

## Chapter 4

# PUBLIC POLICIES AND HEALTH SYSTEMS AND SERVICES

**H**ealth is a critical contributor to the success of social policies that enable the attainment of national goals of social and economic development. Attaining those goals depends on effective health policies. Notwithstanding, addressing health policy issues that shape the health system poses problems, because social needs are multidimensional, adverse effects can be cumulative, resources are finite, and, frequently, solutions lie outside the health sector. Consequently, introducing changes to enhance the role of the health system as a core social institution that is also able to create wide-ranging opportunities in the design and delivery of goods and services requires a systemic approach to public policies and policymaking. Public policy can be understood as a set of authoritative decisions produced by any branch and at any level of government and framed in a set of normative guidelines. Public policies communicate goals, means, strategies, and rules for decisionmaking in public administration and legislation. Laws, rules, regulations, operational and judicial interpretations and decisions, statutes, treaties, and executive orders are examples of such policies. Although there are no universally agreed definitions of public policies, they reflect a government's responses to conditions or circumstances that generate or will generate needs for a considerable number of people. Ideally, those responses coincide with the public interest. Furthermore, governments use public policies for political, moral, ethical, and economic reasons, or when the market fails to be efficient. A government also has the option of not responding—that is, public policy is “what government does and what government chooses to ignore” (1). Conversely, public policymaking is a central function of government and an essentially political process. As such, it involves relationships of power, influence, conflict, and cooperation where values, interests, and motivations shape the final design and implementation. Indeed, politics actually define who gets what, when, and how in society (2).

Health policies are important because they directly or indirectly affect all aspects of daily life, actions, behaviors, and decisions. They can prohibit behavior that is perceived as risky, promote behavior considered

beneficial, protect the rights and well-being of targeted populations, encourage certain activities, and provide direct benefits to citizens in need. Regulatory policies can set professional accreditations; establish price controls on goods and services; define quality, safety, and efficacy standards in health services; and address social regulation issues, such as social security, occupational safety, immunization, food and drugs, and environmental pollution.

The Region of the Americas offers a broad array of subregional, national, and local health system experiences and evinces countless common trends, achievements, and challenges. For example, health system trends include the changing role of government in health care from sole provider to regulator and/or coordinator, the asymmetrical expansion of private health insurance, the privatization of social security institutions (affecting pensions and other forms of social security) and health services, and the expansion of public/private partnerships. Yet, along with the ascendancy of the market, civil society has increased its participation in policy development across the Region through partnerships, associations, organized groups, or representatives to advance issues of interest.

An important lesson learned from the legacies of previous health sector reforms, particularly decentralization and devolution, is that these transformations did not always result in greater and better access, equity, services, accountability, or even local participation. The incomplete achievement of those goals was, in some instances, associated with local conditions that were ignored. In the context of globalization, this is an increasingly significant factor due to the tensions between global and local interests, where the contours of "community" become more diffused, yet more heterogeneous (3). Recent experiences increasingly show that successful interventions value local knowledge and capacity, are tailored to heterogeneous conditions and populations, and learn lessons from the exchange, adaptation, and adoption of other successful interventions.

Policy innovation in health and health care is a challenging undertaking, mostly because systemic transformations in an era of global change that defy prevalent values and practices require significant resource commitments and often pose political risks. A case in point is that, despite escalating demands posed by demographic and epidemiological trends, competing needs, and resource limitations, the governments of the Americas, individually or collectively, continue to be committed to achieving high-performing systems that are capable of ensuring equitable access to services and social security, broadening coverage, and strengthening safety nets. However, it has been impossible to solve persistent problems in the production, acquisition, and regulation of pharmaceuticals, vaccines, and medical technologies, despite improvements in the legal and normative frameworks of the health system, including aspects related to stewardship, regulation, financing, insurance, quality, and harmonization.

The renewal of primary health care represents a substantial contribution to those goals, and the process rekindles longstanding commitments and represents a way forward to better public health. Systems based on primary care will further ongoing efforts to provide comprehensive care centered on promotion, prevention, and rehabilitation, jointly with patients, their families, and communities. The critical role of human resources for health figures prominently on the regional agenda, and unless these resources are competent, equitably distributed, and fairly compensated, health system goals will be unattainable.

The central role of health policies, health systems, and health services is to meet needs, mitigate risks, and protect populations from harm, disease, and disability; yet, potentially, they can also have a role in increasing disparities and exclusion. Although a more-detailed analysis is warranted, some factors enabling one or the other role include flawed initial structural conditions, weak governance, or even the delayed realization of benefits. Additionally, the limited ability of an increasingly devalued public sector, including health, to formulate policy has hampered the application of available knowledge, the presentation of convincing advocacy, and the implementation of policy. Too-slow execution and organizational and managerial misalignments may have jeopardized the desired goals of quality and safety in health services, including the effectiveness of drugs, medical technologies, and clinical services, which depend on the delivery of quality health services.

In effect, unwieldy conditions—pluralistic societies, uncertain conditions, unstable institutional landscapes, and a fragmented organizational base—can thwart the best intentions. Indeed, there are no universal policy prescriptions, and even a good decision does not guarantee a good solution. Moreover, the quality of health policies and the viability of equity-enhancing health system changes are constrained by history, culture, politics, economics, and the social foundations of the contexts where they are applied. Almost all aspects of economic and social policy influence health conditions and consequently health disparities. A closer alignment of health policies with equity-oriented social development policies that also consider issues of effectiveness and accountability is encouraging. Nevertheless, the coherence between social and economic policy and the subordination of social and health policy to decisions in other policy domains are still unresolved in most countries. Safeguarding the principle of universal access and achieving meaningful health gains will require not only changing current views on health policies, health systems, and services, but also challenging new forms of governance between the state and society—issues that transcend the health sector.

## ORGANIZATION, COVERAGE, AND PERFORMANCE OF NATIONAL HEALTH AND SOCIAL WELFARE SYSTEMS

### Values, Principles, and Purposes of Health Systems

A health system is understood to comprise the set of institutions responsible for interventions in society that are mainly responsible for health (4). These health interventions or actions embrace care for individuals and their environment for the purpose of promoting, protecting, or restoring health, or compensating for permanent disabilities, regardless of whether health agents are public, governmental, nongovernmental, or private (5). Health systems are a reflection of core social values that are also expressed in the legal and institutional frameworks that form the setting in which health policies are formulated.

Some of the values, principles, and purposes that most countries of the Region establish for their health systems in their constitutions or laws are:

- *Values:* right to health, universality, solidarity, equity, dignity, sustainable development, democratic governance.
- *Principles:* efficiency, effectiveness, quality, social participation/control, comprehensiveness of care, interculturality, decentralization, and transparency.
- *Purposes:* protection of the health of individuals and improvement of the quality of life, reduction of inequalities and inequities, alignment of services with the population's requirements, provision of financial protection from the risks and consequences of falling ill, and meeting people's expectations while respecting their dignity and autonomy and guaranteeing their right to privacy.

Countries organize their health systems with a view to upholding national values and principles, achieving their purposes, and attaining their health objectives which, in turn, generates different ways of managing the system and regulating its operation, providing and allocating funds, and delivering health services. The definition of the health system, its different subsystems, the organizations that comprise them, and the relations between them are mentioned in constitutions, general health laws, or health codes in all the countries of the Region. These normative frameworks establish the relations between the public system and the different subsystems, including the private subsystem, and the subsystems for social security, education, and training of health human resources. Almost all the Region's constitutions recognize health as a human right, but history shows that governments and societies have obtained better results in drafting health legislation than in making the changes needed in their health and social welfare systems to assure that right.

### Background

The specific characteristics of each health system depend on the history and political and socioeconomic conditions of each country, the influence that is exerted by different interest groups, and the interplay of political forces. The history of the creation and development of health systems in the Region is closely bound to the development of social security schemes in the context of paternalistic governments that formed in the West at the beginning of the 20th century and which reached their height during the period immediately following World War II. The institutional frameworks and structures of social welfare systems vary widely with regard to relations between the government, the market, society, and the family (6).

The modes of operation of paternalistic governments had a great influence on the development of health systems; however, their organizational models are idealistic and do not actually exist in a pure state in reality, and, consequently, none of them was fully applied by the countries. On the contrary, the incorporation of partial versions of the models gave rise to a number of very different institutions, with separate organizational arrangements for the management/regulation, financing/insurance, and provision of services.

In short, the Region's health systems were based on Western social security models, but unlike the models followed in most European countries, the Latin American and Caribbean subsystems were directed to specific population strata, grouped by social class, income, occupation, formal employment, ethnic origin, and urban or rural status, whose result was social segregation consisting of stratification in the exercise of the right to health. As a consequence, the traditional organizational structure of health systems in Latin America and the Caribbean consisted of unintegrated subsystems targeted to specific population groups, which led to greater segmentation and fragmentation and seriously affected performance.

Segmented systems present sharp differences in their guarantees of the rights of members, per capita expenditure levels, and the degree of access to services by different population groups, weak stewardship marked by insufficient regulatory frameworks and inadequate supervision, and high transaction costs. They are also regressive and underfinanced, with direct or out-of-pocket payments predominating, and can entail catastrophic risks for the financial security of families.

Service delivery networks were established for each subsystem, with limited integration and communications between their constituent units, both within the same subsystem and between the different subsystems and for different levels of complexity. Services were concentrated mainly in the wealthier urban areas and in the salaried population and this led to inefficient use

## Segmentation and Fragmentation of Health Systems

*Segmentation* is the coexistence of subsystems with different modes of financing, membership, and delivery of health care services, each of them “specializing” in different population segments, depending on their employment, income level, ability to pay, and social status. This kind of institutional arrangement consolidates and deepens inequity in access to health care between different population groups. In organizational terms, segmentation is the coexistence of one or more public entities (depending on the degree of decentralization or deconcentration), social security programs (represented by one or more entities), different financiers/insurers, and private suppliers of services (depending on the extent of market mechanisms and entrepreneurial management introduced during sector reforms in the 1980s and 1990s).

*Fragmentation* of the health services delivery system is the coexistence of various units or facilities that are not integrated into the health network. The presence of numerous health agents that operate separately does not allow for suitable standardization of the content, quality, or cost of care and leads to the establishment of service networks that have no coordination, coherence, or synergies, and that tend to ignore each other or compete with each other, which leads to increases in transaction costs and promotes inefficient allocation of resources in the system as a whole.

of sector resources that failed to protect the very poor, the informal sector, and, in many countries, indigenous groups, Afro-descendants, and rural and marginal-urban populations. The provision of health services in the Region has been marked by overlapping and unnecessary duplication of care networks and the lack of complementarity among services and continuity of care. This prevents individuals from receiving comprehensive care, stands in the way of establishing adequate quality standards, and fails to guarantee the same level of care for individuals covered by different systems. This operational fragmentation can be ascribed to several factors, including structural segmentation, problems with governance, the lack of integrated planning, interactions between the public and non-public sectors that are often inadequate, and the weakness of referral and counter-referral mechanisms (7, 8). In some countries, such as Brazil, Canada, Chile, Costa Rica, and Cuba, changes were made to break down the barriers that separate these different institutional realms; but in most countries of the Region barriers still exist and their health systems are highly segmented and fragmented, with the consequent population segregation.

### Summary of Sector Reform in the Region in the 1980s and 1990s

It is impossible to analyze the changes in the field of health during the 1980s and 1990s without considering the general macroeconomic reforms that took place in most of the countries in the world in those decades. Also worth bearing in mind is the process of globalization which, by promoting extensive liberalization of international movements of capital and entrenching the processes of transnationalization of industry, played a key role in defining policies that had a great influence on the health

sector. Those processes have led as well to a broader discussion of the viability and future of social welfare systems around the world, in circumstances in which the widespread application of structural adjustment policies has led to sweeping changes in the labor market, coupled with the weakening of the social services provided by the State, the rise of the private sector as a major player in areas traditionally occupied by the public sector—such as the administration of social services and natural monopolies—and the reduction in governments’ ability to lead and regulate, with the consequent deepening of segmentation and fragmentation associated with the appearance of new pension and insurance plans and new ways of delivering health services.

The public health protection schemes offered by institutions that reported to the ministries of health and social security were insufficient since they excluded millions of people from access to health goods and services (9–11), which also translated into high out-of-pocket expenditure that persists. Studies show that when personal spending accounts for a significant percentage of total expenditure on health, the ability to pay becomes the determining factor in the demand for personal care (4).

As part of the macroeconomic reforms in the 1980s and 1990s, the countries of the Region introduced a series of changes in their health systems, aimed fundamentally at improving effectiveness, guaranteeing financial sustainability, promoting decentralization, and assigning a larger role to the private sector. The results of these reform processes differ, and their legacy can be seen in how the systems are organized today. Some of the advantages and disadvantages are presented in Table 1.

In general, health reforms failed to consider the peculiarities of each country as they relate to geography, social and demographic structure, history and political culture, and the extent to which sector institutions were developed. They tended to adopt

**TABLE 1. Main advantages and disadvantages of health sector reforms in the 1980s and 1990s in Latin America and the Caribbean.**

Advantages	Disadvantages
The different functions performed by health systems were identified and in many countries they were separated. The private sector became more important in insurance and the provision of health care services.	The creation, promotion, and deregulation of the markets for insurance and the provision of health care services led to the proliferation of competing middlemen. This intensified the segmentation of the system, increased transaction costs, and weakened the stewardship function of the ministries of health.
The idea of fiscal discipline was introduced in the public health sector, with stress on financial sustainability. New sources of financing for health care were sought.	Public expenditure was cut drastically in most of the countries. The application of strict cost control led to losses in public health infrastructure and human resources which, in turn, led to the deterioration of health outcomes. The introduction of user quotas and other payment mechanisms at the point of care increased direct out-of-pocket expenditure.
Service management improved in many countries, in some cases through the establishment of management commitments. The use of efficiency criteria in the provision of health services was introduced.	The introduction of a quasi-market logic in the public health sector adversely affected public health functions. Promotion of competition among insurers and suppliers to attract clients with the ability to pay deepened segmentation. The incorporation of financial incentives for the provision of individual health services led to stressing curative actions over preventive ones.
Different mechanisms, procedures, and instruments were applied to extend coverage and reach bypassed groups. Many countries adopted the idea of creating "basic packages" for the poor or for specific groups.	The introduction of basic packages for the poor deepened the segmentation of health systems. The creation of separate funds for the population with the ability to contribute and for those without that ability led to a loss of solidarity in the system and worsened inequity in access to health care and health outcomes. Coverage did not increase as expected, and in many cases the rise in demand for health services could not be met owing to the scant resources allocated to improving the supply of health care services.
In most countries, efforts were made to increase local participation in the administration of services through decentralization.	Incomplete decentralization undermined the stewardship capacity of the ministry of health and increased geographic inequity in the provision of health services.

**Source:** Based on the Country Health System Profiles (2000–2002) available at [www.lachealthsys.org](http://www.lachealthsys.org).

models promoted across-the-board by multilateral lending agencies, which stressed financial and managerial changes, deregulation of the labor market, privatization, and decentralization.

These reforms also paid little attention to the impact of the changes on health sector players and interest groups, particularly health care workers. They did not promote the requisite coordination and synergy between system functions, ignoring their complex interrelations, and failed to encourage the definition of national health objectives. As a result, although some of the reforms were intended to develop a regional agenda based on greater pluralism, efficiency, and quality in the delivery of health services, in practice, government leadership capacity was undermined, the overall operation of the health system was weakened, and health issues were relegated to the background.

### Organization, Coverage, and Performance of Health Systems

The degree of integration and types of interactions in a health system are crucial for determining its capacity to respond to the demands of beneficiaries. Other key elements that will act as constraints on the good performance of the systems are: the absence or insufficiency of prepaid and shared risk systems, and the predominance of direct or out-of-pocket payments; and weak or embryonic mechanisms for stewardship/regulation that make it difficult to define the rules of the game for players (user-service provider, insurer, financier) and for governments to provide adequate oversight to ensure that the rules are followed. Broadly speaking, the closer the integration within a single system or between the different subsystems in a mixed system, the better the



response capacity of the system as a whole, and the lower the operating costs (12).

Single systems are, by definition, integrated vertically (a single entity carries out all functions) and horizontally (a single entity covers the entire population), while mixed systems can have different degrees of integration or segmentation/fragmentation, either of system functions or of the different population groups covered, with each subsector maintaining its own system of financing.

From the standpoint of users, the demand for health goods and services is shaped by the organizational characteristics and structure of the health system. Segmentation of financing and insurance, population segregation, and fragmentation of the delivery systems mean that members of different plans, both private and public, and people with the ability to pay but who are not members of an insurance plan, many self-employed, small entrepreneurs, merchants, etc., turn to public establishments if they offer good-quality, highly complex services, or are the only service providers in a given geographic area.

A large percentage of the low-income population also uses private health services—particularly pharmaceutical services, traditional medicine, or low-complexity medical care—as an alternative, given the barriers to access, the restricted supply, and the lack of comprehensiveness of public services, and the fact that they are excluded from health insurance plans and therefore must pay out-of-pocket. In turn, owing to the limitations on benefit plans or administrative barriers to the use of services, middle- and high-income groups that contribute to social security also have recourse to parallel modes of financing by buying individual or collective private insurance—the phenomenon of dual coverage—or paying out-of-pocket, which creates distortions in social security financing and demand.

In this context, the performance of health systems can be analyzed on the basis of the organizational structure and coverage of the different subcomponents, as can be seen in Table 2.

### Social Exclusion and Barriers to Access to the Health System

In tandem with institutional segmentation in health systems and population segregation, the operational fragmentation observed in the delivery of services is a major source of exclusion of groups and inequity in access to health services, owing to institutional/legal, economic, cultural, geographic, ethnic, gender, or age barriers. In Latin America and the Caribbean, an estimated 20–25% of the population (close to 200 million people) has no regular and timely access to the health system (13). Conservative figures indicate that in the United States, more than 46 million people lack adequate health care coverage.

Recognition of social exclusion in health care, defined as “the lack of access of certain groups or people to various goods, services and opportunities that improve or preserve health status

and that other individuals or groups in the society enjoy” (14), has constituted a major step forward in describing and understanding the phenomena that affect access to health care.<sup>1</sup>

The main causes of exclusion in health care vary from country to country but in general are related to poverty, rural location, informal sector employment, unemployment, and factors linked to the performance, structure, and organization of health systems (Table 3). Exclusion is essentially the denial of the right to satisfy health needs and demands to citizens who do not have enough money or who do not belong to the dominant social groups.

### Changes in the Agenda for Social Welfare and Strengthening of Health Systems, 2001–2005

The discussion of what should be understood by social welfare and what is the institutional venue in which health policies should be formulated and implemented has grown in importance in recent years in Latin America and the Caribbean, in a regional scenario dominated by four elements: (1) the questioning of the sector reforms carried out in the 1980s and 1990s; (2) the absence of a social safety net capable of acting as the foundation for social development in a new context and replacing the system previously provided by governments, social security institutions, or both; (3) the commitment to attain the Millennium Development Goals (MDGs) by 2015; and (4) a growing concern over the problems of inequity, exclusion, and poverty that prevail in the countries of the Region.

In this context, new institutional arrangements have arisen to replace or complement the earlier models. Some of them represent radical changes in the way the government organizes itself to formulate and implement social policies and, within this overarching project, they incorporate health institutions and actions such as the Unified Health System in Brazil, the Ministry of Social Welfare in Colombia, the Social Security Health System in the Dominican Republic, the national health insurance systems in Aruba, Bahamas, and Trinidad and Tobago, and the Explicit Health Guarantees Program in Chile.

Other countries opted to establish limited plans for the financing and delivery of health goods and services intended to eliminate barriers to access and improve health outcomes for specific population groups. Thus were established the Universal Mother and Child Insurance Program (SUMI) in Bolivia, the Comprehensive Health Insurance Program (SIS) in Peru, voluntary public insurance (Seguro Popular de Salud) in Mexico, and the provincial mother and child health insurance plans in Argentina. The Law on Free Maternity and Child Care was passed in

<sup>1</sup>To help the countries characterize and measure health exclusion, PAHO/WHO, with support from the Swedish International Development Agency (SIDA), prepared and validated a methodological guide that has been applied in eight countries (Bolivia, Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Paraguay, and Peru), in two of Mexico's states, and in five inter-municipal associations in Honduras.

**TABLE 2. Health systems in the Americas: population coverage by subsystem, 2001–2006.<sup>a</sup>**

Country	Year	Source <sup>b</sup>	Subsystem	Coverage by subsystem
<b>Anguilla</b>	2006		Public	... The Health Services Authority (decentralized agency of the Ministry of Health) is responsible for public health care.
			Private	... Private health care services are offered to the population with the ability to pay or through private health insurance.
<b>Antigua and Barbuda</b>	2006		Public	... The government finances public health care.
			Social Security	... All workers contribute to the public insurance plan and the medical benefits plan.
			Private	... Private health insurance.
<b>Argentina</b>	2001	Mesa-Lago C. Las reformas de salud en América Latina y el Caribe: su impacto en los principios de la seguridad social. CEPAL, 2005.	Public	37.4% of the population has access to the public health services system operated by the federal and provincial health ministries.
			Social Security	51.2% employee benefit plans (obras sociales).
			Private	7.9% prepaid medicine.
			Other	3.2% dual insurance coverage, mainly through private plans (voluntary membership in prepaid plans, mutuals, etc.).
<b>Aruba</b>	2006		Public	100% general health insurance.
			Private	The private supply has begun to grow without much regulation.
<b>Bahamas</b>	2005	Web site of the Ministry of Health of the Bahamas: <a href="http://www.bahamas.gov.bs/">http://www.bahamas.gov.bs/</a> .	Public	100% with access to primary care and other health services or technologies in the country, with public health functions and the provision of collective and individual care.
		Bahamian Report of the Blue Ribbon Commission on National Health Insurance, 2004.	Social Security	All public and private employees are required by law to contribute to the National Insurance Office. Parliament is currently debating a national health insurance system.
			Private	51% of the population buys private health insurance.
<b>Barbados</b>	2006		Public	100% access to national health services.
			Private	20%–25% health insurance offered to large organizations and credit cooperatives.
<b>Belize</b>	2006	Web site of the Ministry of Health of Belize: <a href="http://www.health.gov.bz/">http://www.health.gov.bz/</a> .	Public	100% access to Ministry of Health services. The national public health system guarantees individuals and the population universal access to health care through the public services network and programs. 30% buy services through the national health insurance (estimate June 2006).
			Private	Private medical services are growing in urban areas. Private health insurance is offered in Belize City.



TABLE 2. (continued)

Country	Year	Source <sup>b</sup>	Subsystem	Coverage by subsystem
<b>Bermuda</b>	2000	Bermuda Health Systems and Services Profile, 2005, <a href="http://www.gov.bm">http://www.gov.bm</a> .	Social Security/Private	95% insurance coverage (85% by the major medical package; 10% by basic health coverage). Health insurance plans for public employees, private insurance for private employees and the self-employed; insurance for employees of large companies. The National Health Insurance Commission offers a low-cost health insurance plan.
			No coverage	4% have no health insurance; 1% SD.
<b>Bolivia</b>	2003–2004	Instituto Nacional de Seguros de Salud (INASES), Protección en salud desagregada por prestador, Bolivia, 2003.	Public	30% access to the services of the Ministry of Public Health and Sports (theoretical coverage).
			Social Security	25% (National Health Fund [CNS] 20.8%; other health insurance funds 4.2%, including the Oil Industry Health Fund [CPS], University Social Security [SSU], the Private Banks Health Fund [CSPB], the Military Social Insurance Fund [COSSMIL], CSC, CSCO, SINEC, COTEL).
			Private	12% out-of-pocket payments for services and private medical insurance.
			No coverage	45% with no access to health services. 72.8% with no public or private medical insurance.
<b>Brazil</b>	2003–2006	Agência Nacional de Saúde Suplementar (ANS), Ministério da Saúde, Brasil, Caderno de Informação de Saúde Suplementar. Rio de Janeiro, 2006.	Public	80.4% covered exclusively by the Unified Health System (SUS) (basic coverage 98%; Family Health Program coverage 68.4%).
			Private	19.6% supplementary medical care (private company collective plans 14.4% and individual and family plans 5.2%); 3.8% supplementary dental plans. Private insurance beneficiaries maintain their full right to coverage under the SUS.
<b>British Virgin Islands</b>	2006	Web site of the Government of the British Virgin Islands: <a href="http://www.bvi.gov.vg/">http://www.bvi.gov.vg/</a> .  Agreement to develop the medical insurance program of the British Virgin Islands, 2006.	Public	... The Public Health Department provides health care for youths under 15 years and the elderly.
			Social Security	... Compulsory membership for employers, employees, and the self-employed.
			Private	50% of local medical consultations are private sector. People not covered by the Public Health Department or by social security must pay for services, although they are heavily subsidized.
<b>Canada</b>	2006	Web site of the Ministry of Health of Canada: <a href="http://www.hc-sc.gc.ca/index_e.html">http://www.hc-sc.gc.ca/index_e.html</a> .	Public	100% Medicare (composed of 13 provincial or territorial health plans) covers necessary hospitalization, medical care, surgery, dental, and some chronic care services, except for prescriptions.
		Dewa CS, Hoch JS, Steele L. Prescription drug benefits and Canada's uninsured. <i>J Law Psychiatry</i> . 2005 Sep–Oct; 28(5):496–513; <i>Health Affairs</i> 25(3): 878–879; 2006.	Private	65% of the population has private health insurance for services not covered by Medicare (50% for dental services and 30% for drugs).

TABLE 2. (continued)

Country	Year	Source <sup>b</sup>	Subsystem	Coverage by subsystem
<b>Cayman Islands</b>	2006		Public	...
			Social Security	24% CINICON, government social insurance provider.
			Private	59%
			No coverage	17%
<b>Chile</b>	2003		Public	100% services guaranteed under the Universal Access with Explicit Guarantees (AUGE) plan (public or private provision).
			Social Security	68.3% National Health Fund (FONASA) (legal coverage).
			Private	17.6% health insurance institutions (ISAPREs).
			Other	3% armed forces.
			No coverage	12.8% with no known public or private medical insurance (are often covered by other private mechanisms).
<b>Colombia</b>	2004	Cardona JF, Hernández A, Yepes, F. La seguridad social en Colombia. Rev Gerenc Polit Salud. 2005; 4(9)81–99.	Public	29% “vinculados” (population not members of a social security regime but with access to limited services and benefits paid for with national, regional, and municipal resources); theoretical coverage under the basic care plan (collective public health).
			Social Security	67.1% (32.8% contributive regime; 34.3% privately insured, health promoters [EPS], subsidized and partially subsidized regime; public insurers, subsidized regime administrators [ARS]). (The contributive and subsidized social security regimes and the different partially subsidized plans have different programs of services and benefits.)
			Other	3.9% special regimes (armed forces, police, oil industry workers).
<b>Costa Rica</b>	2003	Mesa-Lago C. Op. cit.  Conferencia Interamericana de Seguridad Social (CISS). Reformas de los esquemas de la seguridad social; e Informe sobre la seguridad social en América, 2004.	Public	100% collective public health.
			Social Security	86.8% Costa Rican Social Security Fund (CCSS) (75% employees, pensioners, and dependent family members; 11.8% indigents paid for by the government).
			Other	Workplace risk insurance covers 71% of the economically active population.
			Private	30% of the population (regardless of whether they belong to the CCSS) use private services either directly or through delegation by the CCSS at least once a year.
			Partial coverage	12.1% to 14.7% emergency service coverage by the compulsory automobile insurance (SOA).
<b>Cuba</b>	2006		Public	100% National Health System.

TABLE 2. (continued)

Country	Year	Source <sup>b</sup>	Subsystem	Coverage by subsystem
<b>Dominican Republic</b>	2001	OPS. Exclusión social en salud en países de América Latina y el Caribe, 2004.	Public	60.0% access to Ministry of Health/Secretary of State for Public Health and Social Welfare (SESPAS) services (estimated theoretical coverage). SESPAS has the goal of covering 76% of the population.
			Social Security	7.0% Dominican Social Security Administration (IDSS).
			Private	12.0% private health services paid for by companies and personal insurance.
			Other	5.0% (3% armed forces and police; 2% privately obtained insurance).
			No coverage	16.0% with no access to health services. 76.4% with no public or private health insurance.
<b>Ecuador</b>	2006	Palacio A. Programa de aseguramiento universal de salud, Ecuador, 2006.	Public	28% access to Ministry of Public Health services (theoretical coverage).
		Mesa-Lago C. Op. cit.	Social Security	21% Ecuadoran Social Security Administration (IESS); 11% (9% general insurance, 2% pensioners); Rural Social Insurance 7%; armed forces and police 3% (Armed Forces Social Security Administration [ISSFA], Police Social Security Administration [SSPOL]).
		OPS. Exclusión en salud en países de América Latina y el Caribe, 2004.	Private	26% (nonprofit 6% [Benevolent Board, NGOs, and municipal organizations]; for profit 20% [private health insurance 3%; out-of-pocket for private services 17%]).
			No coverage	27% with no access to health services. 76% with no public or private medical insurance.
<b>El Salvador</b>	2006	Conferencia Interamericana de Seguridad Social (CISS). Op. cit., 2005.	Public	40.0% access to Ministry of Public Health and Social Welfare services (theoretical coverage). The ministry's goal is to cover 81% of the population.
		Mesa-Lago C. Op. cit.	Social Security	15.8% Salvadoran Social Security Administration (ISSS).
		Encuesta de la Dirección General de Estadística y Censos (DIGESTYC), 2002.	Other	4.6% (military health plan 3%, and teachers' plan 1.6%).
			Private	1.5% to 5.0% private medical insurance and out-of-pocket payment for health services.
		OPS. Exclusión social en salud en El Salvador, 2004, <a href="http://www.lachealthsys.org">http://www.lachealthsys.org</a> .	No coverage	41.7% with no access to health services. 78.0% with no public or private medical insurance.
<b>Grenada</b>	2006	National Strategic Plan for Health, 2006–2010. Web site of the Ministry of Health.	Social Security	... Health care is offered by public health services.
			Private	... Some people have individual or group private insurance.
<b>Guadeloupe, French Guiana, and Martinique</b>	2006		Social Security	100% universal health insurance plans, based on compulsory wage deductions and public subsidies. 25% to 33% have supplementary coverage.
			Private	Private and public health services private care under the universal insurance plan.

TABLE 2. (continued)

Country	Year	Source <sup>b</sup>	Subsystem	Coverage by subsystem
Guatemala	2005	Mesa-Lago C. Op. cit.  OPS. Exclusión en salud en países de América Latina y el Caribe, 2004.	Public	27.0% Ministry of Health exclusively with a basic care package (theoretical coverage). The ministry's goal is to cover 60% of the population with the basic package.
			Social Security	18.3% Guatemalan Social Security Administration.
			Private	30.0% mainly through NGOs and other institutions that offer a basic care package. 10.0% out-of-pocket. 0.2% private insurance coverage.
			No coverage	12.8% to 27.4% with no access to health services. 82.2% with no public or private medical insurance.
Guyana	2006		Public	...
			Social Security	... There is no national health insurance system. The National Health Plan administers a social insurance program that is compulsory for employees and self-employed workers from 16 to 60 years of age.
Haiti	2004	Haiti, Ministère de la santé publique et de la population. OPS/OMS, Analyse du secteur de la santé, 2004.	Public	21% access to Ministry of Public Health and Population services.
			Social Security	1% public employees medical insurance.
			Private	37% (for profit, including out-of-pocket expenditure on basic private services 19%; nonprofit, NGOs, religious missions, and international missions 18%).
			Other	70% of the population goes to traditional healers first.
			No coverage	40% with no access to health services. 99% with no public or private medical insurance.
Honduras	2004–2006	OPS. Exclusión social en salud en países de América Latina y el Caribe, 2004.  Ministerio de Salud de Honduras. Plan Nacional de Salud, 2001–2006.	Public	60% with access to Ministry of Health services (theoretical coverage).
			Social Security	18% Honduran Social Security Administration.
			Private	5% private health insurance.
			No coverage	30.1% with no access to health services. 77% with no public or private medical insurance.
Jamaica	2005	Web site of the Ministry of Health of Jamaica: <a href="http://www.moh.gov.jm/">http://www.moh.gov.jm/</a> .  Jamaican Survey of Living Conditions, 2001.	Public	95% of hospital care and 50% of ambulatory care are covered by public institutions.
			Social Security	13.9% of the population had health insurance in 2001.
			Private	50% of ambulatory and diagnostic services and most pharmaceutical services.

TABLE 2. (continued)

Country	Year	Source <sup>b</sup>	Subsystem	Coverage by subsystem
<b>Mexico</b>	2002–2006	Web site of the Secretaría de Salud de Mexico: <a href="http://www.salud.gob.mx/">http://www.salud.gob.mx/</a> .  Mesa-Lago, C. Op. cit.  Frenk J, et al. Health system reform in Mexico 1: Comprehensive reform to improve health system performance in Mexico. <i>Lancet</i> 2006; 368:1524–1534.	Public	41.8% federal and state health departments (theoretical coverage, corresponds to the uninsured population, informal sector workers, the rural population, and the unemployed). 14.8% Seguro Popular (estimated on the basis of 5.1 million member families in November 2006).
			Social Security	58.2% Mexican Social Security Administration (IMSS): 45.3% (IMSS 34.3%; IMSS Oportunidades 11%); Public Employees Social Security and Services Administration (ISSSTE); 7% (Public Employees Social Security and Services Administration), PEMEX (Petróleos Mexicanos), armed forces, navy department and other insurance for government employees 5.9%). Some of the insured are covered by more than one insurance plan.
			Private	2.8% private health insurance ( 5%-23% of IMSS affiliates also have private insurance).
			No coverage	1% with no access to health services.
<b>Montserrat</b>	2006	Web site of the Ministry of Education, Health, Community Services and Labour <a href="http://www.mehcs.gov.ms">http://www.mehcs.gov.ms</a> .	Public	100% primary and secondary level services. Ministry of Health, Department of Health, and Department of Community Health.
<b>Netherlands Antilles</b>	2006		Social Security	100% public health insurance (PPK “pro-pauwere kaart”) for the poor or people with preexisting conditions; public insurance for blue collar workers; insurance fund for retired public sector employees; and private plans.
<b>Nicaragua</b>	2004	Mesa-Lago C. Op. cit.	Public	60.0% access to Ministry of Health services (estimated theoretical coverage).
			Social Security	7.7% Nicaraguan Social Security Administration (INSS) (members and families, spouses and children under 12).
			Private	4.0% out-of-pocket payments.
			Other	0.4% armed forces and government.
			No coverage	27.9% with no access to health services.
<b>Panama</b>	2004	Conferencia Interamericana de Seguridad Social (CISS). Op. cit., 2004.	Public	35.4% Ministry of Health (theoretical coverage). Corresponds to the uninsured population of the Social Security Fund (CSS) which by law must be covered by the Ministry of Health.
		Gobierno de Panamá, Plan de Desarrollo Social, 2000–2004.	Social Security	64.6% Social Security Fund.
			No coverage	20.0% without access to health services.
<b>Paraguay</b>	2005	Mesa-Lago, C. Op. cit.  OPS. Exclusión social en salud en países de América Latina y el Caribe, 2003.	Public	35% to 42% access to Ministry of Health services (estimated theoretical coverage).
			Social Security	18.4% Social Welfare Administration (IPS) or some other kind (individual, work, family, military, police, or foreign).
			Private	7.0% out-of-pocket payment.
			No coverage	38.6% with no access to health services. 81.1% with no public or private health insurance.

