There has been a recurrence of measles, pertussis, and other vaccine-preventable disease thought to have been brought under control; these diseases and others are identified by reporting to local health departments and supported by national and international epidemiological reporting and investigation. Smallpox eradication was achieved by a combination of mass immunization and, in later stages, outbreak identification and rapid vaccination of local communities to stop the spread of the disease.

The Program for Monitoring Emerging Diseases (ProMED) presents an Internet site reporting daily on global disease outbreak monitoring. ProMED obtains information from local reports including newspaper stories, and is supported by professional investigations that provide fresh data on emerging and re-emerging diseases. The US CDC publishes *Morbidity and Mortality Weekly Report* and the European Centre for Disease Prevention and Control publishes *Eurosurveillance*. These are highly professional, regular investigative reporting systems, supported by *Emerging Infectious Diseases* and other journals to bring rapid sharing of information of epidemiological importance to public health systems. (See Chapter 4 for references. URLs are available in support material at the *New Public Health* website.)

In 2012, a diffuse outbreak of fungal meningitis/encephalitis occurred in the USA from the use of contaminated injectable medications used for pain control. Initial cases were diagnosed by an astute physician in Tennessee and traced to a pharmaceutical company in Massachusetts, with cases then appearing widely across the country. Investigation showed contamination in the production site; the offending material was withdrawn from pharmacies and the company's operation was closed (Box 10.4).

In 2013, the emergence of a new Middle East respiratory syndrome corona virus (MERS-CoV) in Saudi Arabia and other Middle Eastern countries is a new episode in disease identification. This emerging disease has the potential to become a widespread epidemic with cases among visitors to the area, although control measures are limited to patient identification and isolation techniques.

Prevention of Injuries

Prevention of road crash injuries is a major public health challenge which requires networking with other governmental agencies, policy makers, and public opinion. A

public policy of allowing high speed limits or increasing the speed limit accounted for an estimated 12,545 deaths in the USA over a 10-year period of follow-up. The US Department of Transportation estimated in 2002 that the comprehensive cost of each fatality was US\$977,000 and the cost for each critically injured person was US\$1.1 million, so that the 10-year cumulative cost for fatalities alone of repealing the 55 mph speed limit was approximately US\$12 billion. The department reports that in 2010 there were 3092 deaths and 416,000 injuries in distraction-affected motor vehicle accidents. Distracted driving includes the use of cell phones or performance of other tasks while driving (see Chapter 5). Local and state legislation regarding the enforcement of drink-driving laws, mandatory use of seat belts, safe car seats for children, helmets for motorcyclists and bicycle riders, education, and enforcement against use of cell phones while driving are all necessary to reduce the toll of death and disability from road crashes (see Chapter 5).

Repeal of the National Maximum Speed Law and its aftermath show that policy decisions that appear harmless can have long-term repercussions. Reduced speed limits lower crash rates, case fatality, and injury severity, thus saving lives as well as reducing fuel consumption, emissions, and air pollutants; save valuable years of productivity; and reduce the societal cost of motor vehicle crashes. Coupled with mandatory seat belts and child safety seats, air bags, road and car safety measures, lowering legal speed limits on rural and urban highways, improved enforcement and use of speed cameras could reduce traveling speeds and fatalities immediately (Friedman et al., 2009).

Methods of Providing or Assuring Services: Direct or Indirect?

Whether a governmental agency provides or assures the provision of services varies from country to country. Canada's health insurance program is operated by the provinces, with federal cost sharing. In Scandinavian countries, the counties, which have many of the characteristics of provinces, operate most local health services. In centrally managed economies, such as former Soviet countries, health services have been operated with a high degree of central control. The international movement towards decentralization of management of services is under critical review, and a mix of centrally managed and decentralized services is likely to be the trend in coming decades.

Only government can perform many public health functions because certain services require legislative, taxing, and regulatory powers, or because they are directed at the total population. Central coordination is required for key public health functions such as epidemiology and disease control, monitoring population health, nutrition, sanitation, and food and drug control.

BOX 10.4 US Iatrogenic Fungal Meningitis Outbreak 2012: Lessons Learned from the National Distribution with State-Based Regulation

Detection and control of infectious disease outbreaks require a concerted effort by frontline and specialty clinicians, local and regional and/or state public health professionals, and national level scientists and regulators. The 2012 outbreak of fungal meningitis in the USA due to contamination of preservative-free methyl prednisolone acetate illustrates several of the strengths and weaknesses of this approach.

Meningitis is an infection of the central nervous system, specifically of the fluid and materials that surround the brain and spinal cord. This system is normally sterile, but injections of medications near or into the spinal column can cause contamination. Agents that can cause meningitis are typically viruses or bacteria, but meningitis due to fungi can occur.

In early September 2012, patients began to present to emergency departments and other sites with symptoms consistent with meningitis but without common causal agents. An infectious disease expert at a Tennessee academic medical center identified one of the initial patients and, given the unusual etiological agent, reported the case via email to the State Health Department of Tennessee (TDOH). There, the Director of the Healthcare Associated Infections, among others, began to look for other patients. As noted by the *New York Times* report on the investigation, while physicians and other clinicians on the frontlines are most likely to detect initial cases, “only health departments and other governmental agencies have the ability and authority to track down additional cases to document disease outbreaks and warn those at risk. It is work that private groups seldom can do”.

Within 48 hours of the first report, the TDOH notified the US federal Centers for Disease Control and Prevention (CDC); the key point was the unusual fungal agent involved. After consultation with the CDC, the TDOH inspected the facility where the index case received treatment, and identified potential causes, such as local contamination due to environmental contamination, mishandling of equipment, or contamination at the compounding source. Similar to case identification and tracking those potentially exposed, inspection of health care facilities requires authority usually reserved only for state and national regulatory agencies.

While narrowing the possible causes, the TDOH reached out directly to the out-of-state compounding source, as well as the state health department in that state (Massachusetts, MDOH).

The company voluntarily recalled potentially tainted lots of the medications. The US agency that oversees most drug manufacture in the USA, the Food and Drug Administration (FDA), was also informed. Here, the lines of authority and responsibility overlap, and the outbreak reveals potential weaknesses in state and federal regulation. Compounding companies are not routinely regulated by the FDA, as such businesses are technically pharmacies. In the USA, pharmacies are routinely overseen by professional boards, often including volunteer professionals.

Clinicians in many other states began to report fungal meningitis cases to their state health departments, and the CDC coordinated formal national surveillance. Finally, within 8 days of the initial email report to the TDOH, the MDOH conducted a detailed inspection of the production facility involved. The company voluntarily recalled all of its products and shut down. A month later, a preliminary report by MDOH noted contamination of floors, floor mats, and a leaking boiler, all near sterile mixing areas. An FDA report found that many of the drug vials contained foreign matter and that the “clean” compounding rooms had either mold or bacterial overgrowth, or both.

By 15 November 2012, over 400 cases of fungal infection due to the contaminated drug had been found, with 32 deaths, and over 14,000 potential exposed patients. In reaction to the situation, hearings at the national level were scheduled to discuss the need for regulatory changes. The director of the Massachusetts Board of Pharmacy has been fired, while new cases are still occurring, and recurrence in some of the initial cases is being documented.

Sources: DiFerdinando GD. Personal communication; November 2012.
 Perfect JR. Iatrogenic fungal meningitis: tragedy repeated. *Ann Intern Med* 2012;157:825–6. Available at: <https://annals.org/article.aspx?articleid=1384984> [Accessed 10 November 2012].
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 Altman LK. Chasing clues to detect outbreak. *N Y Times* 2012; 5 November. Available at: <http://www.nytimes.com/2012/11/06/health/doctors-chased-clues-to-identify-meningitis-outbreak.html?pagewanted=all> [Accessed 10 November 2012].
 Utterson K. Regulating compounding pharmacies after NECC. *N Engl J Med* 2012;367:1969–72. Available at: http://www.nejm.org/doi/full/10.1056/NEJMp1212667?query=featured_meningitis#t=references [Accessed 11 November 2012].

In keeping with specific health targets formulated by national or international public or professional bodies, local, state, or national health authorities directly provide certain basic public health services, such as those of specialized laboratories. In the USA, public health agencies provide services not otherwise available to high-risk or otherwise underserved population groups. Many of these developed under special funding by higher levels of government to promote specific programs such as immunization, lead abatement, prenatal care, and HIV testing. They

are generally services that are often not adequately covered by health insurance systems or by private practitioners and health care systems.

Immunization may be provided as a governmental service, which is the case in Israel, or by private or managed care providers, but the state retains overall responsibility for policy and implementation of an adequate immunization schedule and level, as in the UK and the USA. Even in countries with well-developed primary care systems, there may be a need for additional special services, such as screening

for cancer of the cervix, hypertension, or congenital disease. Health education, a function of all levels of government and non-government health services, involves those activities centered on raising consciousness and knowledge in the health professions, the public, or vulnerable target groups, cutting across virtually all public health activities.

Collaboration may take place with parallel departments of government including education, social welfare, agriculture, urban planning, and voluntary agency groups. Healthy Cities can be an important vehicle for promoting public health-related interests when civic authorities place health on the agenda for urban development in particular. With regard to departments of education, issues of the school health curriculum for education program content, quality of nutrition, and obesity reduction programs are of vital importance.

Financial incentives in the form of grants or other categorical funding may be directed to programs to promote specific public health services, research, or education. Financial incentives are used widely in seeking solutions to particular problems, such as incentive payments to physicians for achieving performance indicators or national health targets such as full immunization, or Papanicolaou (Pap) smears and mammography for target population groups in the UK. National goals may be set in a consultative process, taking into account their importance to the health of the nation. They must also address economic and human resource capacity to organize and deliver relevant programs to meet goals stated with the potential impact evaluated. Incentive or categorical funding is often a useful method to introduce a new set of activities, to strengthen a weak area of public health, or to promote a shift in emphasis in the health system.

NON-GOVERNMENTAL ROLES IN HEALTH

Both the government and the private sector, including not-for-profit and for-profit service systems, have vital roles to play in public health and health care. The private sector includes service providers; professional organizations; universities; and consumer, volunteer, and advocacy groups. Because of the private sector's contribution to service delivery, professional standards, and education of health personnel, it can make a major contribution to any health system.

NGOs may be able to innovate through voluntary action and programming to meet areas of need with which formal health systems may have difficulty. In the USA, the March of Dimes (Box 10.5) is an outstanding example of a volunteer organization and its contribution in the development of the Salk polio vaccine in the 1940s, subsequently in the care of people affected by poliomyelitis and, currently, in the prevention of birth defects. There are many organizations raising funds for promotion of research and services for specific health concerns, ranging from diabetes to multiple sclerosis.

BOX 10.5 The March of Dimes

Founded in 1938 to address the issue of poliomyelitis by President Franklin Delano Roosevelt, a 1921 victim of polio himself, the March of Dimes (MOD) played a major role in providing care for polio-stricken children and the search for a vaccine to prevent the disease. Thousands of volunteers helped to raise funds and to organize widescale clinical trials of the breakthrough vaccine developed by Jonas Salk in 1955. Following the eradication of polio in the USA, the March of Dimes shifted its focus to major health problems of children: birth defects, low birth weight, infant mortality, and lack of prenatal care.

The MOD's 2005 Global Report on Birth Defects states: "Every year an estimated 8 million children – 6 percent of total births worldwide – are born with a serious birth defect of genetic or partially genetic origin. Additionally, hundreds of thousands more are born with serious birth defects of postconception origin due to maternal exposure to environmental agents. At least 3.3 million children less than 5 years of age die annually because of serious birth defects and the majority of those who survive may be mentally and physically disabled for life".

The organization promotes and funds activities to reduce birth defects and infant mortality by measures to prevent low birth weight (to 5 percent or less), and to increase the number of women receiving prenatal care in the first trimester (to 90 percent). It funds work to promote genetic research including gene therapy, testing, counseling, and gene mapping. MOD promotes work on the Human Genome Project with genes related to immune disorders, mental retardation, leukemia, improved blood tests for newborn screening, and improved perinatal care for cerebral palsy and respiratory distress of the newborn. MOD works actively to promote use of folic acid among women in the age of fertility to reduce risks of neural tube defects, and supports comprehensive newborn screening for all babies, for at least 29 conditions for which there are good screening capacity and management of affected children.

Source: March of Dimes. A history of the March of Dimes. August 2010. Available at: http://www.marchofdimes.com/mission/history_indepth.html [Accessed 26 October 2012].

Voluntary organizations can often initiate services that the public sector cannot. Examples are numerous, but the following may suffice. In Jerusalem, a father and son established a voluntary organization in memory of the wife and mother (Yad Sarah) in 1976 to provide a wide range of free, loaned medical devices and services, from wheelchairs, through home meals, to day care centers and emergency call systems. The mission of Yad Sarah is to help the elderly and handicapped to function in their own homes. Subsequently, branches were established in 70 cities all over Israel. Other organizations established similar projects in over 25 cities of the former Soviet Union, and plans are in progress for a similar organization in New York City.

In international efforts to reduce the burden of diseases in low-income countries, bilateral governmental aid, such as the work of the US Agency for International Development (USAID), is important, but international agency and donor aid is equally or even more important. The idea of public–private partnership has achieved much in the global arena, with agencies such as the World Health Organization (WHO), United Nations Children’s Fund (UNICEF), Joint United Nations Programme on HIV/AIDS (UNAIDS) and many others, along with private foundations such as the Bill and Melinda Gates Foundation. These are discussed in Chapter 16 on global health.

DISASTERS AND PUBLIC HEALTH PREPAREDNESS

After September 11, 2001, preparedness for terrorism became a high priority for federal, state, and local governments (Box 10.6). With federal funding and other support, communities have strengthened their ability to respond to public health emergencies. Collaborative relationships developed for bioterrorism preparedness have proven useful in addressing other threats, such as health impacts of natural disasters and infectious disease outbreaks. The primary role in disaster response is increasingly recognized as a local responsibility. Funding constraints, inadequate surge capacity, public health workforce shortages, competing priorities, and jurisdictional issues all continue to hamper adequate preparation and response, as witnessed by the aftermath of Hurricane Katrina in New Orleans in 2005. The US federal and many state governments have responded with an investment of some US\$5 billion since 2001 to upgrade the public health system’s ability to prevent and respond to large-scale public health emergencies, whether caused by terrorism or by natural agents.

As most natural disasters affect many communities and require major resource support, state and federal agencies are necessarily involved. Non-governmental and bilateral aid support is vitally important but basically subsidiary to the governmental agency responsibility and coordination. There has been some criticism of governmental agencies placing too much responsibility on NGOs, such as the American Red Cross following both Hurricane Katrina in 2005 and Storm Sandy in 2012, in terms of location of support supplies and speed of response, but governmental agencies also came under criticism for their poor preparedness and slow speed of effective response.

In 2012, the WHO and World Meteorological Organization published an *Atlas of Health and Climate*, which provides an excellent review of the effects of climate on infections (malaria, diarrhea, meningitis, and dengue fever), emergencies (floods and cyclones, drought, and airborne dispersion of hazardous materials), and emerging

BOX 10.6 Planning Assumptions for Emergency Mass Critical Care

- Mass casualties from bioterrorist attacks or accidental, chemical, or biological releases may occur without warning and could result in hundreds, thousands, or more critically ill victims.
- National, state, and local health authorities should prepare, direct, and coordinate activities in planning and managing such critical situations as illness due to pandemic, natural disaster, and other human-caused or natural disaster situations, utilizing all public and private resources for such events.
- Prehospital care by first responders trained in first care measures of triage, and in chemical contamination, is a vital part of public health systems. They should include well-trained personnel with standard protocols for bleeding, blast injury, or compromised airway care with oxygen and intubation. Ambulances or other transportation to well-organized emergency departments in hospitals are also crucial to life saving in disaster situations.
- Mass illness (or injury) from a pandemic may produce large numbers of critically ill patients requiring acute respiratory care.
- Mass critical illness will place great stress on local community hospitals, which will have a key role in decreasing morbidity and mortality rates after a bioterrorist attack or pandemic disaster situation.
- Surge capacity pre-event planning is required for mass critical care with new approaches to triage and care, fluid infusion, and rapid transport to the nearest hospital.
- Any hospital will have limited ability to divert or transfer patients to other hospitals in such an event.
- Currently deployable medical and epidemiological teams of the US federal government will have a limited potential for increasing a hospital’s immediate ability to provide critical care to large number of victims of a bioterrorist attack.
- Hospitals will need to depend on non-federal sources or reserves of medications and equipment necessary to provide critical care to the seriously ill for the first 48 hours following discovery of the bioterrorist attack, or during a pandemic.