TABLE 2. (continued)

Country	Year	Source <sup>b</sup>	Subsystem	Coverage by subsystem
<b>Peru</b>	2006	Perú, Ministerio de Salud. Seguro Integral de Salud, 2006.	Public	27.8% Ministry of Health comprehensive insurance plan.
			Social Security	28.1% (EsSalud 25.1%; health service providers (EPS), armed forces and police 3%).
			Private	10.0% private (2% out-of-pocket and 8% traditional medicine).
			No coverage	42.1% with no public or private health insurance.
<b>Puerto Rico</b>	2003		Public	40.0% Medicaid.
			Social Security	26.0% (Medicare 14%; public employees 12%).
			Private	37.0% private health insurance.
			No coverage	7.1% with no public or private health insurance.
<b>Saint Kitts and Nevis</b>	2006		Public	100% Ministry of Health. Services not available on the island are financed through public subsidies.
<b>Saint Lucia</b>	2000, 2002	Ministry of Health, Human Services, Family Affairs and Gender Relations. Proposals for Health Sector Reform 2000.	Public	Ministry of Health.
			Social Security	... National Insurance Plan and private health insurance for individuals and groups. A national health plan (universal health care) for secondary and tertiary care through a public-private mix is in the process of being introduced.
<b>Saint Vincent and the Grenadines</b>	2006		Public	... Ministry of Health.
			Social Security	... National Health Insurance Plan.
<b>Suriname</b>	2005		Public	54% (30% Ministry of Health; 24% Ministry of Social Affairs).
			Social Security	27% State Medical Insurance Fund (SZF) (21% Medical Mission; 6% with government subsidies).
			Private	13% private insurance (10% employer insurance plans; 3% private medical insurance).
			Other	1%
			Uninsured	5%
<b>Trinidad and Tobago</b>	2006		Public	...
			Social Security	The government's goal is to implement national health insurance in 2007.
			Private	Private employers offer health insurance.
<b>Turks and Caicos Islands</b>	2005		Public	80% Ministry of Health (theoretical coverage).
			Social Security	The government is considering the creation of a national health insurance authority to administer a national universal health insurance plan.
			Private	20% of the population has private medical insurance.



**TABLE 2. (continued)**

Country	Year	Source <sup>b</sup>	Subsystem	Coverage by subsystem
<b>United States</b>	2005	Web site of the Kaiser Family Foundation, 2006, <a href="http://www.kff.org">http://www.kff.org</a> .	Public	20.6% Medicaid.
			Social Security	16.1% Medicare.
			Private	45.5% private health insurance, usually offered by the employer.
			No coverage	17.8% have no public or private medical insurance or government-subsidized insurance.
<b>Uruguay</b>	2006		Public	45.3% Ministry of Health and the State Health Services Administration (ASSE).
			Social Security	45.0% mutuals.
			Other	7.6% (5.3% armed forces plan; 2.3% police forces plan).
			Private	1.8% private full-coverage insurance.
<b>Venezuela</b>	2000 2005 2006	Mesa-Lago C. Op. cit.  OPS. Barrio adentro: derecho a la salud e inclusión social en Venezuela, 2006.	Public	65.6% Ministry of Public Health (estimated theoretical coverage of the population not insured by the Venezuelan Social Insurance Administration [IVSS]). Misión Barrio Adentro provides primary care for 73% of the population.
			Social Security	34.4% IVSS.
			Private	30.0% (estimated, can be a mix of public and private).

<sup>a</sup>Methodological notes: This table is not intended to provide an exhaustive or exclusive classification/topology, but to synthesize the most recent information available for each country. When data for a given subsystem are not available, the corresponding line was omitted to shorten the table. In some cases the percentages may add up to more than 100% owing to duplication of insurance in some groups that belong to more than one protection plan or to less than 100% owing to lack of information.

<sup>b</sup>When a specific source is not given, the information is taken from materials prepared during 2006 by the PAHO/WHO Country Offices for the publication *Health in the Americas*, 2007 edition. If another source is mentioned, it is additional.

**TABLE 3. Social exclusion in health care: incidence and main causes, selected countries of the Americas.**

Social exclusion (%)				
Country	Incidence	Exclusion due to:		Main causes of social exclusion
		Barriers to access	Insufficient supply	
Bolivia	77	60	40	Poverty/mother's lack of education/ethnic origin
Ecuador	51	41	59	Insufficient health infrastructure
El Salvador	53	54	46	Lack of transportation to health centers
Honduras	56	45	55	Insufficient health infrastructure/insufficient supply of services
Paraguay	62	53	47	Ethnic origin: being monolingual in Guaraní/lack of other public services (electricity, sanitation)
Peru	40	54	46	Poverty/living in rural areas/ethnic origin

**Source:** Pan American Health Organization; Swedish Agency for International Development. Exclusion in Health in Latin America and the Caribbean, 2003.

Ecuador, and the social welfare program known as the Barrio Adentro was started up in Venezuela. Health coverage was extended to rural populations in Guatemala, El Salvador, and Honduras, and a family protection policy was introduced in Nicaragua. The appearance of these new institutional arrange-

ments or plans to extend social health protection is a sign that the importance of this issue is being recognized and a new approach is being sought to guide changes in health systems.

The central place occupied by the fight against poverty, social exclusion, and inequity on the political agenda of the countries

and international agencies in their attempts to attain the MDGs led to a growing consensus in the first five years of the 21st century on a new approach to making changes in health systems, centered on the concept of social protection of health as a universal human right that is no longer contingent on employment or other individual or group characteristics and is guided by a renewed strategy for primary health care. The high priority attached to health in the MDGs underlines that health is not just the result of greater development, but rather lies at the very heart of development itself.

In 2002, the countries of the Americas, meeting at the 26th Pan American Sanitary Conference, approved Resolution CSP 26.R19, which expresses a commitment to provide all their citizens with access to health goods and services under equal conditions of opportunity, quality, and dignity, combating inequities in the use of those goods and services and in health outcomes by extending the social protection of health, understood as “the guarantee that society gives through the public powers to enable an individual or group of individuals to satisfy their health needs and demands, without the ability to pay acting as a restriction.”

At the Special Summit of the Americas in 2003, the governments of the Region approved the Nuevo León Declaration, which outlines three objectives: economic growth with equity to reduce poverty, social development, and democratic governance. Social protection of health was considered essential for national progress and the countries undertook to adopt broader strategies for disease prevention, health care, and promotion, with particular stress on the most vulnerable sectors of society. In 2005, the 58th World Health Assembly approved Resolution WHA58.33 (15), which urges the member states to strengthen their health systems and gear their policies toward universal coverage and sustainable financing.

Accordingly, the main challenge facing the Latin American and Caribbean countries in the new millennium is to “guarantee universal social protection of health for all citizens by eliminating or reducing avoidable inequalities in coverage, access, and use of services as much as possible, and assuring that every person receives care based on their needs and contributes to system financing according to their possibilities” (16). Some countries have already taken up the task, reorienting their health systems toward social protection, based on the principles of primary health care, so they can contribute to building more equitable and inclusive societies, better attuned to the new needs of the population of the Region. Examples include the definition of national health objectives aligned with the population’s health requirements, particularly those of the most disadvantaged groups; the implementation of mechanisms to integrate the operations of the social security and ministry of health systems, reducing fragmentation in the delivery of services and improving geographic equity; the introduction of a single comprehensive plan that guarantees health care for the entire population regardless of the type of insurance, the type of provider, or the user’s ability to

contribute, in order to reduce segmentation in insurance and improve equity; the use of tools to analyze equity and exclusion in health care and to include economic, social, ethnic, cultural, and gender elements in the definition of health plans and policies; the creation of primary care services directed to families; the analysis of the performance of public health functions as a key to formulating health policies; the enhancement of the stewardship and leadership function of national health authorities by creating institutional conditions for sector and intersectoral steering and planning in the development of health actions; the startup of mechanisms to regulate and supervise the actions of the different players who participate in producing health care; the incorporation of health as a central element in social dialogue to define a country’s productive platform; and the insertion of health policies into the broader institutional framework of the social welfare system, alongside income, labor, employment, housing, and education. These examples of the search for mechanisms to eliminate population segregation and institutional segmentation, reduce operational fragmentation, and combat exclusion in health care inform the direction that the public health agenda will take in the coming years.

## NATIONAL HEALTH EXPENDITURE AND FINANCING OF NATIONAL HEALTH CARE SYSTEMS AND SERVICES

### National Health Expenditure in the Americas and Other Regions, 2004: Public Spending Rises with Countries’ Level of Economic Development

In 2004, worldwide health care expenditure was estimated as 8.7% of the global economy (US\$ 4,500 billion).<sup>2</sup> In the same year, world per capita income was estimated as US\$ 8,284 and per capita health expenditure as US\$ 742. Table 4 compares national health expenditure in the Americas and different parts of the world in 2004. As the table shows, health expenditure is relatively high in high-income countries. Those countries, including Canada and the United States, accounted for 15% of the population and 71% of global health care expenditure. Average per capita spending on health in this group of countries is estimated at US\$ 3,226. When the low- and middle-income countries of the world are grouped together, including the countries of Latin America and the Caribbean, they accounted for 85% of the population in 2004 but only 29% of global health care expenditure. Average per capita health expenditure in low- and middle-income countries is estimated to be US\$ 248.

Within the Americas Region, the figures reported in Table 4 illustrate the stark differences in expenditure on health. Canada

<sup>2</sup>Unless otherwise specified, the figures are in US dollars of the year 2000, adjusted by purchasing power parity (US\$ PPP 2000), as reported in the World Development Indicators Database of the World Bank (July 2006).

**TABLE 4. National expenditure on health care in the Americas and other regions, 2004.**

Region	Per capita income, US\$ PPP 2000	National expenditure on health as a percentage of GDP	National expenditure on health per capita in current US\$	National expenditure on health per capita, US\$ PPP 2000	Public/private ratio	Expenditure on public health as a percentage of GDP
<b>Americas</b>	18,149	12.7	2,166	2,310	47/53	6.0
Canada	28,732	10.3	2,669	2,875	71/29	7.3
United States	36,465	13.1	5,711	4,791	45/55	7.2
Latin America and the Caribbean	7,419	6.8	222	501	48/52	3.3
<b>High-income countries<sup>a</sup></b>	28,683	11.2	3,449	3,226	60/40	6.7
European Union	25,953	9.6	2,552	2,488	74/26	7.1
Other high-income countries	24,490	8.2	1,997	1,997	64/36	5.2
<b>Low- and middle-income countries<sup>b</sup></b>	4,474	5.5	79	248	48/52	2.6
Eastern Europe and Central Asia	7,896	6.5	194	514	68/32	4.5
Middle East and North Africa	5,453	5.6	92	308	48/52	2.7
South Asia	2,679	4.4	24	119	26/74	1.1
East Asia and the Pacific	4,920	5.0	64	247	38/62	1.9
Sub-Saharan Africa	1,820	6.1	36	111	40/60	2.4
<b>All regions and countries</b>	8,284	8.7	588	742	58/42	5.1

<sup>a</sup>Includes Canada and the United States.<sup>b</sup>Includes Latin America and the Caribbean.

**Source:** Prepared by the Health Policies and Systems Development Unit, Health Systems Strengthening Area, Pan American Health Organization; data on development indicators from the World Bank and PAHO's database on national health expenditure.

and the United States account for 39% of the population and 86% of total health care expenditure, while Latin America and the Caribbean account for 61% of the population but just 14% of expenditure. Average per capita national health expenditure in the countries of Latin America and the Caribbean is estimated to be US\$ 501. The figure for Canada (US\$ 2,875) is almost six times higher than the average for Latin America and the Caribbean. Average per capita spending on health in the United States (US\$ 4,791) is even higher than Canada's, and is more than nine times greater than the average for Latin America and the Caribbean.

The Region of the Americas accounted for a relatively large share (44%) of global health care expenditure. The share of national health expenditure (NHE) as a percentage of gross domestic product (NHE/GDP) is estimated to be about 12.7%. This figure is higher than for the European Union countries (9.6%) and significantly higher than for the Latin American and Caribbean region taken alone (6.8%). Spending on health is one of many factors that define the preventive and curative levels of care achieved and national health expenditure can be a good indicator of inequalities in access to services, not only between regions but within them and between income groups in the same country.

The analysis of the public/private mix of national health expenditure helps to understand the degree of efficiency of the government and of the market that controls health resources. Resources channeled through public institutions are vulnerable to government failure due to misallocation, underutilization, or low

productivity of public resources. Resources transferred between consumers and providers through the purchase and sale of health goods and services, including the purchase of health insurance, are subject to market failures. Public policy discussion of issues related to efficiency should be based on the relative weight of the public and private sectors in expenditure—the public/private mix of national health expenditure (Table 4).

As Table 4 shows, there are variations in the composition of the public/private mix of national health expenditure in different regions of the world.<sup>3</sup> The ratio of public/private national health expenditure varies from 74/26 in the European Union where countries have universal health care systems to 26/74 in the low-income countries of South Asia. In the Americas, the mix varies from a public/private ratio of 71/29 in Canada, which has remained rather stable over the last decade, to about 45/55 in the United States and around 48/52 in Latin America and the Caribbean. Among the developed countries, the United States appears to be the most market-oriented national health care system. There is no clear pattern in the relationship between the public/private mix of national health expenditure and the level of income per capita. However, the share of public health expenditure

<sup>3</sup>Public health expenditure usually includes disbursements by central and local governments and mandatory social health insurance schemes. Private expenditure includes out-of-pocket spending by households and the payments made by various institutional sectors of the economy through health insurance and pre-paid health plans.

as a percentage of GDP provides a better indicator of the role of government in the provision of health goods and services,<sup>4</sup> and is positively correlated with a country's level of economic development. For example, public health expenditure represents around 7.1% of GDP in high-income countries of the European Union, around 7.3% of GDP in Canada, and 7.2% of GDP in the United States, while the figure is about 3.3% for countries of Latin America and the Caribbean.

### **National Health Expenditure and the Public/Private Mix of National Health Care Systems in the Americas 2004–2005: Cross-Country Comparisons<sup>5</sup>**

The total amount of national resources spent on health care expressed as a percentage of the national economy varies significantly in the countries of the Americas. The wide differences suggest that although per capita income may have some role in explaining the share of GDP devoted to national health, other factors may be playing a more important role in determining the level and composition of national health expenditure. Whether countries spend relatively more or less of their GDP on health is more influenced by policy decisions and reflective of the way in which national health systems are organized and financed.

Depending on the structure of national health care systems, the Region exhibits large variations in the public/private mix of national health expenditure. Table 5 summarizes this information by presenting GDP per capita, total national health expenditure as a percentage of GDP, per capita national health expenditure, and the relative weight of public and private expenditure as a percentage of overall national health expenditure.

As mentioned, there is no clear pattern in the relationship between the public/private mix of national health expenditure and the levels of per capita income in countries. There may be a slight

association between these factors, but at all income levels there are significant variations in the composition of the mix. The public/private composition of national health expenditure ranges from 93/7 in Antigua and Barbuda, where there is national health insurance, to 27/73 in Guatemala. In Table 6, national health care systems have been classified by type of health system and by level of income. The national health care systems of the countries of the Americas are classified either as predominantly public systems (with public expenditure exceeding 66% of total national health expenditure), mixed systems (with public expenditure ranging from 50% to 66%), and predominantly private market-oriented systems (with public expenditure amounting to less than 50%).

The more fundamental issue may be that the provision of public health services tends to be weaker in poorer countries, particularly in those that lack a predominantly public health system. The mild association between a larger share of private expenditure and the country's per capita income mentioned earlier is probably due to weak public health services in countries such as Bolivia, Ecuador, Guatemala, Haiti, Honduras, Jamaica, Nicaragua, and Paraguay. In general, where extensive coverage of the population exists under public health care systems or social insurance systems, private spending tends to account for a smaller share.

### **Changes in the Composition of National Health Expenditure: Trends in Total Expenditure and the Growing Role of Private Insurance and Pre-paid Health Plans**

The dynamics and nature of national health expenditure have changed over time in Latin America and the Caribbean. Recent trends include one period from 1980 to about 1995, and a second very different period from 1996 to 2005. During the 1980s, national health expenditure in the Americas as a percentage of GDP rose steadily, and this occurred amidst general economic stagnation affecting most Latin American and Caribbean countries. The regional economy grew slowly during the 1980s, at a rate of 1.2% per year. Average per capita income declined from US\$ 6,600 in 1980 to US\$ 6,200 in 1990. During that period, national health expenditure grew faster than the economy, at around 1.4% a year. Per capita expenditure, in real terms, increased from US\$ 380 to US\$ 420. During the 1990s, most of the Latin American and Caribbean economies experienced a significant recovery in their rate of economic growth. National health expenditure grew at an even faster pace. The NHE/GDP ratio rose from 6.8 in 1990 to 7.1 in 1995. Per capita health expenditure reached around US\$ 480. From the early 1980s to the mid-1990s, the share of national health expenditure as a percentage of GDP grew substantially, from around 5.9% in 1980 to around 6.8% in 1990 and reached about 7.1% in 1995.

Since the mid-1990s, the Region has experienced a period of accelerated economic growth. Expenditure on health care-related goods and services grew more slowly than the economy, and the

<sup>4</sup>The term "provision" is used as defined in the literature on public finance. It is not limited to the government's production of health care services; it includes regulatory and mandatory systems that ensure that an adequate amount of a particular type of good or service (health care services or health insurance) is available or used (consumed) by the population.

<sup>5</sup>Because of differences in concepts, classifications, and/or accounting procedures, the data presented in this section may differ from estimates reported in the country chapters and/or by other international organizations. Methods and data sources used in the estimates presented here are similar to the ones used in PAHO's Basic Health Indicators 2006, and can be consulted at: <http://www.paho.org/english/dd/ais/BI-brochure-2006.pdf>. The concepts, classifications, and accounting procedures used in the regular production of estimates of national health expenditure for the 48 countries and territories of the Americas are based on the guidelines of the United Nations System of National Accounts (SNA 1993), the Government Finance Statistics Manual of the International Monetary Fund (GFS 2001), the new international standards developed under the framework of the United Nations Statistical Commission, and the Statistical Conference of the Americas (SCA-ECLAC). Implementation of harmonized estimates of economic and financial indicators at the country level would assure that those indicators would be available for use in policymaking. National health accounts in the countries of the Americas include the development of economic and financial indicators related to health, health care services, and national health care systems.

**TABLE 5. National health expenditure in the Americas: per capita, percentage of GDP, and public/private ratio, 2004.**

Country	GDP per capita, US\$ PPP 2000	National expenditure on health as a percentage of GDP	Per capita national expenditure on health, US\$ PPP 2000	Public/private ratio
Anguilla	8,310	6.9	573	68/32
Antigua and Barbuda	11,567	9.4	1,084	93/7
Argentina	12,222	8.6	1,045	55/45
Aruba	21,515	14.2	3,064	89/11
Bahamas	15,955	6.1	969	52/48
Barbados	17,217	8.1	1,389	53/47
Belize	6,201	5.5	341	77/23
Bermuda	70,313	9.8	6,914	38/62
Bolivia	2,499	7.1	178	59/41
Brazil	7,531	7.0	530	49/51
British Virgin Islands <sup>a</sup>	36,947	1.8	681	...
Canada	28,732	10.3	2,959	71/29
Cayman Islands <sup>a</sup>	31,614	3.3	1,049	...
Chile	9,993	8.3	827	53/47
Colombia	6,669	6.0	402	57/43
Costa Rica	8,714	8.5	738	60/40
Cuba <sup>a</sup>	3,483	6.3	220	...
Dominica	5,186	6.5	335	68/32
Dominican Republic	6,846	4.7	320	29/71
Ecuador	3,642	4.6	166	48/52
El Salvador	4,633	6.2	287	39/61
French Guiana	7,774	...	...	...
Grenada	7,372	7.7	571	59/41
Guadeloupe	7,759	...	...	...
Guatemala	3,964	6.5	259	27/73
Guyana <sup>a</sup>	4,080	1.1	45	...
Haiti	1,714	5.7	98	47/53
Honduras	2,644	6.0	160	58/42
Jamaica	3,826	7.0	267	36/64
Martinique <sup>a</sup>	14,026	...	...	...
Mexico	9,010	5.5	497	44/56
Montserrat	3,072	7.2	220	85/15
Netherlands Antilles	15,481	12.9	1,997	91/9
Nicaragua	3,340	8.0	266	41/49
Panama	6,689	6.8	453	66/34
Paraguay	4,423	6.6	290	33/67
Peru	5,219	3.8	197	61/39
Puerto Rico <sup>a</sup>	23,987	3.5	828	...
Saint Kitts and Nevis	11,606	4.3	497	57/43
Saint Lucia	5,819	5.8	337	57/43
Saint Vincent and the Grenadines	5,880	4.5	267	86/14
Suriname <sup>a</sup>	6,188	3.8	237	...
Trinidad and Tobago	11,196	4.9	551	60/40
Turks and Caicos Islands	10,212	3.4	348	...
United States	36,465	13.1	4,791	45/55
US Virgin Islands <sup>a</sup>	13,938	3.0	416	...
Uruguay	8,658	9.0	781	71/29
Venezuela	5,554	6.3	348	56/44

<sup>a</sup>Public expenditure only.**Source:** Pan American Health Organization, Health Systems Strengthening Area, Health Policies and Systems Development Unit.

**TABLE 6. Classification of national health care systems in the Americas (type of system and income level), 2004.**

Type of health system	Income level: Low (Under US\$ 4,000)	Income level: Middle (Over US\$ 4,000; under US\$ 11,000)	Income level: High (Over US\$ 11,000)
Predominantly public system		Anguilla Belize Dominica Montserrat <sup>a</sup> Panama <sup>b</sup> St. Vincent and the Grenadines Uruguay <sup>b</sup> Chile <sup>b</sup> Costa Rica <sup>b</sup> Grenada	Antigua and Barbuda <sup>a</sup> Netherlands Antilles <sup>b</sup> Aruba <sup>b</sup> Canada <sup>b</sup>
Mixed system <sup>b</sup>			Argentina <sup>b</sup> Bahamas Barbados Saint Kitts and Nevis Trinidad and Tobago
Public expenditure exceeds 66% of national health care costs	Cuba <sup>a</sup>		
Public expenditure exceeds 50% but is under 66% of national health care costs	Bolivia  Honduras Nicaragua	Peru Saint Lucia Venezuela El Salvador	
Predominantly private, market- oriented systems	Ecuador		Bermuda
Public expenditure is less than 50% of national health care costs	Guatemala Haiti Jamaica	Brazil Mexico Paraguay Dominican Republic	United States

<sup>a</sup>Can be classified as national health services systems.<sup>b</sup>Countries with extensive social security or compulsory medical insurance systems that cover 50% or more of the population (see Table 7) can be classified as having national health insurance systems.**Source:** Based on Table 5.

share of national health expenditure as a percentage of GDP declined to 6.8%. From 1990–2000 to 2004–2005, total spending on health care services grew by an average of 4% a year, slightly slower than the economy. The share of national health expenditure as a percentage of GDP declined from around 7.1% in the mid-1990s to about 6.8% in 2004–2005. During that time, the level of per capita expenditure on health remained practically constant (around US\$ 500). Overall, the Latin American and Caribbean region spent about US\$ 305 billion on health care in 2005. This figure is 50% higher than the level of US\$ 190 billion in 1980, and 5% higher than in 2000 (around US\$ 291 billion).

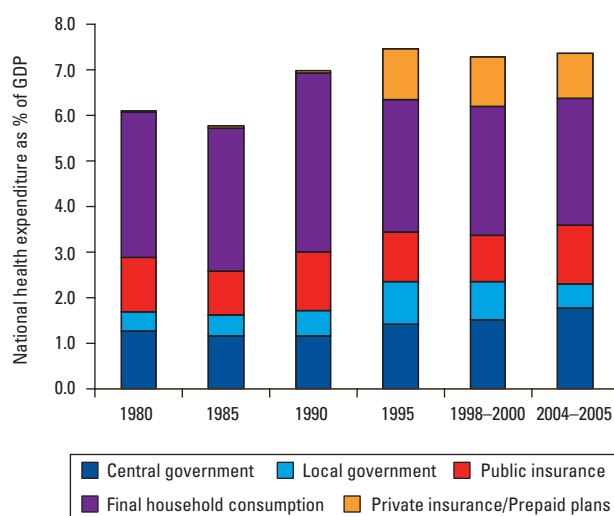
From 1980 until 2005, the composition of national health expenditure underwent significant changes. The economic and fiscal crisis of the 1980s severely curbed government spending capacity. In 1985, governments spent less on health care than in 1980. Public expenditure as a share of GDP declined from around 2.9% in 1980 to 2.6% in 1985. During the 1980s, private expenditure grew faster than public expenditure. The share of private expenditure as a percentage of GDP increased from 3.2% in 1980 to about 3.8% in 1990. Figure 1 shows the changes in the composition of national health expenditure for Latin America and the Caribbean for 1980–2005.

The recovery of economic growth during the 1990s had a positive impact on public health expenditure. (Public health expenditure includes central government, local government, and public insurance spending.) From 1990 to 1997, public health expenditure grew continuously, rising to 3.4% of GDP in 1995–1997. It declined slightly to 3.2% in 2000 and remained at that level for the next three years. There have been changes in the composition of public health expenditure: central government expenditure decreased during the 1980s, then increased with the economic recovery in the 1990s. Local government expenditures on health were low in the 1980s, grew in the 1990s and, after peaking in 1995, have been declining since 1998. Public health insurance program expenditures decreased slightly in the 1980s, before rising in 1990; they declined in the 1990s, but apparently improved again during 2004–2005.

Most of the increases in private spending on health care came from a significant rise in household out-of-pocket expenditure and rapid growth in private health insurance and pre-paid medical plans. Household out-of-pocket spending grew when government spending declined during the 1980s, peaking in 1990. Out-of-pocket spending has declined since then, consistent with the increase in spending on private health insurance. Private health



**FIGURE 1. Changes in the composition of national health care expenditure over time, Latin America and the Caribbean, 1980–2005.**



**Source:** Pan American Health Organization, Health Systems Strengthening Unit. Database on national health expenditure.

insurance and pre-paid health plans amounted to about 2% of total private spending in the early 1980s. With growth in the market for private health insurance and prepaid plans, private expenditure on these items rose steadily through the late 1980s and early 1990s, accounting for about 27% of total private spending in the mid-1990s. It has remained fairly constant since then at about 1.2% of GDP.

### Public Health Care Systems: Expenditure and Coverage of Government and Social Health Insurance Plans

The organization and financing of national public health care systems in the Americas are reflected in expenditures on health goods and services by central and local governments (provincial, state, and departmental), either directly or indirectly through the health and maternity programs of social security institutions or mandatory (social) health insurance schemes (depending on the accounting practices of the countries, these expenditures may or may not be included as part of government finances). There are large differences in Latin America and the Caribbean in total public expenditure on health, in the magnitude of public resources spent through social security and other public insurance schemes, and in the coverage of public health insurance plans. Table 7 illustrates the wide differences between countries in public expenditure on health as a percentage of GDP, and the spending and coverage levels of health insurance systems during 2004–2005.

Total public health expenditure as a percentage of GDP in the Region ranges from a high of around 12.7% (Aruba) to a low of 1.1% (Guyana). Countries with the largest share of public expenditure as a percentage of GDP are those whose national health systems provide universal or near-universal coverage of services through national health insurance schemes. The central government is directly involved in the provision of health care services to all or most of the population in those countries. For example, Cuba and some English-speaking Caribbean countries have total public health expenditure of 6% of GDP or more; the Netherlands Antilles and Aruba have total public health expenditure of around 12% or more of GDP. Countries with public health insurance schemes covering more than two thirds of the total population, such as Chile, Costa Rica, and Panama, spend between 4.4% to 5.0% of GDP on this item. Canada is the only country in the Region providing universal coverage, with total public health expenditure of around 7.3% of GDP.

Other countries exhibit high levels of public expenditure on health but lower levels of coverage, such as Colombia and the United States. The relatively high share of public expenditure as a percentage of GDP in Colombia is associated with the introduction of a new compulsory public health insurance scheme in the early 1990s, which increased coverage from around 20% in the early 1990s to about 52% in 2004–2005. The United States spends about 7.2% of GDP on public health, with a coverage rate of just over 30% of the population. The main components of that expenditure are the social insurance systems targeted to the poor (Medicaid), to persons over 65 years old (Medicare), and to children (State Children's Health Insurance Program—SCHIP).

Public expenditure per capita varies considerably throughout the Region, ranging from US\$ 45 in Haiti to over US\$ 2,000 in Aruba, Bermuda, Canada, and the United States. In countries with public health insurance, there are significant differences in per capita expenditure per beneficiary, ranging from a high of about US\$ 7,150 in the United States to a low of about US\$ 136 in Bolivia. In general, health expenditure per beneficiary of public health insurance is more than twice as high as public health expenditure per capita.

Social security institutions have low population coverage in countries with predominantly private market-oriented systems. This is true in Ecuador (20.4%), Guatemala (17.8%), El Salvador (16.8%), and Paraguay (10.9%). A similar level of low coverage is observed in low-income countries with mixed health systems such as Honduras and Nicaragua.

Some countries in the Region have implemented publicly financed health programs targeted to vulnerable groups. Implementation of these programs has actually increased the level of overall public health spending. These programs have been financed through the creation of specific taxes to raise funds for improving maternal and child health. The programs have been implemented in an incremental manner. The box on page 320 presents a short summary of key information on how two of

**TABLE 7. Public health expenditure and public health insurance coverage in the Americas, 2004–2005.**

Country	Total population (millions)	Total public expenditure on public health as a percentage of GDP	Expenditure on social security and public health insurance including the total of the preceding column as a percentage of GDP	Coverage of social security and public health insurance plans as a percentage of the total population	Per capita public expenditure in US\$ PPP 2000	Expenditure on health per public health insurance beneficiary in US\$ PPP 2000
Anguilla	0.01	4.7			388.3	
Antigua and Barbuda	0.08	8.7			1,005.1	
Argentina <sup>b</sup>	38.37	4.7	2.5	49.6	574.4	609.1
Aruba <sup>a</sup>	0.10	12.7	12.7	100.0	2,732.4	2,732.4
Bahamas	0.32	3.1			502.5	
Barbados	0.27	4.3			739.0	
Belize	0.28	4.2			262.0	
Bermuda	0.06	3.7			2,624.9	
Bolivia	9.01	4.2	1.5	27.8	105.1	136.1
Brazil	183.91	3.4			259.5	
British Virgin Islands	0.02	1.8			680.6	
Canada	31.97	7.3	7.1	100.0	2,097.5	2,040.0
Cayman Islands	0.04	3.3			1,048.8	
Chile <sup>b</sup>	16.12	4.4	3.7	83.5	441.7	437.0
Colombia <sup>b</sup>	44.92	3.4	3.0	67.8	229.4	294.9
Costa Rica	4.25	5.0	4.5	87.8	440.0	449.0
Cuba	11.24	6.3			220.2	
Dominica	0.07	4.4			228.0	
Dominican Republic	8.77	1.4	0.5	0.0	94.1	
Ecuador	13.04	2.2	1.0	20.4	80.1	177.6
El Salvador	6.76	2.4	1.2	16.8	111.0	331.6
French Guiana	0.20					
Grenada	0.11	4.5			334.8	
Guadeloupe	0.45					
Guatemala	12.29	1.8	0.9	17.8	71.1	192.1
Guyana	0.75	1.1			45.3	
Haiti	8.41	2.7			46.3	
Honduras	7.05	3.5			93.4	
Jamaica	2.64	2.5			95.7	
Martinique	0.44					
Mexico	103.80	2.4	1.7	56.4	217.9	275.0
Montserrat	0.01	6.1			186.0	
Netherlands Antilles <sup>a</sup>	0.18	11.7	11.7	100.0	1,811.2	1,811.2
Nicaragua	5.38	3.3	1.9	10.7	108.8	
Panama	3.18	4.5	2.9	62.7	298.8	
Paraguay	6.02	2.2	1.0	10.9	95.7	
Peru	27.56	2.3	1.1	27.3	120.1	
Puerto Rico	3.89	3.5			827.8	
Saint Kitts and Nevis	0.05	2.5			285.1	
Saint Lucia	0.16	3.3			192.9	
Saint Vincent and the Grenadines	0.12	3.9			228.3	
Suriname	0.45	3.8			237.0	
Trinidad and Tobago	1.30	3.0			332.0	
Turks and Caicos Islands	0.02	3.4			348.5	
United States	293.66	7.2	5.9	30.1	2,633.0	7,149.8
US Virgin Islands	0.11	3.0			415.6	
Uruguay <sup>b</sup>	3.44	6.4	4.5	44.8	554.1	876.1
Venezuela	26.13	3.5	1.3	38.3	194.4	192.9

<sup>a</sup>Public health insurance accounts for more than 96% of total public expenditure.<sup>b</sup>Includes the costs of public health insurance plans financed through compulsory contributions: Argentina (Obras Sociales); Chile (FONASA and ISAPRES); Colombia (Health Social Security Funds, contributive and subsidized); Uruguay (IAMCS).**Source:** Pan American Health Organization, Health Systems Strengthening Area, Health Policies and Systems Development Unit, Washington DC, PAHO, August 2006.

## Financing of Mother and Child Health Care Programs in Bolivia and Ecuador

In both Bolivia and Ecuador, universal publicly financed mother and child health insurance has been introduced through national laws and decrees. The Universal Mother and Child Insurance (SUMI) was established in Bolivia in January 2003 to replace the Basic Health Insurance (SBS) and the National Maternal and Child Insurance (SNMN). SUMI was established as a broad, universal, and free insurance plan for pregnant women, and it covers up to six months after delivery, in addition to covering care for children from birth to age 5. In 2005, Law 3.250 extended SUMI coverage to all women up to 60 years of age. The basic health services covered by SUMI rose in number from 92 to 546 and are provided by institutions in the public and social security network and by health centers operated by NGOs, churches, and other institutions.

SUMI is mainly financed with funds from the national treasury, municipal tax transfer payments (CTM), and the National Solidarity Fund (FSN). Between 1999 and 2005 financing for mother and child health insurance rose from US\$ 8 million to US\$ 24 million. The initial figure of US\$ 8 million was doubled in 2002 with the inclusion of the CTM and FSN contributions, and it is estimated that the program has the capacity to disburse between 70% and 85% of total funding. After the SNMN was introduced in 1996, mother and child health coverage in Bolivia expanded to cover 55% of the population in 2005.

Estimated per capita expenditure on mother and child health rose from about US\$ 11 in 1999 to US\$ 25 in 2005 for each person assisted. That amount is not sufficient to cover services for the entire potential beneficiary population. Even with a sustained increase in service coverage and higher disbursement capacity by SUMI, financing will continue to be insufficient to cover all services for the entire potential beneficiary population.