Sources: Khan AS, Levitt AM, Sage MJ. *Biological and chemical terrorism: strategic plan for preparedness and response. Recommendations of the CDC Strategic Planning Workgroup.* MMWR Morb Mortal Wkly Rep 2000;49(RR-04):1–14.

Rubinson L, Nuzzo JB, Talmor DS, O’Toole T, Kramer BR, Ingelsby TV. *Augmentation of hospital critical care capacity after bioterrorist attacks or epidemics: recommendations of the working group on emergency mass critical care.* Crit Care Med 2005;33:E1–13.

Centers for Disease Control and Prevention. *Emergency preparedness and response. Mass casualty information for emergency medical services (EMS) providers.* Available at: <http://www.bt.cdc.gov/masscasualties/ems.asp> [Accessed 2 November 2012].

National Center for Injury Prevention and Control. *Updated: In a moment’s notice: surge capacity for terrorist bombings.* Atlanta, GA: Centers for Disease Control and Prevention; 2010. Available at: http://www.bt.cdc.gov/masscasualties/pdf/cdc_surge-508.pdf [Accessed 2 November 2012].

environmental challenges (heat stress, ultraviolet radiation, pollen, and air pollution).

The public health system will continue to face demands for emergency preparedness and health protection in the face of natural disasters and terrorism. The challenges are to use focused, risk-based resource allocation, regional planning, technological upgrades, workforce restructuring, and improved monitoring.

Disaster preparedness requires activities and readiness at all levels of government, and by first responders (police, firefighting, and ambulance services) as well as by health care institutions. Activities include preparation of essential supplies, organizational guidelines, staff training and orientation, as well as adequate funding to meet these needs. Since disasters with mass casualties may appear in many forms, the response teams need flexibility and capacity for improvisation. Coordination between different levels of government can be difficult, with lines of command and lateral communication unclear and potentially disastrous. Preparation for treatment of mass casualties of bioterrorism requires similar resources to a situation of pandemic and mass illness due to a new variant of severe acute respiratory syndrome (SARS) or avian influenza (Box 10.7).

The US Federal Emergency Measures Agency (FEMA) was established by President Jimmy Carter in 1978. It acts on the request of a state governor, who declares a state of emergency and requests federal assistance. FEMA provides experts in specialized fields of disaster management, and funds for reconstruction, emergency relief, and support services. FEMA has assisted state and local authorities in many instances of hurricanes, floods and other disasters, including the Love Canal toxic chemical waste site in New York State and the Three Mile Island nuclear near-meltdown threat in the late 1970s.

FEMA was attached to the new US Department of Homeland Security created in 2002, but suffered from reduced budgetary and restricted definition of functions, so that when Hurricane Katrina struck in Louisiana and the Gulf states, with devastating effects on New Orleans, the municipal, state, and federal responses were seriously lacking. Because of the bitter legacy of Hurricane Katrina, FEMA was strengthened in its terms of reference and budgetary support.

In late October 2012, Superstorm Sandy, and its associated snowstorms, reached a wide sector of the US eastern seaboard, with the overwhelming power of a hurricane, high waves from the sea sweeping inland, widespread flooding, and destruction of everything in its path. It led to flooding of major parts of New York City and New Jersey, millions of people being affected by fires and power and transportation outages, and some 100 deaths, mainly from falling trees and drowning. The responses of city, state, and federal authorities were impressive in their initial disaster management and provision of public information. FEMA played a

vital supportive role, and continues to provide support in the reconstruction phase. But the first responders were local city employees of the police, fire, and ambulance services, who helped to coordinate health services, and evacuated patients from facilities threatened with flooding and fires, and the loss of electricity, food supplies, and other essentials. The public health impact is likely to be immense, from floodwaters as well as the potential for carbon monoxide poisoning from misuse of generators. Relief efforts by local, state, and national authorities to alleviate the immediate impact on millions of people will be followed by reconstruction that may take years and cost an estimated US\$50 billion. Agencies involved in relief include the American Red Cross (<http://www.redcross.org>). The federal government has a number of useful websites containing valuable information, including:

- US Government – www.ready.gov
- US DHHS – www.phe.gov/emergency
- CDC – <http://www.cdc.gov/Features/AfterAFlood/index.html>
- EPA – www.epa.gov/hurricanes
- FEMA – www.fema.gov/response-recovery

MEDICAL PRACTICE AND PUBLIC HEALTH

Public health and clinical services are interactive and mutually supportive. Both have important roles to play in individual and population health. Ready access to high-quality health care services is a basic right and a requirement of good public health. This calls for high-quality organization and the availability of professionals to provide both clinical and preventive care. The phenomenon of private payment to physicians working in public sector health systems is widespread, as is that of physicians in public service who practice privately after official working hours. Under-the-table payments are common in many countries and difficult to stop, but regulated private services in public or voluntary hospitals can be regulated allowing onsite private services with a portion of the funds remaining with the hospital.

In Canada, the Supreme Court of Quebec ruled in 2005 that delays in the health system for medically justified procedures were in contravention of the Quebec Charter of Human Rights. This caused national controversy over the integrity of Canadian provincial health plans, supported on one side by the public and all political parties, and on the other side by medical associations and opponents of public medical care systems.

In the UK, private practice by specialists employed by hospitals is permitted and encouraged, allowing faster access to hospital care for private patients. This situation is often seen as a built-in injustice in the NHS. In Israeli teaching hospitals, a private medical service is organized using

BOX 10.7 Lessons from Recent Disasters and Threatened Pandemics

The twenty-first century began with the 9/11 massive terrorist attack on New York City's World Trade Center in Manhattan using hijacked civilian aircraft, causing over 2500 deaths and many injuries. This event stirred worldwide repercussions and was followed by deadly terrorist strikes in Madrid, London, Bali, Mumbai, and many other parts of the world. These attacks caused national and international reactions including calls for disaster preparedness with stress on local capacity for response to human-caused and natural disasters, with emphasis on basic "first responder" service capacity.

During 2003, a threatened pandemic of severe acute respiratory syndrome (SARS) started in China and, in a short time was transmitted via an infected person to Toronto, Canada. The Canadian provincial and municipal authorities were taken by surprise and lacked adequate federal mechanisms for addressing the problem. Provincial and municipal authorities managed the epidemic by hospitalization and isolation of all suspected cases with quarantining of hospitals involved. As a result of review of this experience, Canadian governmental authorities developed new federal institutions, in part modeled on the US Centers for Disease Control and Prevention, establishing a federal Public Health Agency whose director was also a deputy minister in the federal Department of Health, with direct authority to increase the federal presence in epidemic control.

In 2004–2005, three huge natural disasters occurred in different parts of the world, showing the crucial importance of disaster preparedness and response organization, preparation, and inter-governmental coordination. The tsunami in Thailand and surrounding regions, Hurricane Katrina in Louisiana and especially New Orleans, and the earthquake in northern Pakistan showed the crucial need for coordination and speed as well as preparation for natural disasters by all levels of government working with voluntary organizations for rescue and relocation needs.

In 2006, the H5N1 influenza virus, also called "avian flu", threatened to become a new world pandemic of a scope similar to the influenza pandemic of 1917–1918. National and world public health organizations mobilized under the leadership of the WHO, implementing monitoring and control measures. These largely rest on identification of cases among wild and domestic birds, and the rapid identification, isolation, and treatment of human cases. Culling of domestic agricultural birds took place to restrict transmission of the H5N1 virus, which could produce a human pandemic of epic proportions if transmitted from birds to humans and then by human-to-human transmission.

In May 2008, a cyclone disaster in Burma (Myanmar) killed many tens of thousands of people, and left some 1.5 million

homeless, destitute, and vulnerable to secondary disasters from new floods, exposure, famine, and infectious diseases. The response from the military government has been alleged as criminally negligent, preventing foreign aid reaching the people in need. China was struck by a massive earthquake and series of aftershocks which killed an estimated more than 100,000 people and devastated many cities, towns, and villages. The governmental response was immediate and effective, accepting limited foreign assistance, which was unable to cope with the calamity, but limited the secondary effects of famine and infectious diseases.

Hurricane Sandy in 2012 resulted in one of the largest disaster areas affecting the Caribbean and six states in the USA, including New York City. The damage in the USA included over 100 deaths, and an estimated US\$50 billion of damage to property and public facilities. With power outages, the unsafe use of home generators and indoor use of charcoal grills resulted in fatal carbon monoxide poisonings.

In August 2013, in a civil war in Syria with over 100,000 deaths and millions of refugees, a large-scale use of a neurotoxic chemical weapon (probably sarin) caused many hundreds of deaths and casualties. This caused international outrage and possible military response by the USA, the UK, and France. The intervention is legally based on the precedent of NATO's Kosovo intervention in the 1990s to prevent continued genocide and the Hague Convention on the use of chemical weapons in warfare (see Chapter 9).

These experiences and threatened pandemics have brought public health organizations and key public health functions into the spotlight of national thinking in many countries, after many years of financial cutbacks and administrative neglect or outsourcing to private providers. This public awareness may be fleeting, and should be used to help strengthen public health infrastructure capacity and workforce development.

Sources: Centers for Disease Control and Prevention. Public health emergency response guide for state, local, and tribal public health directors. Available at: <http://www.bt.cdc.gov/planning/responseguide.asp> [Accessed 8 November 2012].

World Health Organization. Myanmar disaster. Available at: http://www.searo.who.int/LinkFiles/Myanmar-Cyclone_sitrep_170508.pdf [Accessed 8 November 2012].

US Department of Health and Human Services. Public health emergency preparedness and recovery. Hurricane Sandy and response 2012. Available at: <http://www.phe.gov/emergency/events/Pages/sandy-midatlantic-2012.aspx> [Accessed 8 November 2012].

Centers for Disease Control and Prevention. Emergency preparedness and response. Hurricanes. Hurricane Sandy. Available at: <http://emergency.cdc.gov/disasters/hurricanes/index.asp> [Accessed 8 November 2012].

senior physicians on the hospital premises, with a percentage of the generated funds going to the hospital.

Fee-for-service payment practice of medicine is still common in the USA and Canada, even though each of these countries has different methods of financing services. Canada's national health insurance program is based on private fee-for-service practice of medicine. Fee schedules

are negotiated between each province and their respective medical associations. Federal legislation bans extra billing by physicians, which could threaten equity of access for all population groups, as part of federal criteria for the support of provincial health plans.

The USA has a mixed situation of private health coverage, mainly through employer-subsidized insurance, Medicare

for those over age 65, and Medicaid for the poor and people with disabilities. This combined system has proven inadequate on a societal level; some 48.6 million people (or 15.7 percent of the US population in 2012, increasing to 16.3 percent in July 2013) lack health insurance and another 15 million have poor levels of coverage, with further difficulties for those who change jobs and lose their health insurance coverage. In 2010 nearly 26 percent of people in the USA had at least one month without health insurance coverage. Growth of managed care plans is occurring as private medical practice is declining in the USA. Operated as for-profit or as not-for-profit programs, managed care plans provide lower cost and more comprehensive coverage than traditional insurance plans (US Census Bureau).

Medical care outside hospitals was reviewed in eight countries where health care financing is based predominantly on social health insurance and in others funded through taxation (Ettelt et al., 2006). This and another study pointed out wide variation in patterns of organization, use of computerized medical records, insurance restrictions, quality incentives, and other factors (Schoen et al., 2009). Common issues that are emerging are the increasing burden of chronic conditions, the tendency to move services out of hospitals, the use of information technology, and group practices with ancillary health workers. Reforms in various countries encouraging multispecialist and general practitioner networks with integration into single centers providing medical service are becoming an increasing trend. In the USA, accountable care organizations (ACOs) are linking primary care with hospitals for comprehensive care and this will be fostered by elements of the Patient Protection and Affordable Care Act (PPACA, “Obamacare”) being introduced in 2014.

Health care is being reformed in many countries. Such reform requires incentives to promote ambulatory and community outreach services, through incentives and integration of hospital and long-term care. Managed care is important in the USA, and the model is relevant in other countries because of the link with reducing unnecessary use of hospital and unreferred specialist services, placing emphasis on primary care and preventive care (see Chapters 11–13).

INCENTIVES AND REGULATION

Incentives and disincentives are important tools in health policy and management. Governments are responsible for assuring adequate supplies and quality of health facilities and personnel to meet the needs of the population. They also are responsible for assuring that financing of the system is adequate and efficient. These responsibilities include the use of public authority to ensure a balanced and high-quality system of care equitably available to people of all regions and social classes. Whether services are owned and administered by government, non-profit agencies, or private

auspices, the public authority is responsible and accountable for ensuring that the health needs of the population are met.

The appropriate balance among different elements of health systems serving the same regional or district population is an important public health planning issue. Health facilities such as hospitals and long-term and community care facilities are licensed and regulated by the appropriate public health authority. This regulatory power is necessary, but not sufficient without financing arrangements to combine incentives and disincentives (Box 10.8).

The ratios of hospital beds and medical personnel per thousand population are crucial determinants of health economics, so that national and state health authorities must use their regulatory powers to contain supply and distribution. Excess labor supply of medical specialists is a problem in many mid-level developing countries, such as in Latin America. Regulatory or financial powers, as well as financial controls, can be used to reduce the oversupply of specialists and to redirect doctors to underserved areas of a country and primary care.

A federal government authority can act to promote health programs by setting financial incentives and disincentives. The categorical grant approach provides funds for a specific purpose or cost sharing for a program that meets defined guidelines. Canadian health insurance is based on provincial plans meeting federal guidelines to qualify for a share of the costs. The Canadian national health insurance system is based on provincial plans with federal cost

BOX 10.8 Regulation and Incentives: Carrots and Sticks

“Carrot and stick” is a phrase used to refer to the act of simultaneously rewarding “good” behavior while punishing “bad” behavior. An older interpretation is the use of a carrot dangling on a stick in front of an uncooperative mule, so that the encouragement is constant, but the satisfaction is permanently elusive.

The combination provides financial mechanisms, and limiting the supply of, for example, hospital beds by regulation or financial incentives is meant to encourage health facilities to develop, in keeping with national, state, or local needs. In developed countries, this may mean closure of excess hospital beds and reallocation of resources to community-based health services, as in the UK, many European countries, Canada, the USA, and others. In Russia and many former Soviet countries, the incentives and requirements produced a heavily hospital-oriented health system with lower priorities to community-based services.

Pay for performance (P4P) is being adopted in other countries. The US Patient Protection and Affordable Care Act of 2010 (Obamacare) includes incentives to institutions to improve quality of care and rural care, and incentives to provide free preventive care for breast and cervical cancer screening and other preventive care services.

sharing and conditions. The first public health insurance plan was enacted in 1947 by the province of Saskatchewan, and led to passage in 1957 of the federal Hospital Insurance and Diagnostics Services Act, which ensured universal coverage for in-hospital services in provinces that met federal criteria. By 1961, all of Canada's 10 provinces had signed on. In 1962, the government of Saskatchewan passed an act requiring doctors to collect fees solely through the government-run plan. Thus, the Canadian system is based on provincial responsibility and administration, but with federal cost-sharing incentives that helped to induce the provinces to participate. Federal conditions for funding in health include universal coverage, comprehensiveness, portability, and public administration as criteria for the provincial plans. When the federal government moved from a fixed percentage of expenditures to block grants, it lost some control over detailed management of provincial plans, but it retains a strong voice in requirements for equity, portability (i.e., transferability of insured benefits from one province to another), public administration, and prohibiting extra billing by providers for insured services. As federal shared cost program funding declined as a share of total provincial health costs, the provinces were under pressure to reform, mainly by reducing the hospital bed supply and promoting community-wide health service organization. The federal parliament unanimously passed the Canadian Medical Care Act of 1966, giving the national framework a stronger legislative base, setting standards for provincial plans, disallowing extra payment for medical services, and ensuring a standard across the country of which Canadians are very proud.