In Ecuador, the Free Maternity and Child Care Law of 1994 was implemented for the first time in 2000 through the National Maternity and Child Insurance (SNMI). The law establishes that 3% of the special consumption tax (ICE) will be used to finance the insurance, complemented by contributions from the National Child Nutrition Fund (FONNIN) and international cooperation agencies that contribute funds to local governments. The latter finance activities in their respective jurisdictions (municipalities) and cover the costs of transportation in obstetrical and pediatric emergencies. The estimated budget for the Free Maternity and Child Care Law does not include funds from the Ministry of Health's general budget that the government authorizes each year to subsidize salaries, unit equipment, instruments, and maintenance of installations or establishments.

Financing for SNMI rose from approximately US\$ 8 million to US\$ 20 million between 1999 and 2005. This steady increase is due to the special tax allocated directly to the insurance. In 1999 it initially covered nine services which were gradually increased to 42 by 2003. Over the same period, the number of beneficiaries jumped from 793,000 to 3 million, while per capita expenditure per beneficiary increased from about US\$ 6 to US\$ 10. National estimates suggest that the average per capita package costs US\$ 34, so that current financing does not cover all the programmed services. The sustainability of this insurance depends on the government's capacity to increase taxes for this purpose and on efficiency in the use of funds.

**Source:** Adapted from Gordillo A, 2006. Pan American Health Organization, Health Systems Strengthening Area, Health Policies and Systems Development Unit.

these programs are financed: the Universal Mother and Child Insurance Program in Bolivia and the Free Maternity and Child Care Program in Ecuador.

### Private Expenditure on Health by Households

For most countries of the Region private spending on health care is an important component of general national health ex-

penditures, even in countries with relatively high levels of government spending and countries where public health insurance coverage is relatively high or universal. However, in general, there seems to be an inverse ratio between the relative importance of public health care systems and the relative importance of private health expenditure.

Household expenditure on health services as a percentage of total household spending measures the health care costs borne

by families, directly through out-of-pocket spending, or indirectly through household and company spending on pre-paid medical plans and private health insurance plans. It also measures the differential impact of increases in health care costs on household budgets.

The share of private household expenditure on health as a percentage of GDP is an indicator of the significance of private consumption of health goods and services compared to the total income and expenditure of an economy. The differences in the level of household spending on health care in per capita terms—adjusted for purchasing power parity—is an indicator of differences in actual access and utilization of health care services in different countries of the Region. Household spending on private health services represents a significant percentage of total consumer spending in most countries of the Region. The estimates of the relative importance of household spending on health care presented in Table 8 correspond to the weight of the cost of health goods and services in a country's official consumer price index (CPI).<sup>6</sup>

Table 8 shows the sharp differences in the relative importance of household spending on health goods and services as a percentage of the total household consumption. These differences range from 10% in Argentina and 8.5% in the United States, to less than 2% in Antigua and Barbuda, Aruba, and Saint Vincent and the Grenadines. In countries with relatively high levels of government expenditure and public health insurance coverage, such as Canada, Chile, and Costa Rica, household spending on health care represents between 5% and 6% of total household consumption. In low-income countries, such as Haiti, Honduras, and Peru, the share is low, at about 3% of total household consumption. This private household expenditure is over and above the value of the health care services received free of charge from governments or social security institutions. The differences in these shares illustrate the large differences in the potential impact of increases in health care costs on household budgets between countries. Similarly, the large differences in private household expenditure expressed as a percentage of GDP indicate the relative importance of public policies to manage the market failures that are typical of private health care markets.

Large regional differences in the level of household expenditure in per capita terms point to the wide inequalities in access to

and utilization of private health care services in the countries of the Americas. Table 8 summarizes different indicators for assessing the relative importance of private health expenditure, estimated on the basis of the weight of household expenditure on health goods and services.

Private health insurance and pre-paid health plans are becoming important mechanisms for financing private health costs. The rapid increase in resources spent on private health insurance and pre-paid health plans is the most important factor in recent trends in national health expenditure and has become a major factor shaping the health care markets of the countries. This trend poses a major public policy challenge. Regulations must be designed to ensure efficiency in the functioning of the health insurance and pre-paid health plan markets, and to address inequalities that exist in countries of the Americas in access to health care. The scale of the markets for private health insurance and pre-paid health plans seems to be determined by the size of the public health care system, the extent of population coverage, the services covered under public health insurance systems, and the presence (or absence) of policies regulating the functioning of those markets. The presence of multinational and large national corporations in different countries, rather than a country's income level, seems to be an important factor in explaining the relative importance of the markets for private health insurance and pre-paid health plans.

Shortfalls in coverage by public health care systems do not appear to be a sufficient reason for a private health insurance market to develop. In the case of Mexico (as in South Korea, Greece, and Turkey), private health insurance markets are relatively undeveloped, despite gaps in coverage of the public health care system. On the other hand, even in countries with near-universal public health insurance systems, such as Costa Rica, large firms will provide their employees with complementary private health insurance to reduce waiting times at public facilities and/or to provide access to "better quality care."

Because of the lack of regulation, many individuals with private health insurance rely on subsidized health care services at public hospitals to keep their insurance premiums low. Private health insurance may be used to cover a limited set of medical services. The most expensive and unusual medical procedures are not included in private insurance plans on the assumption that infrequent, costly procedures will be provided at subsidized public hospitals. This poses an additional problem in terms of the potential impact on the use and financing of public hospitals. It also creates an additional public policy challenge that needs to be addressed.

### Description of Household Expenditure on Health

Analyzing household expenditure on health is a way to measure the financial burden families face in seeking health care, and to understand the choices families make in allocating resources

<sup>6</sup>A consumer price index (CPI) measures changes over time in the average prices of goods and services that a reference population acquires, uses, or pays for. A CPI is estimated as a series of summary measurements of the period-to-period proportional change in the prices of a fixed set of consumer goods and services of constant quantity and characteristics, acquired, used, or paid for by the reference population. Each summary measurement is constructed as a weighted average of a large number of elementary indices. Each of the elementary indices is estimated using a sample of prices for a defined set of goods and services obtained in, or by residents of, a specific region from a given set of outlets or other sources of consumption of goods and services. For a detailed description of the different names and components of the item "health and medical care" used in different countries see the footnotes and methodological notes to PAHO's Health Situation in the Americas: Basic Indicators 2006. PAHO/HDN/HA/06.01; Washington D.C.; September 2006.

**TABLE 8. Private health care expenditure by households, Region of the Americas, by country, 2004.**

Country	Health care expenditure by families as a percentage of total household spending	Health care expenditure by families as a percentage of GDP	Per capita health care expenditure by families in US\$ PPP <sup>a</sup>
Anguilla	3.1	2.2	184.4
Antigua and Barbuda	2.8	0.7	79.4
Argentina	10.0	6.9	845.4
Aruba	2.9	1.5	331.1
Bahamas	4.4	2.9	466.5
Barbados	5.9	3.8	649.6
Belize	6.0	4.1	251.6
Bermuda	...	...	...
Bolivia	...	...	...
Brazil	5.9	3.6	270.2
British Virgin Islands	...	...	...
Canada	6.4	3.5	1,005.3
Cayman Islands	...	...	...
Chile	6.0	3.9	385.5
Colombia	4.0	2.6	172.2
Costa Rica	5.0	3.4	298.5
Cuba	...	...	...
Dominica	3.2	2.0	106.5
Dominican Republic	...	...	...
Ecuador	3.4	2.7	85.8
El Salvador	...	...	...
French Guiana	...	...	...
Grenada	...	...	...
Guadeloupe	...	...	...
Guatemala	5.5	4.7	187.7
Guyana	...	...	...
Haiti	3.2	3.2	55.2
Honduras	3.7	2.5	66.4
Jamaica	7.0	4.5	171.2
Martinique	...	...	...
Mexico	...	...	...
Montserrat	6.9	5.3	162.3
Nicaragua	5.1	4.7	157.2
Panama	...	...	...
Paraguay	...	...	...
Peru	2.9	2.0	106.4
Puerto Rico	...	...	...
Saint Kitts and Nevis	3.7	1.8	212.0
Saint Lucia	3.6	2.5	143.8
Saint Vincent and the Grenadines	1.0	0.6	38.4
Suriname	...	...	...
Trinidad and Tobago	3.6	2.0	219.3
Turks and Caicos Islands	...	...	...
United States	8.5	5.9	2,157.8
US Virgin Islands	...	...	...
Uruguay <sup>b</sup>	3.8	2.8	242.2
Venezuela	4.2	2.8	153.2

<sup>a</sup>United States dollars adjusted for purchasing power parity (PPP), year 2000.<sup>b</sup>Excludes contributions and payments to public health insurance systems and the medical services of collective health institutions and mutuals.**Source:** Pan American Health Organization, Health Analysis and Statistics Unit (HA), Health Situation in the Americas: Basic Indicators 2006. Washington, DC: PAHO; 2006.

**TABLE 9. Distribution of household expenditure on health care (%) by quintile, selected countries of the Americas.**

Country	Year	Total	Approximate income or expenditure by quintile				
			1	2	3	4	5
Argentina	1996–1997	8.6	9.2	8.6	7.8	8.2	9.0
Brazil	1995–1996	6.5	8.3	6.5	6.9	7.1	6.3
Dominican Republic	1996	6.3	29.1	14.7	9.4	7.7	3.5
Guatemala	1998–1999	7.3	3.9	5.9	7.0	8.3	7.8
Jamaica	1998	2.6	2.4	2.5	2.5	2.6	2.7
Mexico	1996	2.9	3.7	3.3	3.3	2.9	2.8
Paraguay	1996	10.7	14.0	13.8	10.9	10.1	8.8
Peru	1997	4.4	4.3	4.8	4.7	4.0	4.5
Uruguay	1994–1995	13.0	11.0	14.0	15.0	13.0	11.0

**Source:** Pan American Health Organization, Health Systems Strengthening Area, Health Policies and Systems Development Unit. August 2006

to purchase health goods and services. The analysis may also provide some limited insight into other issues, such as health sector equity and access to health services. A number of factors play a role in whether or not households have access to and make use of health care services, such as family income, time constraints, the cost of services and transportation, the availability and quality of services, cultural preferences, and an awareness of the need to seek treatment. Families have their own priorities that influence the decision about when and where to seek care. Furthermore, health services are not a homogeneous product and often the price of comparable services can vary considerably from private to public sector providers (where services may not cost anything), thus rendering expenditure data even less useful. Nevertheless, the relative share and composition of spending on health in a household's budget and comparisons across income groups can provide important information on family choices, and often reflects the availability of public resources and services.

Table 9 provides data on the percentage of household resources allocated to health across income groups for nine countries of the Region. The share of total household expenditure that is devoted to health tends to be relatively stable across income groups within a country, usually differing by only a few percentage points. In absolute terms, however, wealthier income groups spend far more than the poor do on health goods and services. A rough average for the Region suggests that the richest 20% of the population spends up to 12 times more than the poorest 20%. For the nine countries included in Table 9, a weighted average was constructed for household spending on health. Using these data, households on average allocated 6% of their expenditure to purchase health goods and services; however, the poorest quintile spends 7.3% on health care, and the richest quintile spends 5.9%. In six countries in Table 9, the poorest quintile spends a larger share of its resources on health than the richest quintile. In some countries, such as the Dominican Republic and Paraguay, the poor spend considerably more on health care than the rich. In the Dominican

Republic, health care expenditures comprise 29.1% of spending for the poorest quintile, but only 3.5% for the richest; in Paraguay, health care expenditures comprise 14% of spending for the poorest quintile, and just 8.8% for the richest. In other countries, health expenditures are roughly equal in the poorest and richest quintiles. Guatemala is the only country where the richest quintile spends more on health care than the poorest quintile.

Private expenditure on health as a share of total household spending tends to decrease as income increases. Two factors seem to be the driving force in this trend. The first is the relatively recent impact of private insurance on household health care spending. The increasing degree of private insurance coverage in the upper income groups, with premiums paid largely by employers, reduces out-of-pocket spending in those income quintiles. The second factor relates to the gaps in public health system coverage. The poorest income quintiles have limited access to formal health insurance programs, because they are primarily composed of agricultural and informal laborers who are not covered by them. The poorest income quintile may also have more limited access to public health facilities, given that they tend to be located in or near urban areas, which may not be easily accessible for people living in rural areas. With governments allocating the majority of resources to secondary and tertiary facilities in predominantly urban areas, public subsidies may disproportionately favor the cities and the upper-income quintiles rather than reducing the burden on the lowest-income groups in rural areas.

### Distributive Impact of Government Health Expenditure

There appears to be considerable variability in the effectiveness of health expenditure as a distributive tool. The analysis of government health expenditure suggests there are large differences in the distributive impact of government expenditure on health by income groups, both across countries and within coun-



**TABLE 10. Distribution of the benefits of government expenditure on health in selected countries of Latin America and the Caribbean, by quintile.**

Country	Q1	Q2	Q3	Q4	Q5
Argentina <sup>a</sup>	31.0	18.0	26.0	18.0	7.0
Argentina, 1991 <sup>b,c</sup>	38.7	16.6	25.5	14.8	4.5
Bolivia, 1990 <sup>c</sup>	15.2	14.7	24.4	24.4	21.3
Brazil, 1994 <sup>c,d</sup>	31.5	26.5	19.5	14.2	7.5
Colombia, 1970 <sup>a</sup>	21.4	26.9	19.0	25.9	6.8
Colombia, 1974 <sup>a</sup>	28.0	22.0	20.1	17.7	12.2
Colombia, 1993 <sup>a</sup>	27.4	25.6	18.7	15.9	12.5
Colombia, 1997 <sup>c</sup>	17.5	19.7	22.2	20.7	19.7
Costa Rica, 1986 <sup>c</sup>	27.7	23.6	24.1	13.9	10.7
Chile <sup>a</sup>	31.0	25.0	22.0	14.0	8.0
Chile, 1996 <sup>c</sup>	30.9	23.2	22.2	16.5	7.2
Ecuador, 1995 <sup>a</sup>	12.5	15.0	19.4	22.5	30.5
Ecuador, 1994 <sup>c</sup>	18.8	41.9	16.0	16.3	7.0
Guatemala, 1998–1999 <sup>a</sup>	12.8	12.7	16.9	26.3	31.3
Jamaica, 1993 <sup>a</sup>	25.3	23.9	19.4	16.2	15.2
Peru, 1997 <sup>a</sup>	20.1	20.7	21.0	20.7	17.5
Uruguay, 1993 <sup>c</sup>	34.9	19.9	22.1	13.2	10.0
Average <sup>c, e</sup>	26.9	23.3	22.0	16.7	11.1

<sup>a</sup>Estimates reported by Suárez-Berenguela R, 2001, page 142.

<sup>b</sup>Household distribution by income less social security contributions, income tax, and government subsidies.

<sup>c</sup>ECLAC estimates (ECLAC 2000; ECLAC 2001). Per capita income quintiles, includes public expenditure on health care and nutrition.

<sup>d</sup>The data are for the city of São Paulo only.

<sup>e</sup>Average for the countries included in the ECLAC study, only.

**Sources:** Suárez-Berenguela R. Health systems inequalities in Latin America and the Caribbean. In: *Invertir en salud. Beneficios sociales y económicos*. (Publicación Científica y Técnica No. 582). OPS; 2001.

Economic Commission for Latin America and the Caribbean. *Equity, Development and Citizenship*. Final Version. Santiago, Chile: ECLAC; 2000.

Economic Commission for Latin America and the Caribbean. *Social Panorama of Latin America 2000–2001*. Santiago, Chile: ECLAC; 2001.

tries. Paradoxically, there seems to be an inverse relationship between a country's level of income and the distributive impact of government expenditure on health. The distributive impact of government expenditure was found to be progressive in countries with relatively higher income levels (Argentina, Chile, Costa Rica, and Uruguay) and regressive in countries with lower levels (Bolivia, Ecuador, and Guatemala). The distributive impact of health expenditure was found to be neutral in the case of Peru. Table 10 examines the distribution of the benefits of government expenditure on health by socioeconomic quintiles for Latin America and the Caribbean.

Colombia is the only country where it was possible to observe trends in government expenditures on health over time, from 1970 to 1997, due to the availability of a series of data sets. A shift can be observed from a progressive to a regressive distribution. The poorest 20% of the population received more than 21% of government health expenditure in 1970 and around 28% in 1974. In 1997, the poorest 20% received just 17.5%. The wealthiest 20% of the population benefited the most from these changes in dis-

tributive impact: it received almost 7% of government health expenditure in 1970; but in 1997 it received almost 20%.

Public spending on health has a significant redistributive impact favoring the poor in countries where expenditure represented 2.5% or more of GDP (Argentina, Colombia, Chile, and Jamaica). Public spending favoring the rich was observed in countries where government expenditure on health represented around 1% of GDP or less (Ecuador and Guatemala). In most countries, financing of the (public) system was regressive, based on indirect taxes. Changing the financing of the health systems from an indirect tax-based system to a direct tax-based system reduces regressivity.

Specific policies may contribute to improving the distributive impact of government expenditure on health. For example, only the case of Brazil was considered progressive where in 1997–1998, an earmarked tax on financial transactions and direct taxes on net company profits were the main sources of revenue of the Ministry of Health. Redirecting public expenditure to policies aimed at heightening individuals' perceptions of their own health

status and health risks may be an effective way to narrow the gap between actual and self-assessed health status, to make people aware of their health service needs, and to increase the demand for those services.

Public expenditure and fiscal revenues are the main tools that a government can use to achieve more equitable financing and access to health care services. Higher levels of taxation are required to finance government activities, similar to schemes used by governments in the now developed countries. However, most of these fiscal instruments are not fully utilized in developing countries, including those in Latin America and the Caribbean. Low-income countries in the region face a vicious cycle of weak governments and lack of funds to set up institutions strong enough to enforce tax codes and fiscal policies and to ensure the sustainability of social programs.

Public policy choices influence the levels of public expenditure on health and social programs. Wide differences in the distributive impact of government spending on health care services and public health programs suggest that in most countries of the Region, there is ample room for making better use of government financing and expenditure tools with a view to achieving more equitable financing for health care services and access to them. Data presented in this section suggest that governments of countries in Latin America and the Caribbean, particularly those in low-income countries, have the potential to use existing fiscal tools more effectively to address health and equity issues.

In conclusion, governments have considerable room to maneuver to enhance the distributive impact of public expenditure on health. They can increase health resources, reduce regressivity in health financing, and redirect public expenditure to interventions that lead to greater utilization of health care services by the poor.<sup>7</sup> Results from a number of studies, including those conducted by the project Equity in Latin America and the Caribbean/Investment in Health, Equity, and Poverty on the distributive impact of government expenditure on health, suggest that the relative size of that expenditure makes a difference in terms of equity in financing for health services as a percentage of GDP.

## HEALTH LEGISLATION

Legislation provides health policies with the support required to move from the political sphere into the legal framework. With regard to health systems and services, legislation establishes a platform of guarantees with counterpart obligations, defines the roles to be played by national and international public, private, and social institutions and their functions and interactions, and establishes the model that will put into effect national health ob-

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*“We are making every effort to obtain original articles penned by the highest authorities in the Americas on topics of interest related to matters of public health.”*

Hugh Cumming, 1927

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jectives, all of which is accessible through the judicial system. In the last five years, several of the countries of the Region continued revising their legal frameworks with a view to providing a legal footing for policies aimed at restructuring health services and systems. This included redefinition of the responsibilities of the health ministries/departments and the design of plans to extend coverage, including the regulation of private sector participation, quality assurance and control mechanisms, participation by civil society, and consolidation of individual health rights.

## Legal Framework for Health System Stewardship and Regulatory Functions

The legislation that restructures health systems reformulates the functions of the ministries and departments, stressing their stewardship and regulatory roles. In 2002 Supreme Decree No. 26.875 was approved in Bolivia, which redefines the national health system and establishes organizational and functional responsibilities based on management levels. Under this arrangement, the Ministry of Health and Social Insurance (today the Ministry of Health and Sports) is responsible for the national leadership and regulatory function. Technical management is the responsibility of the Departmental Health Service (SEDES) and the municipalities, through the Local Health Directorates (DILOS), which are the highest local authority. In Chile, under Law No. 19.937 of 2004, the Ministry of Health is made responsible for leadership and regulation in the field of health, including the formulation, evaluation, and updating of the Universal Access with Explicit Guarantees (AUGE) system. In Colombia, Law No. 790 of 2002 merged the Ministry of Labor and Social Security and the Ministry of Health into the Ministry of Social Welfare to implement the social safety net established in Law No. 789 of the same year, one of whose objectives is to provide timely access to good quality basic health services. Also, Decree No. 205 of 2003 defined the functions of the Ministry of Social Welfare, which is the lead agency in the system.

Ecuador promulgated the National Health System Institutional Law and its Enabling Regulations (Decree No. 3.611 of 2003) to make exercise of the right to health effective by guaranteeing equitable and universal access to comprehensive health services. Under these norms, the national system is decentralized, deconcentrated, and participative in its activities and its functions include coordination, service provision, insurance, and financing. The function of system coordination is the responsibility of the

<sup>7</sup>For more information on the distributive impact of public expenditure on health, see Investments in Health: Social and Economic Returns. PAHO Scientific and Technical Publication No. 582 (available in PDF format).

Ministry of Health at all levels. Nicaragua enacted the General Health Act (Law No. 423 of 2002) and its Enabling Regulations (Decree No. 001 of 2003) which regulate the different health activities and define the Ministry's sphere of competence and responsibilities, which include regulation of the benefit regime that it establishes and its status as the lead agency in the sector.

In Peru, the Ministry of Health Act (Law No. 27.657 of 2002) establishes that it is the agency that leads, regulates, and promotes the national health system to achieve the full development of individuals. Subsequently, Law No. 27.813 of the same year established the National Coordinated Decentralized Health System (SNCDs) to provide comprehensive health care for the population and progress toward universal social security, and also conferred the status of lead agency on the Ministry of Health. In the Dominican Republic, the General Health Act (Law No. 42 of 2001) regulates all the actions that permit the government to make effective the right to health protection recognized in the constitution. This act organizes the national health system, which is headed by the Secretary of State for Public Health and Social Welfare (SESPAS). In Venezuela, Decree No. 3.753 of 2005 partly reforms the organization and operation of the central public administration. As a result, the Ministry of Health and Social Development became the Ministry of Health, with responsibilities for the preparation, formulation, regulation, and monitoring of comprehensive policies for the health of the population.

In the English-speaking Caribbean, legislation was passed to create regulatory systems under the supervision of authorities, commissions, and committees, with the goal of making the administration of hospitals and other health care institutions more effective and efficient. The British Virgin Islands Health Service Authority Act of 2004 makes that authority responsible for administering the Peebles Hospital and community health services. The act establishes a council appointed by the Minister of Health, whose functions include the design of policies based on the territory's health requirements and the development and implementation of a quality assurance program subject to the Ministry's policies.

In Guyana, the Regional Authorities Act and the Ministry of Health Act were passed in 2005. The first creates regional authorities to deliver and administer services and programs in specific zones and makes the Ministry responsible for applying the law and establishing parameters to enable the authorities in question to carry out their functions. The Ministry of Health Act defines that institution's functions, which include control of health services and their development in a comprehensive, balanced, consistent, and equitable manner. The 2002 Institution-Based Health Services Act of Saint Kitts and Nevis establishes a directorate to manage and administer institutional health services (17). In Canada, an Order in Council of 2004 created the Public Health Agency of Canada with the mandate of fostering communications with the provinces, providing leadership in health surveillance, and initiating community action programs (18).

### Regulation of Financing, Insurance, and Private Sector Involvement in Health Care

In Argentina, a package of essential benefits was approved and guaranteed by health insurance agents under the Mandatory Emergency Medical Program (PMOE), which was to remain in effect until 31 December 2002. The period was extended to 2003. Law No. 25.929 of 2004 expands the mandatory benefits that all Obras Sociales (employee benefit plans) and pre-paid medical institutions are required to provide, including pregnancy, labor, delivery, and post-partum care, which are fully incorporated into the Mandatory Medical Program (PMO) as part of a regime of rights for parents and newborns. In 2005, Decree No. 317 issued by the country's president approved Obras Sociales' system of regional contracting, which will be implemented gradually in the country's different regions and whose purpose is to avoid middlemen in contracts between the Obras Sociales groups belonging to the system and service providers. This decree establishes general guidelines to assure medical coverage for the beneficiaries of Obras Sociales.

In 2001, Belize amended the Social Security Act to establish a national health plan that covers the provision of the public and private health services determined in the act. Bolivia promulgated the Universal Mother and Child Insurance (SUMI) in 2002 to provide free care for pregnant women (from conception to six months after delivery) and children up to age 5, which is universal, comprehensive, and free of charge, at all levels of public care. SUMI is financed jointly by the national government, municipal taxes, and a special account called *Diálogo 2000*. Local Health Directorates (DILOS) have been established as the highest local health care authority.

In Canada, two recent decisions by the Supreme Court will have an impact on the Medicare system. One is related to the debate over what services are "medically necessary" or "medically required" as defined in the Canada Health Act; and the other opens the door to removing the ability of the provincial governments to prohibit private insurance for services covered with public funds. Nonetheless, the provinces are making efforts to strengthen Medicare. In British Columbia the Medicare Protection Act was amended to prohibit extra charges for services diagnosed as medically necessary, in order to address situations created by private for-profit clinics. Ontario passed legislation that supports its Medicare commitments and re-introduced an additional mandatory health care contribution (the health care premium tax) (18).

In Chile, Law No. 19.996 establishes the General Health Guarantees Regime, which is a regulatory instrument that forms part of the Health Services Regime referred to in Law No. 18.469, whose Article 4 regulates the exercise of the constitutional right to health protection and establishes the 1985 health benefits regime. The General Health Guarantees Regime includes explicit guarantees related to access, quality, financial protection, and timeliness, which must be mandatorily assured by the National Health Fund (FONASA) and the Health Insurance Institutions (ISAPRES).

Under the new structure, the Office of the Superintendent of Health takes on a relevant role. It is a decentralized agency with legal status and its own assets that reports to the country's president through the Ministry of Health. The Office of the Superintendent, which acts through the Health Insurance Institutions Administration and the Health Care Providers Administration, is responsible among other things for overseeing and controlling the ISAPREs and overseeing compliance with obligations, including those relating to the Health Guarantee Regime. It also oversees and controls the National Health Fund and supervises all public and private health care providers with respect to accreditation and certification and compliance with accreditation standards.

In Colombia, Legislative Act No. 01 of 2001 amends some of the articles of the 1991 Constitution and creates the general participation system for departments, districts, and municipalities, also establishing criteria for the distribution of resources, with emphasis on equity. As a consequence, Law No. 715 of 2001 was promulgated, which defines the responsibilities of the national and subnational entities in the health sector and the system for the distribution of financial resources. In Ecuador, the National Health System Institutional Law establishes a comprehensive health care plan guaranteed by the government as a strategy for accessible public health protection with compulsory coverage for the entire population, through the public and private network of suppliers, whose structure is based on a multicultural approach. This plan defines the care model, which stresses primary care, health promotion, and interrelations with traditional and alternative medicine, or both, and includes mechanisms for deconcentrated, decentralized, and participative management. The plan is intended to achieve universal coverage through three coordinated regimes—the contributing, the non-contributing, and the voluntary—incorporating public, private, and mixed health service providers.

In El Salvador, Legislative Decree No. 775 of 2005 promulgated the Law on the Basic Comprehensive Health System and Decree No. 1.024 of 2002 established provisions relating to health and social welfare guarantees. Health is defined as a public good and the country's constitution makes the provision of public health services mandatory. The decree prohibits privatization, concession, or the purchase of services or any other modality intended to transfer to private institutions the provision of public health services or the social security services delivered by the Salvadoran Social Security Administration.

In 2002, the United States passed the Health Care Safety Net Amendments, which created the Healthy Community Access Program that provides health care for persons with no health insurance (or insufficient insurance) through joint actions by suppliers, organizations, and local governments. The program was to conclude in fiscal year 2006. The Medicare Prescription Drug Improvement and Modernization Act (MMA) of 2003 modifies the Medicare + Choice option by including a component to cover prescription drugs, called Medicare Advantage. The reform affects access to

medicines, while transferring part of Medicare responsibilities to private plans and to the beneficiaries themselves. Under the Deficit Reduction Act of 2005, the federal government required proof of citizenship to accede to Medicaid benefits and the State Children's Health Insurance Program (SCHIP). Several states, including Massachusetts and Maine (Dirigo Health Initiative), have passed legislation involving extensive reforms of their health systems. The Massachusetts Plan provides universal health coverage, making it compulsory to participate, while the Dirigo Plan, although it has the same goal, does not make it mandatory to join (19).

In 2002, Grenada passed the Private Hospitals and Nursing Homes Act, which regulates those institutions through the Private Hospitals Committee. In Jamaica, the 2003 National Health Fund Act implements the national health insurance plan, known as the National Health Fund, as a contributing plan intended to improve the quality of life of the population. The plan includes the provision of certain health benefits for all the country's residents, without distinction by age, gender, or income (17).

In 2003, Mexico reformed its General Health Act to establish the social health protection system, which is financed jointly by the federal government, the states and the Federal District, and beneficiaries. A Department of Health resolution of the same year published the operating rules and management and evaluation indicators for the Health for All or Seguro Popular de Salud Program, which is a voluntary public insurance plan to implement the system. The main targets of the Seguro Popular are families and individuals who are not enrolled in social security institutions and who do not have any other health insurance. Also, a 2001 Department of Health resolution establishes a National Committee for the action program "Arranque Parejo en la Vida" (Fair-Start Program), whose objective is to contribute to health care for women during pregnancy, delivery, and the puerperium, and adequate health care of children from birth to 2 years of age, through close monitoring and evaluation of the actions introduced under the program.

Peru passed Law No. 27.812 in 2002, which establishes the sources of financing for the Comprehensive Health Insurance (SIS) to make it sustainable over time and enable it to comply with its objectives, and Decree 9-2002-SA of 2002 regulates its organization and functions. One of the sources of financing for the SIS is transfers from the Permanent Solidarity Fund created by Law No. 27.656 of 2002, whose sole intent is to promote access for the excluded population to good quality services. As a complement, Decree No. 3-2002-SA of 2002 established regulations governing the services delivered by the SIS in order to incorporate the services grouped into the mother and infant, child, and youth components as priorities. The Dominican Republic promulgated Law No. 87 of 2001, which creates the Dominican Social Security System, structured into three regimes—contributing, subsidized, and subsidized contributing—with the goal of achieving universality. Members are guaranteed free choice between the National Health Insurance, as a public insurer, and the Health



Risk Administrators, which can be public, private, or mixed. Also in the Dominican Republic, the regulations governing Family Health Insurance and the Basic Health Plan were established in Resolution No. 48-13 of 2002, which are intended to govern the provision of family health insurance benefits, conditions, limitations, and exclusions throughout the country.

In Uruguay, Decree No. 133 of 2005 created the Consultative Council for Implementation of the Integrated Health System within the Ministry of Public Health, whose main objective is health policy. In Venezuela the Social Security System Institutional Law was promulgated in December 2002 to make the right to social security effective. The regimes it establishes include the Health Benefits Regime, which will be the responsibility of the Ministry of Health and Social Development and will be managed through the National Public Health System, through policies, structures, and actions targeted to universality, equity, promotion of health and the quality of life, and comprehensive services.

### Regulation of the Quality of Care

A number of countries have issued regulations governing the quality of care. In Argentina, Resolution No. 482 of 2002 approves regulations on the organization and functioning of the social services area in the establishments that form part of the National Medical Care Quality Assurance Program. In Decree No. 140 of 2004, Chile approved the Health Services Organization Regulations that introduce audits to assure the quality of services. In Costa Rica, Decree No. 30.571 of 2002 approves general regulations on the authorization and functioning of health facilities and Law No. 8.415 of 2004 adds a paragraph to Article 30, Chapter IX, of Law No. 7.593 on the Public Services Regulatory Authority to include failure to observe quality standards and principles in the delivery of public services among actions that are subject to sanction. In Resolution No. 06 of 2005, Honduras issued the Regulations on the Control of Products, Services, and Establishments of Health Interest.

In Mexico, a 2002 decision by the General Health Council laid the groundwork for a National Medical Care Establishment Certification Program, and in 2003, the council issued Internal Regulations governing the Health Services Facilities Certification Committee, which is intended to support the council in coordinating and developing the national certification program. The General Health Act of Nicaragua establishes the System for Health Sector Quality Assurance and its regulations introduce audits of the quality of medical care.

In Dominica, the 2002 Hospitals and Health Establishments Act regulates the licensing of those facilities and others that the government operates and maintains. In Saint Kitts and Nevis, the 2002 Institutional Health Services Administration Act establishes an executive management committee, whose functions include coordinating oversight of activities related to service quality with the Ministry of Health. In 2004, an act established the Accreditation Council of Trinidad and Tobago. The council, appointed by

the president, has the mandate of providing guidance and advice regarding the accreditation and recognition of post-secondary and tertiary education institutions, including those offering health education, and of promoting quality standards. The 2003 Public Hospitals Authority (Medical Staff) By-laws of the Bahamas establish a series of committees whose function is to guarantee the quality of services and ensure that medical staff comply with the policies, guidelines, and regulations (17).

### Channels for Participation by Civil Society

In regard to civil society participation, the Management Model and Local Health Directorates (DILOS) Law and the Universal Mother and Child Insurance Law of Bolivia establish that management will include participation by the public to comply with national health policy and implement local directorates. Chile's Law No. 19.937 establishes users consultative councils to advise local health directors on policies and the definition and evaluation of institutional plans. In Law No. 715, Colombia establishes the need to promote mechanisms on all levels for adequate participation by society in the full exercise of citizen rights and duties in the field of health and social security. Ecuador's National Health System Institutional Law includes the promotion of participation and control by society and the observance of user rights among the functions of the National Health Councils and the Canton Health Councils. The Dominican Republic's General Health Law creates grass-roots organizations, neighborhood associations, and organizations of users and patients as consultative bodies of the National Health Council. Venezuela issued Decree No. 2.745 of 2003, which creates the Presidential Committee for the Implementation and Institutional Coordination of the Comprehensive Program for Primary Health Care, known as Barrio Adentro, as a new management model based on the principles of interdependence, coordination, accountability, cooperation, and active and predominant participation by the organized community. For its part, the Social Security System Institutional Law establishes that on account of their public relevance, community organizations have the right and duty to participate in decision-making for planning, execution, and control of specific policies in public health institutions.

### Enhancing Health Rights

The general health laws of Nicaragua and the Dominican Republic contain chapters referring to the rights and duties of public and private sector users and the rights, duties, and responsibilities of the population in relation to health, respectively. In Bolivia, the Professional Practice Act of 2005 (Law No. 3.131) establishes the rights and duties of patients and medical professionals, medical audits, and management of the quality of health care services. The regulations to that act, issued in Supreme Decree No. 28.562, also of 2005, include the obligation to publicize those rights and duties and require medical professionals to know the native language

used at the place where they practice. The regulations also refer to standards and protocols for managing the quality of services.