In the USA, national health insurance was included in the proposed social security legislation during the Roosevelt administration but excluded from the Social Security Act of 1935 because of severe opposition to the major elements of the act by the medical association and the insurance industry. During World War II, the Emergency Maternity and Infant Care Program (EMIC) was established by the federal government to help state governments to provide wives and infants of lower grades of servicemen with generous obstetric and pediatric care. Thus, to meet the needs of military families, the government became involved in health care. This was the first national health services program for a significant sector of the US population.

Following the end of World War II, in 1946, the proposed Wagner–Murray–Dingell Bill for national health insurance failed to reach the floor of Congress, dying in committee, under severe pressure from the American Medical Association and the health insurance industry. A portion of that proposal emerged, however, as the Hill–Burton Act (HBA) to provide federal assistance to local agencies to build or upgrade hospitals. The Hill–Burton model is a relevant approach to problem solving in a federal state using a categorical grant mechanism to promote what is

seen as a health priority. Such an approach may be useful to strengthen a weak health program such as immunization and maternity care in a developing country. It may be used to change the balance in supply of services and resources. A system of incentives or cost-sharing arrangements can provide capital funding; for example, to reduce total bed capacity and to promote integration of maternity, mental health, geriatric, and TB facilities into general hospitals. A “downsize and upgrade” conditional grant would provide for renovation and transition to an approved program of facilities to modernize hospital services. The federal grant system, pioneered by the HBA (Box 10.9), would encourage the local authority to apply for and match part of the funding, and meet federal criteria and guidelines for this process.

The HBA is relevant today as a model for top-down health services development based on transfer of federal funds to promote state and local health services development, and may be applied to many targeted needs such as in financing community-based networks of primary and secondary care services. In some ways it is a component of the 2010 Obamacare plan now being introduced in the USA to extend insurance coverage and to control the costs of public and private insurance by ACOs. These are basically networks of service systems with financial as well as administrative linkages (see Chapters 11 and 13).

The 1965 Medicare and Medicaid titles under the Social Security Act enacted Medicare, which provides health insurance for people over 65 years and those with major disabilities. Medicaid, also established under the Social Security Act, provides a system of federal assistance to state health insurance for the poor (see Chapter 13). Subsequent attempts to introduce various forms of national health insurance failed in Congress, with some exceptions, until the Obama administration passed the PPACA in 2010, extending health insurance coverage to millions of Americans, with many cost savings and incentives to improved preventive care coverage in the US population.

In countries where health systems were highly centralized, such as the UK NHS and in former Soviet health systems, decentralization and diffusion of power were promoted by financing mechanisms. These are discussed in Chapters 13 and 15.

Unregulated chronic care facilities operated by private interests resulted in proliferation of poor-quality facilities and sometimes extremely low levels of care in many communities in the USA. Public health authorities were powerless to interfere except in cases of gross neglect or poor sanitary facilities. The introduction of Medicare for the elderly and Medicaid for the poor provided federal and state agencies with the power to set minimum standards for care facilities, by requiring all facilities serving Medicare patients to be accredited by a non-governmental agency accepted by the federal health authorities. This

BOX 10.9 The Hill–Burton Act

The Hill–Burton Act (HBA), adopted by the US Congress in 1946 as the Hospital Survey and Construction Act, provided a federal–state–local partnership that channeled large federal grants to assist the development of hospitals and standards for construction (Hospital Survey and Construction Act, 1946, Title VI of the Public Health Service Act). This affected 4000 communities in 6800 projects to modernize hospitals suffering from a lack of investment from the depression and World War II period. Initially it covered hospitals, but later was expanded to extended care, rehabilitation facilities, and public health centers. In 1975, this was further expanded to grants, loan guarantees, and interest subsidies for health facilities. Facilities assisted under Title XVI were required to provide uncompensated services in perpetuity. The HBA gave hospitals, nursing homes, and other health facilities grants and loans for construction and modernization. The HBA required facilities which benefited with federal grants to provide a “reasonable volume of services to persons unable to pay and to make their services available to all persons residing in the facility’s area”. Although the program stopped providing funds in 1997, approximately 170 US health care facilities still have to provide free or reduced-cost care.

This Act of Congress brought national standards and financing to local hospitals. The program helped to raise standards of medical care throughout the USA in the 1950s and 1960s. It led to an increase in numbers of hospitals in underserved areas and the renovation of obsolete facilities. It promoted

desegregation in the southern USA and provided a mechanism for treatment of the uninsured in the nation’s hospitals.

The program also succeeded in limiting the buildup of an excess of hospital beds, setting standards at 4–4.5 acute care hospital beds per 1000 population (more for rural areas), without an increase in the total supply of beds. While it favored middle-class communities because it required local financial contributions, it also channeled federal monies to poor communities, thus raising standards of hospitals and equity in access to quality care. In setting upper limits on hospital beds, it limited hospital expansion and contributed to a continuing process of improvement of diagnostic and patient care shortening hospital stays. Limiting hospital bed supply over time influenced medical ideology and helped to promote community-based health services.

The program had a number of basic failings, including the promotion of the hospital as the main center of health care, leaving community care out of the main flow of added funds. It led to an increase in the proportion of health expenditures going to hospital care. Expenditures for hospital care in the USA as a percentage of total health expenses increased from 34.5 percent in 1960 to a high of 41.5 percent in 1980, but declined to 35.4 percent in 1995. In the 1980s, the HBA was expanded to promote clinic and primary care facilities.

Source: Department of Health and Human Services. Human Services and Resources Administration (HSRA). Hill–Burton free and reduced-cost health care. Available at: <http://www.hrsa.gov/gethealthcare/affordable/hillburton/> [Accessed 1 November 2012].

has become a standard requirement throughout the USA. The Canadian provincial health insurance plans also apply economic sanctions on unaccredited hospitals or other inpatient facilities.

Another measure to increase regulation of health care facilities was the requirement for any hospital proposing expansion or renovation to seek state approval through a Certificate of Need (CON). The CON, as used in the USA under state health legislation, makes approval by the state contingent on demonstrating need and sources of funding which comply with state regulations. This measure can be linked with incentive grants but can also be used as a simple regulatory mechanism. The CON approach by state departments of health was only partially successful in limiting unbridled ambitious expansion of hospital facilities. In the 1980s and especially the 1990s, competition and changes in payment systems have resulted in hospital closures and downsizing in the USA.

Promotion of Research and Teaching

Research and education are the basis for future developments in health care. They foster new health scientific developments in health, such as diagnostic devices, vaccines, and medications. The Human Genome Project has already generated

new diagnostic and treatment for genetic and chronic diseases. Research contributes to the development of medical schools, but also safeguards, guarantees, and increases their quality, raising standards of care. Research in public health depends on the basic and clinical sciences, but equally on epidemiology and documented experience of field programs.

In the USA, the National Institutes of Health (NIH), starting with the National Cancer Institute in the 1930s, have done much to encourage high-quality medical education and research. The NIH granting system has been a major factor in promoting standards of medical education by financing research and teaching faculties in medical schools throughout the USA. NIH funding has played a major role in moving the USA to the forefront of the biomedical sciences since World War II. There are currently 27 separate National Institutes of Health including centers and divisions (Box 10.10).

A combination of professional competition, the free publication and exchange of research studies, views in peer-reviewed journals, and professional meetings in government agencies promotes scientific and applied progress in the medical sciences. Clinical guidelines and recommended practices contribute to quality of care. The private sector manufacture of drugs and medical devices contributes to

BOX 10.10 US National Institutes of Health, Centers and Divisions, and Internet Addresses, 2012

- Institutes home page – <http://www.nih.gov/>
- National Cancer Institute (NCI) – <http://www.cancer.gov/>
- National Eye Institute (NEI) – <http://www.nei.nih.gov/>
- National Heart, Lung, and Blood Institute (NHLBI) – <http://www.nhlbi.nih.gov/>
- National Human Genome Research Institute (NHGRI) – <http://www.genome.gov/A/>
- National Institute on Ageing (NIA) – <http://www.nia.nih.gov/>
- National Institute of Alcohol Abuse and Alcoholism (NIAA) – <http://www.niaaa.nih.gov/>
- National Institute of Allergy and Infectious Diseases (NIAID) – <http://www.niaid.nih.gov/Pages/default.aspx>
- National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS) – <http://www.niams.nih.gov/>
- National Institute of Biomedical Imaging and Bioengineering – <http://www.nibib.nih.gov/>
- National Institute of Child and Human Development (NICHD) – <http://www.nichd.nih.gov/>
- National Institute of Deafness and Other Communication Disorders (NIDCD) – <http://www.nidcd.nih.gov/Pages/default.aspx>
- National Institute of Dental and Craniofacial Research (NIDCR) – <http://www.nidcr.nih.gov/>
- National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) – <http://www2.niddk.nih.gov/>
- National Institute of Drug Abuse (NIDA) – <http://www.drugabuse.gov/>
- National Institute of Environmental Health Sciences (NIEHS) – <http://www.niehs.nih.gov/>
- National Institute of General Medical Sciences (NIGMS) – <http://www.nigms.nih.gov/>
- National Institute of Mental Health (NIMH) – <http://www.nimh.nih.gov/index.shtml>
- National Institute of Neurological Disorders and Stroke (NINDS) – <http://www.ninds.nih.gov/>
- National Institute of Nursing Research (NINR) – <http://www.ninr.nih.gov/>
- National Institutes of Health Clinical Center (NIHCC) – <http://clinicalcenter.nih.gov/>
- Center for Information Technology (CIT) – <http://www.cit.nih.gov/>
- National Library of Medicine (NLM) and MEDLARS – <http://www.nlm.nih.gov/>
- National Institute on Minority Health and Health Disparities (NIHHD) – <http://www.nimhd.nih.gov/>
- National Center for Research Resources (NCRR) – <http://www.nih.gov/about/almanac/organization/NCRR.htm>
- National Center for Complementary and Alternative Medicine (NCCAM) – <http://nccam.nih.gov/>
- John Fogarty International Center (FIC) – <http://www.fic.nih.gov/Pages/Default.aspx>
- Center for Scientific Review (CSR) – <http://public.csr.nih.gov/Pages/default.aspx>

MEDLARS=Medical Literature Analysis and Retrieval System.

Source: National Institutes of Health, Bethesda, MD. Sites confirmed: 8 November 2012.

the continued development of medical and public health sciences. National centers of excellence in public health in other countries include the Pasteur Institute in France and Cambridge Laboratories in the UK. They receive national funding and have a critical mass of high-quality researchers. Federal funding of medical teaching centers supports development and maintenance of academic standards for undergraduate medical education.

Federal or external granting mechanisms can be used to promote schools of public health and health administration that are needed to prepare the next generation of health leaders, academics, and researchers. Research may be initiated in response to requests for proposals by scientists in university or research institutes, or in the governmental or private sector. A competitive peer-reviewed grant system can be useful to upgrade medical education and university academic standards by promoting research and graduate education, as developed by the US NIH since 1946.

Accreditation and Quality Regulation

Public health authorities have sufficient powers to regulate health facilities. However, in practice, accreditation based on

professional guidelines and systems outside the governmental structure (see Chapter 15) plays an important role in quality of health care provider organizations, as an important adjunct to the official regulatory approach of health departments.

The Joint Commission on Hospital Accreditation (JCHA) started in the USA in 1913, and included Canada from 1951 until 1959, when the latter established its own accreditation system. The JCHA was established by a consortium of the American College of Surgeons, the American Hospital Association, and other voluntary professional bodies. It carries out voluntary peer review of hospitals throughout the USA. The commission established minimum standards in 1918, and has gone on to develop extensive guidelines based on physical, organizational, and professional criteria, to protect the safety and rights of the patient, standards of care, and efficient organization of services. Accreditation involves a process of external review of the facilities, organization, staffing, and related functions including staff qualifications, continuing education, medical records, and quality assurance (see Chapter 15).

The JCHA review was initially conducted on the basis of a voluntary request by the institution, but accreditation has become virtually mandatory for the economic survival

of a hospital in the USA and Canada. Since 1965, Medicare and Medicaid accept accreditation as compliance with federal standards for the purpose of payment, and refuse to pay for services in an unaccredited hospital. The renamed Joint Commission for Accreditation of Healthcare Organizations (JCAHO) has gone on to develop standards for accreditation of facilities for the mentally retarded (1969), psychiatric facilities (1970), long-term care facilities (1971), ambulatory facilities (1975), hospices (1983), managed care programs (1989), and home care and ambulatory care (1990). There is a growing emphasis on action plans for quality improvement for rural hospitals, health care networks, laboratories, and public health programs. The JCAHO has become active in promoting accreditation organizations in other countries such as the UK and Australia.

The New York State Department of Health has its own mandatory regulatory system for hospitals and long-term care facilities. Regulation of hospitals and other health care institutions or programs including public health organizations is essential to the maintenance of quality standards and prevention of professional and human rights abuses. Accreditation by non-governmental agencies such as the Joint Commission may be accepted in lieu of state inspection. The New York State Department of Health has a collaborative agreement with the Joint Commission. In that agreement, the Department will waive a routine onsite survey of a facility if that facility requests accreditation by the Joint Commission. Israel, during the 1990s, established a national system of inspection of private long-term care facilities, which has improved standards of facilities and care. While opponents may see this as excessive state interference, in principle accreditation is for the protection of patients' rights in public service facilities, even under private auspices. Resultant improvements in quality of care measures have justified prudent regulation and oversight of health care facilities. These models could be useful for raising standards in other health care systems.

NATIONAL GOVERNMENT PUBLIC HEALTH SERVICES

National governments can use their financial power to promote programs directly to the state, provincial, or local governmental level or indirectly through non-governmental agencies. The latter include universities, voluntary teaching hospitals, and private NGOs. Direct or indirect funding may be used to diffuse and promote national standards, such as in medical education and research. Both federal and unitary governments often try to ensure regional equity of services by the use of cost sharing or grants that favor poorer regions of the country. National governmental health agencies are responsible for external relations, including those with international bodies such as the United Nations, the WHO, the Food and Agriculture Organization, and the International Labour Organization (see Chapter 16), as well

BOX 10.11 Key Functions of a Federal or National Ministry or Department of Health

- National health planning
- National health financing
- National health insurance
- Assurance of regional equity
- Defining goals, objectives, and targets
- Setting standards and quality of care
- Promotion of research in quantity and quality
- Operating or delegating professional standards/licensing
- Environmental protection
- Food and drug standards, licensing
- Epidemiology of acute and chronic disease
- Health status monitoring
- Medical/pharmaceutical industrial development
- Health promotion
- Nutrition and food policy
- National reference laboratories
- Social assistance
- Social security
- Identification of reportable diseases
- Immigration health requirements

as with parallel ministries of health in other countries, and other national agencies in the same country.

Before and after World War II, most western industrialized countries developed some form of national health program. In North America, health care was provided through private insurance, largely union-negotiated, employment-based health plans. Attempts by US President Harry Truman to bring in a national health insurance plan in 1946 were unsuccessful. As a result, federal support for health was channeled into many categorical programs by funding state and county public health services and research and teaching facilities, and the CDC and the NIH were established. This promoted high levels of competitive, peer-reviewed programs throughout the country, but failed to ensure universal access to health care (see Chapter 13).

In all forms of government, the national responsibility for health has led to specialized public health services as well as supervisory and regulatory functions (Box 10.11). These include provision of vital support services, such as public health reference laboratories, epidemiology and communicable disease control activities (e.g., national epidemiological publications, airport, and port surveillance), national health statistics, approval and supervision of drugs and biologicals, research and teaching facilities, and cooperation among federal, state, and local authorities. Standards bureaux and agencies, such as the Food and Drug Administration (FDA) and Environmental Protection Agency (EPA) in the USA and the National Institute for Health and Care Excellence (NICE) in the UK (see Chapter 13), while created by governments, need to have a high degree of semi-autonomy to provide regulations, enforcement, guidelines,

monitoring, and/or supervision of health care at the lower levels of government and in the non-governmental and private sectors.

The federal government entered the public health arena in areas where only a national jurisdiction could function. The Marine Hospital Service was established in 1798 to provide care for US and foreign seamen, becoming the United States Public Health Service (USPHS) in 1889. Under the organizational structure of the US Department of Health and Human Services (DHHS), the USPHS provides direct care in many areas of US society, including Native American reservations, areas of physician shortage, the US Coast Guard, and penal institutions. The federal Food and Drug Act of 1906, which has been updated frequently, protects the consumer from adulterated foods and ineffective or dangerous medicines. The Social Security Act has provided pensions for elderly and disabled people since 1935. In 1965, the Social Security Act was extended to include Medicare as a federal program providing health insurance for the elderly. In the same year, Medicaid was also established, providing health care for the poor, set up as a cost-sharing program with state and local authorities. The history of development of public health in the USA reflects advancing scientific knowledge, societal demands for better health, and the evolution of interactive organization at federal, state, and local levels. In some respects, public health in the USA has provided professional leadership in the field internationally; in other respects, the USA has lagged behind other industrialized countries.

The Department of Health, Education, and Welfare was established in 1953 under a cabinet-level officer of the executive branch of the Eisenhower administration. This brought together a variety of federal agencies and programs, and subsequent reorganization led to the emergence of the DHHS. The present organizational structure of the DHHS is presented in [Figure 10.2](#). The federal role in direct regulation and funding of projects deemed to be in the national interest helps to promote state and local health authority response to public health problems. The categorical grant system has been instrumental in advancing specific areas of activity, such as maternal and child health, which remain a major activity of both state and local public health departments. The initiatives of the Health Care Financing Administration (HCFA) in promoting changes in methods of paying for hospital care through diagnosis-related groups (DRGs; discussed in Chapters 12 and 13) helped to reduce hospital lengths of stay, days of care, and the hospital bed to population ratio.

The Surgeon General of the Public Health Service is also the Assistant Secretary for Health and provides important professional leadership to the public health movement in the USA. Dr C. Everett Koop, an outstanding surgeon general, who served from 1982 to 1989 during the Reagan administration, exemplified this kind of leadership role. As

a pediatric cardiac surgeon, he was initially poorly accepted by the public health community as an “outsider”, but came to be a highly respected leader and advocate for public health, responsible for many accomplishments, most notably increased awareness of the deadly effects of tobacco use and for HIV/AIDS research and treatment funding.

The CDC plays a continuous role in dispersing epidemiological data and evaluation throughout the country and the world (see Chapter 4). The training program of Epidemic Intelligence Service (EIS) officers for federal, state, and local health departments continues to provide high-quality medical epidemiologists capable of developing leadership in this field.

Other agencies of the federal government control health-related programs, including the Departments of Agriculture, Defense, the Environment, the Interior, Labor, and Transportation. The Department of Agriculture operates a National School Lunch program and a food stamp program to supplement food purchasing power for the working poor. The Department of Labor operates the Occupational Safety and Health Administration. The EPA is an independent federal agency responsible for air and water quality, pollution control, pesticide regulation, solid waste control, radiation and toxic substance hazard control, and noise abatement.

STATE GOVERNMENT PUBLIC HEALTH SERVICES

State or provincial governments have leading roles in health in most federal countries, as constitutions written in the eighteenth or nineteenth century. These left health to state or provincial responsibility for ensuring adequacy in organization, setting standards and targets, assisting financially, and providing professional and technical support services to local health departments. State functions, such as financing and in some cases direct services and monitoring health status, are listed in [Box 10.12](#). In Canada, the provinces are responsible for universal health insurance programs within federal standards and financial support. In the USA, states are responsible together with local welfare authorities for operating Medicaid programs within the federal funding and guidelines, but the access and support levels vary widely by state.

State or provincial departments of health are complex organizations with many responsibilities for financing, regulating, inspecting, and assuring health-related issues. In the USA, responsibilities include administration of health insurance for the poor under Medicaid; in Canada, the provinces administer universal health insurance plans. States may initiate programs that are shared with local health authorities and with federal cost-sharing, or respond to federal initiatives and seek funding for a wide variety of programs through federal requests-for-proposals for maternal and child health or other categorical grants.

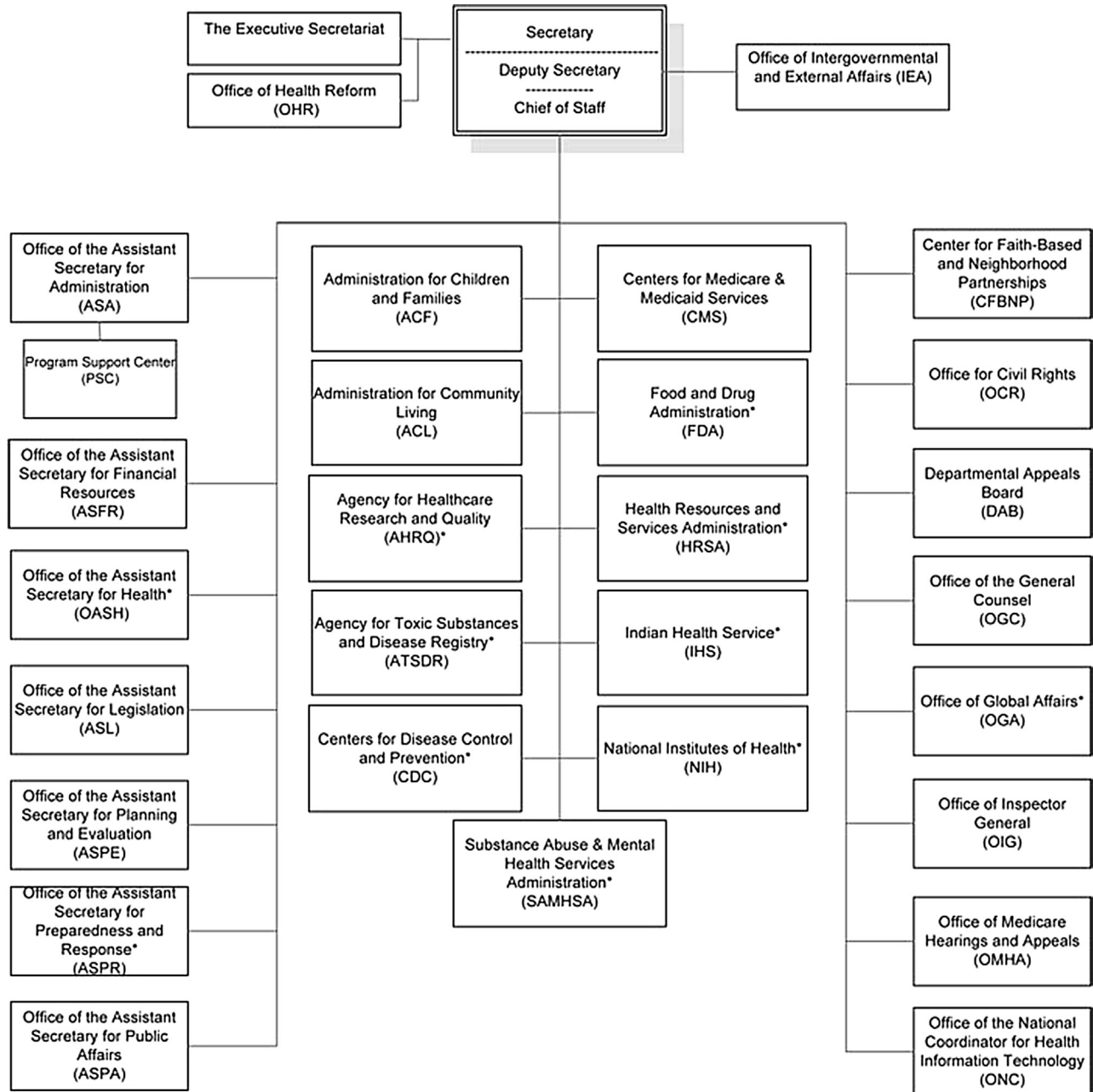


FIGURE 10.2 US Department of Health and Human Services. Note: The Assistant Secretary for Health is also the Surgeon General of the United States. *Designates a component of the US Public Health Service. Source: US Department of Health and Human Services. Available at: <http://www.hhs.gov/about/orgchart.html> [Accessed 8 November 2012].

The New York State Department of Health (DOH) has a strong tradition of regulation in chronic care facilities, laboratories, and hospitals, and in environmental health, including arrangements with the JCAHO. The various regulatory functions of the department make it a powerful determinant of the operation of health care in the state. Among its functions are granting certificates of need, regulation of reimbursement methods for hospital care (see Chapter 13), establishing health standards and surveillance systems, rural health systems, and many other activities. This state DOH is

active in screening programs for congenital and infectious diseases of the newborn, laboratory certification, and quality assurance. An AIDS Institute is responsible for prevention, screening, and AIDS care programs. The Center for Community Health operates a wide range of public health programs, from epidemiological surveillance of infectious diseases, to prenatal and newborn care among the underserved, to community health worker programs, to nutrition monitoring and many other intervention programs focused on high-risk groups or topics. Environmental epidemiology

BOX 10.12 Functions of a State/Provincial Ministry or Health Department

- Coordinate with other government departments: governmental planning and priorities; education, social welfare, labor, agriculture, mental health, and financing of universities.
- Establish standards; finance, develop, advise, and supervise local health departments.
- Legislate and regulate health-related matters: preparation, assistance, and enforcement.
- Plan and set health priorities and targets.
- Provide epidemiological and laboratory services to local health departments and conduct biological surveys.
- Maintain and publish vital statistics, epidemiology, and health information systems.
- Develop standards and monitor quantity, quality, and distribution of diagnostic and treatment services.
- Ensure occupational health supervision.
- Ensure environmental health monitoring and supervision.
- License and discipline health professionals and health care institutions.
- May provide occupational and personal health services to state employees.
- Coordinate with related state services: social services, mental retardation, drug and rehabilitation, and prison services.
- Ensure mental health services are part of mainstream health.
- Coordinate with national and other state/provincial health authorities.
- Monitor health status indicators of state/province and local authorities.
- Provide health education.
- Promote quality of care in long-term care and hospitals, and in primary care.
- Ensure communicable and infectious disease control.
- Prepare and train for natural and human-made disasters as well as health emergencies, including potential mass epidemics and bioterrorism.
- Legislate for and promote positive health behaviors, such as smoking restriction and environments in schools, workplaces, and public spaces.

Source: Turnock BJ, Atchison C. *Governmental public health in the United States: the implications of federalism*. *Health Aff* 2002;21(6):68–78.

and monitoring are also strong in the state, which experienced the Love Canal incident (see Chapter 9). [Figure 10.3](#) shows the 1996 configuration of the New York State DOH. This arrangement is not necessarily typical but does show the wide range of activities, including state, federal, and local initiatives.

In New York State, selected public health functions are the responsibility of other government departments or agencies. [Table 10.1](#) displays the range of public health responsibilities in other agencies. The New York State

“prevention agenda” is an important and valuable initiative, similar to Healthy People objectives for the nation. As part of this agenda in New York State, local health departments work with community partners, hospitals in particular, in a collaborative effort to promote community health.

The New York State Department of Health is unique in that it is a cosponsor with the State University of New York (SUNY) of a School of Public Health at Albany, which involves departmental personnel as faculty and students in internships in branches of the DOH. While not necessarily representative of other states, this health department represents the broad scope of public health at the state level of government ([Table 10.1](#)).

LOCAL HEALTH AUTHORITIES

Historically, the local health authority (LHA) was responsible for sanitation and the provision of direct care to the poor and high-risk population groups. Boards of Health were established in Philadelphia in 1794 and in New York City in 1796 for these purposes.

The city or county local public health department is the official public health agency closest to the population served. The LHA provides a range of direct supervisory sanitation functions to ensure compliance with local, state, and federal sanitary codes. The local public health department may also provide direct services, usually personal preventive services, such as those for uninsured pregnant women, funded by the local government authority or by higher levels of government. In the USA, the local public health department is the agency attempting to ensure services to people inadequately served by voluntary or federal and state insurance plans. Programs may be funded by cost sharing or may be based on categorical or block grants from state or federal governments.

Even though there has been massive growth in the involvement of higher levels of government in public health, the LHA remains the major force for public health at the community level ([Box 10.13](#)). In the USA and Canada, the LHA is organized in the form of city or county/municipal health departments. In Quebec, the community level of government operates Local Community Service Centers (CLSCs). In Scandinavian countries, the county is the key operating level for public health as well as hospital and medical services. Current reforms in the UK are moving in this direction as well (see Chapter 13).

In new health initiatives, such as Health for All, district health systems, and Healthy Cities, the LHA is involved in a wider set of programs for the health of its population. In recognition of the objectives of these programs, formerly highly centralized systems, such as those of the UK, the Scandinavian countries, developing nations, and republics of the former Soviet Union, are being decentralized to

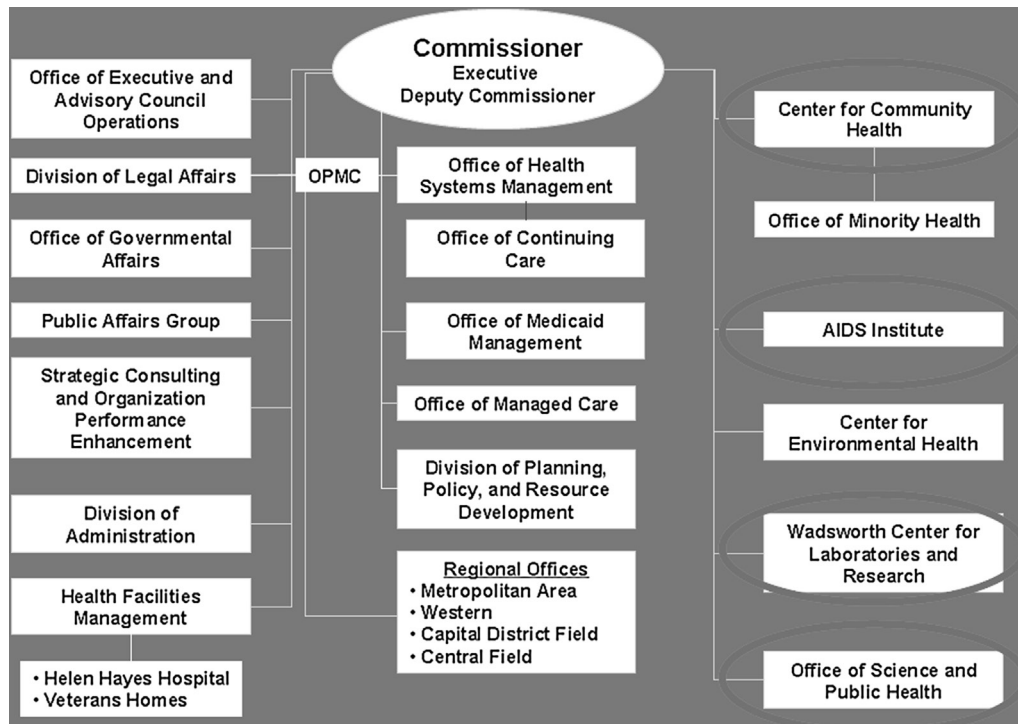


FIGURE 10.3 New York State Department of Health: Organization Chart. Source: New York State Department of Health. Available at: http://www.cdc.gov/nchstp/programintegration/attachments/G-PCSItheNewYorkExperience/G-PCSItheNewYorkExperience_03.pdf [Accessed 2 November 2012].

TABLE 10.1 Agencies with Public Health Responsibilities (New York State)

Agency	Responsibilities
Department of Education	School sanitation, health education, licensure of physicians and other health professionals
Department of Labor	Health and safety of workers, in-plant pollution and radiation control
Department of Environmental Conservation	Control of pesticides, rabies control, air pollution, sewage and solid waste control
Department of Social Services	Medicaid (program for the poor)
State University of New York	School of Public Health, student health services
Department of Mental Hygiene	Mental institutions and community services
Narcotics Addiction Control Commission	Treatment facilities, research, education
Department of Agriculture	Licensure of meat dealers and slaughterhouses, inspection of restaurants, school-meal regulation of food additives
Department of Corrections	Operation of prison hospitals and clinics, tuberculosis case finding
Department of Motor Vehicles	Highway safety promotion

Source: New York State. Prevention agenda toward the healthiest state. Available at: http://www.health.ny.gov/prevention/prevention_agenda/ [Accessed 15 November 2012].