In Canada, the federal government reformed the Labor Code to allow up to eight weeks of compassionate leave with pay for persons caring for relatives with terminal illnesses. Most of the provinces have reformed their labor codes along the same lines. The Personal Information and Electronic Documents Protection Act has been in force since 2002 and includes the protection of health information (18). In Costa Rica, Law No. 8.239 of 2002 on the rights and duties of users of all public and private health services creates the office of the Auditor General of Health Services as a deconcentrated agency of the Ministry of Health with the mandate of promoting continuous improvement in health services. In Panama, Law No. 68 of 2003 regulates the rights of patients, healthy individuals, and professionals at public and private health facilities with regard to information and free and informed decisions for clinical and therapeutic purposes. In Mexico, the Resolution of the Department of Health publishing the regulations for the management and evaluation of the Health for All Program (Seguro Popular de Salud) includes a list of the rights and duties of members.

In the United States, the federal government has not acted to regulate the health management organizations, but in 2005 nine states (Arkansas, North Carolina, Colorado, Connecticut, Indiana, New Hampshire, Rhode Island, Texas, and West Virginia) issued detailed patients' bills of rights for the members of those organizations (19).

## HUMAN RESOURCES

### The Importance of Health Human Resources and Their Development

The main challenge in the field of health human resources is to achieve recognition of their importance in the countries of the Region as a whole, and there has been a promising change in that regard. After two decades in which health imbalances sharpened and health human resources were viewed more as a cost that needed to be reduced than as an investment, since 2004 these resources have gradually been recognized as core components for the development of health.

Many national and international initiatives underline their relevance and urge that efforts be concentrated in this field. In 2006, WHO dedicated World Health Day to recognizing the work of health professionals under the motto "Working Together for Health" and defined this area as a priority for its 2006–2015 work plans. The adoption of the Millennium Development Goals—in which improvement in different health indicators plays a central role—has underlined the importance of having sufficient qualified human resources to make faster progress. Different studies on the possibilities of attaining the MDGs have recognized that success hinges largely on health human resources. Institutions such as Harvard University, private foundations such as the

Rockefeller Foundation, Atlantic Philanthropies, and the Bill and Melinda Gates Foundation, and cooperation agencies such as the Swedish Agency for International Development (SIDA) joined WHO in designing the Joint Learning Initiative (JLI) which decries the lack of investment, efforts, and financing in this field and declares that the goal of attaining the health-related MDGs will not be met without the active participation of the health workforce (20).

In recent years, statistics have been compiled on the impact of human resources availability on the health situation, and it has been demonstrated that the number and quality of health workers is directly related to the degree of coverage of immunizations, the scope of primary care, and the survival of infants, children, and mothers. An econometric study conducted in 2004 in 117 countries by the JLI concluded that the density of health care personnel has a significant impact on maternal, infant, and under-5 child mortality and that this correlation exists independently of any income improvement policies, poverty reduction programs, or increases in education for girls that may have existed (21).

In past decades, the issue of human health resource development in the Americas did not have a high profile, which is apparent from the fact that between 1980 and 2001, PAHO's Governing Bodies did not approve any resolution in that regard. More recently, however, the Region has not been left untouched by the global movement that has come to realize the importance of health personnel, as is clear from the growing concern of governments and the place occupied by the issue on the agendas of their meetings and in their commitments (22, 23). At the same time, the close relationship between the availability of health workers and the health status of the population is beginning to be recognized. When countries are grouped by the availability of human resources (low, medium, and high) it is apparent that mortality from certain causes declines as the number of human resources increases (Table 11).

An evaluation of the impact of the Family Health Program in Brazil in the period 1990–2002 indicates that the infant mortality rate dropped in those 12 years from 49.7 to 28.9 per 1,000 live births, as the program's coverage rose to 36%. The analyses suggest that, after controlling for the other health determinants, an increase of 10% in the coverage of the program was associated

**TABLE 11. Selected mortality rates and coverage of deliveries in groups of countries by the availability of health human resources.**

Human resources per 10,000 population	Maternal mortality rate per 100,000 live births	Infant mortality rate per 1,000 live births	Mortality rate in children under 5 years per 1,000 live births	Deliveries (attended by qualified personnel)
< 25	148	31	43	74%
25 to 50	65	22	25	95%
> 50	9	7	8	99%

**Source:** Pan American Health Organization. Basic Indicators. PAHO 2005.

with a drop of 4.5% in infant mortality (24), a figure that is similar to the one obtained in a study conducted for the JLI, which found that an increase of 10% in health human resources leads to a drop of between 2% and 5% in maternal, infant, and under-5 child mortality.

In this context, in 2005 the Seventh Regional Meeting of the Observatories of Human Resources in Health was held in Toronto, Canada, attended by 28 countries and many cooperation agencies. During the event, the Toronto Call to Action was drafted which was intended “to mobilize institutional actors, both national and international, of the health sector and other relevant sectors and civil society, to collectively strengthen the human resources in health through both policies and interventions, in order to achieve the Millennium Development Goals and according to the national health priorities to provide access to quality health services for all the peoples of the Americas by the year 2015” (25). Five key challenges were identified at the meeting:

1. Define long-range policies and plans to better adapt the workforce so it will be prepared to meet expected changes in the health systems and to better develop the institutional capacity for defining those policies and revising them periodically.
2. Place the right people in the right places to achieve an equitable distribution of health workers in the different regions so that they match the specific health needs of the population.
3. Regulate the displacements of health workers to ensure access to health care for all the population.
4. Create ties between health workers and health organizations that result in a commitment to the institutional mission to guarantee quality health services for the entire population.
5. Develop mechanisms for cooperation between training institutions (universities and schools) and health services institutions so that the education of health workers can be adapted to a universal and equitable model for providing quality care to meet the health needs of the population.

A survey conducted in 28 countries of the Region in 2005 (26) asked about the status of the five challenges in each of them and found that more progress was necessary. The following sections review the situation in the Region with respect to those challenges, in both their qualitative and quantitative aspects.

### **Long-Range Policies and Plans to Better Adapt the Workforce to Health Requirements and Develop the Institutional Capacity to Put Them into Practice**

#### *Human Resource Planning Processes and Their Characteristics*

The production and use of information on human resources varies from country to country. In the period under considera-

tion, the availability and use of information for decisionmaking has improved in many countries in the Region, but it is also true that limitations in both these aspects persist in many others. In the survey mentioned earlier, 75% of the 28 countries admitted that they did not have sufficient information about health workers, their occupations, and skills. Some countries make great efforts to know the number of physicians and nurses they have and in general they obtain information from preexisting databanks (population censuses, records of professional colleges, etc.) but there are few which, like Brazil, obtain original information intended to respond to specific problems.

Notwithstanding, information on health human resources has been improving in many countries. In the Dominican Republic, Guatemala, and Costa Rica, information systems are being organized on the health workforce, while others, such as Bahamas, Canada, Colombia, Cuba, Jamaica, Mexico, Suriname, and Trinidad and Tobago, have relatively stronger information systems on health human resources.

#### *Institutionalization of National Management of Human Resource Development*

The institutional complexity of the field of human resources has led to the creation of collective bodies for discussion, negotiation, and coordinated decisionmaking in a growing number of countries. Many others have also promoted institutionalization of the capacity to lead the national development of health human resources. Some, such as Brazil, Chile, Cuba, Peru, and Honduras, have human resource directorates or similar bodies, whose functions include guidance and support for sector development of health human resources. Others have bolstered the capacity of their health ministries or departments to lead national processes to develop those resources. For example, Guatemala established a unit in charge of human resource development in the Ministry of Public Health and Social Welfare (MSPAS); in Brazil, the Department of Health Employment and Education Management carries out functions involving information, planning, investigation, regulation, and advisory services on human resources. Peru, with the creation of the Human Resources Development Administration, and Chile, with its Human Resources Management Division, have strengthened the administrative units responsible for sector development of health human resources.

Notwithstanding, of the 28 countries consulted in 2005 about the capacity of the directorates or agencies of the ministries or departments of health responsible for compiling information, planning, and proposing human resource policies, 23 responded that there are major weaknesses in this field (26).

#### *Regulation of Professional Practice by Health Human Resources*

The regulation of professional practice differs from country to country, but in general the subject is gaining in importance. In most countries, this responsibility lies with the professional colleges, while the health authorities remain relatively in the background. In Costa Rica, only the colleges of physicians, dentists,



and pharmacists have a professional recertification system. In the Dominican Republic, regulations have recently been drafted on professional certification and recertification. Other countries are implementing periodic recertification processes. In the Bahamas, for example, the Health Professions Council requires that professional licenses be renewed annually. In Bolivia, a professional recertification process has been developed based on accreditation of the certificates obtained. The Nursing Council of Jamaica has established a biannual registration system. In Mexico, the medical specialty councils certify and recertify professionals in their respective specialties. In Canada, the authorities in each province and territory define most of the regulatory mechanisms. And in Peru, professional recertification has only been implemented for the medical profession and efforts are being made to establish similar mechanisms for the colleges of nursing, midwifery, and dentistry.

Subregional efforts in the field of regulating professional practice include initiatives to establish agreements for reciprocal recognition of diplomas for teaching purposes and for the pursuit of postgraduate studies in the universities of the MERCOSUR member countries.

### Placing the Right People in the Right Places to Achieve an Equitable Distribution of Health Personnel

#### *Availability of Health Personnel*

The Region has 1,872,000 physicians and 3,580,000 nurses, for an average of 22 and 42 per 10,000 population respectively. Recently (2000–2004) these rates have increased at an annual pace of 0.15 for physicians and 0.20 for nurses.

Positive growth of health human resources is being maintained but the increase is tending to be smaller. In the period 1980–1992, annual average growth in the number of health professionals throughout the Region was 5.8% for physicians and 8.2% for nurses, with the figures falling in 1992–2000 to 3.7% and 2.7%, respectively. In the period 2000–2004, the trend became more marked, with annual average growth of 1% in the number of physicians and of 0.8% for nurses. These values also indicate that the drop in the number of nurses is considerably larger than for physicians.

Many countries in the Region do not have the necessary personnel to achieve minimum levels of health services coverage.<sup>8</sup> In contrast, another group of countries has five times more personnel available. The average density of health professionals per person in the groups of countries with low, medium, and high in-

dexes is 18.4, 27.7, and 122.6 (human resources per 10,000 population), respectively.<sup>9</sup> It should be noted that as long as the rate for health professionals in the group of countries with low indexes (18.4) is below the minimum parameter proposed by WHO (25 professionals per 10,000 population), the goal of having 80% of childbirths attended by professionals will not be attained.

The 15 countries with the lowest health personnel density contain 19% of the Region's population and have 10% of the physicians and 3% of the nurses, while the 11 countries with the highest density have 40% of the population and 52% of the physicians and 90% of the nurses. When the situation of these groups of countries in the year 2000 is compared with 2004, the concentration of health personnel can be seen to rise. In the former year, the countries with the most health personnel had 73% of the Region's physicians and nurses, while they now have 77%.

The total density of health personnel (physicians plus nurses per 10,000 population) in the countries with higher density was 122.6, which represents a moderate increase since 2000 (120.1). The group with medium density has a health personnel rate of 27.7 (similar to the rate in 2000). In the countries with lowest density, the availability of human resources increased in the period 2000–2004 from 13.3 to 18.4 per 10,000 population, while infant mortality fell from 34.0 to 31.4 and mortality among children under 5 fell from 51.6 to 42.6 deaths per 1,000 live births.

The health personnel rate of several of the countries in the group with lowest availability is significantly below the minimum density required to achieve basic coverage: Haiti (3.6), Paraguay (9.1), Bolivia (10.8), Guyana (11.2), Honduras (11.9), and Guatemala (13.3). To achieve the minimum rate, the countries in question will require 124,000 physicians and nurses—with Haiti needing 18,000, Guatemala 14,500, Bolivia 12,000, Paraguay 9,500, and Honduras 8,500.

In the period 2000–2004 significant increases were reported in health personnel in some countries: Bolivia increased its rate by 120%, Nicaragua by 88%, Paraguay by 44%, Costa Rica by 25%, and Colombia by 24%; but in other countries the rates fell: Saint Vincent and the Grenadines by 18%, Belize by 15%, and Guatemala by 13%.

Particular mention should be made of Cuba, which provides training for health human resources, particularly physicians, and accepts students from other countries. To date, 8,222 students from 24 countries, 20 of which belong to the Region, are enrolled in the Latin American School of Medicine (ELAM) in Havana. In 2005, ELAM graduated the first generation, composed of 1,372 physicians from the Region. Also, the Santiago de Cuba School is

<sup>8</sup>To calculate the number of physicians and nurses for a given population, WHO and the JLI have proposed using a measurement known as "health human resources density" which consists of the sum of these two categories for all the countries per 10,000 population. The measurement thus obtained is imperfect because it does not consider any of the other health workers, but it is the only viable measurement for making global comparisons.

<sup>9</sup>To analyze the availability of health personnel, the countries were grouped according to the density of human resources, into three categories: (1) countries with a rate exceeding 50 per 10,000; (2) countries with a rate between 25 and 50; and (3) countries with a rate under 25, in accordance with WHO's World Health Report 2006, which indicates that a density of 25 professionals per 10,000 population is needed to assure a minimum level of coverage (defined as 80% of childbirths attended by trained health personnel).

currently training 726 students from three countries, including Haiti, a country that has 128 recent graduates.

With regard to the MDGs, it is interesting to note that if the rate of growth in human resources in the period 2000–2004 does not pick up, some countries will not achieve the requisite goal of 25 health professionals per 10,000 population by 2015. Paraguay will need 32 years, Bolivia 15, Colombia 11, and Ecuador 9, and in all cases, that period extends beyond 2015. The situation of countries with negative human resources growth, such as Belize and Guatemala, is even more serious (it was not possible to determine the growth rate in some countries, for instance Guyana, Haiti, and Honduras, owing to the lack of information).

The lack of trained human resources is a problem that extends beyond the complex and lengthy process of training health professionals, and the countries with the largest health personnel needs have great difficulty in creating and financing positions that can attract and keep those professionals in the places where they are needed most.

#### *Health Personnel Composition*

The Region as a whole has 21.8 physicians per 10,000 population, which is an increase of just 0.6 over 2000. Cuba is the leading country in the Region with regard to the availability of physicians per person at approximately 60 per 10,000, a figure that rank it second in the world for this indicator. The rates of physicians per person in Uruguay and Argentina are also among the highest in the Region (over 30 per 10,000 population). At the other extreme, Haiti and Guyana have rates of 2.5 and 2.6 physicians per 10,000 population.

Trends in the rates for physicians per capita varied enormously throughout the Region, from a reduction of 11% in Guatemala, to an increase of 165% in Nicaragua and 130% in Bolivia. The rate of nurses per capita for the Region as a whole is 41.7 per 10,000, which is almost double the rate for physicians; however, growth is tending to slow rapidly. Trends in the rate for nurses per capita differed from country to country. In Costa Rica the rate rose by 178%, and in Bolivia by 100%, while it fell in Nicaragua by 58%, in Belize by 24%, and in Guatemala by 12%.

The rate of nurses per capita was high in the United States (97.2 per 10,000 population), in Bermuda (89.6 per 10,000), and in Canada (73.4 per 10,000); with nurses outnumbering physicians in a ratio of 3 to 1 in the United States, Canada, and some of the English-speaking Caribbean countries. Physicians outnumber nurses in a ratio of 5 to 1 in the MERCOSUR countries. The concentration of nursing personnel in the Region is clear when we consider that in 2004, 83% of nurses worked in the United States or Canada.

Data from population surveys and censuses conducted in 13 countries of the Region (Belize, Bolivia, Costa Rica, Chile, Dominican Republic, Ecuador, El Salvador, Honduras, Mexico, Nicaragua, Panama, Trinidad and Tobago, and Venezuela), which have a total of 2.4 million health workers, indicate that the percentage of women lies between 65% and 70%. Different docu-

ments stress that the numerical importance of women in the health sector reveals gender inequities, since senior positions are mainly held by men, in both public and private institutions.

#### *Public Budgets for Human Resources*

Expenditures for salaries and other outlays related to health personnel are one of the largest items in the Region's health budgets. Budget constraints and lack of financial leeway, given that the budgets of the public health institutions are financed by the ministries of the economy, affect many countries. The 2005 consultation showed that in 64% of the countries, the budget of public health institutions is not sufficient to cover the population's main needs. Health budgets make it impossible to plan adequately for demographic and epidemiological needs, with the required numbers and types of personnel. Furthermore, 75% of the countries consulted in 2005 estimate that the planning and preparation of the budgets for public health institutions is inadequate and does not allow them to have sufficient workers in the more remote and poorer areas (26).

Health institutions and authorities have relatively weak capacity to negotiate budget allocations. Part of these difficulties stem from the existing limitations on obtaining and processing reliable information that links spending on services to outcomes in terms of the population's health. There are some exceptions: Canada, where each jurisdiction has the power to adjust health personnel in function of needs; Cuba, where the budget is tailored to requirements; Brazil, where the Family Health Program transfers specific resources to relocate professionals in primary care services; and Chile, where recent legislative reforms have led to greater flexibility in the staffing of health services.

#### **Displacement of Health Workers**

##### *Distribution of Health Personnel*

The shortage of health workers in some countries is aggravated by the tendency of professionals to live in urban areas, which restricts the already limited access to services by the rural population. Only nine of the 28 countries of the Region reported being satisfied with the information available on the distribution of health personnel in relation to the population. At the same time, 82% of the countries acknowledged weaknesses in the adoption of policies and implementation of plans to mobilize and attract health workers to the regions where they are most badly needed (26).

There are marked differences in the urban-rural distribution of health human resources. Generally speaking, there are 1.5 to 4 times more physicians available in urban zones than the national average and 8 to 10 times more than in rural zones (Table 12).

In most of the countries for which information is available on the concentration of health personnel, the proportion of physicians and nurses available in the areas with highest and lowest concentrations is less than 10 to 1, while in other countries (Ar-

**TABLE 12. Rates of physicians and nurses per 10,000 inhabitants in provinces and departments of high and low distribution in selected countries of the Americas, 2000–2005.**

	Year	Physicians			Nurses		
		High	Low	Ratio	High	Low	Ratio
Argentina	2000	105.0	10.4	10/1	7.2	0.3	24/1
Bolivia	2001	5.3	1.3	4/1	4.6	0.8	6/1
Colombia	2000	14.7	6.0	2/1	4.3	1.9	2/1
Ecuador	2001	24.4	5.7	4/1	9.2	1.5	6/1
Guatemala	2004	30.5	4.5	7/1	n/d	n/d	n/d
Nicaragua	2003	15.0	0.6	25/1	11.0	0.7	16/1
Panama	2005	7.4	0.6	12/1	n/d	n/d	n/d
Paraguay	2003	19.6	1.2	16/1	n/d	n/d	n/d
Peru	2003	17.7	3.3	5/1	14.5	2.9	5/1

**Sources:** Pan American Health Organization. Human Resources Unit.

Merino, C. Datos básicos sobre formación y distribución de personal de salud. Ecuador 1981–2001.

Peru, Ministerio de Salud, Instituto de Desarrollo de Recursos Humanos. Situación y desafío de los recursos humanos en salud. Lima: IDREH; OPS/OMS; 2005.

Bolivia, Ministerio de Salud. Indicadores de recursos humanos de 2001.

Guatemala, Ministerio de Salud. Inventario de recursos humanos. Informes nacionales, 2005.

Panama, Ministerio de Salud. Inventario de recursos humanos del sector público en salud. Available at: <http://www.observatoriorh.org>.

gentina, Nicaragua, Panama, and Paraguay) the difference between areas is higher. There is a large contrast between Nicaragua, where some parts of the country have 25 times more physicians and 16 times more nurses than others, and Colombia, which presents the greatest homogeneity in the distribution of health personnel.

#### *Migration of Health Personnel*

The migration of health human resources is a highly complex phenomenon, whose visibility grows as health personnel migrate within a country and between countries. This phenomenon is related to market failures in the countries of origin and tends to siphon off younger and more qualified personnel who can join the receiving labor market more easily.

There are two arrangements under which professionals work outside their country of origin: (a) permanent migration, particularly of nurses from the Caribbean to the developed countries, mainly the United States and Canada; and (b) temporary migration of physicians and other health workers from Cuba to different parts of the Region.

In some countries, health personnel migration makes a significant contribution to the health workforce. In Venezuela, the Barrio Adentro Program uses more than 25,000 Cuban cooperants in the field of health. In Chile, migration of health personnel from Ecuador, Peru, and Colombia contributes contingents of professionals to municipal primary care services. Some Caribbean countries, such as Haiti and Saint Lucia, have significantly increased the availability of physicians with the return of students who received their medical training in Cuba.

A study conducted in the United States, the United Kingdom, Canada, and Australia (27) indicates that between 25% and 28% of the physicians who practice in those countries graduated elsewhere, and between 40% and 75% of those professionals come

from low-income countries. Physicians from the Americas practicing in the four countries studied included 1,589 Jamaican physicians (70% of those practicing in their own country), 1,067 Haitians (55%), 3,262 Dominicans (21%), and variable figures for Peruvian, Bolivian, Guatemalan, Panamanian, Costa Rican, and Colombian physicians, who represent between 4% and 5% of those who remain in their own countries. The case of Haiti is eloquent, because although it has the fewest physicians per capita in the Region, 55% of its doctors have emigrated to one or another of the four countries in question—not even counting other possible destinations. The study omitted countries with fewer than 1,000 physicians, which is why the English-speaking Caribbean (except Jamaica) does not appear, a fact that is interesting if we consider that up to 35% of positions are vacant in some countries in that subregion.

The study in question notes that Canada and Mexico experience the largest emigration of health human resources, which is related to the proximity of both countries to the labor market of the United States, which currently has 170,000 nursing vacancies that are expected to grow to 260,000 by 2010 (this deficit corresponds to 90% of the nurses in Latin America and the Caribbean). Annual demand for residents in medical specialties in the United States is 6,000 higher than the number of physicians who graduate from its medical schools, and therefore the positions are covered by doctors from abroad, many of whom acquire permanent residency in the country (28).

To understand the process of migration of health personnel it is necessary to consider the influence of agencies that facilitate that migration and which are generally hired by the health services of the countries seeking foreign workers to recruit nurses or doctors who are willing to emigrate. Some training programs for physicians contribute indirectly to migration of their graduates, and

## Migration of Health Workers in Peru and Ecuador

According to a study on the migration of health human resources in the Andean area, there are 16,000 Peruvian doctors and 17,000 Peruvian nurses working outside the country. According to the Immigration Directorate, émigré physicians grew in number from 1,060 in 1992 to 1,667 in 2004, while nurses held steady at 1,400. The destinations of Peruvian nurses are Italy, followed by the United States and Spain (Investigación de migración de los recursos humanos de salud en el Área Andina).

A study conducted in Ecuador suggested that 10% of health professionals who had graduated in the three previous years had left the country. More doctors emigrate than nurses, and men emigrate more frequently than women. More graduates of private universities leave the country (26% compared to 7%). The United States is the most frequent destination for young Ecuadoran professionals, followed by Mexico and Chile. Stable and well-paying work and good training opportunities are the prime factors that keep young professionals in a country (María Cristina Merino de Rojas. Migración de médicos y enfermeras recién graduados, en ciudades seleccionadas de Ecuador. Observatorio de Recursos Humanos en Salud, Ecuador. Available at [www.opsecu.org/orhs-ecuador](http://www.opsecu.org/orhs-ecuador).)

there is evidence that some medical schools offer programs that are not aligned with national health problems or with available technologies, which leads to dissatisfaction with existing opportunities and is a factor that increases the emigration of health personnel.

Although many countries recognize that the migration of health personnel is a major problem, few efforts are being made to obtain better information about it. In the survey of 28 countries of the Region mentioned earlier, just three felt that they knew enough about trends in internal and external migration of the main health professionals (26).

### *International Agreements on Migration of Health Personnel*

Just three of the 28 countries consulted report having signed international agreements regulating the most frequent movements of health professionals to or from the country (26).

Those countries, which belong to the Commonwealth, have reached an agreement to stop recruiting nurses from the other member countries, but at the same time, the English-speaking Caribbean countries need to recruit physicians from outside. MERCOSUR is moving toward regulating the migration of health professionals in that subregion.

## Relationships between Health Workers and Health Institutions

### *Changes in the Nature of Employment and Contracting Systems*

It has already been pointed out that data from population surveys and censuses in 13 countries of the Region with 2.4 million health workers indicate that women account for between 65% and 70%, but that senior positions in public and private institutions are mainly filled by men (29, 30). These studies note that in

2002, the general unemployment rate was 6.2%. In the countries considered, the percentage of women employed ranged from 49% to 70% in the public sector and from 64% to 76% in the private sector. The percentage of unemployed women was significantly higher than the percentage for men (31).

Holding more than one job is a widespread phenomenon and is linked to the increase in the number of part-time jobs and low wages, which force workers to obtain income from a variety of sources. In many countries of the Region a “dual” labor market has grown up that combines the better salaries and working conditions in the private sector with the better social security and other benefits in the public sector. Working at more than one job is more prevalent in Argentina, Brazil, Uruguay, and Peru, and less so in Chile, Panama, and El Salvador. In the case of Peru, a study found that 71% of physicians had two or more jobs. In Uruguay, according to studies conducted in the last 20 years, each doctor holds an average of 2.6 positions. Considerably fewer nurses work at more than one job, which is explained by the longer number of hours each works. In Uruguay, nurses held an average of 1.34 jobs, which is half the figure for physicians.

### *Diversity in Labor Systems*

New technologies, a reduction in the length of hospital stays, and the increase in ambulatory services and home care have an impact on employment in the health sector, where the number of hospital posts tends to fall and the number of posts in the primary care system rises. Thus, in contrast with what happens in other areas, the overall health workforce continues to grow. The most salient effect of sector reforms has not been a reduction in health personnel but an increase in the flexibility of labor relations, through the adoption of alternative forms of subcontracting, often temporary, with private companies, nongovernmental organizations, workers’ cooperatives, or other workers’ associations (32).

Different Latin American and international studies and sources of information report deterioration in the labor situation of health workers in recent years (33). Labor markets in general and health labor markets in particular have seen growth in salaried and part time work, either because protection has been reduced, because what is made to look like autonomous work is really salaried work, or because labor relations are fleeting.

The tendency to reduce protection for health workers has sharpened in many countries (including Argentina, Brazil, and Peru). This reduction assumes the coexistence of different modes of contracting and therefore different protection for workers who perform similar tasks, which raises concerns about the possible effect on the quality of care.

Outsourcing or subcontracting in health initially focused on general services (cleaning, meals, maintenance, and security). Today, however, it includes professional services that are recruited under contracts with medical cooperatives, home-care nurse organizations, rehabilitation services, and others. A study in Brazil indicated that 49% of labor in hospitals with 150 to 300 beds was subcontracted, and the figure for hospitals with more than 300 beds was 38% (34). The budget for contracting out in the Costa Rican Social Security Fund has increased year after year for just under a decade.

The deterioration in working conditions, which takes the form of longer working hours, an increase in the intensity of work, or the breakup of health teams, constitutes a set of problems that affect health management and hamper the attainment of institutional objectives. Deterioration in working conditions has an impact on workers, turning occupational health into a real concern for health authorities in many countries of the Region.

Given that the greater flexibility in labor relations has not brought the expected benefits and is creating unforeseen difficulties, many countries are beginning to develop policies to reverse temporary employment in the field of health. In Peru, where there was strong growth in the number of fixed-term contracts for non-personal services (a labor sector that grew by 430% in eight years), a large contingent of physicians and other health workers has recently been appointed permanently. In Brazil, as well, where a large part of the personnel recruited in the municipalities after implementing the Unified Health System (SUS) was hired on temporary contracts (35), policies are being applied to reverse this trend in labor conditions for health workers.

#### *Decentralization in Health Human Resources Management*

In the last decade, many countries began to decentralize health services management, which led to radical changes in personnel administration in the public sector. A survey administered in 18 countries of the Region showed that the delegation of powers for decentralized human resource management took place in 16 of them, with variations in the degree of decentralization, autonomy, or both (36). In general, these processes were not accompanied by strengthening regulatory capacity on the na-

tional level and did not always involve the transfer of financing or the enhancement of skills for decentralized human resource management. Brazil is an exception, since decentralization included transfers of financing and regulatory capacity was delegated, while the national level paid particular attention to health human resources policy formulation and planning.

#### *Health Positions and Career Paths*

Dissatisfaction is growing with the forms of labor relations in the health sector. Seventy-five percent of the countries of the Region consulted in 2005 consider that the systems used for contracting, incentives, and evaluation of health personnel do not promote identification by workers with the mission of providing good health services (26). Some of the Latin American and Caribbean countries are discussing regulations that would place labor relations in a more well-defined framework. Establishment of a health career path is being considered as a response to the lack of identification of health workers with their function and as a suitable tool for improving the quality of the labor relationship.

Differences persist in nomenclature and the content of the regulations governing public health personnel management. The phrase "health career path" is generally used, but there is also mention of human resource regulations or laws, a health personnel statute, a medical law or "plan of health positions and salaries." In some cases these regulations are exhaustive and in others they are generic; some are intended to be approved in a national law, while others take the form of internal statutes of the ministry of health that do not cover the entire sector (Table 13) (33).

#### *Qualifications, Recruitment, and Careers of Health Managers*

Many countries of the Region do not have health human resource management systems that are differentiated from the general systems applicable to public servants, which leads to serious problems since they do not reflect real working conditions in the

**TABLE 13. The health career path in 19 countries of the Americas.**

	Countries	Number
Exists	Brazil, Chile, and the Dominican Republic	3
Being regulated	Colombia	1
Under discussion	Bolivia, Ecuador, Nicaragua, Paraguay, and Uruguay	5
None	Argentina, Costa Rica, El Salvador, Guatemala, Haiti, Honduras, Mexico, Panama, Peru, and Venezuela	10
Total		19

**Source:** Pan American Health Organization. Human Resources Program.



**“The future of health in the Americas rests on the full development of adequate health services in each country and not on any international agency.”**

**Fred Lowe Soper, 1954**

field of health. The decentralization processes carried out, the need to reduce costs in an increasingly complex and costly technological structure, and the changes in the make-up of personnel, on the one hand, and sharpening labor conflicts on the other, pose new challenges for the management of health human resources.

Of the countries consulted in 2005, 65% consider that the systems for manager selection and training do not facilitate development of the skills of management teams and do not encourage workers to provide good health services (37). However, in the period under consideration some countries have improved the process of selecting service directors and almost all have provided training for health managers. Chile introduced a system to select senior public managers through public competitions and stepped up efforts to establish health management teams. Mexico introduced a career professional service which involves competitions for managers and the establishment of a series of training strategies intended to develop managerial skills in health services.

#### *Management and Regulation of Health Personnel Conflicts*

During 2004, labor conflicts in the health sector took the form of 64 national strikes in 10 countries for an increase of 73% in labor conflicts over the previous year. The strikes were called by 31 organizations (12 workers' organizations, 10 physicians' organizations, six nurses' and midwives' organizations, and three organizations of other health professionals). Of all the strikes occurring in the Region, 56% took place in three countries, and the principal demand of 81% of them was an increase in salaries and health sector budgets (38).

In some countries the right to strike is regulated differently for public services that are essential for the community, including health care, with a view to guaranteeing the inalienable right of citizens to those services. Regulations attempt to make the general interest compatible with workers' interests, guaranteeing the maintenance of services, and therefore they establish restrictions or limitations on the right to strike.

#### *Training for Health Workers*

Reforms in the countries of the Region highlighted the need to have suitable personnel to implement them. The demand for new skills and the modification of the occupational profiles of large groups of health workers led to large-scale training programs and the adoption of new management styles for educational programs and projects. This created an active training market.

An evaluation of 15 training projects carried out in eight countries of the Region (39) showed that the sums earmarked to provide training for health personnel differed by country. National projects cost between US\$ 700,000 and US\$ 350 million, with the educational component representing between 2.8% and 6.5% of the project total. An evaluation of those components shows that although they improved the skills and abilities of health personnel and led to favorable changes in services, they did not contribute to the development of human resource policies. The projects did not improve institutional capacity for managing human resource development, nor did they remedy the phenomena of temporary work or the high mobility of sector workers. Investments in health personnel training, which had been significant in the previous decade in nearly all the countries of the Region, have fallen recently.

### **Interaction between Professional Training Institutions and Health Services**

#### *Programs and Experiences with In-Service Education*

There are many experiences in the Region that reflect the interrelations between the institutions that train health professionals and the health services and ministries or departments of health. These interactions have increased recently and have continued to become consolidated. Chile established the National Health Teaching Committee (CONDAS), and in Brazil consolidation of the Human Resources Observatory network made room for cooperation between the managers of the Unified Health System (SUS) and the academic world. Good progress was also made in Bolivia, Costa Rica, Ecuador, Guatemala, Mexico, and Paraguay. Cuba is a special case, since the process of training health personnel is carried out inside the health services, which function simultaneously as professional training centers.

#### **Reforms to study plans geared to primary health care.**

Most countries of the Region have a supply of professional training but the profiles of graduates differ significantly from health services demand and population needs, which is aggravated by the weakness of the mechanisms required to keep health personnel permanently up to date. Despite unanimous agreement on the importance of establishing systems based on primary health care, there is a relative shortage of professionals trained in family health. The contents of the basic study plans for health professionals and technicians do not emphasize primary care, although it occupies a prominent place in training for nurses.

The different proportions of physicians and nurses in the countries of the Region reflect different strategies to address health problems, with physicians generally being the dominant group. However, there are significant experiences in training primary level health teams, such as those in Cuba, where the doctor

and the nurse form the basic professional team. There are undergraduate, professional, and specialized professional services in Bolivia, Costa Rica, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Peru, and Venezuela, where doctors, nurses, midwives, and dentists are assigned to provide health care in rural and marginal urban areas, and Brazil has the Family Health Program, whose teams are composed of physicians, nurses, and community health agents (40).

**Regulations for refocusing training on primary health care.** Greater flexibility in training for health professionals has led to the proliferation of private centers which, combined with the absence or weakness of regulatory mechanisms to guarantee the quality of training, means that graduates do not always have the skills necessary to exercise their profession. Of the countries consulted, 90% consider that the government's general regulation of educational content is inadequate and that incentives to promote the design of training plans for health professionals tailored to national realities are insufficient (26).

Recently progress has been made in the Region in educational regulation. For example, Colombia issued a decree to guarantee the quality of professional training; Peru established requisites for compulsory undergraduate training for faculties or schools of medicine; and accreditation processes are being developed in Bolivia for several careers in the public system. The Central American System for Accrediting Academic Programs led by the Central American Higher University Council (CSUCA) stands out as a subregional initiative in the field of health education regulation.

## FUNCTIONS OF HEALTH SYSTEMS: TRENDS AND CURRENT SITUATION

### The Health Sector and the Health System

The health sector is defined as a set of values, standards, and institutions, and the players who produce, distribute, and consume health goods and services, whose main objectives are to promote the health of individuals or population groups. It is assumed that the activities performed by these players and institutions are targeted to disease prevention and control, the delivery of personal and non-personal health services to the population, scientific research on health, training for health care personnel, and the dissemination of information to the public at large.