BOX 10.13 Health Responsibilities of a Local (Health) Authority (LHA)

- Registration and vital statistics
- Epidemiology of infectious diseases
- Maintaining documentation and reports as required by the government, e.g., fiscal records, reportable diseases, inspection and laboratory reports
- Health education and health promotion
- Environmental protection and sanitation
- Control of communicable diseases, sexually transmitted infections, human immunodeficiency virus, tuberculosis
- Preventive prenatal, infant, and toddler care
- Coordination and cooperation with Departments of Education, Social Welfare, Agriculture, Environmental Protection, Urban Planning, and others
- Allocation of resources
- Planning and management of services
- Licensing and supervision of health facilities
- Hospitals and home care
- Care of disabled
- Rehabilitation and long-term care
- Coordination of health services
- Intersectoral cooperation
- Mental health
- Emergency and disaster preparedness
- Social assistance
- Nutrition, including licensing of food establishments
- Community participation advocacy

LHAs, with varying degrees of central funding, planning, and direction.

In 1940, the APHA adopted a recommended standard of six basic responsibilities of the LHA, known in the public health community as the Haven Emerson Six:

- vital statistics
- communicable disease control: childhood diseases, TB, STIs, and tropical diseases
- environmental sanitation: water, food processing and marketing, sewage, garbage, sanitary condition of places of business, public eating places, and workplaces
- laboratory services
- maternal, child, and school health
- health education.

In 1950, the APHA adopted an expanded list of program of responsibilities for the LHA, which included the above plus the following:

- non-communicable and chronic disease control
- housing and urban planning
- accident prevention
- coordination with other agencies
- surveillance of total health status; births, deaths, chronic disease, morbidity data, surveys, reporting of morbidity, and evaluation of community needs
- education of the public and professional community regarding health status and needs
- supervisory and regulatory activities including health services providers
- personal health services: direct provision and supportive services, varying from comprehensive service programs to services for those in need
- planning of health facilities, urban planning and renewal
- special diagnostic services, including STIs, TB, cancer, child development, and dental care.

Cooperation between the different levels of government is vital to define and achieve national health objectives. Each level of government has a unique role to play. There is growing emphasis on responsibilities for emergency and disaster preparedness. Decentralized administration of public health without national financing and policies will not achieve the full potential of public health and will produce inequities between different regions of a country. National governments are responsible for setting policies, priorities, and goals with definable health targets. State and provincial governments are direct providers and supervisors of public health standards, while local authorities are those directly responsible for sanitation, local planning, and direct services to reduce public health risks. As an example, the programs of the Albany, New York Department of Health are summarized in [Box 10.14](#), and an organizational chart of departmental activities in 2009 and 2010 is provided in [Figure 10.4](#).

ACCREDITATION OF PUBLIC HEALTH DEPARTMENTS

Accreditation of public health departments has been promoted on a national level in the USA in recent years by the American Public Health (APHA) and other national associations of public health professionals. A Public Health Accreditation Board was established and has published guidelines and standards for conducting accreditation. The objective is to raise standards and assist health departments to achieve excellence in performance.

Standards and measures were developed based on many years of state-based public health accreditation programs, a National Public Health Performance Standards Program, and operational definition of a local health department. The standards and measures, developed by a working group comprising public health professionals, experts, and researchers, can be used to advance public health practice, strengthen the role of public health, and demonstrate accountability, and apply to all health departments and all forms of governance. As of 27 August 2013, 126 local health departments, 18 state health departments, and one tribal health department have successfully undergone accreditation. They include the award of accreditation to five departments in August 2013 (Central Michigan, Chicago, El Paso County, Kansas City, and Tulsa Oklahoma) serving communities ranging from 45,000 to millions in Chicago city (Public Health Accreditation Board, 2013).

This is seen as a method of improving quality and performance standards in local, state, and other departments of public health. It is a trend which has gained momentum in the USA and will become a standard in other countries as well. Standards for public health services are a component of Accreditation Canada developed in response to the need for public accountability and the organizational changes in health care delivery. The comprehensive program addresses the five core functions of public health service systems: health surveillance, health assessment, health promotion, health protection, and disease and injury prevention (Accreditation Canada, Public Health Services, 2013).

MONITORING HEALTH STATUS

As discussed in Chapter 3, public health depends on information and evidence, just as an army depends on intelligence in order to modify approaches in accordance with changing circumstances and need. Collection, collation, and analysis of this information are vital for informed health policy, and the information must be available to all concerned with health for analysis and policy debate. All levels of government are engaged in health status monitoring, with the geographic information system (GIS), a multisource database related to health indicators for the

BOX 10.14 The Albany, New York Department of Health

Programs of the Albany County Department of Health include:

- Public health emergency preparedness (PHEP).
- Preparing for a widespread natural disease outbreak since SARS, and the potential threat of avian influenza in 2011 and the global H1N1 influenza pandemic.
- New and revised programs:
 - Kids: Growing Healthy, Growing Strong!
 - Lyme disease monitoring
 - sanitation: individual sewage disposal systems, individual water supply
 - mobile home parks
 - nuisance and housing complaints
 - pesticide notification: enforcing law requiring notification of commercial and residential lawn pesticide use
 - investigation and control of outbreaks of communicable diseases
 - public water supply
 - realty subdivision
 - swimming pools and beaches
 - toxic exposures, indoor air, and chemicals
 - animal rabies/bites
 - children's camps
 - food service and vendors
 - hotels and motels
 - schools and day care centers
 - investigation and information for the Clean Indoor Air Act (smoking law)
 - implementation and enforcement of the Adolescent Tobacco Use Prevention Act
 - supervision of tattoo and piercing sites
 - West Nile virus surveillance and emergencies
 - community health worker program: providing in-home health education and assisting families in getting basic needs for healthy living (medical care, food, clothing, and shelter); preventive care and dental treatments for children up to age 18.
- Anonymous and confidential HIV counseling and testing; informational sessions and programs targeted at high-risk populations and the general public.
- Home care – registered nurses, social workers, and public health nurses design a patient specific plan of care, coordinate needed health and support services, and provide ongoing follow-up and treatment under the orders of the patient's physician.
- Influenza vaccination – everyone 6 months and older should have a flu vaccination each year.
- Testing for lead poisoning for uninsured children aged 6 months to 5 years; nursing visits to assist with education and treatment; home inspections to find and correct lead problems.
- New York State Smokers' Quitline – a free and confidential telephone-based counseling service that provides effective stop-smoking services.
- Identifying hepatitis B-positive mothers; ensuring hepatitis B vaccine series for infants.
- Investigations of potential contacts of humans with rabid animals.
- Residential public health programs (water, sewage, pesticides).
- Free confidential STI diagnosis and treatment to all age groups; medical care for active and inactive TB, skin testing, and medications.

Source: Crucetti J. Personal communication; October 2012.

population of a geographic region, helping to identify localized or national problems for intervention.

The responsibility for gathering vital statistics lies largely at the local government level, as does the reporting of infectious diseases and other events. Initial collation of the data occurs at this level, and information is then sent to state health authorities and subsequently to the national level. The gathering of information is a strongly developed tradition in the industrialized countries, and the USA has in many ways done this effectively. In the USA, the CDC serves as a national leadership and reference center, not only for infectious diseases, but also for chronic diseases such as cardiovascular disease, nutrition, diabetes, perinatal epidemiology, and many other conditions.

Health statistics provide the ongoing data needed for monitoring the health status of populations. They provide routine diagnostic and population-based monitoring data that supply valuable epidemiological information on congenital conditions, STIs, TB, and HIV infection. Centers of excellence of all kinds, funded or administered directly by federal

or state government or by the NIH mechanism, provide tertiary level medical care and conduct biomedical and epidemiological research, making important contributions to the information pool needed to promote quality analysis and health care.

The national health authority is responsible for the central collation and analysis of health information on the epidemiology of infectious and chronic diseases, vital statistics, utilization of services, and monitoring of national and regional variations in health. This information is only of value if gathered, processed, and published so that it is readily available to health administrators, planners, epidemiologists, care providers, and the public. Census data provide the population denominators for calculation of rates of death and disease incidence or prevalence.

Inexpensive technology of personal computers with modems, as well as telephones and facsimiles, enables local public health agencies to receive real-time information through Internet connections for continuous health profiles of their communities. Sources of data include the following:

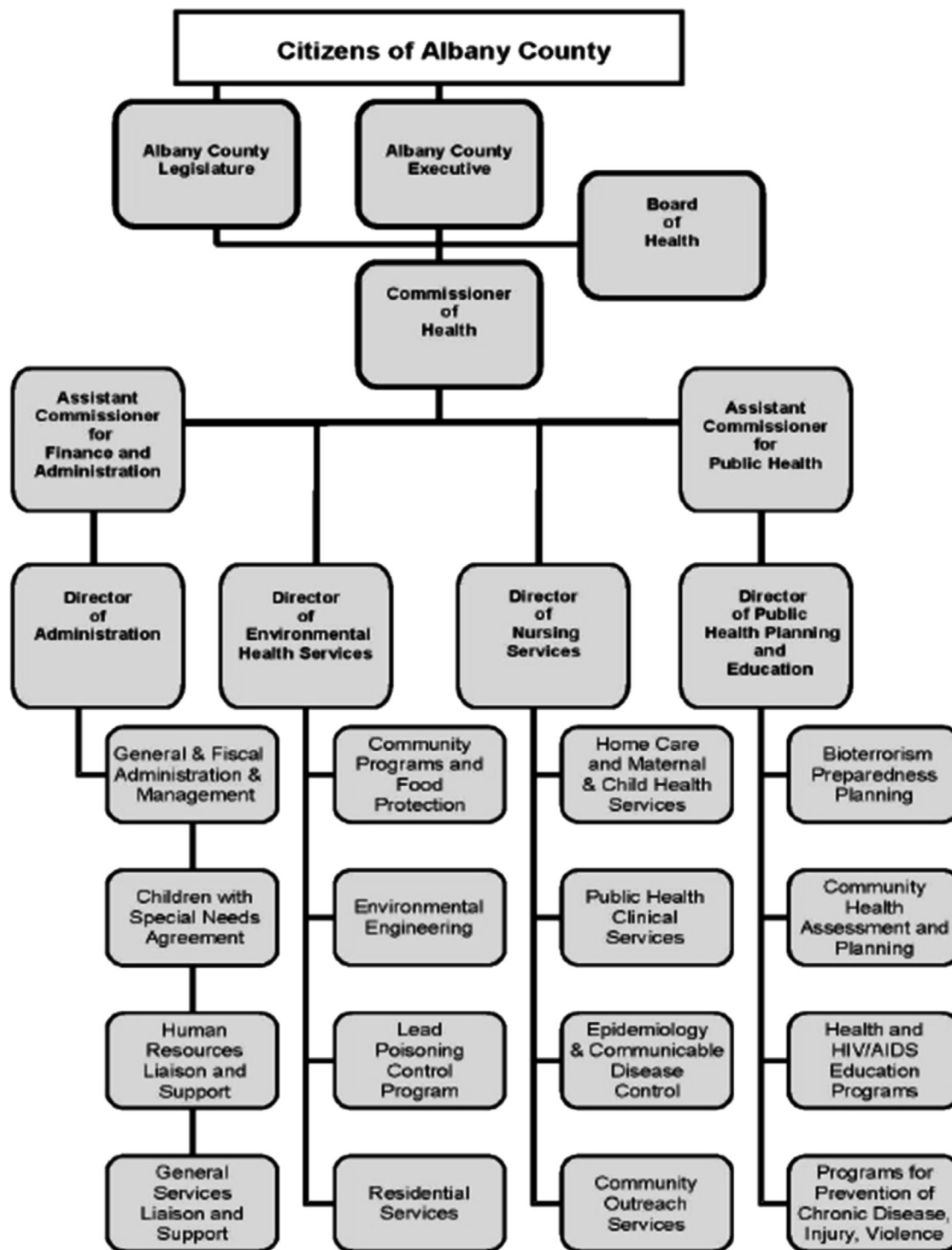


FIGURE 10.4 Albany County Department of Health Annual Report 2009-2010. Programs and Services Report. Courtesy James B Crucetti, Commissioner, personal communication 7.11.2012. Department website: <http://www.albanycounty.com/Government/Departments/DepartmentofHealth.aspx> [Accessed 28 December 2013].

- vital statistics and national centers for health statistics
- epidemiological reports of infectious and reportable diseases, including STIs
- state, national, and international reporting centers for disease control
- census data
- special disease registries (e.g., cancer)
- hospital and health and residential facilities discharge information systems
- public health laboratories

- poison control centers
- central medical libraries with Medline
- registries of medical, nursing, and dental professionals.

Geographic epidemiology has been important in the history of public health. Fragmentation of information systems has delayed the application of modern information technology to multiphasic evaluation and the integration of data from multiple sources. Pooled information can be used to identify a basic framework of standards and policies for both public and private sector participation. A common framework of policies and standards would be strengthened by information sharing among regional and other health networks including academic institutions, service sectors, and community organizations, as well as the media. Hospital discharge information systems and disease registries provide monitoring of sentinel events which can have important public health implications (see Chapter 3).

An outstanding example of such an information system is the Health for All database, provided and updated by the WHO European Region. This database is also available for use within countries to show interprovincial or intracounty variations in health status indicators (available at <http://www.who.dk/hfadb>). It is uniquely user friendly and can be adapted to other regions, countries, and states, such as the USA, Canada, the UK, and others wishing to understand the regional variations in health status of their populations as a public benefit. It is also especially useful for teaching purposes, as well as for policy and research background material, and should be included in all public health teaching programs.

Increased financial and human resources in local health departments in the USA show a relationship with lowered rates of infectious diseases (AIDS, hepatitis A and B, and TB) and higher rates of reduction for cardiovascular mortality than in comparable local health departments which had reduced or static resources between 1997 and 2005 (Erwin et al., 2011).

As an example of targeted public health issues, bicycle traffic deaths in the USA declined from 830 in 1995 to 677 in 2011 or 2 percent of total traffic fatalities while bicycle injuries declined from 61,000 to 38,000 in the same time period. A large proportion of deaths and injuries from bicycling can be prevented with helmets, but helmet use among cyclists in the USA remains low, particularly among adults. A legal requirement of use of bicycle helmets may be seen as the “nanny state” interfering with personal liberty, but the injuries cost the community many preventable deaths and cost the health system large amounts of money for hospitalization. In 2009, there were 418,700 emergency department visits and 27,900 inpatient community hospital stays for injuries related to bicycle accidents as well as loss of life. State regulation and local enforcement are part of legitimate public health activity (Stranges et al., 2012).

NATIONAL HEALTH TARGETS

The US Public Health Service has set national health targets since 1979. These are increasingly accepted at all levels of the national public health complex. Targets highlight areas of concern that require effort by all levels of government and the health care system. They also serve an educational role for health providers and the community.

Some of the progress made in reducing morbidity and mortality from epidemiologically important diseases is the result of that wider awareness and a growing concept of “self-care”. Healthy People 2010 is a set of health objectives for the USA. It is important as a guideline for states, communities, professional organizations, and others to help them to develop programs to improve health. This initiative began in 1979 with the Surgeon General’s Report, Healthy People, and Healthy People 2000: National Health Promotion and Disease Prevention Objectives. These were developed through a broad consultation process, incorporating available scientific knowledge, and are monitored by measurable indicators over time. The publication *Health, United States* provides annual updating of a wide range of health statistics.

Healthy People 2010 Midcourse Review, issued by the National Center for Health Statistics and the CDC, showed progress being made towards over 450 separate objectives in 28 focus areas designed to prevent disease and injury and to promote health in the USA. Of the 281 objectives with tracking data, some 10 percent of the goals have been met and progress has been made in another 49 percent. Midcourse reviews showed that progress in their implementation was not uniform: for 20 percent of targets there were regressions; for 20 percent mixed results or no change. The Leading Health Indicators are composed of 26 indicators organized under 12 topics. The Healthy People 2020 Leading Health Indicators are shown in [Table 10.2](#). Each of these 26 indicators listed under the 12 topics is being tracked, measured, and reported on regularly throughout the decade.

Another approach to national health promotion developing in Europe relates to decision making in public health ([Box 10.15](#)). The European Union (EU) lacks many of the institutions available to a federal state such as the USA. It is attempting to find ways to compensate, such as by establishing the European Centre for Disease Prevention and Control (ECDC) to promote pan-European cooperation in communicable and control of other diseases with guidelines and common policies of health promotion. This effort is in its early stages, but has been advanced by concern over the threats of pandemics such as SARS and avian influenza.

The concepts of prevention and health promotion are integral to setting and attaining health targets. The methods of public health are increasingly moving towards wider responsibilities in terms of health monitoring and

TABLE 10.2 Healthy People 2020: Leading Health Indicator Topics

Topic	Indicators
Access to health services	People with medical insurance People with a usual primary care provider
Clinical preventive services	Adults who receive a colorectal cancer screening based on the most recent guidelines Adults with hypertension whose blood pressure is under control Adult diabetic population with an A1c value >9% Children aged 19–35 months who receive the recommended doses of DTaP, polio, MMR, Hib, hepatitis B, varicella, and PCV vaccines
Environmental quality	Air quality index > 100 Children aged 3–11 years exposed to secondhand smoke
Injury and violence	Fatal injuries Homicides
Maternal, infant, and child health	Infant deaths Preterm births
Mental health	Suicides Adolescents who experience major depressive episodes
Nutrition, physical activity, and obesity	Adults who meet current federal physical activity guidelines for aerobic physical activity and muscle-strengthening activity Adults who are obese Children and adolescents who are considered obese Total vegetable intake for people aged ≥2 years
Oral health	People aged ≥2 years who used the oral health care system in the past 12 months
Reproductive and sexual health	Sexually active females aged 15–44 years who received reproductive health services in the past 12 months People living with HIV who know their serostatus
Social determinants	Students who graduate with a regular diploma 4 years after starting ninth grade
Substance abuse	Adolescents using alcohol or any illicit drugs during the past 30 days Adults engaging in binge drinking during the past 30 days
Tobacco	Adults who are current cigarette smokers Adolescents who smoked cigarettes in the past 30 days

Note: A1c = glycosylated hemoglobin; DTaP = diphtheria, tetanus, acellular pertussis; MMR = measles, mumps, and rubella; Hib = *Haemophilus influenzae* type b; PCV = pneumococcal conjugate vaccine.

Source: US Department of Health and Human Services. 2020 LHI topics [updated 12 March 2012]. Available at: <http://www.healthypeople.gov/2020/LHI/2020indicators.aspx> [Accessed 29 October 2012].

organization to reach the stated goals and objectives. The New Public Health provides a conceptual basis for this process.

UNIVERSAL HEALTH COVERAGE AND THE NEW PUBLIC HEALTH

Because the USA lacks a universal coverage national health insurance program, it is commonly cited in the literature that the USA has a “non-system”. This is misleading: the USA has a very complex and unfinished health system, with a major deficiency in lack of universal access health insurance. Yet, the USA is a world leader in public health, not only in the development of new vaccines, but in implementation of important advances in prevention and health promotion, such as fluoridation of community water supplies. The USA has the costliest health system, with total

expenditures reaching nearly 18 percent of gross domestic product (GDP) in 2011, but it lags behind many other countries in important indicators of health status (see Chapter 13). Still, the USA has other indirect public health programs that support poverty groups, including a universal school lunch program and the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC), which provides food supplementation for pregnant women and toddlers in need. Furthermore, the US health system is a complex interactive set of organizations, subject to system changes, that has pioneered many innovations in health sciences, health care administration, and public health.

Publicly administered universal access elements exist, even if they are underfunded. The middle class is protected by employment-based health insurance, the elderly by Medicare, and the poor by the federal–state–locally administered Medicaid program. The failure to adopt national

BOX 10.15 Effective Decision Making for Public Health Policy

Public health does not take place in a vacuum. It requires a societal commitment that places health in a high social priority for funds and public policy. Allin and colleagues examined public health policy in eight countries (Denmark, Finland, France, Germany, the Netherlands, Sweden, Australia, and Canada). The authors discussed the following key issues for strong public health policy:

- political commitment and support at all governmental levels (national, state, local)
- intersectoral cooperation between government agencies and with non-governmental organizations
- preparation of the population (e.g., societal acceptance of smoking restriction legislation)
- health law developed and codified with appropriate enforcement capacity
- promotion of individual and population behavior changes consistent with “healthy lifestyle” and supportive socioeconomic context such as in alleviating poverty and inequities in health
- adequate infrastructure and resources for organized public health structures at all levels of government with sufficient, well-trained personnel and programs
- independence from political control so that the voice of public health can operate to identify and meet challenges in population health and not be submerged under a clinically oriented health system
- organization, funding, and support for research to provide the skills and material to evaluate health of the population and identify new risk factors and associations
- health policies that are realistic and targeted to measurable goals with identification of priorities and feasible programs to meet these objectives
- development of training and research environments and capacities consistent with the standards and culture of public health at the highest international standards.

Source: Modified from Allin S, Mossalio, McKee M, Holland W. *Making decisions in public health: a review of eight countries*. Copenhagen: World Health Organization on behalf of the European Observatory; 2004. Available at: <http://www.euro.who.int/document/E84884.pdf> [Accessed 8 November 2012].

health insurance providing equitable access to health care continues to be a major obstacle to improving health of the vulnerable poor and marginalized sectors of society. Public health services at all levels of government spend much energy and resources trying to cover deficiencies resulting from inequities in access to services.

Managed care plans in which financial incentives are in play to promote ambulatory and preventive care and decreasing use of hospital care increasingly cover the US population. Collaboration between organized public health and medicine, long-standing antagonists in the USA, took a new direction in the mid-1990s with development of a “new paradigm” of cooperation. The American Medical

Association and the APHA agreed to work together to promote networking in the form of collaborative local programs to resolve unmet health needs of the community. This mutual awareness represents recognition of the importance of both clinical medicine and public health. Intersectoral dialogue helps to identify the potential for cooperation in the context of the dramatic changes taking place in the USA in health care organization. Health insurance coverage of people aged 18–44 years and 45–64 years in the USA (Figure 10.5) shows a decline in private coverage in both age groups, with an increase in uninsured and Medicaid insured people.

In other countries such as the UK and the Scandinavian countries, organization of health services moved to district health systems in which public health is a full partner with clinical services, and where prevention is integral to the economics and function of a population-based program. The managed care evolution in the USA since the 1990s may well promote a new level of cooperation between clinical medicine and public health. Integration of services financed by Medicare and Medicaid, with federal waivers of eligibility conditions for age and poverty, may allow a new approach based on residence in areas of need. Expanding Medicaid will occur largely through enabling enrollment into managed care programs of large numbers of eligible people who are not currently enrolled.

Downsizing the hospital sector, constraining health costs, increasing enrollment in managed care, focusing on health targets, and increasing coverage through managed care will constitute a national health program evolving towards some form of the New Public Health. The USA has been very innovative in financing systems to promote efficiency in use of services, and other countries have begun to apply those lessons in their national health insurance plans. The USA will benefit from examining the reforms going on in many countries, including Canada and European countries, as their health systems also evolve. The US public health community, including the schools of public health, has capacity and experience with professional leadership and advocacy, and it can make a great contribution towards adaptation of the New Public Health.

In 2010, expenditures for governmental public health services in the USA were 3.2 percent of total health expenditures, an increase from 2.8 percent in 1990. Personal health care accounted for 84.3 percent of expenditures, including 31.4 percent for hospital care and 26.6 percent for professional services including dental care (Health United States 2012). Thus, most expenditure by state health departments was for personal care services, mostly for people ineligible for health insurance or with benefits excluding preventive care. This represents the predominant priority for hospital and ambulatory care services based on insured or personal outlay for services. While much of ambulatory care involves preventive services, the relatively low expenditure

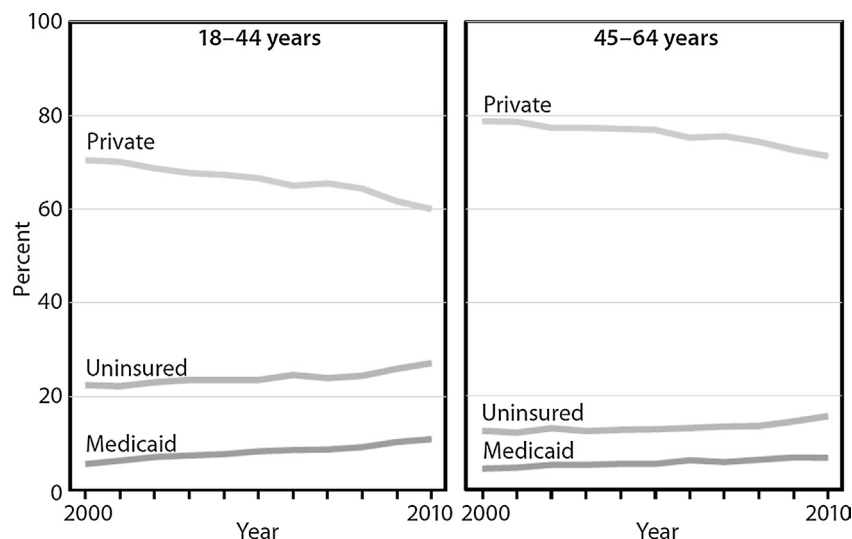


FIGURE 10.5 Health insurance coverage among young and older adults, USA, 2000–2010. *Source:* National Center for Health Statistics. *Health, USA, 2011: with special feature on socioeconomic status and health.* Hyattsville, MD: NCHS; 2012. Available at: <http://www.cdc.gov/nchs/hus/contents2011.htm#fig15> [Accessed 8 November 2012].

for community-oriented public health activities reflects traditional values and undervaluation of the potential impact of community-oriented approaches to health promotion. The health reforms going on in most countries, especially those in transition from the Soviet system, require a shift of priorities for expenditure from a hospital orientation to a community orientation. This is a difficult process with many political implications, especially loss of jobs in many communities.

HOSPITALS IN THE NEW PUBLIC HEALTH

Hospitals evolved under municipal, religious, voluntary, governmental, university, private, or other sponsorship. Hospitals have traditionally been separate administrative units from other health services, although often with a strong connection to medical and paramedical training programs. The organizational structure is often based on the history of the organization, and may need adaptation to address the facility's mission, resources, and role as part of a larger community health system.

The hospital is an important element of the New Public Health. Inpatient health care facilities characterized as hospitals include many different types of facilities with important roles in a health system. They include general or specialized hospitals, rehabilitation centers, nursing homes, mental and other special hospitals. Each has a defined role, administrative structure, funding sources, operating and capital budgets, and modus operandi as a unique service-providing organization. They are mutually dependent even if entirely independent administratively and financially. This is a key issue in cost control in public health insurance or service systems.

Hospitals are often the largest employers in a community. They employ some three-quarters of all health personnel and, depending on the country and its traditions and reform processes, between 38 percent and 75 percent of total health expenditure. The magnitude of the hospital sector and the key role it plays in the health service system make it vital to rationalize its services, preventing duplication, bed surpluses, overemphasis on specialized services versus primary care, and depersonalization of patients and workers. Hospital spending in the US between 2003 and 2006 grew by an average of 7.4 percent, slowing to 5.5 percent annual growth between 2007 and 2010, reaching US\$814.0 billion in 2010.

The modern hospital is the most costly and visible element of a health system to the public; it employs the most personnel and it provides care for the seriously ill. Hospital management is therefore an important factor in managing the total health system. While health care is an organizational system, the component facilities such as hospitals are also living organizational entities that require structure, management, and planning.

The supply and utilization of beds in community general hospitals in the USA have declined over the past three decades from 4.4 acute care beds per 1000 population in 1980 to 2.6 beds per 1000 in 2009 (OECD, 2012). Occupancy rates of community hospitals declined from 75 percent in 1960 to 65 percent in 2009. A trend of reducing hospital bed supply has also occurred in most industrialized countries, and more recently in some of the former Soviet countries, although with rates still well above those in Western Europe (see Chapters 11 and 13).

Under managed care systems, the hospital will try to satisfy two parties: the patient and the managed care system,

with its economic constraints. These two parties may have different objectives and methods of assessment of the functioning of the institution and the community it serves. The insured patient, in his or her role as a hospital patient and with the option to change health plans, will be able to exert some influence on the quality of care he or she receives. Similarly, the managed care system can judge the quality of care rendered by a hospital and express dissatisfaction by choosing an alternative provider.

The mission of a hospital is to provide high-quality care and service to the patient within the limits of current standards of knowledge and resources. In addition, there are many other objectives of the hospital as an organization, including professional and economic survival as an institution, teaching functions, research, and publication. The hospital makes an important contribution to the community, providing employment, financial stability and solvency, prestige, education, research, and a system of access to health care.

To meet these diverse goals and objectives, hospitals have become complex organizations with an extensive division of labor (see Chapter 12). The organization involves many different professional areas, as well as “hotel services and facilities” such as the provision of food, laundry, house-keeping, supplies, and financial and personnel administrative functions. As a large organization of great complexity, a hospital must have a formal, quasi-bureaucratic structure with clear lines of authority and responsibility. However, the modern hospital cannot function under a traditionally authoritarian, paternalistic pattern of administration. Coordination of the many complex skills brought together in a hospital requires lateral coordination between departments and staff at all levels or the machine simply will not function. As a result, the hospital is highly dependent on the motivation and integrity of its staff, and their ability to network with others in different departments or professional levels freely and without excessive bureaucratic constraints.

Nevertheless, basic teamwork, acceptance of authority, professional standards and clinical guidelines, and quality assurance on a continuous basis to maintain standards of care are still essential to hospital function and predictability of performance. A great demand on hospitals is efficiency, so that waste, duplication of service, poor maintenance and function of facilities and equipment, corruption, negligence, or theft cannot be tolerated by the organization. The modern hospital has formal bureaucratic lines of authority, and hundreds or perhaps thousands of examples of informal networks and sometimes formal organizations to carry out the daily work of patient care, while meeting the other needs of the hospital and good standards of care with efficiency in use of resources. There are many checks and balances in the structure with multiple lines of authority and responsibility, and sometimes even tension between administrative and professional elements.

Hospital Classification

Hospitals are institutions whose primary function is to provide diagnostic and therapeutic medical, nursing, and other professional services for patients in need of care for medical conditions. Hospitals have at least six beds, an organized staff of physicians, and continuing nursing services under the direction of registered nurses. The WHO considers an establishment a hospital if it is staffed continuously by at least one physician, can offer inpatient accommodation, and can provide active medical and nursing care.

Any hospital bed that is set up and staffed for care of inpatients is counted as a bed in a facility. A bed census is usually taken at the end of a reporting period. The WHO defines a hospital bed as one that is regularly maintained and staffed for the accommodation and full-time care of inpatients and situated in a part of the hospital that provides continuous medical care. A bed is measured functionally by the number and quality of staff and support services that provide diagnostic and treatment care for the patient in that bed.

Hospitals include those operated on a not-for-profit and those on a for-profit basis. Most are operated as not-for-profit facilities as public services provided by government, municipalities, religious organizations, or voluntary organizations. In the UK, hospitals formerly operated by the NHS have been transformed into public trusts to operate as not-for-profit public facilities. In the Scandinavian countries, hospitals and other local health services are operated by the county health department. Private, for-profit hospitals, though increasing, are still a minority of general hospitals but include a large proportion of chronic care facilities.

In the USA, Canada, and Israel, long-term care for the elderly and infirm is largely provided by private for-profit facilities. In these countries, private facilities arose because of inadequate public resources for direct provision of services. As payment systems evolved, private operators were encouraged to enter the field. Government supervision and regulation have diminished the abuses and exploitation that occurred in the 1960s, but the standards of care can be compromised by the profit motive. There are, however, good examples of large-scale operations of long-term care facilities run by private organizations that are efficient and provide good standards of care. As illustrated in [Box 10.16](#), hospitals are also defined by the types of services provided, the population served, and average length of stay.