This definition fits into a conceptual framework that includes: (1) the concept of health adopted by WHO in its 1946 Constitution as "a state of complete physical, mental, and social well-being, and not merely the absence of disease or infirmity," including their determining and conditioning factors; (2) recognition that each country organizes its own health system; (3) relations between the health sector and other social and economic sectors; (4) a dynamic vision of the sector that takes ac-

count of changes in institutions and their members and in the economic context in which they carry out their activities, and their set of values, knowledge, skills, organization, resources, technologies, interests, and power imbalances; and (5) the functional analysis of the system of health services and the implications for action. Therefore, the health sector covers all actions that contribute to better health, including health-related economic and productive activities (41).

Health systems have been described in different ways. Although it is essential to define their limits, it should be remembered that health systems act as mediators and coordinators, in a political, economic, and technical framework at a given historical time. Consequently, the definition, limits, and objectives of a health system are specific to each country, reflecting its own values and principles.

PAHO describes three notions of what a health system comprises.<sup>10</sup> In the narrowest sense, a health system is limited to carrying out the activities under the direct control of the ministry of health, which therefore excludes many other public or private initiatives taken outside that institution. In some countries, the above includes traditional public health activities and the partial supply of personal medical services, but does not include all the interventions necessary to improve health and can even exclude the personal medical services provided by other government institutions, nongovernmental organizations, or the private sector. The second notion of the health system covers individual medical services and health services directed to the collectivity, but does not include intersectoral actions to improve health. Accordingly, it would consider traditional public health interventions, such as the dissemination of health information, to be part of the health system, but not intersectoral activities of an environmental nature, such as sanitation and drinking water supplies. The third definition considers all measures whose main purpose is to improve health status, including intersectoral actions such as the establishment of regulations to reduce deaths caused by traffic accidents.

More recently, WHO defined the health system as comprising all the organizations, individuals, and actions whose prime purpose is to improve, maintain, or restore health. This covers actions to influence the health determinants and to improve the health situation. Under WHO's definition, in addition to health establishments, home health care, private suppliers, campaigns to control disease vectors, health insurers, etc., the health system also extends to actions that affect health performed by other sectors (42).

<sup>10</sup>Based on PAHO/WHO: Critical issues in health systems performance assessment (general information document), Washington, D.C., 2001; Health systems performance assessment and improvement in the Region of the Americas. PAHO/WHO: Washington D.C., 2001; and Reunión Consultiva Regional de las Américas sobre la evaluación del desempeño de los sistemas de salud. Revista Panamericana de Salud Pública 2001; 10 (1).



The selection of one or another of these definitions is directly linked to the concept of government responsibility for health. However, despite the different definitions of the health system and the health sector, it is clear that there has been a gradual fusion of the two concepts. Today, they both denote that the field of action in health requires nondelegable interventions by the government to act on the health determinants, including social, economic, and productive factors that have an impact on health outcomes, and the interventions agreed on by different sectors and agents to influence those outcomes.

### Conceptual Differences in the Operational Scope of Health Systems

In recent years, the debate on conceptual and methodological approaches to analyzing and understanding health systems has intensified. Approaches have been taken that study systems by their financial and service-provision models, which can be either public or private, a classification that has contributed progressively to the debate. Another related approach focuses on supply and demand, and involves government participation.

One of the most important aspects of the discussion of the role of government in the health system centers on the definition of the functions of the health system, the powers that go with each function, and its relationship to the structure of the health system. The traditional taxonomy of national health systems was mainly based on the type of ownership that prevails in the system—public or private—and included the responsibility borne by each with respect to the financing and delivery of services. Today, owing to the growing complexity of health systems, differentiated relations have developed among the government, the public sector, financing/insurance schemes, and the private sector. Therefore, the old taxonomy is no longer useful and a new typology has been developed based on the functions of the health system (43), which makes it possible to analyze the health system in terms of its capacity to integrate the population or institutions. With regard to the population, integration refers to the level of access enjoyed by different groups to system institutions. Integration of institutions refers to the organizational and functional arrangements developed to effectively perform the functions of the health system.

Publication of the World Health Report 2000 (4) prompted a broad international discussion that focused on defining the central functions of health systems and evaluating their performance. The report suggested that the key functions of health systems include: service delivery, resource generation, financing (including collecting, pooling, and purchasing), and stewardship. The report argued as well that the fundamental objective of the functions of the proposed system was to achieve optimum levels of health and eliminate inequalities in access. The performance objectives or indicators include good health, responsiveness, and fair financial contribution. This position leads to the need to de-

fine priorities and rationalize the distribution of essential public health services using cost-efficiency and social acceptance criteria. In this context, individuals are visualized as service providers, professionals, taxpayers, or consumers, but not as citizens entitled to receive social benefits in health care. Therefore, if that framework is used, it is necessary to spell out the responsibilities that governments will have in the field of health (44).

Based on an analysis of the processes of reform and reorganization of health systems under way in the countries of the Region, PAHO/WHO uses a classification that considers three basic functions of health systems: stewardship, financing/insurance, and the delivery of health services.

### General Trends in Health Reforms in Latin America and the Caribbean That Have Influenced the Traditional Functions of Health Systems

#### *Trends in Stewardship*

Historically, in public subsystems and national health systems, the ministries of health have focused on regulatory functions and service delivery. However, health sector reforms strongly promoted decentralization of both the government and the health sector which, coupled with the rise of new public and private players in the sector, has led to a marked tendency to reduce traditional responsibilities related to the delivery of health services and increase activities in functions related to sector stewardship. Monitoring and evaluation of the sector reforms carried out in the Americas between 2000 and 2003 highlighted regional trends that have had direct repercussions on the capacity of countries to exercise stewardship over health (45–47).

As a product of the growing move toward separation of the functions of the health system, such as financing, insurance, and service delivery, the trends in reforms that have had the main repercussions include, first of all, segmentation, and second, fragmentation. Also, they have influenced the imbalances observed in decentralization processes and the rise of new public and private players in the health sector, marked by a gradual increase in the participation of private insurers. As a result, the countries of the Region seek to strengthen the stewardship role played by ministries of health in the sector and to consolidate leadership of the sector as a whole in order to have the necessary powers to act as health advocates and negotiate with other sectors that have an impact on health (48).

#### *Trends in Financing and Insurance*

**Change in the composition of financing.** In the Region there are wide variations in the composition (public/private mix) of health financing. It has already been mentioned that the countries with the highest public health expenditure as a percentage of GDP generally have national health insurance systems with universal or near universal coverage, reaching 64% in Bolivia,

78.8% in Costa Rica, 84.1% in Canada, and 86.8% in Cuba, according to the World Bank's 2006 World Development Report.

On average, private spending on health (the purchase of health goods and services) accounts for 52% of national expenditure on health in the countries of the Region.<sup>11</sup> As mentioned in the section on national expenditure on health, to a large extent, the increase in private expenditure on health reflects an increase in direct household spending and growth in private insurers and pre-paid medical plans, with the latter rising since the late 1980s and early 1990s to represent 27% of total private expenditure on health in 1995. Private expenditures have stabilized since then at that level, or approximately 1.2% of GDP.

A second factor that explains the increase in out-of-pocket spending are the shortfalls in the coverage provided by public systems. The poorest population quintiles have limited access to social security because many of them are agricultural or informal sector workers, and they also have limited access to public services per se. Some governments allocate most of their funds to the secondary and tertiary levels of care and to predominantly urban areas, which means that public subsidies can disproportionately favor the urban population and the wealthier quintiles.

**Differences in the distribution of public expenditure.** National expenditure on health care as a percentage of the national economy varies greatly. The wide differences suggest that although per capita income plays an important role in the percentage of GDP earmarked for health care, other factors could also be having a large impact. For example, the fact that countries spend relatively more or less of their GDP on health appears to be influenced more by national policy decisions regarding universal access and coverage and, to a lesser extent, by the way in which national health systems are organized and financed. For example, in countries with large numbers of poor and where out-of-pocket spending is the main means of financing health care, national expenditure tends to be low. The inverse ratio between the income levels of countries and the distributive impact of public spending on health—which is generally progressive in countries with higher income levels and regressive in countries with lower levels—has already been mentioned. This suggests that in this second group, health policies are either not directed to equity or are not duly monitored to ensure that the neediest population benefits.

Inequities are even greater when the differences in per capita expenditure per beneficiary in public insurance programs are compared. A positive redistributive effect was observed in countries where these costs represent 2.5% of GDP or more (Argentina,

Chile, Colombia, and Jamaica), while a negative redistributive effect was observed in countries where they represent about 1% of GDP or less (Ecuador and Guatemala). There is a great deal of room to improve the use of government financing and spending instruments to achieve greater equity in financing and access. Data presented in other sections of this chapter suggest that the governments of Latin America and the Caribbean, particularly the low-income countries, have the potential to make more effective use of existing fiscal instruments to address the challenges in health and equity.

**Social health protection as a marginal issue.** In recent years, private insurance and pre-paid plans have become important mechanisms for private health care financing in many of the countries of the Region. The rapid growth in the size of these items is the most important factor explaining the recent trends in national health expenditure.

The size of the markets for private insurance and pre-paid plans appears to have been determined by the relative importance of the public health services system, both with regard to the coverage and scope of services, and to the existence or absence of policies that favor the rise of these markets and regulate their operation. The presence of large national or transnational corporations also appears to be a relevant factor in explaining the different relative sizes of the private insurance and pre-paid health plans markets. In Peru, for example, the existence of large private employers who offer health benefits has contributed to the rise of insurance companies as well as to the increase in the supply of high-complexity private health services.

However, the lack of coverage of public health services does not appear to be sufficient for growth of the private health insurance market. In the case of Mexico, that market is relatively undeveloped despite the shortcomings in public health system coverage. On the other hand, even in countries with nearly universal social security systems, such as Argentina, Costa Rica, and Uruguay, large companies provide their employees with complementary health insurance to reduce waiting times in public services, provide access to “better quality care,” or both.

The growing importance of private spending on health in the form of private insurance or pre-paid plans is transforming health care markets in the Region. This trend poses a large challenge for health policies, particularly with regard to the design of regulations to ensure efficiency in the operation of those markets and to address inequities in access to health care. Owing to the lack of adequate regulation or the limited enforcement of existing regulations, many people with private health insurance use health services that are subsidized by the government—for example, public hospitals, to keep their premiums low or reduce the cost of their policies. Private insurers can opt to include only a limited number of medical services in their benefits packages, on the assumption that the more costly procedures, which are also generally infrequent, will be subsidized by public hospitals.

<sup>11</sup> This calculation includes private consumer spending that may have been financed directly by households through out-of-pocket spending or indirectly through health insurance, prepaid plans, or transfers from other sectors of the economy.

*Trends in Health Services Delivery*

In the Region, health services continue to face large challenges (49). Access to health care is not universal, and in many cases it is virtually nonexistent for the social groups with the greatest need of it. The supply of health services does not always reflect the expectations, social values, and cultural preferences of the population. In many cases, the delivery of services is ineffective and technical quality is poor. Also, the resources available are not always used adequately, which leads to inefficiencies in the services and drives up costs. In some cases, financing of services is insufficient and unsustainable (41).

As a result of sector reforms or changes in health systems, new patterns of care have been introduced, and in countries where the insurance market is strong the supply of services is now better aligned with demand. In Chile, for example, services are geared to more comprehensive, family-based care, with stress on primary care at family health centers rather than at private physicians' offices, and training that seeks to increase the responsiveness of ambulatory services. In Mexico, the creation of the Seguro Popular de Salud has modified the care model of the Secretariat of Health by clarifying that user benefits are a right, while simultaneously subsidizing the cost of services, limiting patient contributions to a co-payment. In the United States, reforms have been recently made in the Medicare system to extend the benefits to cover medications, whose high cost is a major factor in national health expenditure and a substantial financial burden for pensioners.

Other countries are making changes to respond to different national priorities. Nicaragua, for example, has modified the delivery of services to reflect its epidemiological transition and, like other countries, it has made changes in the three levels of care. The first level has been modified to respond to vulnerable populations, placing stress on gender and geographic distribution, and defining criteria for targeting and exemptions from payment for services. In Brazil, ambulatory services and home care have been stepped up through a variety of strategies that range from modifying the basic care model to preparing plans for the regionalization of public services, joining the efforts that other countries have been making in these areas.

Several countries have given priority in health care to vulnerable groups. In Paraguay, for example, the management of service programs is being centralized in a General Programs Office in order to give priority to mother and child care and focus on rural and indigenous populations. Bolivia and Colombia have programs targeted to vulnerable groups, such as mothers and infants, children under 5, indigenous populations, the elderly, and groups at epidemiological risk. In Cuba, more effective and innovative services have been introduced, such as ambulatory surgery, shorter hospital convalescences, and monitoring through home-care. In Cuba and, to a lesser extent, in Central America, referral and counter-referral services have been enhanced, as has the assessment of services based on quantitative and qualitative indicators, which permits problems to be better identified and timely and proper decisions to be made. Most of the countries have ex-

pressed a commitment to providing good quality services suited to the needs of the public but problems often remain in allocating the necessary resources or organizing the services necessary to attain this goal.

With respect to the management model, many countries report that they have made general changes to it. In Panama, the main change has been active participation by the management council in the administration of San Miguel Arcángel General Hospital and the creation of a national health coordinator (CONSALUD), which is a private body of public interest constituted by the Ministry of Health and the Insurance Fund, to finance and purchase health care services from not-for-profit suppliers around the country. Cuba has experienced a sweeping transformation in its care model, which has served to strengthen the community level, promote exchanges of information, and step up the regulatory function of the Ministry of Public Health. This has improved control and implementation of programs in the provinces and provided the main players with the know-how to identify priority problems in the sector and design solutions.

Management commitments and contracts have been introduced between the different levels of the public health system in several countries. In Guatemala, the central Ministry of Health authorities and the regional managers have made a commitment to expand coverage and reduce the incidence of certain diseases. Management commitments have been signed in Nicaragua and Bolivia, and Bolivia has introduced them as part of its mother and child insurance. In 2000, some Bolivian districts began to sign agreements of this kind with autonomous hospitals, even though the regulatory framework for these mechanisms had not yet been defined.

Some countries are also taking steps to remove legislative obstacles to the purchase and sale of services by third parties. In Argentina, regulations to support the decentralization of hospitals have provided a legal framework for the purchase and sale of health services. This legislation permits hospitals to reach agreements with social security services and other entities, obtain payments from users with the ability to pay and from third-party payers, and operate as a services network. The Social Security Administration has begun a study to determine the feasibility of subcontracting certain support services out to third parties, such as meals and laundry. In Chile, the legal and institutional possibility also exists of buying from third parties and selling them services through the public system. In general, this applies to maintenance services and specialized institutions, and to jurisdictions administered by the social groups.

Despite the changes in management models described above, very few countries are considering privatizing public services. Argentina, for example, has found that decentralization of hospital management has provided hospital managers with greater administrative flexibility and allowed the local authorities to privatize some services. El Salvador and Guatemala have examined the possibility of having public services privately managed. On the other hand, Canada, Chile, Costa Rica, Cuba, Honduras, Nicaragua,

Paraguay, and Uruguay have not handed over the operation of any public service to the private sector. Among the changes being introduced, several countries have reported the establishment of procedures to accredit health services. El Salvador, for example, is reviewing accreditation requirements in centers of higher education in order to improve the quality of the professionals who are being trained. In 2000, the Dominican Republic established the National Quality Committee to standardize processes and create protocols to improve service delivery. Argentina has introduced new procedures for the authorization, accreditation, and classification of health services, professional certification and recertification, health control, and the supervision and evaluation of the quality of medical care and health services. However, it is difficult to evaluate how well those procedures are complied with, since the provinces are responsible for these functions. In the Andean sub-region, Peru, Bolivia, and Colombia have institutionalized accreditation processes on different service levels.

In addition to defining procedures for accreditation and service delivery, several countries have reported the creation of programs in the ministries of health to improve quality. Trinidad and Tobago has established a Quality Management Directorate to organize a system that will help to improve the quality of care. The directorate includes a system for the accreditation of services on the primary and tertiary levels, and the development of a system of clinical audits. It has also begun to define a plan to bolster the evaluation of health technology and management capacity. In Honduras, the new health agenda includes initiatives related to technical quality and perceived quality. Costa Rica has incorporated similar initiatives that focus on user satisfaction.

Few countries have reported the establishment of programs to evaluate health technologies. In Colombia, the Office of Science and Technology Development of the Ministry of Health has improved its evaluation of technology, including standards for imported technology. In Cuba, the National Technology Evaluation Department was established in 1996 to determine the incidence and viability of health technology in existing systems and identify the equipment that needed to be incorporated. Other national bodies have also been established to evaluate and monitor health technology during the implementation phase.

As for decentralization, many countries of the Region have completed it while others are making progress in applying decentralization policies in the government in general and in health systems. However, health administrative structures continue to be highly centralized. In Guyana and Suriname, administrative levels are being reviewed prior to decentralizing health services, but these efforts are not necessarily linked to other decentralization initiatives in the public administration. Chile decentralized its National Health Service in 1980, dividing it into 26 services and transferring responsibilities for primary care to the municipalities, while the planning and management functions, responsibilities, and resources for decisionmaking remained on the central level. However, in many cases, decentralization of the health system is still incipient. Bolivia, for example, passed the Decen-

tralization and Public Participation Law in 1994, which transferred health infrastructure and equipment from the central level to the municipalities, but, to date, the Ministry of Health continues to administer the sector's human resources.

In many countries, responsibilities, authority, and resources have been transferred to the subnational level, i.e. to regions, provinces, or departments, and in others they have been transferred to the municipal level. In Jamaica and Trinidad and Tobago, decentralization is being implemented by establishing regional health authorities, which manage the provision of health services, although the management of resources continues to be centralized. In Brazil, a new tool for regulating decentralization established an operating standard for health care, which expands the primary responsibilities of the municipalities, defines the process of regionalization of care, creates mechanisms to fortify the managerial capacity of the Unified Health System (SUS), and updates authorization criteria in the states and municipalities. Despite the existence of knowledge, methods, and instruments, activities for promotion, prevention, and recovery continue to suffer from lack of coordination in sector planning.

## STEWARDSHIP FUNCTION

### Conceptual and Methodological Development of the Stewardship Function, 2001–2005

One of the critical problems faced by the countries of the Region is institutional weakness, a factor that has repercussions on the real possibilities of economic development. In today's context, redefinition of institutional roles and strengthening of the functions of the state that cannot be delegated—such as citizen security, public health, and the social security of vulnerable or excluded groups—have become priorities. Consequently, the countries are attempting to build up and consolidate their capacity to supervise the health system and to have on hand the expertise to promote health and negotiate with other sectors that interact with the health system (48).

It has not been easy to arrive at an operational definition of stewardship in the field of health, since this concept often overlaps with the concept of governance. According to WHO, the government has the capacity and obligation to take responsibility for the health and well-being of its citizens and to direct the health system as a whole, and this governance responsibility should be exercised in three fundamental aspects: providing vision and direction for the health system, collecting and using intelligence, and exerting influence through regulation and other means. WHO also stresses that the degree of capacity and performance by the government in exercising governance over the health system will have a decisive effect on all outcomes (50, 51).

PAHO/WHO uses the phrase “stewardship of the health system” to refer to governance of the system. Accordingly, and in response to Resolution CD40.R12 (52) on stewardship by the ministries of health in sector reform processes, in the period



2001–2005 PAHO/WHO addressed the process of developing the concept and practice of health stewardship as a priority and an intrinsic aspect of the process of modernization of the State. An in-depth debate and exchange of ideas on the conceptualization, sphere of action, and mechanisms for strengthening stewardship capacity in health ensued.<sup>12</sup> Today, the stewardship function in health policy is considered to be the exercise of substantive responsibilities and competencies that are incumbent on the government and that cannot be delegated. That stewardship is exercised by the national health authority (50, 51, 53).

### The Stewardship Function and Strengthening Health Systems

The main public depositaries of the health authority are the ministries of health and, in that capacity, they are the primary institutions responsible for exercising the stewardship function. A growing trend has been observed in the Region not to concentrate all tasks in a single institution as in the past, but to create diverse and complementary institutional mechanisms that carry out their different functions in a specialized fashion and with clearly differentiated powers.<sup>13</sup> Structural variations are apparent in the composition of the health authority, depending on whether the country is a federation or a unitary state and on the institutional organization of the health sector (5, 54). However, to consolidate the function of the health authority, its responsibilities and operations need to be restructured and adapted to the new realities which, in turn, will demand a shift from actions that fundamentally involve implementation to actions that are predominantly intended to organize and coordinate a host of actors (55).

### Conceptual Framework of the Stewardship Function in Health

While aware that different taxonomies can be adopted regarding the stewardship function, PAHO defined six large areas of responsibility and institutional competencies, which cover the

dimensions of the stewardship function: leadership, regulation, insurance, financing, provision of services, and essential public health functions (Figure 2). Depending on the degree of decentralization in the sector and the separation of functions adopted in the institutional organization of each country, these dimensions will be located at a given level of the health authority (national, subnational, or local) and sometimes responsibilities will be shared by two or more levels.

#### *Effective Health Leadership*

Sector leadership constitutes one of the three dimensions of the stewardship function that is the exclusive responsibility of the national health authority (41). Leadership is more relevant when the objectives require significant changes in the existing situation (56). In such cases, the strategies will generate power shares that mobilize the support required to bring them about and increase operating capacity. The health authority will need to develop or build up its capacity to effectively guide sector institutions and mobilize institutions and social groups to support national health policy through: (1) an analysis of the health situation, including the definition of priorities and objectives; (2) the formulation, dissemination, monitoring, and evaluation of health policies, plans, and strategies; (3) the mobilization of players and resources; (4) health promotion and social participation and control in health; (5) the harmonization of international technical cooperation; (6) political and technical participation in national and sub-regional organizations; and (7) the evaluation of health system performance, including measurement of the goals achieved and the resources used.

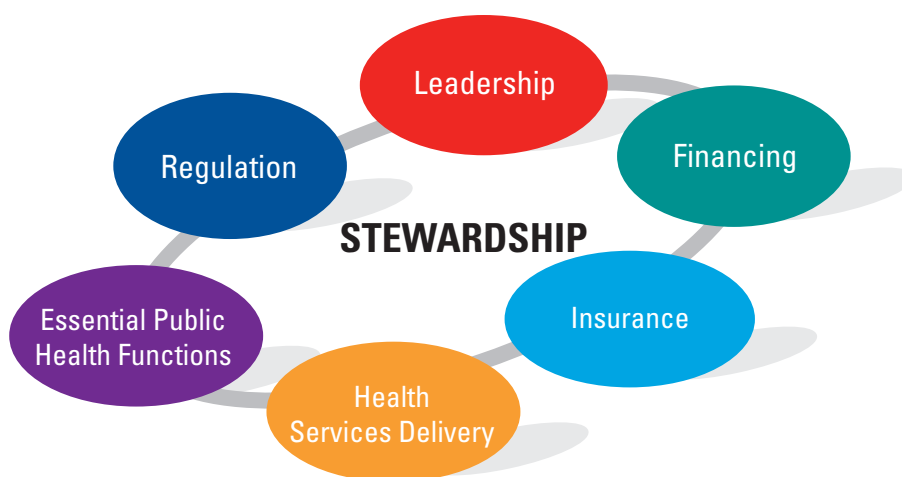
In this context, the countries of the Region that exhibit good leadership share some common attributes (57), among them: (1) political support, which is fundamental for effective leadership; (2) the availability of reliable and timely information, which is indispensable for establishing health priorities and objectives; (3) the formulation of health policies and strategies, which should be complemented by their evaluation; (4) awareness-raising among sector players regarding the importance of the leadership function, which facilitates the consolidation of the health authority as lead agency; (5) mobilization of interested players and participation by civil society in health promotion, which are often the keys to success; and (6) participation of the health authority in negotiation, coordination, and evaluation processes with donor agencies to assure that international cooperation in health is effective, responds to the needs identified, and proves sustainable.

#### *Effective Health Regulation and Supervision*

Regulation and supervision are necessary to guarantee the government function of organizing relations in the production and distribution of health resources, goods, and services. For a health ministry or department to fully exercise its regulatory function, it must enjoy political and social representativeness,

<sup>12</sup> See Pan American Health Organization. Informe Final. Reunión de expertos: desarrollo de la capacidad institucional de la autoridad sanitaria para ejercer la rectoría sectorial. Washington DC 18–20 junio 2001, and Informe Final. Reunión de expertos en rectoría del sector salud en procesos de reforma. Washington DC 14–15 June 2004. Pan American Health Organization. Marco conceptual e instrumento metodológico: función rectora de la autoridad sanitaria nacional: desempeño y fortalecimiento. Edición Especial No. 17: Washington DC: OPS, 2006. <http://www.lachealthsys.org/documents/433-funcionrectoradelaautoridadsanitariacnacionaldesempenoyfortalecimiento-ES.pdf>

<sup>13</sup> At the 40th Meeting of the PAHO Directing Council (1997), the Member States discussed and ratified the dimensions of sector stewardship in health, which include six large areas of institutional responsibility and competencies that are incumbent on the health authority: steering, regulation, insurance, financing, provision of services, and essential public health functions. PAHO/WHO, 40th Directing Council of the Pan American Health Organization, Resolution CD40.R12: Steering role of the ministries of health in the processes of the health sector reform, 1997.

**FIGURE 2. Functions of the stewardship role.**

**Source:** Pan American Health Organization; United States Agency for International Development. Health Systems Strengthening in Latin America and the Caribbean.

solvency, and technical authority, and perform its tasks transparently, subject to scrutiny of its decisions by society (57). Regulation in the broadest sense is a tool for supervision that the government uses in combination with other tools to achieve its political objectives and, as a principle, rule, or other type of norm, it conditions and governs the behavior of citizens and of organizations or institutions.

Supervision and control are fundamentally technical activities that are intended to verify concrete compliance with the regulations and require professional specialization and arms-length dealings with the bodies that are supervised. Exercise of supervision is heavily dependent on human and technical resources and the powers that the law confers on the institutions that are called on to perform it. Supervision that translates into the application of sanctions should be subject to review by the courts to guarantee due process and prevent abuses or capricious behavior by the supervisor (58). The countries of the Region that exhibit good regulation share some common attributes: (1) the legal framework that supports the health authority in its functions is consistent with the governance it wishes to exercise over the sector as lead agency; (2) the normative function complements supervision; and (3) the professionals who carry out the supervisory function are duly trained for that task (57).

#### *Financing Function*

The separation of functions that is typical of sector reform in the Region is based on three main financing mechanisms. The first is the creation of autonomous national funds, separate from the ministries of health, that pool public contributions from general taxes, from specific health services institutions, where they

exist, and from employee and employer contributions in the event that the contributive social security regimes in health are merged with general government health allocations. This can be linked to a public insurance plan or to multiple insurance plans that may be public or private. The second mechanism is related to an increase in the percentage of public financing collected by the intermediate and local levels of government from their own taxes or transfers for health activities from the central government. The third is related to a growing share in the composition of overall sector financing in some countries of the Region of private health insurance and certain types of pre-paid services that are funded directly by the beneficiaries, their employers, or both, and that, as a minimum, complement mandatory government plans. Combining these three financing mechanisms in countries that have made attempts to surmount the segmentation of insurance and service delivery caused by differentiated financing mechanisms represents new challenges and duties for the ministries of health in managing sector financing (41).

#### *Insurance Function*

With regard to insurance, governments have the responsibility of effectively overseeing social protection of health, guaranteeing access to a basic health services plan for all citizens, or through specific plans targeted to special population groups. This demands stronger institutional capacity in the ministries or departments of health to define the content of the basic benefits plans that it is mandatory to offer persons covered by the publicly operated social security system(s). It is also necessary to define the population groups and territories that will be covered by the set of benefits and to protect the rights of users and publicize

them. Last, public and private compliance with the services must be regulated and controlled to ensure that no beneficiary of mandatory social health plans is excluded on account of risks related to age or preexisting pathology. Mechanisms must also exist for purchasing or delivering the services included in guaranteed-coverage plans.

#### *Health Services Delivery Function*

The trends toward decentralization and a reduction in government intervention in the provision of health services through different mechanisms that enable participation by many social players (public, autonomous, private, and nongovernmental solidarity organizations) have a practical influence on harmonization of the provision of public health services. This has turned the ministries or departments of health more into coordinators of the management and delivery of services by public institutions than direct administrators of services. The function of harmonizing the provision of health services is therefore particularly important in systems in which many public and private players exist, whose activities must be channeled for the purpose of achieving common goals. That function means that the health authority must have the capacity to promote complementarity among different providers and user groups to extend health care coverage in an equitable and efficient manner.

### **Actions to Strengthen the Stewardship Function in Latin America and the Caribbean**

#### *Building Capacity to Regulate and Oversee the Pharmaceutical Sector: The Case of Brazil*

Brazil is the first developing country that has implemented a national program to distribute antiretroviral medicines. The program is supported by the country's general policy on drugs, which proposes to "ensure public access to safe, effective, and good quality medicines at the lowest possible cost" (57). The national health authority carries out two types of drug regulation: technical and financial. Technical regulation introduces health standards to assure the quality and safety of drugs, using mechanisms such as licensing, inspection, and surveillance. Financial regulation is intended to introduce policies to reduce the influence of the pharmaceutical industry on the market and to increase consumer access to pharmaceutical products. The tools it uses include price controls, market monitoring, the development of policies on access, and policies to promote the use of generic drugs. Although the accessibility of medicines has always been high on the public agenda, its importance has increased with the AIDS epidemic, and price controls came to play a predominant role in financial regulation.

#### *Building the Leadership Capacity of the Health Authority: The Case of Chile*

The health reform process in Chile, which was launched in 2000, brought about a dramatic change in both the public and

private health systems, with the objective of providing the population with more and better access to health services, reducing waiting times, expanding the network of establishments, and eliminating financial barriers. This reform process included two fundamental actions that led to the strengthening of the health authority in the leadership area. The first action was to prioritize the concept of leadership and its linkage with a series of proposals that have come to form the foundation of the Chilean health sector. The second was the promotion by the health authority of active participation by civil society in identifying problems, and planning and implementing actions in the field. The reform proposal was based on five main issues, each of which was dealt with in its own draft legislation. The first bill that was passed by congress was called the Health Authority Act, whose purpose was to redesign the regulatory agency. As a result, the health reform process in Chile has been exemplary in introducing legal, institutional, and operational changes to steer the sector toward achieving the main goals of the reform: to improve health effectiveness, equity, and solidarity, and boost efficiency in sector management.

#### *Building the Leadership Capacity of the Ministry of Health: The Case of Costa Rica*

Costa Rica is a country that has historically attached priority to public health. Its commitment to universal health care coverage, coupled with sustained investments in the sector and the provision of basic social services, meant that in the 1990s the country had one of the best health situations in the Region, comparable in many respects with the industrialized countries. However, Costa Rica was not exempt from the economic crisis that afflicted the Region in earlier decades. The problems of the fiscal deficit and foreign and domestic debt as well as excessive centralization, inefficiency, and bureaucratic growth in the government apparatus led to a reduction in government financing for the health sector (59) which, in turn, affected the quality of health services, their coverage, and investment levels in the sector. Nonetheless, owing to its commitment to public health, the country opted to focus health sector reform on strengthening the public health system (60).

At the start of the 1990s, a national debate began on the options for addressing the problems affecting the Ministry of Health and the Costa Rican Social Security Fund (CCSS). In 1994, major structural reforms got under way in the organization, financing, and provision of health services, while always maintaining the basic principles of universal coverage and public financing of the CCSS. A leadership and institution-building project for the Ministry of Health was designed, whose objective is to support the ministry in effectively exercising stewardship and transferring activities related to direct care for individuals to the CCSS. Actions focused on separating the functions of delivery and financing (taken over by the CCSS) from the functions of regulation and leadership (the responsibility of the Ministry of Health) to eliminate unnecessary duplication of human resources and infrastructure. The redefinition of institutional functions in the



health system as a result of the reform demanded greater capacity in the Ministry of Health to carry out its stewardship function: leading the sector, regulating health goods and services, measuring how well the essential public health functions are performed, modulating financing for health care, supervising insurance, and harmonizing the delivery of services. Much has been achieved since the start of the project in 1994. By 2002, the ministry had made good headway in reorganizing its operations in order to respond to growing demands that required effective exercise of sector stewardship.

### Challenges

The countries of the Region are making major efforts to bolster the stewardship function of the health authorities. However, each of them, in light of its situation and possibilities, needs to perform a self-evaluation to analyze its capacity to exercise the leadership function and define actions to improve it. They should keep in mind the following lessons learned from national experiences: (1) the establishment of health priorities and objectives requires reliable and timely information; (2) the formulation of health policies and strategies should be complemented with evaluation; (3) the legal framework that supports the health authority in the exercise of its functions should be consistent with the governance that it strives to exert over the sector in its capacity as lead agency; (4) for regulation to be effective, the regulatory function should be complemented with oversight; (5) for international cooperation in health to be effective, respond to the needs detected, and be sustainable, the health authority should be involved in its negotiation, coordination, and evaluation; and (6) qualified human resources must be available to exercise the stewardship functions.

In short, the great challenge lies in entrenching stewardship as a function of government and its senior authorities and directing institution-building efforts toward enhancing the functions of planning, financing, allocation, and development of resources, public management, and knowledge.

## THE PROVISION OF HEALTH CARE SERVICES AS A FUNCTION OF THE HEALTH SYSTEM

Delivery of high quality, efficient, and equitable health services and giving the population access to them is one of three main functions of the health system. This function is probably the one most readily identified, because it embodies the purpose of all health care systems and because its degree of implementation directly affects the ability to maintain health and prevent disease at the individual and community levels. The health care services function is also highly visible since it is embodied in health care organizations, the work of health care professionals, and the interventions and health technology that each society has made available to satisfy this basic human need.

*“The Governments of the Americas have stressed that vital and health statistics are essential in all phases of program planning and of evaluating the activities carried out by health services and the social effects achieved.”*

Abraham Horwitz, 1966

Health care services include both personal and public health services, that is, services that respond to individual and collective needs, covering the whole spectrum of care and ranging from health promotion and disease prevention to curative and palliative treatment, rehabilitation, and long-term care. Health care services also encompass physical, mental, dental, and vision services.

### Levels of Health Care Services

Health services are classified according to the level of care as primary, secondary, or tertiary. These levels of care are defined by the type of services provided, the degree of complexity, and the capacity to treat various types of health problems and conditions. The designation of primary, secondary, or tertiary often characterizes the infrastructure of the health services system, in particular, health care facilities such as hospitals and clinics. In this context, primary care refers only to a level of care and not to the broader set of values, principles, and essential elements of a health system, as previously discussed in the primary health care strategy.

Emergency care cuts across all levels of care. Yet, it is perhaps the least developed in most countries of the Region, and very few countries have established special programs to strengthen emergency care. In Brazil, for example, the mobile emergency care service units were established in 2003 as part of the unified health care system. As of 2006, the Ministry of Health had established 94 of these mobile units, which are providing services in 647 municipalities. Chile has been expanding its prehospitallization emergency care services, which consist of rescue units of various complexities and a local emergency center supervised by an emergency care physician. In Cuba, 121 Intensive Care Areas (AIMs) have been established since 2004 to provide emergency care services to the population in areas of difficult access to health services or too far from hospital-based emergency care. Each AIM provides 24-hour service and is staffed by emergency care physicians and nursing personnel.