Supply of Hospital Beds

The supply of hospital beds is measured in terms of hospital beds per 1000 population, a ratio which varies widely between and within countries. Historically, hospital development was initiated by church or religious groups, municipalities or voluntary charitable societies, or by local, state,

BOX 10.16 Types of Hospital

- *Short-stay hospitals* are those in which more than half of the patients are admitted to units in the facility with an average length of stay of fewer than 30 days. These include teaching, general, community, and district hospitals providing a broad range of services, as well as specialized hospitals that focus on special categories of patients by age, gender, or medical condition.
- *Long-stay hospitals* are those in which more than half of the patients are admitted to units in the facility with an average length of stay of more than 30 days. These may include special hospitals and may be jointly managed with short-stay hospitals.
- *Nursing homes* are establishments with three or more beds that provide nursing or personal care to the aged, infirm, or chronically ill. They employ one or more registered or practical nurses and provide nursing care to at least half of the residents.
- *Skilled nursing homes* provide more intensive nursing care, as defined by nursing care hours per patient day.
- *Hostels* are residential facilities attached to a medical center for overnight stay of patients undergoing outpatient investigation or care.
- *Hospices* are facilities related to a medical center especially organized to provide a humane, personalized, and family-oriented setting for care of dying patients.
- *Non-profit hospitals* are operated by a government, voluntary, religious, university, or other organization whose objectives do not include financial profit.
- *Proprietary hospitals and nursing homes* are operated for profit by individuals, partnerships, or corporations.
- *General hospitals* provide diagnoses and treatment for patients with a variety of medical conditions or for more than one category of medical discipline (e.g., general medicine, specialized medicine, general surgery, specialized surgery, and obstetrics). This excludes hospitals which provide a more limited range of care.
- *Community hospitals* serve a town or city and are usually short-stay (fewer than 30 days average length of stay) general hospitals.
- *District hospitals* are general hospitals that serve a population of a defined geographic district and have, as a minimum, four basic services: general medicine, surgery, obstetrics and gynecology, and pediatrics.
- *Teaching hospitals* are those operated by or affiliated with a medical faculty in a university or institute.
- *Special hospitals* are single-category inpatient care facilities such as a children's, maternity, psychiatric, tuberculosis, chronic disease, geriatric, rehabilitation, or alcohol and drug treatment center which provide a particular type of service to the majority of their patients.
- *Tertiary care hospitals* are referral and teaching hospitals; a secondary level hospital is a community or district hospital providing a wide range of services; and a primary level hospital is a limited service community hospital in a rural area.

Source: American Hospital Association, 2006; Health, United States. Available at: <http://www.aha.org/about/index.shtml> [Accessed 15 November 2012].

or national governments without national planning criteria. In all health systems, regardless of administration and financing methods, the supply of hospital beds and their utilization are fundamental to health economics and planning.

The hospital bed is often a political issue. In some countries, the hospital has been traditionally regarded as a center of refuge from the harsh conditions of life, climate, and social conditions. This is especially the case in rural areas with lesser access to health care. Pressures for more beds may come from physicians or from the public. Political figures tend to favor more hospitals because they provide jobs in a community, signify access to medical care, and create a public sense of well-being. The addition or closing of hospital beds is one of the difficult and controversial issues in health planning and health politics. However, if politicians are responsible for paying the hospital operational costs, they must take into account that operational costs will equal capital costs in about 2 years. It is also difficult to close redundant or uneconomic hospital beds, because this means a loss of jobs in the community unless combined with transfer of personnel to other services, a painful procedure itself.

The hospital bed is a functional economic unit with accompanying staff and fixed costs, so it has important economic implications for the health system. The cost per bed is measured by the total expenditure of the hospital divided by the number of beds. Building and operating costs, on average, are such that the cost of construction of a hospital unit is usually equal to the cost of operating the bed over 2–3 years. The decision to build a bed obliges the health system to indefinitely fixed costs even if that bed is unused as a result of regulation or reduced utilization from professional or economic incentives. Hospital planning is no longer left to the initiative of the facility itself, even in the most competitive, market economy-oriented health system.

The tendency to build excess hospital beds and the resultant costs of maintaining them were common to both developed and developing countries in the 1950–1980s. Excess supply is associated with high utilization rates and long lengths of stay. Most non-emergent diseases may be better treated on an outpatient basis, as hospital-associated infections and disease, such as deep vein thrombosis (DVT), increase length of stay, morbidity, and mortality, and raise health costs dramatically. Where there is no incentive for the

hospital or physician to increase efficiency, patients tend to linger in the hospital. This situation results in higher overall costs of health care and is associated with medical mishaps, including falls in the hospital, errors in care, drug errors, anesthetic mishaps, and nosocomial infections. Excess bed capacity can be managed in a number of ways. Essentially, it requires conversion of bed stock and staff to other purposes or closure of obsolete facilities.

Especially since the 1980s, many countries have been reducing excess hospital bed utilization by shortening the length of stay, increasing the efficiency in diagnostic procedures, decreasing unwarranted surgical procedures, and adopting less traumatic procedures (e.g., breast-conserving surgery for breast cancer, and endoscopic surgery). Ambulatory services replace inpatient care for many types of surgery, including most eye, ear, nose, and throat surgery, and for medical care in oncology, hematology, mental health, and many internal medical problems (see Chapter 11).

Alternatives to hospital care, such as organized home care, assist in earlier discharge of patients from acute care hospitals by providing services to the patient at home, such as nursing, physiotherapy, intravenous care, changing dressings, or removal of stitches following surgery. Rehabilitation facilities provide appropriate low-cost alternatives to lengthy recovery periods after surgery such as hip or knee replacements. Long-term care facilities provide services for geriatric patients requiring extensive nursing care. These patients may not benefit from lengthy stays in acute care hospitals, and need access to alternatives to hospital care. Closure or reduction of beds is important to assure that savings in one area of service are transferred to a common financing system to provide funding for those alternative services. Investment may be required in these extended community services before savings are realized from reduced hospital utilization. While hospitals are vital for acute care in life-threatening disease, preventive capacity is optimized by decentralizing and taking medical care to the community. Hospital size, number, and beds must

be balanced using an economic- and public health-focused approach.

The capitation system of payment provides incentives for district health or managed care systems to limit admissions and lengths of stay. Sweden succeeded in reducing the percentage of gross national product (GNP) spent on health care during the 1980s by reducing hospital bed supplies, while maintaining the improvement of health status indicators. Managed care systems and diagnostic related groups (DRGs) have the same effect in the USA. District health system capitation is leading to reduced hospital bed supplies in the UK. This is a complex and controversial issue, but managing the numbers of hospital beds is essential especially in view of aging populations with chronic diseases, and the highly intensive and expensive kinds of care needed by many patients (see Chapter 11). [Figure 10.6](#) shows general hospitalization rates (adjusted by population age) from 1998 to 2010. The decline in utilization is part of a long-term trend to reduce hospitalizations and length of stay with improved diagnostic and treatment methods and a stronger emphasis on ambulatory and primary care.

The Changing Role of the Hospital

Hospitals are technologically oriented and costly to operate. Under the influence of rising costs, incentives for alternative forms of care have led to the development of home care, ambulatory services, and linkages with long-term care. Forces acting on the hospital as an organization and economic unit place the hospital in a context where community-based care is an essential alternative that requires organizational and funding linkage to promote integration.

As a key element of any health system, the hospital will undergo changes as technology and health management sciences advance. Managing health systems with fewer hospital days requires reorganization within the hospital to provide the support services for ambulatory, diagnostic, and treatment services, as well as home care. The

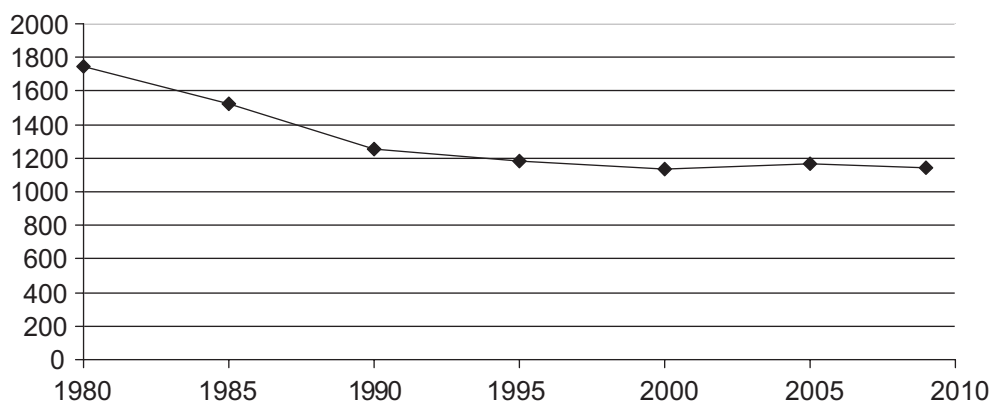


FIGURE 10.6 Total age-adjusted discharges from general hospitals per 10,000 population, USA, 1980–2009. Source: Centers for Disease Control and Prevention. *Health United States, 2011. Table 123.* Available at: <http://www.cdc.gov/nchs/data/hus/11.pdf> [Accessed 9 November 2012].

interaction between the hospital- and community-based services requires changes in the management culture and community-oriented approaches. Involvement of all staff in ensuring the quality of the service has become part of this management (Box 10.17).

In countries that operate hospitals as part of the Ministry of Health or National Health Service, there is a growing tendency to transfer hospital ownership and operation to not-for-profit agencies, or trusts as free-standing economic

BOX 10.17 Hospital Mergers in Los Angeles County: The University of California, Los Angeles (UCLA), Health Sciences Center and Community Outreach

Los Angeles is a large, multi-ethnic, and rapidly growing metropolitan city of over 9 million people in southern California. The hospital bed-to-population ratio was 3.5 per 1000 population during the 1980s and 1990s. Payment by diagnosis-related group in the 1980s, and growing membership in managed care, led to reduced hospital bed occupancy, with 45 percent of beds occupied in 1996. In 1998, the vast majority of insured Angelinos belonged to managed care programs. As a result, many for-profit hospitals are being sold to for-profit hospital chains, or are under threat of closure, some being converted to long-term or ambulatory care facilities.

As an example, the UCLA network includes the Santa Monica Hospital, a 337-bed acute care facility serving the health care needs of Los Angeles and Santa Monica since 1926. The UCLA network includes community clinics (Brentwood, Malibu, Santa Monica, Westwood, and others). This provides a wide population for the tertiary care center in competition with other tertiary care centers in Los Angeles. The UCLA Health Sciences Center is a teaching hospital owned and operated by the university.

In the mid-1990s this center developed contracts to provide hospital care to many managed care programs. In order to broaden its community service base, the center purchased several community hospitals and established affiliation agreements with medical group practices in adjacent areas of the city. This enabled the center to ensure its catchment population in a highly competitive market. The emphasis is increasingly on developing contractual arrangements with primary care medical services. The Health Sciences Center is replacing the hospital owing to damage in the 1994 earthquake and will do so with a substantially lower number of beds. This is the survival strategy adopted to ensure its continuing role as a major teaching and community service hospital in the changing medical market in the twenty-first century.

The UCLA Medical Center is also linked to many educational facilities including the Faculties of Medicine and Nursing, and the UCLA Fielding School of Public Health.

Source: UCLA Health. Ronald Reagan UCLA Medical Center. Available at: http://www.uclahealth.org/homepage_med.cfm [Accessed 2 November 2012].

units, or integrated within service programs of district health authorities. Competition for patients and payment for services such as by a DRG system will increase competition and the need for excellence in hospital care and its management for the financial survival of the facility. There is a trend in the UK, Israel, and many countries in transition from the Soviet and postcolonial health systems towards less centralized management and greater competition in health care. The trend to include hospitals in district health authorities, as in the Nordic countries, as part of geographic managed care programs is another important policy direction of health reform. Some Nordic countries, however, are reversing this trend and re-establishing centralized management of district hospitals.

In the USA, hospital networks are developing in the for-profit and not-for-profit sectors with integration of management and other cost savings in scale of purchasing and operation. Integration of health services can be “lateral”, integrating related services and the medical providers of these services, or “vertical”, integrating different types of services and different levels of health prevention, such as acute with long-term care, and community care services (Figures 10.7 and 10.8). Contracts with managed care

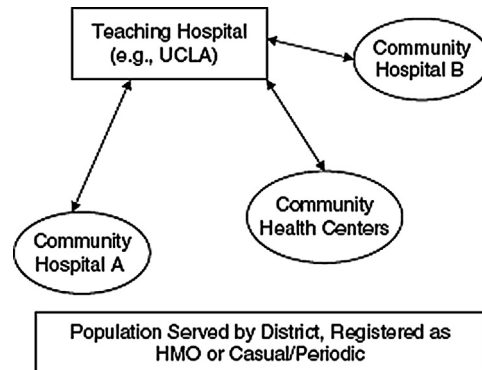


FIGURE 10.7 Integration of health services, University of California, Los Angeles (UCLA) Medical Center. Note: HMO=health maintenance organization.

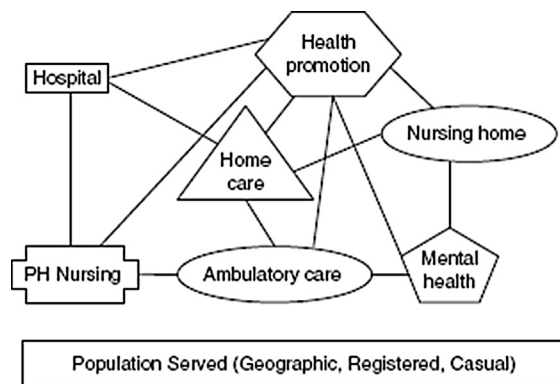


FIGURE 10.8 Vertical integration of health services. Note: PH=public health.

organizations for hospital care have replaced the previous system under which the insured patients' hospitalization depended on whether the attending doctor had privileges or worked on staff. The for-profit hospital corporations, along with similar managed care organizations, have brought health care to the stock market with profits larger than many other sectors of the private economy. Hospital mergers may then be seen in the context of any other business merger or corporate development.

For example, the UCLA health system includes the Ronald Reagan UCLA Medical Center; UCLA Medical Center, Santa Monica; Resnick Neuropsychiatric Hospital at UCLA; Mattel Children's Hospital UCLA; and the UCLA Medical Group, with its wide-reaching system of primary-care and specialty-care offices throughout the region. The links with community and rehabilitation hospitals and group medical practices provide a strong referral system and access to a top medical center for primary care physicians and their patients.

State governments have the responsibility and authority to assure standards of health for the population. Licensing of health facilities is a traditional method used to ensure public safety and prevent harmful practices in patient care facilities. State licensing is the basis for regulation of quantity as well as quality and the content of the service, and is essential for controlling health care expenditures (see Chapter 11).

Governments have a number of methods to regulate hospitals. One method is through control of the funding mechanism; this allows room for negotiation and influence on standards and level of satisfaction with care. The second is regulation of the number of hospital beds as the licensing and standards authority. The third is control of capital expenditures. A fourth method is to link payment for insured patients to accreditation of the hospital. The level of government responsibility for regulation varies from country to country, usually depending on the constitutional division of responsibility between the different levels of government and the size of the country. In general, the state and local authorities have the greatest influence because of their proximity. Where government agencies operate hospitals directly, there is a conflict of interest in the form of self-regulation.

The combination of governmental roles of financing, operating, and regulating hospitals in a highly centralized health system may appear to have some advantages, but separation of these conflicting functions is important in promoting a high-quality service. The separation of financing and regulation from operation of services is a widening trend in national health systems.

Governmental regulation may be augmented by the use of non-governmental accreditation systems, making them virtually mandatory by conditioning payment on accreditation. Accreditation agencies' standards are accepted by

government as a requirement for hospitals and long-term care facilities in the USA. This use of an NGO inspection system as a proxy for governmental standards frees the government from the need to establish large-scale regulatory and inspection systems. National accreditation by Ministries of Health is standard, but external transnational accreditation offers a wider and perhaps more objective system using international standards of organization, facilities, management, quality, and ethical standards. Accreditation systems outside routine governmental licensing have been developed in many countries including Canada, Australia, the UK, Malaysia, Taiwan, and Norway, while most countries have governmental or semi-autonomous accreditation processes for hospitals and other health care programs.

INNOVATIONS IN HEALTH CARE DELIVERY

Health care provided by physicians has traditionally been on a fee-for-service basis in the USA. Since the 1930s demonstration programs called prepaid group practice developed the idea of a group of physicians contracting to provide care for construction sites in remote communities, such as the Hoover Dam or for mining communities, to registered clients, including workers and families lacking access to other arrangements for medical care.

Prepaid group practice came to prominence in the USA during World War II to provide care for war industry workers and families. The Kaiser Permanente system grew to cover millions of people in many states and other similar programs developed with doctors having incentives to promote preventive care and reduce hospitalization and unnecessary interventions. This model later developed into health maintenance organizations (HMOs) and more recently into accountable care organizations (ACOs), which are becoming increasingly common methods of organization of health care for Americans and will be fostered by Obamacare in the coming years (see Chapter 13).

The link between medical care and public health has been a distant goal for those who see a need to link prevention and curative services, including health promotion and long-term support systems for patients with chronic illnesses and problems of aging.

The development of HMOs in the USA since the 1990s has been accompanied by a decrease in acceptability of private for-profit programs and a sense of substandard services. Nevertheless, the principles of organized group practice with the emphasis on preventive care came to be recognized as vital to controlling costs and reducing inequities in care. The introduction of the Patient Protection and Affordable Care Act (PPACA) will promote new approaches to medical care with group practice, social and preventive support systems, and the ideas of community-oriented primary care. Innovations under development include the patient-centered medical home (PCMH), ACO, and population health

management system (PHMS). They include new payment arrangements that reward health outcomes achieved rather than payment of a fee for each service rendered. Evidence on the performance of such innovations will be needed to promote their wider adoption (Shortell et al., 2010).

THE UNINSURED AS A PUBLIC HEALTH CHALLENGE

While most industrialized countries have some form of national health insurance or national health service, low- and medium-income countries usually have very mixed systems which do not have such guaranteed access to health care for the majority of people. At the same time, public health systems in those countries are weak, with shortages of trained personnel and organized infrastructure. People without insurance or entitlements in a national health service lack access to regular medical care, including preventive services that are taken for granted in the industrialized countries. These countries also have low levels of national expenditure for health from all sources, generally under 5 percent of GDP. As a result, maternal and child health care are weak, with high maternal, neonatal, and postneonatal mortality, and high child death rates, often from diseases that could be prevented or treated inexpensively. The Millennium Development Goals (MDGs), discussed in several chapters, are only partially being reached, although significant progress has been made in many countries. The burden of non-communicable disease is also high and access to medical care is crucial for the management of hypertension, early cancer discovery and treatment, and management of malaria, tropical diseases, and TB. HIV and hepatitis C are at pandemic levels and these too require access to care which, if available, mainly comes from foreign donor sources.

The WHO has been calling for progress in health systems development in medium- and low-income countries as essential to achieving health goals. Western experience with national health insurance is, however, not necessarily appropriate as it tends to favor the middle and wealthy classes as opposed to the urban and rural poor majority, so the infrastructure development of public health services may be a more suitable approach. Private insurance is developing for the urban middle class in employment settings such as the civil service, commercial and industrial enterprises, and the military. There is a wide gap between currently available medical and public health technology and its implementation. More investment in health is needed to bridge that gap. In 2004, the WHO concluded that “much more investment is needed for a new, innovative approach to research on health systems; health research must be managed more effectively if it is to strengthen health systems and build public confidence in science; [and] stronger emphasis should be placed on translating knowledge into action to improve public health by bridging the gap between what is known and what

is actually being done”. National health insurance or service systems need to be developed that reach the rural and urban poor, who are most at risk for high morbidity and mortality from preventable diseases.

In the USA, national health insurance has been only slowly and partially achieved for the elderly and the poor, but the country may take a large step forward as a result of the PPACA of 2010, known widely as “Obamacare”. Historically, the USA has been pioneering in many scientific, medical, and public health achievements. The US health system functions adequately, albeit with major handicaps of the uninsured and underinsured. County and municipal health departments are well developed and focus a great deal of their activities and attention on this population, who are largely poor and in need of health care. The coverage of the elderly and the very poor under Medicare and Medicaid has given a base of protection to these groups, but the near-poor and the near-elderly are still highly vulnerable, especially when job layoffs are a major part of the economic condition. While this problem is becoming more acute with a growth in the number of uninsured following the failure to enact national health insurance in 1994, there are increasing federal and state initiatives to widen coverage for Medicaid and especially to cover children who are uninsured. The USA, despite still being the only industrialized country lacking universal health insurance, has established and led in the development of public health programs that have had positive health effects, such as expanding the content of routine immunization of children and adults, school lunch programs, a wide range of categorical health programs to promote prenatal care, lead screening and exposure reduction, mammography, Pap smears, and other preventive services.

The delay in establishing a universal health insurance program remains a continuing burden on the full realization of America’s national health potential, for its individual citizens and for the nation as a whole. To improve health in the USA in the twenty-first century, the political echelons at federal and state levels will need to find a suitable formula for the implementation of universal health coverage. The USA will adopt national health insurance, or alternatively state programs to mandate health insurance coverage for all in stages. Implementation of the 2010 act is proceeding as a result of its being declared constitutional by the US Supreme Court and the re-election of President Barack Obama in 2012. Public health professionals have to engage the public, the business community, and public policy makers to promote this process towards achievement of individual and community health as well as a healthy workforce.

In contrast to HMOs, which were largely led by for-profit insurance companies, ACOs are led by medical provider groups such as hospitals (e.g., Beth Israel-Deaconess Medical Center in Boston), clinics, physicians, and other health care providers. ACOs may also integrate with health

departments, social security departments, safety net clinics, and home care services. The various providers within an ACO need to work with one another to provide coordinated care to the beneficiary population, to adjust financial incentives, and to lower overall health care costs. Primary targets for enrollment are Medicare beneficiaries, but may include private insurance or employer-purchased insurance. Payers may play several roles in helping ACOs to achieve higher quality care and lower expenditures. Payers may collaborate with one another to align incentives for ACOs and create financial incentives for providers to improve the quality of health care. The Obama health insurance plan is complex; it establishes federal support for state health insurance initiatives to expand Medicaid coverage and a federal–state program of mandatory private or public health insurance.

US Patient Protection and Affordable Care Act (Obamacare)

The US Patient Protection and Affordable Care Act (PPACA), commonly referred to as “Obamacare”, was

passed by the US Congress and signed into law on March 2010. The PPACA was challenged as to its constitutionality, but in 2012 the US Supreme Court ruled in favor of most clauses of the act. It is the most fundamental reform in US health care since the 1965 introduction of Medicare and Medicaid under the Social Security Act. Obamacare is aimed primarily at decreasing the number of uninsured Americans, recently approximately 16 percent of the population, but rising as chronic unemployment has increased. Features of the plan are shown in [Box 10.18](#). The plan also focuses on reducing the overall costs of health care. The PPACA is highly controversial in the USA, and its application will depend on political events in the coming years.

In terms of preventive care, the Act has expanded access to vaccination for influenza, diabetes screenings, and mammograms. The list of preventive services covered contains over 100 services for adults and children, including a range of preventive services for adults such as screening for breast, cervical, and colorectal cancer. The care provided includes screening for chronic and infectious diseases, including mental health conditions such as depression. Counseling is

BOX 10.18 Features of Obamacare: Patient Protection and Affordable Care Act 2010

- Most Americans will be required to have health insurance coverage in 2014.
- Those unable to obtain affordable health coverage through employers will be able to purchase insurance through a Health Insurance Exchange with premiums and cost sharing to those who cannot afford the insurance on their own.
- This will extend coverage to some 32 million Americans previously lacking health insurance under a public insurance plan (Health Care for America Plan).
- Regulations will prevent private health insurance plans from denying coverage for pre-existing conditions or charging higher premiums based on health or gender; this mandates insurance companies to cover all applicants and offer the same rates regardless of pre-existing conditions or gender and bans punitive exclusions of insurance benefits with denial of coverage by private insurance plans.
- Reduces costs of premiums to millions of families and small businesses.
- Caps out-of-pocket expenses under private insurance and eliminates co-payments, co-insurance, and deductibles for benefits defined as part of an “essential benefits package” of preventive care, and protects patients’ rights.
- Encourages small businesses to provide health insurance to employees by mandates, subsidies, and tax credits to promote coverage.
- Introduces reforms aimed at improving health care outcomes and streamlining the delivery of health care by bundling payments to organized health networks (Accountable Care Organizations) as opposed to fee-for-service.
- Reduces fraud and abuses in private insurance plans.
- Requires insurance to promote free preventive care.
- Encourages young adult coverage on parents’ insurance up to age 26, extending coverage to half a million young people.
- Expands Medicaid with child health benefits expansion (CHIP) and simplifies enrollment.
- Encourages state initiatives to improve care for Medicaid and Medicare beneficiaries.
- Reduces Medicare spending.
- Waives co-payments for preventive measures for seniors and many services for women.
- Provides incentives to institutions to improve quality of care and rural care.
- Promotes prevention and wellness programs; provides nutritional information to reduce costs to patients for preventive care measures to keep people well and reduce costs.
- Promotes women’s preventive health measures, including mammography.
- Regulates and provides incentives to improve quality in nursing homes.
- Provides incentives to states to improve legal tort reforms, protect patients’ safety, and improve liability insurance law.
- Promotes cutting-edge medical and health-related research.
- Promotes development of community health centers.
- Provides scholarships for young people training in health professions.

Sources: US Department of Health and Human Services. Washington, DC. Key features of the law: preventative care [updated 11 October 2012]. Available at: <http://www.healthcare.gov/law/features/rights/preventive-care/index.html> [Accessed 25 October 2012].
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available in various areas: breastfeeding counseling for new mothers, therapy to treat alcohol misuse, STI prevention, and dietary counseling for those at risk for chronic disease. The Act provides coverage for certain vaccinations and all approved contraceptive methods.

Many services for children and newborns are covered, including fluoride supplements for children without fluoride-fortified water sources, screening for autism, and behavioral assessments for children of all ages. In addition, a large component of the plan is a US\$15 billion “prevention and public health fund”, which invests in proven prevention and public health programs including smoking cessation and antiobesity programs. Included in these programs are “well-woman visits”, which focus solely on preventive care for women, free of charge, including human papillomavirus testing, screening for gestational diabetes, and free breastfeeding equipment rental.

The PPACA expands access to private insurance plans, by offering a Pre-Existing Condition Insurance Plan (PCIP) to individuals who have been uninsured owing to pre-existing conditions or other factors. States have the option of running this program. By 2014, all discrimination against pre-existing conditions will be prohibited. The idea of lifetime limits on coverage was problematic for young children incurring high costs early in life. Under the new law, insurance companies are prohibited from imposing lifetime dollar limits on benefits such as hospital stays. Young Americans have benefited from staying on their parents’ plan until they turn 26 years old. In addition, the law gives small businesses tax credits to provide insurance benefits for their employees.

The plan makes prescription drugs more affordable for eligible seniors by sending rebates to those who fell into the “doughnut hole”, or those seniors who had to pay expensive premiums for prescription drugs because they had reached a limit. This system was implemented in 2010, when each eligible senior received a one-time, tax-free US\$250 rebate check.

The PPACA also contains a program called New Exchanges, which will be fully implemented in 2014. This US\$5 billion program is intended to provide financial assistance to employment-based plans for the provision of health insurance coverage to people who retire between the ages of 55 and 65 (Box 10.18).

SUMMARY

Public health is organized at local, state, and national levels to define and work towards a healthy population with achievement of health targets. A balanced health care system requires resources to be rationally allocated to the different preventive, curative, or environmental elements of health. Resources must be directed to all vulnerable groups in the population, recognizing that some groups have greater needs than others. At the same time, issues that affect everyone, such as nutrition, sanitation, housing, and socioeconomic

conditions, affect the poor and the elderly disproportionately. Sound public policy must also take into account the need to ensure adequate quality of care by health care providers and institutions, through developing and regulating standards, licensing procedures, and quality assurance mechanisms.

Impressive progress has been made in public health in the USA over more than two centuries since the federal government established the US Marine Hospital Service in 1792, and public health systems have continued to evolve in the twentieth and twenty-first centuries. Despite lacking a national health system, the USA has been a leader in formulating administrative mechanisms to improve the efficiency of health care.

The evolution of health care in the USA since the 1990s towards managed care is causing a large-scale reorganization of hospitals with both vertical and lateral integration; that is, the formation of networks of hospitals and linkage of hospitals with primary care and other care facilities and programs. Adjustment to meet the health care organization environment of the twenty-first century requires further changes for hospitals, including downsizing, development of ambulatory and home care services, and linkages with primary care services to ensure a catchment population. The competitive factors in which primary care providers and the community have a role in determining a hospital’s utilization, occupancy, and ultimately its survival will help to build a more community-oriented health system.

In the USA, public health has been separated from and is poorly funded compared to medical services. The advent of managed care for a large portion of the population creates a professional and economic challenge for both sides. Organized public health in the USA needs to seek a closer liaison with managed care to promote a more comprehensive New Public Health approach. Managed care organizations need to develop health promotion and at the same time ensure the interests of the patient to successfully promote their long-term economic interests, and vice versa. If public health remains outside the issues of organization and financing of personal care services, the isolation of public health in the USA will deepen.

The New Public Health is a comprehensive approach to health care, stressing the interdependence of medical and hospital services with prevention and health promotion. Clinical medicine, management of health services, and community health approaches are interactive in many forms, in the USA and elsewhere. In northern Europe and the UK, district health systems incorporating public health are responsible for and are budgeted on a per capita basis to ensure community health and the availability of all levels of personal care services to the catchment population. In the USA, the lack of universal health access and central payment systems for all has, paradoxically, promoted development of managed care systems linking all levels of health care. However, public health remains detached from this process, being organized and financed separately.

Health impact assessment applied systematically at the community level is important for determining priorities and use of evidence-based public health. Health impact assessment is an approach to assessing both the health burden from conditions in sectors other than health and the potential of health improvements by modifying those conditions. It combines procedures, methods, and tools by which a policy, program, or project may be judged as to its potential effects on the health of a population and the distribution of those effects within the population.

Systematic review is a formal process that identifies all of the relevant scientific studies on a topic, assesses their quality, individually and collectively, and sums up their results. Systematic reviews make it easier for practitioners and policy makers to understand all of the relevant information that is available, how it was collected and assembled, and how the conclusions and recommendations relate to the information that was reviewed. This range of techniques and tools can serve to ensure that an intervention or policy will be appropriate and feasible in particular settings.

Intersectoral collaboration is vital between health and with other sectors of government such as agriculture, education, economic policy, transportation, and housing, as well as with non-governmental sectors including industry, community, advocacy and donor groups, and the media. Working with political leadership is just as crucial. Ongoing and long-term support for public health is overshadowed by clinical medicine, not only in funding but also in public perception. However, the medical community is increasingly aware of the vital importance of prevention and organized public health activity. Understanding the bond between curative medicine and public health is the foundation for addressing non-communicable diseases and conditions as well as communicable diseases.

The Obamacare plan introduced in the USA in 2012 creates a new dynamic towards national health insurance by covering many uninsured Americans, promoting preventive care, and regulating private insurance to remove many exclusions, co-payments, and caps on coverage. This plan is controversial and full implementation will depend on political evolution in the coming years, but is a great step forward towards universal coverage in the USA.

The development of universal coverage in low-income countries is still a major challenge, and great care must be taken to protect the rights of rural and poor people in the population from plans that would mainly benefit the middle and upper classes. At the same time, the development of public health infrastructure and training of large cadres of public health workers at the bachelor's and community health worker levels should be of the highest priority for both national governments and international agencies.

While public health and health protection of the population is largely a governmental function, it is vitally linked to many sectors of society to be effective. The New Public Health

approach seeks to link those activities of local, state, and national government with public awareness and health systems organization, all vital to protect and promote the health of a population, including the provision of personal care in hospitals, community, and long-term care settings. The New Public Health approach also seeks to link those activities of local, state, and national governments with non-governmental agencies and sectors that are related to achieving such goals.

NOTE

For a complete bibliography and guidance for student reviews and expected competencies please see companion web site at <http://booksite.elsevier.com/9780124157668>

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