### Access to Health Care Services

“Access” can be understood as the ability to obtain care when needed. “Accessibility” refers to the degree to which health services are acceptable to the population and respond to its needs. It is ultimately manifested by the utilization of health services by particular population groups which, *a priori*, can be assumed to

be disadvantaged (61). Accessibility is affected by the characteristics of the delivery system, of individuals, and of communities (62). Access to a regular source of care—a primary care provider or specific site—makes it more likely that individuals will receive a greater number of appropriate health services and, in turn, experience better health outcomes (63). Changes in the health situation, as discussed elsewhere in this publication, will require changes in health care services so that they emphasize promotion and prevention rather than just curative care, address chronic as well as acute illnesses, and respond to growing health problems such as substance abuse and violence, among others.

The evaluation and promotion of equitable access to necessary health services is an essential public health function (5). A study and survey of decisionmakers in the area of primary health care undertaken in 16 countries in Latin America and the Caribbean found that strategies to increase coverage and access to primary care are some of the most common elements of health care reform efforts in the Region (64). These strategies include increasing the total number of primary care facilities, targeting the delivery of a set of basic services to populations with limited access and/or to vulnerable groups such as mothers and children or indigenous populations, as has been the case in Brazil, Costa Rica, Ecuador, Honduras, Jamaica, Mexico, Nicaragua, and Panama, among other countries.

For instance, one of the mechanisms used in Brazil to expand coverage and reduce inequalities is the Basic Health Services Program (PAB). This strategy transfers funds for basic health care services to municipalities for the implementation of previously established activities and for meeting performance goals. The municipalities are responsible for guaranteeing the population access to a package of basic health services, and they receive support from the Ministry of Health to do so. In Mexico, the Opportunities Program includes a set of integrated health care interventions directed to improving the health, nutrition, and educational level of families residing in rural areas, with special emphasis on vulnerable populations. Services are provided free of charge and include a minimum package of essential health services, nutritional interventions for children, improved self care at the level of families and communities through health communication and health education strategies, increased supply of services to satisfy growing demands, and subsidies for families to increase food consumption (65).

Despite similar efforts in several countries, only 28% of decisionmakers surveyed in a 2004 regional study considered that primary care services provided adequate coverage and did not leave significant population groups without access to services. According to an exploratory study sponsored by PAHO, only a few countries in the Region have reached rates equivalent to universal coverage (e.g., Canada, Chile, Costa Rica, and Cuba). This same study also reports that approximately 27% of the population in Latin America and the Caribbean do not have permanent access to basic health services, 30% do not have access to care due to finan-

cial barriers, and 21% do not have access due to geographic barriers (66).

### Quality of Health Care Services

The efforts to define quality of care span many decades. One of the most well known definitions of quality is the one proposed by Donabedian, who described quality of care as “the application of medical science and technology in a way that maximizes its benefits to health without correspondingly increasing its risks. The degree of quality is, therefore, the extent to which the care provided is expected to achieve the most favorable balance of risks and benefits” (67, 68). Donabedian also recognized that quality of care has both a technical and an interpersonal component (69).

More recently, the Institute of Medicine (IOM) of the United States defined quality as “the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge.” High-quality health care services are defined as safe, effective, patient-centered, and timely (70, 71).

Safe care refers to services that avoid causing injuries to patients from care that is intended to help them. Effective care refers to providing medical practices or procedures to individuals and communities based on available scientific knowledge to all those who could benefit from them and refraining from providing these services to those not likely to benefit (i.e., avoiding underuse and overuse). Patient-centered care establishes a partnership between practitioners and patients to ensure that health care decisions respect patients’ wants, needs, and preferences. As such, it should lead to higher satisfaction among users. This partnership also ensures that patients and their families have the education and support they require to make decisions and participate in their own care. Instead of focusing on disease or organ systems, patient-centered care takes into account the psychosocial and cultural dimensions of illness as well as the family and community context. Timely care refers not only to minimizing unnecessary delays in getting care, but also to the need to provide coordinated care across providers and facilities, and across the spectrum of care ranging from preventive to palliative care.

Quality assurance and improvement with respect to personal and public health services is one of 11 essential public health functions. According to a regional study published by PAHO in 2002, it was among the least developed (55). Several countries in the Region have defined and implemented procedures for the accreditation of health care facilities, with the United States and Canada leading in this area. Several countries in Latin America also have developed accreditation programs, including Argentina, Belize, Bolivia, Brazil, Colombia, Costa Rica, the Dominican Republic, El Salvador, Honduras, Jamaica, Peru, Suriname, and Trinidad and Tobago (72). The degree of implementation of these accreditation programs varies by country, and almost all of them focus on hospitals.

### *Equity and Efficiency in the Delivery of Health Care Services*

In the context of quality, equity is a crosscutting aspect of health services and refers to the distribution of quality health care services across population groups based on need rather than other criteria not inherently linked to health, such as ethnicity, geographic location, socioeconomic status, or insurance coverage. Universal coverage and equal access to care are the foundation of an equitable health system, as discussed elsewhere in this publication. The second crosscutting aspect of high-quality health services is efficiency in the allocation of resources and the delivery of services to reduce waste and obtain the best possible value for the resources used (73).

## **Development of High-Performing Health Care Delivery Systems**

### *Challenges to Developing High-Performing Health Care Delivery Models*

Most countries in the Region face a set of common challenges with respect to the performance of health care delivery systems. These include the rapid increase in the cost of services, insufficient health care services, inequitable access to services, deficiencies in technical efficiency, low level or lack of evidence with respect to the effectiveness and cost effectiveness of most services provided, insufficient quality of services, and low levels of consumer satisfaction and social participation in health.

An analysis of the situation with respect to hospital care, specifically, shows the following (66):

- An overemphasis on highly specialized care and the use of costly health care technologies.
- A concentration of health care facilities in metropolitan urban areas.
- A growing gap between the demand and supply of services.
- An imbalance in the distribution of patients between public and private sector hospitals based on financing schemes, whereby the public system usually cares for the more costly cases while private hospitals pre-select patients and limit access to more costly procedures.
- A lack of sufficiently developed management systems.
- A lack of quality control systems linked to hospital procedures, particularly for medium- and high-complexity procedures.

In addition, most health care delivery models have tended to emphasize personal care services rather than public health services; curative care rather than preventive care; and services centered on a specific disease episode or a visit, rather than on treating the person as a whole and establishing a care partnership, in the context of family and community. Furthermore, services are generally characterized by a lack of continuity of care due to the

lack of access to a regular source of care, and the lack of an integrated and coordinated network of services.

### *Emerging Trends in Health Care Delivery Models*

In general, changes in health services delivery at the level of primary care have focused on providing a better fit between the delivery of services and the population's needs and demands for health care, with an emphasis on ambulatory care, and increasing access and equity. Stepped up efforts in this direction should help to address some of the deficiencies noted above.

Although we cannot refer to a single dominant model of health care services delivery, there are a number of common trends, particularly at the primary care level (64). Their relative importance and level of implementation varies across countries in the Region. One of the most evident trends has been the shift from hospital-based inpatient care to specialized ambulatory care including increased use of ambulatory or same-day surgery, day hospitals, and home health care, to reduce costly hospital stays. This trend is most evident in higher-income countries such as the United States and Canada, because it often requires complex technologies, costly investments, and retraining of personnel. However, it is increasingly evident in other countries in the Region. In Panama, for example, the public health insurance system provides home care for patients requiring care for chronic conditions. In Chile, one of the strategies has been to develop new ways to deliver specialized ambulatory care independently of hospitals, such as the use of health care referral centers for the more common specialties and diagnostic and treatment centers for more complex ambulatory care.

An increased focus on health care at the level of the family, rather than on individual care, is also evident in Brazil, Chile, and Cuba. This approach tends to favor integrated care rather than a select set of services and has stimulated the use of a team approach to care where nurses and auxiliary personnel are integral members, rather than the more traditional hierarchical model where most or all of the decisionmaking power resides with physicians. Although 58% of primary care decisionmakers surveyed in 16 Latin American and Caribbean countries reported the existence of family health policies or programs, about the same proportion reported that these only reach half of the country's population or less (64).

An emphasis on health promotion and prevention, rather than solely curative and rehabilitative care, is another common trend in new health delivery models implemented in several countries in the Region. The relative emphasis on health promotion and disease prevention is greater for lower- than higher-income countries, most likely due to efforts to expand coverage through preventive services (64).

Taking health care services to places where users live, work, and study, rather than having users always go to seek services at health care facilities, is another strategy to increase access used in health care delivery models. School-based health care programs

for students have been established in high- as well as low-income countries. In the United States, over 1,000 schools (mostly high schools) have health centers (74). In Nicaragua, school-based health care was established in several schools in 2001 as part of a pilot program. As of 2006, four schools had health centers. The program has also enhanced the coordination between schools and municipalities to increase coverage of child immunizations and improve child nutrition and oral health.

Another common way to increase access to integrated care is the establishment of primary care teams with assigned populations. In Cuba, each primary care team (including one family physician and nurse) is assigned about 120 families, and the team must live in the same neighborhood as their assigned population. The physician's office and residence are often in the same building. The teams provide care in the office, but they also conduct home visits and field visits. Schools and work sites often have their own health care centers (75).

Mobile clinics and/or mobile health care teams are not necessarily a new trend but continue to be used in many countries in the Region particularly for areas of low population density or hard-to-reach areas where health care facilities and personnel are not available on a permanent basis. For example, in Panama, this is the primary objective of the so-called itinerant health caravans.

#### *The Goal: Integrated Health Care Services*

Integrated systems are among the most recently proposed models of health care delivery. These refer to inter-organizational health care networks that articulate clinical, functional, normative, and systemic dimensions coordinating health services over space (from the home to diverse types of health care facilities) and time (for an episode of illness and over the life cycle). An integrated delivery system has the necessary resources and capabilities to address the majority of health problems of a population at various stages of the life cycle (76). Integration of services is sometimes described as being horizontal or vertical in nature, but truly integrated services require both. This means having a horizontal component articulating facilities and services at the same level of care (e.g., hospitals, health centers) and a vertical component integrating services and the corresponding service providers along the continuum of care (e.g., home health care agencies, physicians' offices, hospitals, nursing homes, hospices).

From the patient's perspective, the following are characteristics of an integrated health services delivery system (76):

- The existence of an integrated health information system including medical records, so that patients do not have to repeat their medical history each time they seek care; the patient's medical record would also include information on utilization of services and procedures.
- No unnecessary duplication of diagnostic and laboratory procedures.

- Easy and timely access to a health care provider at the primary care level.
- Access to various levels of care with the capacity to resolve the specific set of health problems.
- Information on treatment options and participation in decisionmaking as equal partners with health care providers.
- Regular follow-up care to prevent problems with any chronic conditions.
- Health counseling and support for appropriate self-management of chronic conditions and self-care to increase individuals' autonomy and their informed use of the health care system.

Experiences with integrated health service models in the Region are growing, but few have been studied and evaluated. In El Salvador, the first level of care has been completely redefined through the definition of basic integrated health care systems (SIBASIs), designed according to the principles of a primary health care strategy, with a high level of participation of all relevant social institutions. The SIBASIs constitute the basic operational level of the health care system, and their structure includes health care facilities at the primary care level linked to facilities at the secondary and tertiary levels and organized into coordinated networks designed to respond to the population's health care needs. Legislation approved in 2006 defines the regional authorities as the technical and administrative level responsible for the management of resources assigned for the SIBASIs. It also establishes a referral system that will enable continuity and coordinated integrated care.

Many integrated health care models have been implemented on an experimental or pilot basis for restricted geographic areas and populations, commonly at the local or regional level. For example, in Peru, EsSalud (the public health insurance system) sponsored a pilot program in several polyclinics to apply and examine implementation of new strategies for the integration of services. These included conducting a needs assessment and diagnosis of the health situation of defined population groups, establishing a triage system according to population groups, increasing the hours of operation, redistribution and reorganization of physical resources, improved information systems, establishing quality-improvement processes including benchmarking, and incorporating several primary care facilities into the polyclinic (the report on the pilot project focuses on the experiences of a polyclinic that provides primary, secondary, and tertiary medical care, including emergency services) (77). Lessons learned include the importance of identifying and adapting best practices to improve the supply and integration of services, the need for a new organizational culture to support changes based on the establishment of good communication channels between managers and health providers to increase buy-in, and informing users about the changes in health services delivery to decrease potential resistance to change.

### *Effects of High-Performing Health Care Delivery Models on Health Outcomes*

Only a few studies have been carried out that show an association between changes in health delivery models—specifically primary care services—and health outcomes. In Costa Rica, comprehensive reform at the level of primary care included increasing access, focusing first on the most deprived areas (access increased by 15% in those health care districts), reorganizing health professionals into multidisciplinary primary care teams, and assigning responsibility for a particular geographic area and population to each primary care team or EBAIS. For every five years of primary health care reform, child mortality was reduced by 13% and adult mortality was reduced by 4%, independent of other health determinants (78). Equity in access to care was also improved (79).

In the case of Brazil, the Family Health Program also includes multidisciplinary health teams responsible for providing care to an assigned population. Depending on the availability of resources, dentists, social workers, and psychologists may be members of the team or instead be incorporated into support networks for a number of teams. The objectives of the program, initiated in 1994, are to extend access to basic health promotion, prevention, and treatment through low-cost and highly effective health services. By 2004, enrollment multiplied from one million to over 60 million, and the program was in operation in over three fourths of municipalities (66). The implementation of this program has been linked to reductions in infant mortality, as was the case with similar programs in Costa Rica and Mexico.

### *Challenges in the Organization and Management of Health Care Services*

Although the Americas Region is very diverse with health systems and health care services of various types and complexities, a number of challenges are shared by many countries with regard to the organization and management of health care services, including:

- Insufficient knowledge of the health situation and needs of the population served, including vulnerable populations, particularly in cases where there is not an assigned population.
- Weak or nonexistent articulation between the primary care level and other levels of care through effective referral mechanisms and information systems.
- Centralization of management and decisionmaking.
- Unclear distinctions between health care delivery and health care financing and insurance functions.
- Management of services based on inputs and resources, rather than processes and results.
- Social participation generally limited to consultative processes rather than direct participation in the management of services.

It is also important to note that the organization and management of health care services must be defined, taking into account basic ethical principles (80). These principles include justice, or equity in access to and receipt of high-quality care; respect for persons as reflected in a person- and family-centered care approach with a high level of community participation; beneficence, or the provision of high-quality effective services based on evidence; and nonmaleficence, or the provision of services through systems that assure safe care that avoids injury to patients and the overuse of ineffective health care services, which can cause harm.

### *Trends in the Management of Health Care Services*

Table 14 below shows the results of a survey of 36 policymakers and 46 health care executives regarding the most commonly used management models for hospitals, specialized ambulatory care facilities, and services networks in 15 countries of Latin America and the Caribbean, including Argentina, Bahamas, Brazil, Bolivia, Colombia, Costa Rica, Cuba, Chile, Dominican Republic, Honduras, Mexico, Nicaragua, Peru, Saint Lucia, and Trinidad and Tobago (72). The most common models are direct public administration, cooperatives of health care professionals, and private management models, whether for-profit or not-for-profit. Among those surveyed, 10% to 14% stated that these management models do not adequately respond to health care needs, and another 70% responded that they only do so to a partial extent.

The same survey identified the following emerging trends in hospital and specialized ambulatory health services (66):

- Greater flexibility in the management of human resources.
- Transformations in the organization of hospital services.
- Changes in financing mechanisms for hospital services.
- Increase of managed care.
- Economic evaluations and health technology assessment.
- Evidence-based health care.
- Increased sharing of best practices regarding diagnosis and treatment.
- Greater management of services from a technical perspective, rather than just a financial or human resource perspective.

Colombia, Cuba, and Mexico are among the few countries in Latin America to have established a health technology assessment program. For instance, in Mexico, the National Center of Technological Excellence (CENETEC) has developed a database of health technologies that includes information on efficacy, safety, cost-effectiveness, and compliance with technical standards and is used for purchasing and assigning medical equipment. The database includes 22 practice guidelines, 31 technological guidelines, 125 documents on technical specifications, eight medical equipment guidelines, six consumer information publications, and various reports on technology assessment and biomedical engineering (81). In Colombia, the Ministry of Health's Office of Science



**TABLE 14. Management models by type of health care facility or network.**

Type of facility or network	Management model
Hospital	Direct public management Privatized or outsourced management Cooperatives of medical professionals Private for-profit
Specialized ambulatory care	Direct public management Indirect public organization Privatized or outsourced management Cooperatives of medical professionals Private for-profit
Health care services networks	Direct public management Cooperatives of medical professionals Private for-profit

**Source:** Organización Panamericana de la Salud. Estudio regional sobre asistencia hospitalaria y ambulatoria especializada en América Latina y el Caribe, 2004.

and Technology Development has improved health technology assessment and defined standards for importing and evaluating health technology. Cuba has a National Office of Technology Assessment to determine the impact of health technology in existing systems and to identify new medical equipment that may be acquired (72).

Policymakers and administrators made suggestions to accelerate the development of appropriate management models and improve management of care, including (66):

- Decentralizing the administration of public hospitals and increasing autonomy.
- Decentralizing health care services in general.
- Reviewing the system of financing to eliminate economic barriers confronted by public facilities when trying to provide services at the minimal level of quality required for appropriate functioning of the system.
- Reinforcing coordination across institutions to form networks of integrated services and giving priority to services delivered through networks.
- Defining quality criteria and implementing quality assurance and quality improvement programs.
- Defining and establishing incentives and other mechanisms to motivate health care personnel.
- Training and continuing education of technical and administrative personnel.

Decentralization of health care services management and delivery continues to be one of the main components of health care reform efforts in many countries in the Region. Brazil is one of

the countries where decentralization has been the most expansive. The Unified Health System or SUS was established in 1990. It is based on the goals of universal and equitable access to care through a regionalized system of health care services organized by level of complexity under the direction of municipal, state, and federal level authorities. The decentralization of health care services is one of its most important strategies. Decentralization of services has been accompanied by increased regulatory capacity and is ruled by a new agreement approved in February 2006 by the Tripartite Inter-managerial Committee and the National Health Council, which establishes a new framework for management of the system at all levels of government.

#### *Capacity-Building for Optimal Management of Health Care Services*

Capacity is traditionally defined as the ability of individuals, organizations, and systems of care to perform their main functions. It is most often used to refer to financial support, medical equipment and facilities, human resource development, and technical skills. However, capacity building is a continuous process of developing and strengthening the knowledge and skills needed to manage health care. These skills include the ability to: conduct needs assessments and identify gaps in access to and delivery of care; define a plan to reduce these gaps through capacity building and the definition of specific strategies and actions; and monitor and evaluate processes and the results obtained (82).

With respect to this last area, and regarding the use of outcome indicators of health care services, the survey of Latin American and Caribbean policymakers, hospital administrators, and managers of various ambulatory care facilities described previously (66) found the following:

- 59% of respondents reported that these facilities conduct analyses of the results of health services, mostly with respect to financial indicators.
- 63% reported that facilities measured the rate of hospital-related infections (one of the key indicators of patient safety).
- 71% reported that facilities use quality indicators, but only 57% reported the use of consumer surveys with respect to satisfaction and/or experiences with care, and only 46% regularly review guidelines for care.
- 63% reported using indicators of the productivity of health care personnel, and 52% use indicators of the use of material resources (such as equipment) and medicines.

Experiences at the international level have shown that key factors for capacity building in management include: recognizing the importance of developing the necessary skills to manage change; ensuring the skills necessary for basic management of services, acknowledging the importance of organizational culture when promoting change at this level; recognizing the pres-

ence of potential barriers external to the health services delivery system such as the political, legislative, and regulatory structure; and the need to build capacity in stages and not try to institute change all at once.

#### *Health Care Services Monitoring and Performance Measurement*

The basis for the effective management of health care services is the availability of timely and accurate information for analysis, reporting, monitoring, and performance measurement. A management information system that is flexible, periodically reviewed and updated, properly financed, and sustainable is essential for decisionmaking. Such a system provides managers with information for strategic planning, as well as routine management of health care services. Other design principles for an effective management information system (83) include linking it to specific evidence-based goals for improvement and including measures to evaluate progress with respect to key attributes of health care services at any level of the system: access, quality (safety, effectiveness, person centeredness, timeliness, and coordination of care), equity, and efficiency.

A number of countries in the Region have embarked on processes to foster effectiveness, efficiency, and equity in the delivery and management of health services by implementing methods and tools to monitor the resource flows associated with health care delivery and evaluate institutional performance with respect to previously defined standards for both process and outcome measures. The use of methods that generate information for the analysis of productivity, performance, and resource utilization is essential for meeting institutional goals, negotiating contracts for the provision of services, increasing accountability, monitoring institutional performance, and improving management practices (84).

In Ecuador, regular tracking of process indicators has enabled program managers to monitor the effects of legislation implemented to provide free maternity care and infant care services on the quality of care. Several process indicators of quality showed significant improvement after only nine months. For example, the proportion of births where a set of standardized guidelines were followed (e.g., maternal blood pressure and fetal heart rate monitoring) increased from 44.5% in 2003 to 83.6% in 2004 (85).

In the Bahamas, the Department of Public Health has initiated a pilot implementation of a new public health information system at four sites. The system is an automated, integrated client health records and reporting system that supports implementation, tracking, and reporting of public health interventions, as well as follow-up and case management at the individual level.

A number of countries in Latin America and the Caribbean have implemented management information systems for use in health care facilities. In Mexico, for example, more than 100 hospitals have implemented a management information system. Modules for resource generation and costs are the most extensively developed, including costing of 1,800 hospital-based proce-

dures and cost-recovery programs. In one department in Colombia, a management information system was piloted successfully in 2004 in three hospitals, and the system is expanding its use to 36 hospitals in another department. The system has been particularly useful to public hospitals, which in Colombia must negotiate and manage contracts for services with insurance or managed care companies as well as county and department level health authorities. Chile implemented a management information system in 2003, which was later expanded to seven hospitals where it has additionally been used to negotiate budgets based on the costs and complexity of the production of various services.

#### *Emerging Trends in Health Care Services*

Certain key developments in health care services that can expand access to care are still mostly in the beginning stages. These include for instance the use of information and communication technology, increased globalization and trade in health services, research on mapping the human genome, and new treatments, medicines, and health care technologies.

In rural or hard-to-reach areas, information and communication technologies facilitate the increase of access to specialists and services that are more complex. When properly used, telehealth can reduce barriers in access to care due to geographic obstacles, inadequate distribution of health providers, costs, and lack of supervision and support of health workers at the primary care level (86). For example, in rural areas of the United States, telehealth is used by primary care providers to consult with specialists on specific cases in the presence of the patients. Information technology can also be used to increase access to diagnostic services by radiologists, using specialized scanners to transmit the images to radiologists who analyze the images at other locations. This type of technology can provide continuing education to health care providers of all types. In Mexico in 2006, 18 health care facilities in four states had trained personnel who could provide telemedicine services. Eight other federal facilities also provided telemedicine services as well as continuing education using the same type of technologies.

## **MEDICINES AND HEALTH CARE TECHNOLOGIES**

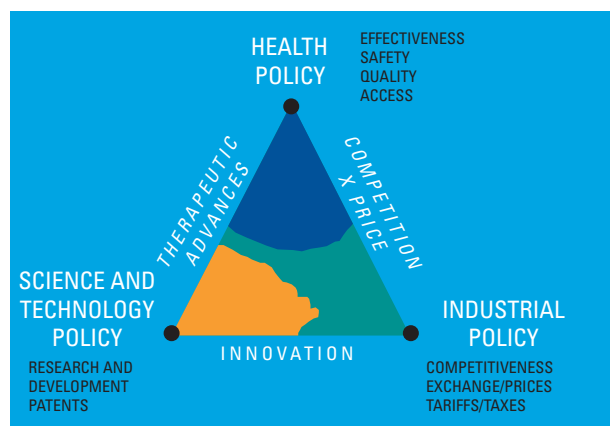
### **Medicines**

#### *Pharmaceutical Policies*

Pharmaceutical policies, with their harmoniously interrelated components of access, quality, and rational use, form part of health care or health insurance system policies, designed to maintain comprehensiveness in structural, financial, and managerial aspects and, above all, to attain the health goals established by the countries. The formulation and implementation of pharmaceutical policies involves health, industrial, and science and technology



**FIGURE 3. Interrelated aspects in the formulation of drug policies.**



**Source:** Adapted from Tobar F. Políticas para mejorar el acceso a los medicamentos. *Boletín Fármacos*, julio 2002; 5(3).

aspects. This triad can be represented by a triangle with industrial policy, science and technology policy, and health policy on the vertices (Figure 3) (87).

From the standpoint of industrial policy, the goal is domestic and international competitiveness to consolidate the supply. From the standpoint of science and technology policy, interest centers on research and development and on technological improvement of pharmaceutical forms. From the standpoint of health policy, in addition to ensuring public access to medicines, oversight of the quality of the products, their safety, and therapeutic performance is also called for. Health concerns share the need with industrial policy to promote competition through prices, and with science and technology they share the concern for promoting therapeutic advances. In turn, the latter shares with industrial policy the promotion of innovation and quality.

From the standpoint of health policy, medicines are primarily a social good, while from the viewpoints of industrial policy and innovation, they are a consumer good. Since reality is more complex than this, a pharmaceutical policy can be centered on different aspects as determined by national priorities.

After the different trends that lined up on the vertices of the triangle over the last three decades, today a better balance appears to exist. Some countries have stronger structures that include regulatory agencies. This is true of Brazil and Argentina, which are playing an acknowledged leadership role, attempting to guide pharmaceutical policies toward striking balances at different points inside the triangle rather than on the vertices. Other countries are making efforts to identify spaces that will permit them to move toward the center of the triangle with certain innovations, although for the time being they are more involved in regulation than implementation. Ecuador, for example, approved a law on generic drugs in 2000 which spans the entire cycle, from

production to consumption, and which, in addition to requiring the use of cheaper drugs in the public sector, also requires that 20% of the production of all laboratories be generic and establishes higher drugstore profit margins on sales of generic drugs (88). Through growth in government procurement, several countries of the Region (including Bolivia, Chile, the Dominican Republic, Jamaica, Peru, and Uruguay) spurred an increased supply of competitive products.

In the countries, these measures can form part of official comprehensive pharmaceutical policies or can stem from decisions on specific policy components. According to the most recent WHO report (89), of 27 countries in the Region that responded to a survey on the pharmaceutical situation in 2003, 16 reported that they had a national drug policy and in nine the policy was official.

### *The Pharmaceutical Market*

The market for medications is one of the fastest growing in the world. In the last five years alone, it grew by more than 50%.<sup>14</sup> The United States is the market leader in the Region and in the world with US\$ 190 billion in invoicing in 2005–2006.<sup>15</sup> It is followed in the Americas by Canada with US\$ 13 billion (89). Together, the two countries account for 50% of the world market, and they doubled their sales in the last six years. The pharmaceutical market has also grown steadily in Latin America and the Caribbean since 2002 and is expected to maintain the pace until the end of the present decade (90). The region represents 8% of the world market. In 2006, the three countries with the highest sales were Brazil (US\$ 8.1 billion), Mexico (US\$ 7.8 billion), and Argentina (US\$ 2.1 billion) (91).

As in the other regions, the share of competing products (also called multiple-source or generic) is growing. This means that larger numbers of units are being sold, given that this segment charges much lower prices. Of the countries of the Region, 80% have rules to promote prescriptions that include the common international denomination in the public sector, but just 33% have done so in the private sector (92). Argentina is one of the most advanced in this area, where 78% of prescriptions include the generic name (93).

**Supply and demand.** The pharmaceutical industry is extensively globalized today. International companies are rapidly increasing their share of the Latin American market. In Argentina, national producers have a larger market share (50% of laboratories), followed by Chile with 43%, Uruguay with 26%, Brazil with 25%, and Mexico with 12% (94). The deregulation of the econ-

<sup>14</sup> In 2000, the world market was US\$ 356 billion, and in 2005 it was US\$ 602 billion. Source: International Medical Statistics (IMS) Health Total Market Estimates and Global Pharma Forecasts (includes IMS audited and unaudited markets).

<sup>15</sup> The data presented are from IMS and correspond to the period between July 2005 and June 2006. Taxes and retailer profit margins are not included.

omy introduced in the last decade encouraged multinationals to concentrate their production in the largest countries of the Region. Since then, interregional trade has been on the rise. Participation by Europe and the United States has been declining as a share of the Region's imports, particularly when volumes rather than prices are considered.

No country is completely self-sufficient. The United States is the world's largest producer of drugs, but it is also the largest importer and has a negative balance of trade in this item. All the countries import materials and, for finished products, dependence is proportionate to the level of industrial development. For example, in Brazil, imports account for 19% of the market (95), 30% in Argentina (96), 40% in Peru,<sup>16</sup> 50% in Uruguay (97), and 80% in Ecuador (98). Demand for drugs is highly concentrated, and more than 80% of world production is consumed in the 12 most highly developed countries.

More than half of the Region's inhabitants have difficulties in obtaining essential medicines. According to the WHO survey, in 60% of the countries of the Region access to essential medicines in 2003 was below 80% (92). Prices are the main barrier, although access also depends on income. When prices are adjusted for purchasing power parity, Uruguay, the country with the lowest average prices, turns out to be the most expensive (99). Another barrier has been attributed to the fact that the very fast pace of innovation in the industry is not responsive to the problems that prevail in less-developed countries and areas (100). Estimates suggest that just 3% of expenditure on research and development in the pharmaceutical industry goes to produce drugs to fight those diseases, which account for 90% of the global burden of disease in the developing world (101).

**Financing.** According to IMS projections for 2006, Latin American countries spend more than US\$ 22 billion (almost US\$ 40 per capita/year) on medicines. Drugs are financed from three main sources: household expenditure (out-of-pocket); insurance plans (public, mutual, and private) which generally finance 100% of the drugs needed by their members during hospitalization but a smaller portion for ambulatory patients; and government expenditure to supply drugs for public health services.

Two-thirds of financing for medicines in Latin America comes from households, and the other two sources combined pay for just one-third. This introduces strong regressiveness, since lower income groups use more than 70% of their health expenditures to buy drugs (102). Social insurance and public insurance (which are spreading in the Region) still only offer partial coverage, and Costa Rica alone is comparable with European or Australian social security.

<sup>16</sup> In 2006, the National Statistics and Information Institute of Peru estimated that the market was about US\$ 462.5 million, and imports were US\$ 185.5 million. See also, M.I. Terra, G. Bittencourt et al. Estudios de Competitividad Sectoriales. Industria Manufacturera. Departamento de Economía. Facultad de Ciencias Sociales. UDELAR. Documento No 23/05. Montevideo, Uruguay.

*“The challenge of achieving the goal of health for all will require the unflagging commitment of governments, the allocation of required resources, and the reform and restructuring of health systems in order to obtain maximum equity, efficiency, and effectiveness.”*

Héctor Acuña, 1983

The larger the share of public financing, the greater the access and the lower the average price. In Chile, government procurement increased with the AUGS system (universal access with explicit guarantees) and comes close to 30% of total expenditure; in Brazil, the Unified Health System (SUS) provides 25% of all the drugs prescribed in the country (103); in Peru, 21% is financed (104), and in Argentina about 15% (105).

#### *Trade and Health*

In recent years, the subject of intellectual property rights related to access to medicines has been permanently present on the health agenda. Since 1999, when the World Health Assembly adopted the Revised Drug Strategy Resolution, WHO was given the mandate of cooperating with the Member States in the monitoring and analysis of the implications of international agreements, including trade agreements, for the pharmaceutical sector and public health. Since then, several developing countries have led a movement to permanently track this issue and place it on the agenda of the governments of the Member States. In 2001, 2002, and 2003 specific resolutions were approved related to access to medicines (106–108), with clauses relating to the public health implications of trade agreements, particularly the Trade Related Intellectual Property Rights Agreement (TRIPS) of the World Trade Organization (WTO). These aspects have been included in resolutions related to the response to HIV/AIDS (109).

The Doha Declaration (Ministerial Declaration on TRIPS and Public Health) adopted on 14 November 2001 at the WTO's Fourth Ministerial Conference in Doha, Qatar, represents a historical framework for relations between trade and public health. The declaration reaffirms the flexibility provisions established in the TRIPS Agreement and the right of countries to use those provisions to promote access to medicines.

The bilateral and subregional free trade agreements currently being discussed, negotiated, or implemented by different countries constitute a significant concern in the Americas Region and in other regions, given the impact that their application could have on health, particularly on access to medicines. One of the main reasons for concern is the possibility of imposing more restrictive conditions than were established in earlier agreements, particularly the TRIPS Agreement, and their effects on domestic legislation. These trends are known as TRIPS Plus or WTO Plus. Since treaties of this kind are generally superimposed on domes-

tic legislation, they end up imposing greater restrictions and forcing countries to change their legislation. It is also known that conflicts arise within governments when discussing such agreements. In the past, conflicts of this kind led a number of governments to discuss trade agreements without inviting the health sector to participate. Although this is apparently an everyday problem in the developing countries, it can also be anticipated that the health systems of the industrialized countries will be unable to continue to afford the rising cost of reimbursing patients for new medicines for significant public health problems.

Patents are an instrument of economic policy that may or may not bring benefits to a given country. It has been argued that patents spur investments in science and technology development, producing innovations and benefits for society. However by their very nature, they also create legal monopolies that permit high prices to be charged and hobble market competition.

### *Harmonization*

The Region of the Americas has made great strides in the field of harmonization. The Pan American Network for Drug Regulatory Harmonization (PANDRH) sponsored by PAHO/WHO, which was established in 1999 at the Second Pan American Conference on Drug Regulatory Harmonization, has grown and is increasingly well entrenched as a regional strategy for supporting national and subregional processes. Today, the network has 12 working groups that are coordinated by representatives of the drug regulatory authorities of the different countries of the Region, except the pharmacopoeia group, which is coordinated by the United States Pharmacopoeia (USP). Today, the different groups are composed of 110 professionals from regulatory offices that bring together representatives of industry and academe, 72% of whom are from national regulatory agencies. The working groups have recently extended to technical discussion groups and have incorporated more than 80 additional professionals, all from national regulatory offices.

To date, the network, whose main objective is to contribute to all aspects of the quality, safety, and effectiveness of pharmaceuticals, has produced several tangible products, two of which have already been approved by the conference: the Harmonized Guideline for Good Manufacturing Practices (GMP) Inspection, prepared by the working group on GMP; and Good Clinical Practices: Document of the Americas. Other studies that are ready are: the strategy for implementing bioequivalence studies; common requirements for the registration of medicines; definition and criteria for the classification of medicines; and the series of documents on consignment notes, basic structure, and definitions and indicators to step up the fight against counterfeit medicines.

One of PANDRH's most successful activities has been to design and carry out educational activities on regulations. The network has held some 50 courses on the quality of medicines (good manufacturing practices, good laboratory practices, validation of processes, practical application of high performance liquid chromatography, bioequivalence, and good clinical practices).

National universities in the Region cooperated in these activities, which are mostly national in nature. Through them, more than 1,700 professionals in different countries have been kept abreast of new developments.

### *Supply of Medicines*

National models for obtaining supplies of medicines in the Region are cyclical systems in which the primary functions or processes depend on the efficient execution of a previous function and are supported by it. For example, the selection of medicines is based on an evaluation of needs and drug use, and procurement requirements stem from the decisions made during the selection process.

The list of essential medicines serves as a guide for the public sector in procuring medicines and is used as a primary reference in some countries for reimbursements for drugs financed by private insurance plans. Procurement systems evolve as decentralization of the health system progresses. In the larger countries, such as Brazil and Colombia, the responsibility for procuring most medicines has been transferred to the local level (the health departments or local institutions), while centralized distribution systems or systems administered directly by the ministry of health or an autonomous agency contracted by the public sector for that purpose continue to operate in the smaller countries.

The decentralization process creates certain problems since the health areas at the departmental (or state), municipal, or district levels need to develop the capacity to organize a procurement process that assures that medicines will be available continuously in health facilities. In some cases, decentralization leads to significant increases in the cost of medicines because the economies of scale that result from the consolidation of demand are lost, particularly for more expensive drugs. That is why the countries are considering the possibility of redefining the criteria for differentiating between expensive products that would be procured at the central level through consolidated purchases and inexpensive products that can be purchased at the decentralized level. The centralized procurement systems in the smaller countries are also evolving as they obtain greater managerial independence from the ministry of health; however, the ministry continues to bear prime responsibility for the procurement and distribution of medicines in most countries (86%) (92).

Regardless of the extent of decentralization in distribution systems, all the countries continue to face major challenges in the procurement and regulation of the supply of medicines. Studies on essential drug supply systems in various countries conducted in the last two years by PAHO and the Cooperative of Hospitals of Antioquia (COHAN), a PAHO/WHO Collaborating Center, indicate that national health policies and pharmaceutical policies, and the conditions governing the procurement of medicines established by external financial agencies, do not facilitate the integration of distribution systems. Consequently, procurement processes are often isolated and disconnected, parallel distribu-

tion systems exist, and there is overlapping of functions on the district and national levels, with no coordination. Frequently, the products are obtained through isolated procurement mechanisms that fail to consider the importance of implementing and monitoring the system as a whole. In the last instance, this leads to shortages and increased costs, and missed opportunities to use the financing available.

The cost of medicines in the public sector continues to soar. Brazil reports that in 2006 that cost amounted to some 11% of the national health budget, which is more than double the 5% reported in 2002. Furthermore, public sector drug costs are rising exponentially as a result of the proliferation of court cases throughout the Region to defend patients' rights and provide individual patients or groups of patients with expensive medicines that do not appear on the list of essential drugs. To justify the inclusion or exclusion of drugs on official lists and apply the use of those lists more strictly in the public sector, the health sector is examining processes and evaluating the use of health technologies taking a test-based approach (scientific and economic).

PAHO's Strategic Fund, in which 17 countries already participate, is a technical cooperation tool that was established to support the countries in planning and procuring strategic public sector supplies. The Strategic Fund provides technical support for procurements and regulation of the supply, particularly for basic products related to HIV, where procurements are complicated because of the challenges of projecting needs when different lines of treatment exist; the need to determine the status of product patents; and the policies of differentiated pricing that are applied by some manufacturers throughout the Region. The countries that participate in the Strategic Fund are attempting to work together to address similar challenges in the procurement and supply of other expensive complex medicines, including immunosuppressants and cancer drugs.

#### *Rational Use of Medicines*

As has been mentioned, major efforts are being made to improve access to medicines, but they have not always been accompanied by a strategy for their rational use. The concept of essential medicines, which will be 30 years old in 2007, is a cornerstone of pharmaceutical policies, and selection of the list is a powerful tool for guaranteeing rational use. In 2003, 22 countries reported that they had a list, with an average of 400 medicines, but ranging from a low of 346 to a high of 618 (92). However, these lists were used primarily for public sector procurement and only in a few cases for reimbursements under public or private insurance. Most countries have formal medications and therapeutics committees, but their functions and real impact on effective execution of guidelines, formularies, and selection of medicines vary greatly from country to country. The national therapeutic formularies and standardized treatment guides, although they are sometimes mandatory in institutions, frequently do not form part of medical practice and require great efforts and training, and institutional

coordination to comply with. The La Plata (Argentina) Collaborating Center continues to support regional training in problem-based pharmacotherapy. The course, aimed at instructors, is given each year. In the last five years the Collaborating Center has given courses in Argentina, Brazil, Mexico, Guatemala, and Cuba, where it trained about 200 teachers and 50 physicians and primary care coordinators. The center is also cooperating on a distance course on the rational use of medicines for 5,000 prescribers under the REMEDIAR program (an initiative that provides essential medicines for 15 million people in Argentina).

Brazil has offered a course on problem-based pharmacotherapy in 21 of the country's 27 states, which trained 1,022 professionals, including physicians, dentists, pharmacists, nurses, and veterinarians. Some initiatives have also been designed to educate the community about rational use of medicines, ranging from local campaigns in primary schools in Costa Rica to a Spanish edition of the international course on Promoting Rational Drug Use in the Community, developed by Health Action International in Nicaragua.

Self-medication continues to be a problem in the Region, with consequences related particularly to the use of antibiotics. Over-the-counter sales of antibiotics, combined with a high rate of prescription errors, contributes significantly to drug resistance. An ambulatory survey conducted in 2005 in Nicaragua and Honduras calculated that more than 30% of antibiotics were purchased without prescription and that nearly 50% of antibiotics were wrongly prescribed (110). Excessive use of antibiotics in illnesses such as upper respiratory infections has been widely documented even in developed countries like the United States. Chile is one of the countries that has adopted a national strategy to address this problem and has obtained positive results in a reduction of antibiotic use through the introduction of regulatory measures in 1999.

With regard to drug dispensing, since 2002, the Pharmaceutical Forum of the Americas, whose members include national and regional pharmaceutical associations, the International Pharmaceutical Federation, and PAHO, has been carrying out a project in four countries on the pharmaceutical treatment of hypertension (111) to obtain pharmacological and non-pharmacological therapeutic results. Activities in each country are coordinated by a national group, whose participants are drawn from universities, medicine information centers, the national pharmaceutical association, the ministry of health, and PAHO/WHO. The forum also launched a project on good pharmaceutical practices that began in Uruguay in 2005.

#### **Vaccines**

In the last 10 years, the Latin American and Caribbean countries have increased their dependence on imported vaccines produced outside the Region. New products and their combinations with classical vaccines produced by large consortia forming differ-



ent types of business partnerships have replaced a large part of national production. With the introduction of the triple viral vaccine (measles, rubella, and mumps), the production of measles vaccine has been stopped. The arrival of the pentavalent vaccine (diphtheria, whooping cough, tetanus, hepatitis B, and *Haemophilus influenzae* type b) meant that DPT was only used as a reinforcement. In some countries, such as Brazil, its use was replaced by nationally produced quadruple DPT-Hib vaccine. Some types of production, such as oral polio vaccine produced in cell cultures in Mexico, are highly likely to be replaced in the short term by inactivated polio vaccine. Smaller productions in Chile, Venezuela, and Colombia have been reduced or totally eliminated.

In the Region, attempts at self-supplying vaccines in the 1990s were affected by the use of new products introduced by immunization programs in most countries. Today, few producers in the Region have the capacity to modernize their technical infrastructure and installations to produce the combined vaccines that are necessary to meet the demands of their immunization programs. Judging from WHO certification, just two products are prequalified for good manufacturing practices: the yellow fever vaccine in Brazil and the hepatitis B vaccine in Cuba. Some products, such as the *Haemophilus influenzae* type b polysaccharide-tetanus protein conjugate in Cuba and the quadruple vaccine (DPT-Hib) in Brazil, are promising efforts, seeking review for prequalification by WHO. The valuable attempts made by the governments of Venezuela, Colombia, and Cuba to reinstate the production of DPT (Venezuela and Cuba) and yellow fever vaccines (Colombia) with the development of new production plants that meet current standards for complying with good manufacturing practices are worth mentioning.

As an alternative for continuing with competitive production, some producers are associating with international manufacturers outside the Region. For example in Brazil, BioManguinhos (which produces Hib and triple viral vaccines) and the Instituto Butantan (which produces seasonal influenza vaccines) have established partnerships with European pharmaceutical consortia.

### Vaccine Regulation

The national regulatory authorities (NRAs) are the main agencies responsible for guaranteeing the quality of vaccines used in the countries and to that end they need to work in permanent cooperation with the immunization programs. PAHO conducts a continuous training program in the basic functions of the NRAs in the area of vaccines, to guarantee compliance with the six basic functions (licensing, good manufacturing practices, lot release, laboratory testing, clinical evaluation, and post-marketing surveillance) required by WHO for the NRAs in vaccine-producing countries and in at least two functions for the NRAs in countries that purchase products through United Nations agencies.

An additional challenge for the NRAs in Latin America has been the growth in the market for new vaccines whose clinical development and licensing processes do not take place in the

country of biological production. Traditionally, licensing in the country of origin (in general a developed country) was a quality assurance for NRAs in the Region. However, with new products that are not a necessity in the country of origin, first licensing is granted by the NRA that buys the product for the first time, meaning that it assumes responsibility for comprehensive evaluation of the vaccine, including the analysis and interpretation of the first clinical trials obtained during its development. This holds true for the new vaccines against rotavirus and the human papilloma virus, which have been made available to the Latin American and Caribbean countries.

To support the NRAs in the challenge posed by the arrival of the new vaccines, PAHO's Essential Medicines, Vaccines and Health Technologies Unit has organized a series of courses and workshops to present alternatives for evaluating the information, which are included in the common technical document (dossier) and offer training materials for the authorities to generate the technical experience needed for comprehensive evaluation of the new products, including the production process, quality control, stability and preclinical tests, and clinical trials. Evaluation of the effectiveness of the new products constitutes an additional element in the task of the NRAs, for which the introduction of these new biologicals poses a challenge but also an opportunity for joint and individual growth in knowledge and experience in the important function of vaccine regulation.

## Imaging and Radiotherapy Services

### Imaging Services

Conventional diagnostic radiology (basic and specialized), interventional radiology, echography, and diagnostic and therapeutic nuclear medicine are currently playing an essential function in clinical health care processes (112). These diagnostic imaging services cover a wide range of clinical applications, from the diagnosis and monitoring of very common diseases and situations with a high incidence, such as respiratory diseases, traumas, digestive disorders, control of pregnancy and breast disorders, etc., to more complex diseases such as tumors, AIDS, central nervous system conditions, or cardiovascular diseases (113). Image formation technologies continue to be a rapidly changing field and are revolutionizing each medical specialty. This is partly due to the high level of innovation demonstrated by the companies that manufacture the equipment.

Progress in communications technology over the last decade has directly influenced health sciences in the field of telemedicine and, in particular, teleradiology. In the United States, teleradiology billings have grown exponentially over the last five years. Teleradiology involves applications available through communications networks—a virtual world in which the connection between the place where the images are generated and the place where they are interpreted is based more on business models and



the Internet than on the person who is on duty when the image needs to be read (114). These advances can be very useful in places where there is a shortage of radiologists to interpret the images, such as in the Caribbean, the Amazon, or remote areas such as Easter Island. However, although introduction of this technology is being explored in different parts of Latin America and the Caribbean, no successful case has been reported, which is undoubtedly due to the lack of adequate and stable communications infrastructure and the shortage of financial resources to make the initial investments and maintain the network.

Another example of technological progress is the increased use of interventional radiology in recent years. It is now possible to treat different diseases using cannulae or embolization media (115), which permits patients to be treated as outpatients instead of requiring long hospital stays. Governments and the public around the world have quickly come to appreciate the benefits of interventional radiology, and therefore there is considerable pressure from the public and the media to expand the spectrum of these procedures. As a result, the practice of interventional radiology has spread broadly in countries that offer all health care levels in a relatively short time.

Digital radiology, which uses devices to store photostimulable phosphorus, was introduced into clinical practice in the 1980s. It is another imaging area that has seen surprising changes and whose use has gradually increased in Latin America and the Caribbean. New types of digital imaging formation devices are being introduced on the market (116).

In the area of computerized tomography, first with the introduction of explorations with helical and more recently with multislice techniques, examination times per patient have been shortened considerably. It is now possible to perform more examinations in a given time, expand the scope of certain examinations, and introduce certain new techniques and examinations, for example in cardiology. The new image formation devices hold great promise for diagnosing a variety of cardiovascular anomalies.

The United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR) periodically examines the world status of radiology services. At present, UNSCEAR is preparing a report that will be presented to the United Nations General Assembly in 2007. PAHO is cooperating with this activity in the Americas. The last report presented to the General Assembly and officially published dates from 2000 (117).

In most countries of the Region, the level of access to radiology services is far lower than in the industrialized countries. While the annual frequency of radiological studies exceeds 1,000 per 1,000 population in the latter group, in health care level 2 countries (including 22 countries of the Region) the value is around 150, and in level 3 countries (five countries) it is about 20. Apart from being scarce, access to radiology services is inequitable, since most of these services are provided in health centers in the big cities, and so a large part of the rural population has no access

to them. Their high cost also makes them inaccessible to poor urban populations.

The clinical efficiency of these services hinges on the quality of care provided. The existence of well-trained professionals and implementation of quality assurance programs are essential for achieving the main objective, which is an accurate diagnosis. A multicenter study conducted by PAHO in Argentina, Bolivia, Colombia, Cuba, and Mexico demonstrated that there is a direct relationship between the accuracy of radiological interpretation and the quality of radiographic images. In all cases, radiologists from the participating institutions and a panel of external experts reached coinciding diagnoses when they examined good-quality images but there were discrepancies when the images were poor. In turn, the quality of the images was directly related to the training of radiology technicians, the quality of film processing, and the condition of the film/screen combination. The study concludes that stress should be placed on ongoing training for technicians and on procuring and maintaining equipment and accessories, particularly negatoscopes, intensifier screens, and developer machines on account of the influence they have on the quality of the images and therefore on accurate diagnoses (118). The clinical advantages of imaging services are enormous; however, in practice these services can represent an unnecessary cost for health care systems in the countries of the Region if the quality is unacceptable (113).

#### *Radiotherapy Services*

Radiotherapy is used today for the treatment of many kinds of tumors, and is frequently administered in combination with surgery or chemotherapy or both. The goal of radiotherapy is to achieve cytotoxic levels of irradiation at well-defined target volumes, minimizing to the extent possible the exposure of healthy surrounding tissues. Internationally, it is believed that radiotherapy will continue to be key for the treatment of cancer in the coming decades. Its curative function is particularly important for tumors of the head and neck, cervix-uterus, breast, and prostate, to say nothing of its palliative function and effectiveness in relation to the cost of all these diseases. In comparison with other types of therapy, the costs per patient treated are relatively low if the equipment is used optimally.

Malignant neoplasms are the second-leading cause of death in the Region (119). Recent reports from specialized agencies suggest that the population will continue to grow and will gradually age in Latin America and the Caribbean (120). WHO has called attention to the significant increase expected in the number of cancer patients in the developing countries in the near future and, aware of this problem, in 2005 the 58th World Health Assembly approved a resolution on cancer prevention and control that recognizes the importance of radiotherapy in managing and treating this disease (121).

Radiotherapy is applied using one of two methods: teletherapy in which a beam of radiation outside the body is targeted to tissue;

***“Equity and efficiency are two of the basic requirements of a health service system.”***

**Carlyle Guerra de Macedo, 1989**

and brachytherapy in which radioactive sources are placed in a natural body cavity or inserted directly into a tumor. The therapeutic external radiation beams most commonly used are produced by two types of machines: cobalt units that contain radioactive sources of Co-60, which are the most widely used in Latin America and the Caribbean, and linear accelerators, which are more common in the industrialized countries and which are gradually being introduced in Latin American and Caribbean countries.

According to the database of the Directory of Radiotherapy Centers (DIRAC) kept by the International Atomic Energy Agency (IAEA/WHO) (122), in 2005, the industrialized countries had an average of 6.4 high energy radiotherapy units per 1 million population, while the average in Latin America and the Caribbean was 1.4 per 1 million population, and there are countries whose average is far below that figure, such as Peru, Nicaragua, El Salvador, Guatemala, and Haiti, and others where these services are virtually nonexistent, such as many Caribbean countries. As for the human resources compiled in DIRAC, the data for the industrialized countries indicate there are 9 radiotherapists and 5 medical physicists for 1 million population, compared to 1.6 and 0.7 per 1 million in Latin America and the Caribbean, while in the field of technology, 86% of teletherapy units are linear accelerators in the former, with the figure falling to 42% in Latin America and the Caribbean. Also, most of the technology and clinical techniques in use date back to the 1960s and 1970s which reduces their therapeutic impact on different diseases. As a consequence, while the industrialized countries cure approximately half of their cancer patients and at least half of the patients diagnosed require radiotherapy, in many Latin American and Caribbean countries neither the technology nor appropriate human resources are available to provide such services (123) and in some cases access to them is very limited or nonexistent.

According to the GLOBOCAN 2002 database of the International Center for Cancer Research (IARC), a WHO agency (124), the annual incidence of cancer in Latin America and the Caribbean is about 833,000 cases, in other words, fewer than 200 cases per 100,000 population. The figure appears to reflect underestimations if it is compared with the numerical data available in some of the Region's ministries of health and is far below the figure for the more industrialized countries of nearly 500 cases per 100,000 population.

Many factors influence the effectiveness and safety of radiotherapy treatments, such as accurate diagnosis and the stage of the disease, good therapeutic decisions, the precise location of the tumor, and the planning and delivery of treatment. This com-

plexity points to the need to introduce quality assurance programs to improve the effectiveness and safety of treatments. Given the limited therapeutic capacity described above and taking the estimate of 833,000 new cases a year as valid, calculations indicate that in Latin America and the Caribbean at least 120,000 patients will die each year who could potentially have been cured if they had had access to radiotherapy services that operated properly under national cancer control programs.

### *Planning and Management of Imaging and Radiotherapy Diagnostic Services*

The costs of these services, considering both the initial investment and operating costs, make careful planning and management of their development necessary, but the latter are not always adequate in the Region, which means that the services are less effective than desirable. Frequently, the costs of procuring and maintaining equipment are much higher than in the industrialized countries, and geographic distribution and use times are not optimum. All these aspects become more critical with the incorporation of more complex and costly methods, such as computerized tomography, magnetic resonance imaging, linear accelerators, and high-dose brachytherapy.

The developing countries face different challenges in adopting health technologies, since most of the medical devices are designed for use in the industrialized countries. As a result, close to 30% of complex equipment goes unused, while the equipment that operates is out of service between 25% and 35% of the time owing to poor maintenance capacity. One fundamental reason is inefficient management of the technologies, including planning, procurement, and subsequent operation (125).

For management purposes, it is crucial to differentiate between equipment and service: a magnetic resonance machine is not a magnetic imaging service, and a linear accelerator is not a radiotherapy service. One of the common mistakes made by some health managers when they incorporate complex technology is failing to consider in the planning process many of the elements necessary for the operation of the services prior to incorporating the technology. Decisionmakers often focus on the equipment rather than on the service, despite the fact that the service is the main thing for health care.

Aware of this problem, some ministries of health, for example those in Argentina, Costa Rica, El Salvador, Guatemala, Venezuela, and Uruguay, have asked PAHO for technical cooperation in introducing and placing these technologies in service more effectively and adequately. The financial and health costs of technology problems are significant in countries like Argentina, Brazil, Colombia, Dominica, Haiti, Honduras, Panama, Paraguay, and Venezuela, where equipment costing millions of dollars that has been bought or donated has never been put into service or is significantly underused. The causes of these problems are many, but the common denominator is the lack of analysis of the situation by experts prior to buying equipment. It should be kept

in mind in particular that private or institutional donors frequently do not have sufficient technical capacity to carry out the processes of incorporating equipment satisfactorily.

#### *Protection against Radiation Risks*

The advantages and risks of using radiation in medical, industrial, or research applications are well known. The high potential risk for health that their use implies makes it necessary to take special precautions to protect patients, workers, the public, and the environment from radiation. International organizations with mandates in this field, including PAHO, agreed by consensus on the International Basic Safety Standards for Protection against Ionizing Radiation and for the Safety of Radiation Sources (BSS) (126), at the 24th Pan American Sanitary Conference (Resolution CSP24.R9) (127), which include among the technical requisites the need to implement a broad program of quality assurance in medical exposure to radiation, with the participation of qualified experts in the corresponding disciplines, keeping in mind the principles established by WHO and PAHO and counting on national regulatory authorities.

Today, the world is going through a period of major technological changes in the fields of imaging and radiotherapy, and the impact of these changes on the doses of radiation that the future population of the world will receive is very difficult to predict. Facility in acquiring images through new technologies could lead to unnecessary exposure of patients to radiation, unless timely measures are adopted. This, coupled with the increase in the amount of equipment, will have significant repercussions on the doses of radiation that the public receives, making it important for regulatory authorities to continue evaluating protection and safety in medical radiology.

After the recommendations of an international conference on radiological protection of patients held in 2001, the International Atomic Energy Agency, WHO, PAHO, and UNSCEAR prepared an International Action Plan for the Radiological Protection of Patients (128) which includes a strategy to help the countries oversee medical exposure doses. It is hoped that implementation of this plan—which has already established activities for 2006/2008—will modify the growing trend toward medical exposure in the future.

As for regulatory capacity, just 21 countries of the Region have authorities with specific mandates in this sphere and where they exist, in many cases their technical capacity and resources are too limited to satisfactorily carry out the functions established in the national regulations adapted from the BSS. Where regulations exist, the competent authority is located in the ministry of health, in other government agencies, or divided between the two. In all events, exposure to medical radiation should be regulated by the ministries of health. The weakness and scant involvement by the health authorities in this area are of concern in many countries and jeopardize the safety of patients, and even their lives (129, 130).

Failure to manage spent radioactive sources is common in Latin American and Caribbean countries. Closely related to this and to the environmental impact that this waste can have, radioactive waste needs to be properly managed, including its preparation and safe storage. A number of radiological accidents have occurred in the Region, some of which have caused deaths (131). This circumstance, coupled with the current international situation in which terrorists might use radioactive materials and the scant response capacity to radiological emergencies, demands improvements in preparedness and response in this field.

It should be underlined that WHO has started up an international project on the health risks of electromagnetic fields. In the Region there is growing public concern over these risks, while standards and technical knowledge in this sphere vary widely from country to country (132).

#### **Blood Services**

Voluntary blood donation continues to be weak in the Region. The 2002 edition of this publication listed Aruba, Bermuda, Canada, Cuba, Curaçao, Saint Lucia, and the United States as countries with universal voluntary donors; the Cayman Islands, Suriname, and Uruguay reached that goal in 2004. Bolivia, Dominican Republic, Honduras, Panama, Paraguay, and Peru officially report paying blood donors, but the exchange of money between the patients' relatives and blood donors is common in all those countries where forced replacement donation is imposed by hospital-based blood banks. Despite the fact that 2 million prospective donors were deferred in 2004, when about 8 million units of blood were collected in the Caribbean and Latin America, 150,000 units were discarded because the donors carried one or more of the markers for transfusion-transmitted infections, a figure that represents at least US \$ 7.5 million in collection and testing supplies. More importantly, the lack of voluntary blood donors results in insufficient blood components and hampers universal screening of blood. In 2004, 16 of the 39 countries with data reported testing all the blood collected for transfusions, compared with 14 in 2000, but the Region as a whole has not achieved 100% coverage of screening for any of the basic markers of infections (Tables 15 and 16), which was the goal set in the Strategic and Programmatic Orientations of the Pan American Health Organization for 1999–2002. Tests to detect hepatitis C, *Trypanosoma cruzi*, and human T-lymphotropic virus type 2 (HTLV-II) pose the biggest challenge.

The other goal set in the Strategic and Programmatic Orientations for 1999–2002, that all blood banks must participate in quality programs, has not been achieved either. Almost half of the blood banks do not participate in external evaluation of performance, and incorrect results are common among those who do. The excessive number of blood banks, mostly associated with hospitals, limits the implementation of quality programs and contributes to the poor efficiency of national systems. Overall,

**TABLE 15. Blood services: blood collection and screening for infectious markers, countries of Latin America, 2003 and 2004.**

Country	Year	No. of blood banks	No of units collected	HIV	HBsAg	VHC	Syphilis	<i>Trypanosoma cruzi</i>
Argentina	2003	578	780,440	100	100	99	100	100
	2004	578	751,412	100	100	99	100	100
Bolivia	2003	38	38,621	94	93	82	95	80
	2004	25	40,910	99	99	93	99	83
Brazil	2003	367	2,931,813	100	100	100	100	100
	2004	562	3,044,493	100	100	100	100	100
Chile	2003	55	173,814	100	100	100	100	67
	2004	52	186,292	100	100	100	100	68
Colombia	2003	142	495,004	99	99	99	99	99
	2004	123	502,065	99	99	99	100	99
Costa Rica	2003	24	48,625	100	100	100	100	93
	2004	31	54,258	100	100	100	100	100
Cuba	2003	44	589,106	100	100	100	100	...
	2004	47	528,026	100	100	100	100	...
Dominican Republic	2003	81	77,115	100	100	100	100	...
	2004	66	61,745	99	99	99	99	...
Ecuador	2003	33	79,204	100	100	100	100	100
	2004	39	98,695	100	100	100	100	100
El Salvador	2003	32	76,142	100	100	100	100	100
	2004	32	79,368	100	100	100	100	100
Guatemala	2003	48	68,626	99	99	99	99	99
	2004	46	60,638	99	99	100	99	99
Honduras	2003	28	48,783	100	100	100	100	100
	2004	29	47,679	99	99	100	99	99
Mexico	2003	540	1,136,047	100	100	100	100	33
	2004	536	1,225,688	96	96	96	90	32
Nicaragua	2003	24	46,558	100	100	76	100	94
	2004	24	49,416	100	100	85	100	100
Panama	2003	23	46,176	100	100	100	100	95
	2004	25	44,323	100	100	100	100	86
Paraguay	2003	49	29,718	97	96	96	95	96
	2004	45	41,846	99	99	99	99	99
Peru	2003	92	145,665	99	96	99	94	96
	2004	172	183,489	74	74	74	74	75
Uruguay	2003	41	99,675	100	100	100	100	100
	2004	67	96,993	100	100	100	100	100
Venezuela	2003	270	342,526	100	100	100	100	100
	2004	270	380,724	100	100	100	100	100

**Sources:** Pan American Health Organization. Blood Transfusion Medicine in the Caribbean and Latin American Countries 2000–2003. Washington, DC: PAHO, 2005. Pan American Health Organization. Technical Documents. Policies and Regulations.THS/EV-2005/005. Washington, DC: OPS; 2006.

blood banks collect and process an average of 1,600 units of blood per year. Incorrect identification of potentially infected donors is more common in smaller blood banks, especially in those that use rapid tests for screening. Furthermore, because hospital-based blood banks tend to collect and process blood in unsystematic ways, sharing blood units among them is virtually nonexistent—a situation that in 2004 prompted discarding about 175,000 outdated blood units with an estimated processing cost of US \$ 8,750 million. Countries with the lowest availability of blood tend to discard more blood units.

#### *Clinical and Public Health Laboratories*

Of the estimated 40,000 laboratories in the Region, 98% are clinical diagnostic laboratories and 2% are public health laboratories. Most clinical laboratories belong to the private sector, and the public health laboratories generally come under the ministries of health. In most countries, a national reference laboratory heads a network of public health laboratories that may or may not be linked to a hospital, as part of the surveillance system. Apart from these activities, which are carried out in coordination with epidemiology departments, the public health laboratories

**TABLE 16. Blood services: blood collection and screening for infectious markers, countries of the Caribbean, 2003 and 2004.**

Country	Year	No. of blood banks	No of units collected	HIV	HBsAg	VHC	Syphilis	HTLV/II
Anguilla	2003	1	124	100	100	...	100	...
	2004	1	78	100	100	...	100	...
Antigua and Barbuda	2003	2	1,330	100	100	...	100	...
	2004	2	1,227	100	100	11	100	...
Aruba	2003	2	2,651	100	100	100	100	100
Bahamas	2003	3	5,134	100	100	100	100	100
	2004	3	5,521	100	100	100	100	100
Belize	2003	7	2,883	100	100	...	100	...
	2004	7	2,978	100	100	...	100	...
Bermuda	2003	1	2,277	100	100	100	100	...
British Virgin Islands	2003	1	318	100	100	52	100	...
	2004	1	343	100	100	100	100	...
Cayman Islands	2003	2	731	100	100	100	100	100
	2004	2	702	100	100	100	100	100
Curaçao	2003	1	6,066	100	100	100	100	100
	2004	1	6,595	100	100	100	100	100
Dominica	2004	1	804	100	100	...	100	100
Grenada	2003	1	808	100	100	100	100	100
	2004	1	703	100	100	100	100	100
Guyana	2003	5	4,250	100	100	100	100	...
	2004	5	4,887	100	100	100	100	...
Haiti	2003	5	8,711	100	100	89	100	...
	2004	8	9,513	100	100	93	100	...
Jamaica	2003	10	26,092	100	100	100	100	100
	2004	10	23,600	100	100	100	100	100
Montserrat	2003	1	66	100	100	...	100	...
	2004	1	83	100	100	...	100	...
Saint Kitts and Nevis	2003	1	420	100	100	...	100	...
	2004	1	347	100	100	...	100	...
Saint Lucia	2003	2	1,653	100	100	100	100	100
	2004	3	1,782	100	100	100	100	100
Saint Vincent and the Grenadines	2003	1	939	100	100	100	100	100
	2004	1	942	100	100	100	100	100
Suriname	2003	1	6,240	100	100	100	100	100
	2004	1	7,696	100	100	100	100	100
Turks and Caicos Islands	2003	2	211	100	100	60	100	...

**Sources:** Pan American Health Organization. Blood Transfusion Medicine in the Caribbean and Latin American Countries 2000–2003. Washington, DC: PAHO, 2005. Pan American Health Organization. Technical Documents. Policies and Regulations.THS/EV-2005/005. Washington, DC: OPS; 2006.

can perform tests as part of the licensing and control of medicines. Each country's reference laboratory has the authority for standardization, regulation, training, planning, supervision, evaluation, investigation, and dissemination of information.

Public health institutions, and laboratory services in particular, are essential for the surveillance of diseases and play a central role in the epidemic investigation chain. However, problems frequently exist in the Region with regard to organization, management, and financial resources. The common denominator for the shortcomings is that the information produced is not always of good quality. These factors mean that the decisionmaking process and the design of interventions are limited and that public health

laboratories are unable to carry out their essential role in the health system.

These developments, apart from other factors related to the context and development of the disciplines involved, have been forging a clearer concept of the public health function that a laboratory should perform. The function includes the sustainable implementation of a quality management system in the networks of laboratories; close linkage with epidemiological surveillance of diseases, whose reporting is mandatory, and the International Health Regulations; the indispensable integration of actions to respond to outbreaks and emergencies; and support for epidemiological research.



**“The effective management of information is critical to stopping the spread of new pandemics, whether infectious or noninfectious in origin.”**

**George A.O. Alleyne, 1998**

Publication of the *Laboratory Quality Assurance Manual on General Concepts for Public Health Laboratories* in 2002, based on ISO 9001, launched the introduction of the quality system in public health reference institutions in the Region and led to restructuring of laboratory networks in Bolivia, Colombia, Dominican Republic, Ecuador, Honduras, Panama, Paraguay, and Uruguay. Two regional workshops, one on laboratory management aspects and the other on quality management systems, attended by public health reference laboratory directors, consolidated the feasibility of the process.

To consolidate the linkage between laboratories and epidemiology and step up surveillance for infectious diseases in the Region, two subregional meetings were held in Central America and South America on basic concepts in epidemiology and data analysis in the laboratory. Under agreements reached at the annual meetings of the Central American Network for the Prevention and Control of Emerging and Reemerging Diseases (RECACER) in 2002 and 2003, a model questionnaire was prepared to evaluate the response capacity of national laboratory networks to contain epidemic events. This tool was used in the processes of restructuring the national laboratory networks in the countries in question.

The most recent natural disasters in the Region—El Niño and hurricanes Mitch and George in Central America and the Dominican Republic; Stan and Katrina in Cuba, Mexico, and the United States; the earthquake in El Salvador; volcanic eruptions in Ecuador and Colombia; landslides in Venezuela; floods in Haiti, Guyana, Guatemala, Argentina, and Colombia, etc.—highlighted the need to integrate the public health laboratories into health sector contingency plans and revealed the importance of having diagnostic confirmation of highly lethal transmissible diseases and having basic tests for management of the injured and the timely provision of safe blood.

Efforts were directed to integrating the laboratory component into the surveillance system by defining seven essential functions of public health laboratories: (1) public health referral; (2) strengthening of the surveillance system; (3) integrated information management; (4) development of policies and regulations; (5) ongoing training and education; (6) research promotion and development; and (7) communications and strategic partnerships. In advance of technical and managerial training for laboratory directors, the methodology was harmonized in Central America by preparing consensual manuals of procedures for acute diarrheas, acute respiratory infections, bacterial meningitis, dengue, leptospirosis, measles, hantavirus, anthrax, and tuberculosis, and on the regional level the process of external evaluation

of performance was broadened with support from the National Tropical Disease Center (CENETROP) in Santa Cruz, Bolivia, the regional program for monitoring and surveillance of resistance to antibiotics, and the system of networks for the surveillance of bacterial agents that cause pneumonia and meningitis (Regional Vaccine System—SIREVA II), in 20 countries.

As for clinical diagnostic laboratories, with the cooperation of the Latin American Confederation of Clinical Biochemistry (COLABIOCLI), the regulations on laboratory certification were reviewed and updated in Costa Rica, Ecuador, Guatemala, Honduras, Nicaragua, and Panama. Sustainable programs were established for external evaluation of clinical biochemistry performance targeted to public and private laboratories in seven countries. Also, through the United Kingdom International External Quality Assessment Scheme (UK-IEQAS) an external evaluation of performance in clinical chemistry, hematology, and parasitology was conducted in 20 countries: Argentina, Bahamas, Barbados, Belize, Brazil, Chile, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, El Salvador, Honduras, Jamaica, Mexico, Nicaragua, Paraguay, Suriname, Uruguay, and Venezuela.

## SCIENTIFIC INFORMATION ON HEALTH: ACCESS AND UTILIZATION

As an activity to produce new knowledge to benefit society, research and its products are a classical example of a public good.<sup>17</sup> In recent years, access to scientific information and its use have become crucially important in a new global scenario where governments, users, and interested parties are required to demonstrate greater accountability and transparency in the management of resources. This reality extends to the agencies and organizations that operate social programs, since citizen dissatisfaction with them if they fail to attain their goals is often expressed at the ballot box. Therefore, reliable data and scientific information are needed to establish health priorities and to monitor and evaluate the performance of systems versus the goals or expected outcomes.

In the area of health systems, research is one of the 11 essential public health functions and one of the least developed in the Region over the last decade (5). However, significant initiatives were promoted to establish and strengthen mechanisms for oversight and governance in health research. Some of them, such as the Latin American and Caribbean Center on Health Sciences Information (BIREME), have been catalysts for regional progress in networks to promote solidarity and equity (networks of health li-

<sup>17</sup>Health research studies how social, economic, technological, and behavioral factors and other aspects related to the structure and organization of systems affect access to health care, the quality and cost of care, and the health and well-being of individuals, families, and communities. The main goals are not simply to learn but to identify the most effective ways to organize, finance, and deliver more effective, equitable, and safe care. (Source: AcademyHealth, June 2000; Agency for Healthcare Research and Quality, February 2002).

barries, resources, and information centers). For example, the LILACS (Latin American and Caribbean Literature on Health Sciences) database, which is more than 25 years old, collects and registers the content of peer-reviewed scientific journals published in the Region, most of which do not appear in international databases. The SciELO (Scientific Electronic Library Online) network was developed later with the participation of national science and technology agencies. Its objective is to raise the visibility and quality of scientific journals in the Region, improve access to them, and establish indicators for evaluating their use and impact. In 1998, the Virtual Health Library (VHL) was created, which received contributions from several national and thematic initiatives and brings together a broad range of health information sources. The VHL is active in many countries of the Region, where it is developed to different degrees, but follows a common model and responds to national conditions and needs.

During the World Summit on the Information Society which was held in two phases, the first in 2003 and the second in 2005 (133), a call was made to promote universal access to scientific knowledge that affects the development and well-being of peoples. It also advocated the incorporation of new formats to facilitate the use of research results and the democratization of knowledge (134). However, one essential factor is still missing for efficiently targeting efforts and avoiding duplication of work: good situation analysis indicators and resources for research are not available in the Latin American and Caribbean countries.

### Trends in Scientific Production in Latin America and the Caribbean: 2000–2005

As for the development of indicators to study scientific production in health in the Region, mention should be made of publications of systematic reviews and clinical trials that reflect the results of studies that are frequently used to synthesize and dis-

seminate new knowledge for informed decisionmaking in health, and which are specially indexed. Publications of this kind account for almost 4.6% of all the documents indexed between 2000 and 2005 in the MEDLINE database and 0.8% of those registered in LILACS (Table 17).

To analyze the publication of systematic reviews and clinical trials by country, we used the country of publication of the journals in LILACS and MEDLINE, considering that the index is not organized by country of affiliation (Table 18). In the studies published in Latin American journals indexed in MEDLINE (0.51% of the total indexed in that database) Argentina, Brazil, and Mexico stand out with 83% of the total. In LILACS, Argentina, Brazil, and Colombia contributed 76% of the Latin American total for the period.

As there is no registry of the production of new knowledge and information is not widely available, indirect indicators were used for the production of new knowledge in health, such as the number of original scientific studies published in indexed journals. In the period 2000–2005, MEDLINE registered 66,322 publications by authors from 37 countries of the Region (Table 19). Latin America and the Caribbean's share in the MEDLINE database averaged 2% of world production.

LILACS lists authors from 23 countries who produced 92,794 publications in the same period (Table 20). LILACS began to identify the countries of affiliation of authors in 2000 and considers all authors, unlike MEDLINE which focuses on the first-named author. Seven countries contributed 94% of Latin American and Caribbean scientific publications appearing in both databases: Argentina, Brazil, Chile, Colombia, Cuba, Mexico, and Venezuela.

If registration in the most representative international databases is taken as a quality indicator, it can be inferred that there has been a gradual improvement in the quality of scientific journals in recent years (Table 21—see the footnote to the table). In MEDLINE, the total number of Latin American journals indexed

**TABLE 17. Clinical trials and systematic reviews indexed in LILACS and MEDLINE, 2000–2005.**

Types of articles	Total	2000	2001	2002	2003	2004	2005
<b>LILACS</b>							
CT+SR	994	163	172	177	189	185	108
Other types	116,141	21,909	20,260	20,876	20,386	18,212	14,498
Total registered	117,135	22,072	20,432	21,053	20,575	18,397	14,606
% total	0.8	0.7	0.8	0.8	0.9	1.0	0.7
<b>MEDLINE</b>							
CT+SR	150,879	21,151	22,130	23,666	25,796	28,313	29,823
Other types	3,158,544	468,630	496,441	516,260	541,243	565,310	570,660
Total registered	3,309,423	489,781	518,571	539,926	567,039	593,623	600,483
% total	4.6	4.3	4.3	4.4	4.5	4.8	5.0

CT = clinical trials; SR = systematic reviews

**Sources:** MEDLINE; Virtual Health Library; Latin American and Caribbean Literature on Health Sciences (LILACS), October 2006.

**TABLE 18. Clinical trials and systematic reviews published in Latin American and Caribbean journals indexed in MEDLINE and LILACS, 2000–2005.**

Country	Total		2000		2001		2002		2003		2004		2005	
	MEDLINE	LILACS	MEDLINE	LILACS	MEDLINE	LILACS	MEDLINE	LILACS	MEDLINE	LILACS	MEDLINE	LILACS	MEDLINE	LILACS
Argentina	61	94	6	17	9	12	10	16	13	17	12	19	11	13
Bolivia	0	12	0	1	0	0	0	4	0	5	0	1	0	1
Brazil	417	457	47	68	59	65	64	76	63	96	85	100	99	52
Chile	59	60	14	6	5	10	5	8	7	11	15	16	13	9
Colombia	9	203	0	30	0	48	0	40	6	39	0	24	3	22
Costa Rica	1	4	0	0	0	0	1	1	0	1	0	2	0	0
Cuba	6	20	1	4	0	6	1	1	3	2	1	4	0	3
Ecuador	0	1	0	0	0	1	0	0	0	0	0	0	0	0
Guatemala	0	1	0	1	0	0	0	0	0	0	0	0	0	0
Jamaica	15	6	6	4	1	1	1	0	1	0	0	0	6	1
Mexico	166	47	26	17	20	12	32	13	30	4	25	1	33	0
Nicaragua	0	13	0	1	0	4	0	1	0	1	0	5	0	1
Panama	1	0	0	0	1	0	0	0	0	0	0	0	0	0
Paraguay	0	1	0	0	0	0	0	1	0	0	0	0	0	0
Peru	8	9	0	2	2	3	0	0	2	2	1	0	3	2
Puerto Rico	11	6	2	1	0	1	0	0	2	0	3	3	4	1
United States (PAHO)	0	5	0	3	0	0	0	1	0	0	0	1	0	0
Uruguay	0	2	0	1	0	0	0	0	0	1	0	0	0	0
Venezuela	20	53	2	7	6	9	2	15	3	10	5	9	2	3
Total LILACS		994		163		172		177		189		185		108
Latin American and Caribbean representation in MEDLINE	774		104		103		116		130		147		174	
World total in MEDLINE	150,879		21,151		22,130		23,666		25,796		28,313		29,823	
% Latin America and Caribbean in MEDLINE	0.5		0.5		0.5		0.5		0.5		0.5		0.6	

**Source:** MEDLINE; Virtual Health Library, October 2006.

**TABLE 19. Latin American and Caribbean publications in MEDLINE by country of affiliation of the first-named author, 2000–2005.**

MEDLINE	Publications	2000	2001	2002	2003	2004	2005
World total (2000–2005)	3,150,403	483,885	500,961	517,481	544,402	564,440	539,234
Latin American and Caribbean total	66,322	8,978	9,833	11,229	12,174	13,282	10,826
Percentage of world total	2.1	1.9	2.0	2.2	2.2	2.4	2.0
Total by country							
Antigua	3	1	1	—	—	—	1
Argentina	9,642	1,496	1,648	1,747	1,658	1,707	1,386
Bahamas	20	3	2	5	6	1	3
Barbados	89	13	14	16	16	19	11
Belize	3	—	—	—	2	—	1
Bolivia	63	14	9	19	8	8	5
Brazil	33,329	4,107	4,574	5,545	6,281	7,015	5,807
Chile	3,913	577	576	657	723	753	627
Colombia	1,407	171	176	265	253	285	257
Costa Rica	343	40	84	59	67	40	53
Cuba	1,445	226	252	219	278	291	179
Dominica	5	—	2	—	1	2	—
Dominican Republic	20	6	3	2	4	3	2
Ecuador	179	24	19	29	43	34	30
El Salvador	22	2	3	6	1	4	6
French Guiana	65	6	12	8	10	16	13
Grenada	120	39	15	17	12	21	16
Guadeloupe	50	19	11	4	7	7	2
Guatemala	87	10	16	21	14	15	11
Guyana	5	1	1	2	—	1	—
Haiti	39	5	2	8	5	9	10
Honduras	23	2	2	3	4	5	7
Jamaica	377	65	106	67	34	60	45
Martinique	36	7	11	4	2	8	4
Mexico	10,896	1,533	1,647	1,863	1,992	2,164	1,697
Netherlands Antilles	30	4	4	4	5	8	5
Nicaragua	39	5	2	7	5	11	9
Panama	316	32	46	47	56	80	55
Paraguay	41	6	7	6	9	8	5
Peru	484	54	75	72	95	102	86
Puerto Rico	540	47	75	60	105	160	93
Saint Lucia	1	—	—	1	—	—	—
Suriname	26	1	5	2	3	5	10
Trinidad and Tobago	210	40	38	40	35	30	27
Uruguay	749	112	112	113	132	140	140
U.S. Virgin Islands	5	2	2	—	1	—	—
Venezuela	1,700	308	281	311	307	270	223

**Sources:** MEDLINE; Virtual Health Library, June 2006.

rose from 45 (2000) to 66 (2005). In the databases of Thomson Scientific (a company that manages the registry previously known as ISI), the health journals indexed increased in number from 21 (2000) to 32 (2005). The percentage of journals from the Region is still very small compared to the total indexed in international databases. They represent 1.3% in MEDLINE, 0.4% in the Science Citation Index, and 1.9% in EMBASE.

One of the objectives for developing the LILACS database was to index journals published in the countries of the Region and to work with the journals to unify standards and raise the visibility

of regional publications. All the journals indexed in LILACS are chosen by national selection committees and must comply with minimum requirements for frequency, regularity, and peer review. Some 1,500 journals on health are published in the Region and 738 of them were selected for inclusion in LILACS. These journals are published in 19 Latin American and Caribbean countries and by PAHO (Table 21). SciELO's selection criteria ([http://www.scielo.org/scielo\\_org\\_en.htm](http://www.scielo.org/scielo_org_en.htm)) are stricter than those of LILACS and comparable with the main international databases. SciELO includes journals from 11 Latin American and Caribbean countries,

**TABLE 20. Latin American and Caribbean publications in LILACS, by country of affiliation of the authors, 2000–2005.**

LILACS (2000–2005)	Publications	2000	2001	2002	2003	2004	2005
Total in the database	92,794	16,558	16,221	16,195	16,849	15,203	11,768
Total with country identified	77,353	12,251	12,999	13,365	13,984	12,986	11,768
Total Latin America and the Caribbean	73,927	12,073	12,709	12,958	13,499	12,503	10,185
Total with country unknown	16,697	4,307	3,222	2,830	2,865	2,217	1,256
Total by country							
Argentina	6,331	1,142	1,211	1,071	1,133	1,017	757
Barbados	19	2	7	3	2	5	—
Bolivia	270	36	47	53	71	48	15
Brazil	44,716	6,496	6,690	7,830	8,294	8,166	7,240
Chile	7,423	1,399	1,413	1,243	1,270	1,288	810
Colombia	3,943	651	667	831	782	470	542
Costa Rica	320	75	52	76	73	32	12
Cuba	3,186	334	368	614	765	709	396
Dominican Republic	5	—	1	—	—	2	2
Ecuador	186	27	29	45	46	31	8
El Salvador	5	—	—	2	1	1	1
Guatemala	98	25	29	18	15	9	2
Guyana	1	—	1	—	—	—	—
Honduras	140	17	19	42	30	30	2
Jamaica	292	36	66	49	42	67	32
Mexico	3,535	1,160	1,401	369	273	188	144
Nicaragua	7	1	—	1	1	2	2
Panama	22	4	3	2	5	4	4
Paraguay	65	12	11	12	19	7	4
Peru	474	86	80	69	110	80	49
Trinidad and Tobago	54	9	17	17	6	3	2
Uruguay	373	39	89	51	87	58	49
Venezuela	3,196	629	612	678	618	438	221

**Source:** Latin American and Caribbean Literature on Health Sciences (LILACS), June 2006.

Spain, and Portugal. Of the 345 journals in SciELO from Latin American countries, 51% are in the health area.

Thirteen countries are represented in MEDLINE, eight in the Science Citation Index, four in the Social Sciences Citation Index, and eight in EMBASE. The scientific production of Bolivia, Dominican Republic, Guatemala, Honduras, and Paraguay is reported only in LILACS. The number of health journals from Latin America and the Caribbean appearing in the main databases for the Americas and the intersections between the different databases are shown in Figure 4.

### Current Situation and Initiatives

There are various information inputs that help to strengthen and improve different aspects of research for the development of public health. The following are worth noting: the Virtual Health Library (VHL), SciELO, ScienTI, CRICS, and RICTSAL.

#### *The Virtual Health Library (VHL) ([www.virtualhealthlibrary.org](http://www.virtualhealthlibrary.org))*

This is a decentralized, dynamic collection of information sources selected on the basis of quality criteria and available on the Internet. Its objective is to offer equitable access to scientific

and technological information on health. In November 2006, the regional portal brought together 101 national and thematic portals and 10 institutional portals.

#### *SciELO ([www.scielo.org](http://www.scielo.org))*

This is a model of cooperative electronic publication of scientific journals on the Internet, adopted by a number of Ibero-American countries to raise their visibility and increase access to the Region's scientific production. Access can be had to the full texts of the journals indexed in SciELO from numerous databases, directories, and known search engines, such as MEDLINE, Web of Science, Cross Ref, Google, and the Directory of Open Access Journals (DOAJ). In 2005, the set of collections in the SciELO network had about 7 million visitors a month. SciELO Brazil received more than 3 million, and SciELO Chile had more than 1 million monthly visits.

#### *International Network of Information and Knowledge Sources for Sciences, Technology and Innovation Management (ScienTI) ([www.scienti.net](http://www.scienti.net))*

This is a public network of information and knowledge sources, whose objective is to contribute to the management of



**TABLE 21. Indexing of Latin American and Caribbean journals in databases.**

Country of publication	Journals indexed in databases					
	LILACS (2006)	SciELO (2006)	MEDLINE (2006)	ISI/SCIE (2005)	ISI/SSCI (2005)	EMBASE (2005)
Argentina	120	5	7	3	0	10
Bolivia	9	0	0	0	0	0
Brazil	289	85	31	12	2	46
Chile	66	18	3	4	0	4
Colombia	59	8	2	0	1	3
Costa Rica	12	9	1	1	0	0
Cuba	34	19	1	0	0	2
Dominican Republic	1	0	0	0	0	0
Ecuador	14	0	0	1	0	0
Guatemala	4	0	0	0	0	0
Honduras	1	0	0	0	0	0
Jamaica	2	0	1	1	0	1
Mexico	51	4	12	1	3	21
Panama	0	0	1	0	0	0
Paraguay	4	0	0	0	0	0
Peru	11	11	1	0	0	0
Puerto Rico	2	0	2	0	0	0
United States (PAHO)	3	1	1	0	1	0
Uruguay	10	6	0	0	0	0
Venezuela	46	9	3	2	0	4
Total Latin America and the Caribbean	738	175	66	25	7	91
Total indexed titles	738	198	4,959	6,088	1,747	4,872
Percentage Latin America and the Caribbean	100	88.4	1.3	0.4	0.4	1.9

**Sources:** Lists of journals indexed in the different databases.

LILACS: Latin American and Caribbean Literature on Health Sciences. List of titles indexed in LILACS, October 2006. Available at: [http://ccs.bvsalud.org/serial/list-base.php?lang=pt&graphic=yes&base%5B%5D=&base%5B%5D=LILACS&country=AL\\_C&orderby=country&Submit=pesquisar](http://ccs.bvsalud.org/serial/list-base.php?lang=pt&graphic=yes&base%5B%5D=&base%5B%5D=LILACS&country=AL_C&orderby=country&Submit=pesquisar).

SciELO: Scientific Electronic Library Online. List of health titles indexed in SciELO, October 2006. Available at: [http://ccs.bvsalud.org/serial/list-base.php?lang=pt&graphic=yes&base%5B%5D=&base%5B%5D=SciELO&country=AL\\_C&orderby=country&Submit=pesquisar](http://ccs.bvsalud.org/serial/list-base.php?lang=pt&graphic=yes&base%5B%5D=&base%5B%5D=SciELO&country=AL_C&orderby=country&Submit=pesquisar).

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ISI/SCIE: Science Citation Index Expanded, Thomson Scientific (ex ISI). Science Citation Index Expanded 2005, Thomson Scientific, March 2005. Available at: [http://scientific.thomson.com/media/pdfs/sourcepub-journals/wos\\_scie\\_a5021\\_final.pdf](http://scientific.thomson.com/media/pdfs/sourcepub-journals/wos_scie_a5021_final.pdf).

ISI/SSCI: Social Sciences Citation Index, Thomson Scientific (ex ISI). Web page Science Social Sciences Citation Index 2005, published by Thomson Scientific, March 2005. Available at: [http://scientific.thomson.com/media/pdfs/sourcepub-journals/wos\\_ssci\\_a5022\\_final.pdf](http://scientific.thomson.com/media/pdfs/sourcepub-journals/wos_ssci_a5022_final.pdf).

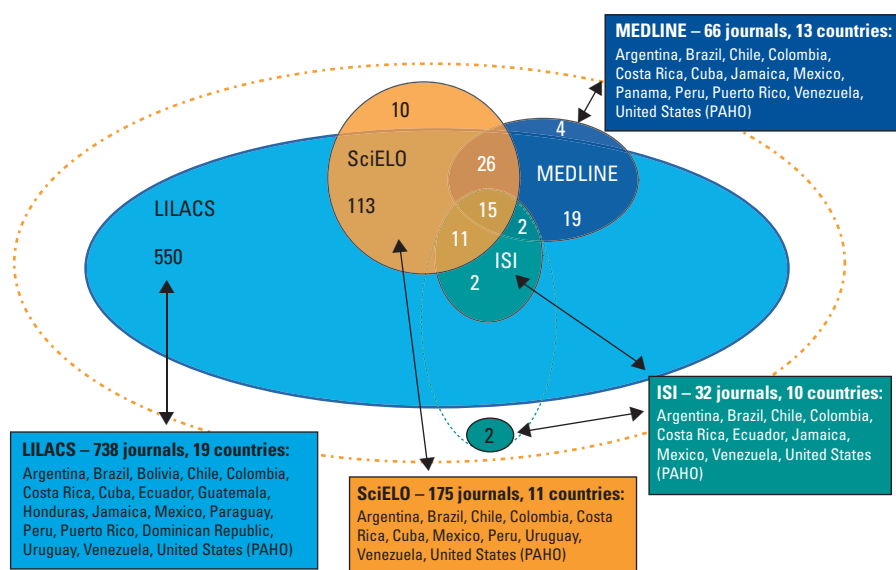
EMBASE: Excerpta Medica Database. EMBASE list of journals indexed in 2005, published by Elsevier, June 2005 (printed version).

scientific, technological, and innovative activities. It is integrated with the Virtual Health Library. ScienTI is an expression of international cooperation among national science and technology organizations, international science and technology cooperation organizations, research and development groups in information and knowledge systems, and sponsoring institutions. It also offers indicators on research in the Region and allows access to directories of researchers and research groups and institutions. In 2006, network participants included Portugal and 11 countries of the Region.

#### *Regional Congress on Health Sciences Information (CRICS)* ([www.bireme.br](http://www.bireme.br))

CRICS was launched in 1992 and is held every two years to evaluate regional and international progress in the areas of scientific and technical information management, scientific communications, bibliotechnology, and information technologies and their applications in national research, education, and health care systems in Latin America and the Caribbean. The Seventh Congress (CRICS 7) was held in Brazil in 2005 and was attended by more than 1,200 participants from 73 countries and experts in

**FIGURE 4. Participation of Latin American and Caribbean health journals in the main databases, 2006.**



Source: Latin American and Caribbean Center on Health Sciences Information, 2006.

different fields, including librarians and specialists in scientific dissemination, health professionals, health sector managers, editors of scientific journals, and researchers. The congress's recommendations are reflected in the documents Salvador Declaration: Commitment to Equity (135) and Salvador Declaration on Open Access: The Viewpoint of Developing Countries (136). These documents state that universal access to information and knowledge is an essential condition for promoting the health and quality of life of individuals and communities.

#### *Network of Science and Technology Health Indicators (RICTSAL)*

RICTSAL was launched in Buenos Aires in September 2004, with representatives of science and technology institutions and the ministries of health of Argentina, Brazil, Chile, Colombia, Costa Rica, Mexico, and Uruguay, jointly with PAHO and the Network of Science and Technology Indicators (RICYT). RICTSAL's mission is to promote, in a framework of international cooperation, the conceptual development of tools for the measurement and analysis of science, technology, and innovation in the field of health in the Americas, in order to learn more about them and support decisionmaking.

#### **Outlook and Needs**

Although different initiatives and networks are devoted to synthesizing knowledge and developing capacity, the commitment, participation, backing, and leadership of the regulatory

and health authorities (national science and technology institutions) is indispensable if those efforts are to respond effectively to the needs of each country, and if progress in health research is to be monitored and regulated.

The Ministerial Summit on Health Research was held in November 2004 in Mexico. The Mexico Declaration on Health Research (137) drafted there received the backing of the ministers of health and heads of delegations of the 58 WHO Member Countries. The declaration urges the countries, the scientific community, and international organizations to implement strategies and activities to step up research to improve the health and development outcomes of the population.

In response to the Mexico Declaration, initiatives have been promoted to provide training and develop human resources for health research, increase the production and systematic use of the results of research on public health, strengthen the leadership and governance of health research, and promote the development of databases and registries to monitor the status of research and learn about what resources are available (138, 139, 140). Strategies are also being implemented to prioritize research on public health and spur investments in this field. This will require coordination of the work of numerous initiatives, such as those promoted by the Council on Health Research for Development (COHRED: <http://cohred.org>), the Global Forum for Health Research: (<http://www.globalforumhealth.org>), and the Alliance for Health Policy and Systems Research (<http://www.alliancehpsr.org>), among others. The development of registries and indi-

cators of scientific production is also being encouraged. The current trend is to promote the development of government policies to lend sustainability to research for equity and development.

Investments have been promoted in research on neglected topics of local interest, including aspects such as research on health systems, evaluation of the massification of interventions, and conditions that require multisector approaches (for example, prevention of traffic accidents, burns, drownings, gunshot wounds, and interventions to reduce violence). The World Alliance for Patient Safety (<http://www.who.int/patientsafety>) is developing working networks whose main goal is to create a culture of patient safety.

On other fronts, universal access to the results of research used to guide health policies and care is being promoted. WHO has promoted the development of an open portal that integrates the registries of clinical trials (<http://www.who.int/ictrp>). Networking is also being promoted under existing initiatives to spur the use of research results such as the Cochrane Collaboration (<http://www.cochrane.org>). In the last decade, major agreements were reached to facilitate access to biomedical and health publications for developing countries including the Health InterNetwork Access to Research Initiative (HINARI) (<http://www.who.int/hinari>).

The strategy of bringing together different initiatives, networks, and working groups in the Region has made it possible to identify synergies, minimize duplication of work, promote cooperation, and develop solidarity among countries to join forces to develop and bolster capacity, for the larger purpose of achieving successful and sustainable initiatives. By way of example, some of the initiatives and networks that have been working steadily in the Americas are mentioned below:

- The Latin American Network of Clinical Epidemiology (Lat-INCLIN) (<http://www.latinclen.org>) is oriented to training and research in clinical epidemiology, biostatistics, social sciences, and health economics.
- The Ibero-American Cochrane Network (<http://www.cochrane.es>) promotes research synthesis and meta-analysis, indexation of “grey” publications, development of new methodologies for secondary research, and offers a compilation of syntheses of scientific literature.
- The Latin American Forum of Research Ethics Committees (<http://www.flaceis.org>) offers a locus for dialogue to develop and strengthen research ethics.
- The Latin American Association of Schools of Public Health (ALAES) (<http://www.alaesp.sld.cu>).
- The Latin American Social Sciences Faculty (<http://www.flasco.org>).

Scientific information is necessary but not sufficient for better health decisions to boost the effectiveness of interventions that will add to the gains in health and quality of life. Other key factors that require consideration and that mold decisionmaking

*“It is estimated that between 25% and 30% of the total population of the Region has no access to health care, despite the fact that universal declarations signed by most countries and the national laws of many more guarantee universal access to such care. Health reform processes have made uneven progress on this issue. In many cases, a significant gap exists between the state of development of national social protection systems and the legal framework that supports them.”*

Mirta Roses, 2005

processes and their results include sociocultural situations, the values of the decisionmakers, and the resources available. Other aspects should also be gradually dealt with to ensure that decisionmaking processes, practices, and policies are sufficiently well grounded in scientific evidence, such as the variability in information use patterns, the ability to appropriate knowledge, and decisions to react to new knowledge (141). The development of new communications technologies has spectacularly changed the panorama for the use of scientific information and has brought new solutions and new challenges in its wake.

In a short time, society has passed from restricted access to knowledge to a situation of great contrasts, since in some places limitations persist, while in others individuals feel overwhelmed by the amount of information and have difficulty in establishing the limits of a study and mastering the store of information and knowledge necessary to carry it out. These new challenges have led to the application of methodologies to synthesize knowledge and evaluate scientific literature critically, the establishment of standards for publishing and sharing information, the development of registries of basic data and scientific production, the incorporation of new information skills into human resource training, and much more. But the countries are still facing a changing scenario, and it is crucial to integrate initiatives to respond effectively to these challenges and have available basic information for a good situational analysis and the design of strategic responses.

## RENEWING PRIMARY HEALTH CARE IN THE AMERICAS

The World Health Organization championed primary health care even before 1978, when it adopted the approach as central to the achievement of the goal of “health for all.” Since that time, the world—and primary health care with it—has changed dramatically. The purpose of renewing primary health care is to revitalize countries’ capacity to mount a coordinated, effective, and sustainable strategy to tackle existing health problems, prepare for new health challenges, and improve equity. The goal of such an endeavor is to obtain sustainable health gains for all.

Several reasons warrant the adoption of a renewed approach to primary health care. These include: new epidemiological challenges; the need to correct weaknesses and reduce inconsistencies that characterize some widely divergent approaches to primary health care; the development of new tools, knowledge, and best practices that can increase the effectiveness of primary health care; a growing recognition that primary health care can strengthen society's ability to reduce inequities in health; and an expanding consensus that primary health care represents a powerful approach to address the causes of poor health and inequality.

### The Context for Primary Health Care

A thorough examination of primary health care is timely, as most of the countries in the Americas have undergone dramatic changes over the past three decades. These changes include democratization and consolidation of democracy, redefinition of the role of the state, economic liberalization, and health and social services reforms, including the expansion of the role of the private sector in areas that were traditionally the responsibility of the public sector. Although not always successful, health sector reforms have been aimed at achieving goals of streamlining health care financing, decentralizing authority for planning and implementation, and, more recently, have sought to improve the quality of care and enhance equity (142). In most countries, these reforms have taken place against the backdrop of widespread poverty, increasing inequality, social exclusion, political instability, and environmental deterioration (143, 144). Furthermore, the effects of globalization have increased the degree of interdependence of nations as well as their vulnerability to external forces; significant demographic and epidemiological trends have shifted the burden of disease; while new forms of political, social, and economic arrangements as well as technological developments are being introduced.

A renewed approach to primary health care is essential to meet internationally agreed-upon development goals. Some of the most relevant include those contained in the United Nations Millennium Declaration, which address the fundamental determinants of health as articulated by the WHO Commission on Social Determinants of Health and ensure health as a human right, as is established in some national constitutions and articulated by civil society groups. In addition to renewing and reinterpreting the approach and practice of primary health care to address the challenges of the 21st century, the renewal of primary health care will require building upon the legacy of Alma-Ata and the primary health care movement, and taking full advantage of lessons learned and best practices built up in more than a quarter-century of experience.

The Region of the Americas boasts a rich intellectual tradition of researching the causes and consequences of health disparities (145). Regardless of how equity is defined, few would deny that

health disparities among the people of the Americas are inequitable. A recent analysis found that “despite a sizable reduction in infant mortality, levels of inequality among countries have remained almost constant between 1955 and 1995” (146). The results are similar when examining the situation within countries where sizeable gaps exist for a variety of health indicators, including maternal mortality (indigenous versus non-indigenous women), access to health services (between urban and rural populations), and life expectancy (between racial and ethnic groups) (147).

In our Region, income-related disparities are associated with poorer health performance and in some cases, their effects threaten to reverse the progress already made in many countries (148, 149, 150). Thus, reducing or eliminating inequities in health warrants the development and implementation of health and development strategies truly fueled by social values and able to address the causes as well as the consequences of inequities. Four main approaches have been employed to raise the levels of equity in health: (1) increasing or improving the provision of health services for those in greatest need (151, 152); (2) restructuring health financing mechanisms to aid the disadvantaged (153, 154, 155); (3) developing programs to aid the poor in obtaining basic goods such as housing, water, food, or income (156); and (4) altering broader social and economic structures to influence more distal determinants of health inequities (157). Research on various aspects of health equity has been part of the published literature for more than three decades, yet the evidence to determine the most effective strategies in any given circumstance remains insufficient (158).

Renewing primary health care means more than simply adjusting the original approach to current realities; rather, it requires a critical examination of its meaning and purpose. Overall, perceptions about the role of primary health care in social and health system development fall broadly into four categories (see Table 22). A study conducted in 2003, which included over 200 decisionmakers from 16 Latin American and Caribbean countries, confirmed the relevance of the primary health care approach for the respondents. Yet, the study also showed that disagreements and misconceptions about primary health care still exist, even within the same country (64) (see Table 23). Regardless of the predominant approach applied, the majority of informants interviewed (75%) saw primary health care as a valuable approach that requires redefinition and reinvigoration. Most respondents believed that such a redefinition requires new implementation strategies, including changes to primary health care organization and financing, human resources development, health policy formulation, health management and administration, and greater government transparency. They added that this process should involve partnerships among providers, communities, governments, international agencies, and international networks to set health priorities, create incentives for applied research and

**TABLE 22. Approaches to primary health care.**

Approach	Definition or concept of primary health care (PHC)	Emphasis
Selective PHC	Involves a limited number of high-impact services to address some of the most prevalent health problems in developing countries. One of the main programs that included services of this kind was known as GOBI (growth monitoring, oral rehydration techniques, breast-feeding, and immunization) and also as GOBI-FFF when food supplementation, female literacy, and family planning were added.	Specific set of health service activities for the poor.
Primary care	Refers to the gateway to the health system and the site for continuous health care for the majority of the population. This is the most common concept of PHC in Europe and other industrialized countries. More narrowly defined, this approach is directly related to the availability of general or family physicians.	Health system level of care.
Alma-Ata Comprehensive PHC	The Alma-Ata Declaration states that: "Primary health care is essential health care based on practical, scientifically sound and socially acceptable methods and technology made universally accessible to individuals and families in the community through their full participation and at a cost that the community and country can afford to maintain ... It forms an integral part both of the country's health system ... and of the overall social and economic development of the community. It is the first level of contact of individuals, the family and community ... bringing health care as close as possible to where people live and work, and constitutes the first element of a continuing health care process."	Strategy for organizing health care systems and society to promote health.
Health and human rights	Conceives of health as a human right and underlines the need to respond to the broader social and political determinants of health. It differs on account of its greater stress on the social and political implications of the Alma-Ata Declaration, rather than on account of its principles. It maintains that if the social and political content of Alma-Ata is to improve equity in health care, it should be more oriented to the development of "inclusive, dynamic, transparent policies supported by legislation and financial commitments" rather than to specific aspects of disease.	A philosophy that cuts across the health and social sectors.

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human resource development, encourage cost-effectiveness in resource allocation, advocate for increased resources, and promote healthy public policies.

The 44th PAHO Directing Council in September 2003 approved a resolution calling for Member States to adopt a series of recommendations to strengthen primary health care. The following year and in response to the above mandates, PAHO/WHO created a working group on primary health care to advise on the or-

ganization of future strategic and programmatic orientations of the primary health care approach. Its first meeting was held in June 2004, in Washington DC, and the second took place in San José, Costa Rica, in October of that year.

To discuss the draft position paper, national consultations took place in 21 countries: Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, El Salvador, Guatemala, Guyana, Jamaica, Mexico, Nicaragua, Panama, Para-



**TABLE 23. Key informant perceptions of primary health care roles.**

To what extent do you agree with the following statements?	Percentage agreement or total agreement	No.
PHC is the first level of care.	80	160
PHC is the gateway to the health system.	71	152
PHC is viewed in different ways by different health care providers.	67	188
PHC is a combination of approaches.	62	158
PHC is low-technology care.	55	187
PHC is a health service for the poor.	52	173
PHC is a strategy for socioeconomic development.	51	154
PHC is viewed differently in different parts of the country.	44	184

**Source:** Pan American Health Organization. *Revisión de las políticas de atención primaria de salud en América Latina y el Caribe*. Washington, DC: OPS; 2003.

guay, Peru, Suriname, Trinidad and Tobago, and Venezuela. The technical recommendations produced by the Regional Consultation held in Montevideo, Uruguay, became part of the position paper and of the Regional Declaration on Primary Health Care (Declaration of Montevideo), fully endorsed by the 46th Directing Council of PAHO in September 2005.

Since approval of the Declaration of Montevideo, several countries have renewed or reinvigorated their efforts to incorporate the core values, principles, and elements of the primary health care strategy into the development of their national health systems. PAHO/WHO has continued to provide technical cooperation for the countries on the matter and has stepped up efforts to disseminate the renewed primary health care approach within the Region. Its efforts have centered on streamlining the primary health care strategy in all of its technical cooperation activities and areas of work.

### Building Primary Health Care-Based Health Systems

The renewal of primary health care must be an integral part of health systems development, and an overarching and enabling approach to the organization and operation of the health system, where the right to the highest attainable level of health is its main goal. Furthermore, a primary health care-based system maximizes equity and solidarity and contributes to sustained population health gains. Such a system is guided by the principles of responsiveness, quality orientation, government accountability, social justice, sustainability, participation, and intersectorality.

A primary health care-based health system is composed of a core set of functional and structural elements that guarantee universal coverage and access to equity-enhancing services that are acceptable to the population. It provides comprehensive, integrated, and appropriate care over time, emphasizes prevention and promotion, and ensures first-contact care. The essential base for planning and action are the families and the communities where the system operates. A primary health care-based health

system requires a sound legal, institutional, and organizational foundation as well as adequate and sustainable human, financial, and technological resources. It employs optimal management practices at all levels to ensure quality, efficiency, and effectiveness, and it develops active mechanisms to maximize individual and collective participation in health. A primary health care-based health system develops and is a catalyst in intersectoral actions that address determinants of health and equity.

The essence of the renewed definition of primary health care is the same as in the Alma-Ata Declaration. The new definition has a whole-system perspective, however—one that applies to all countries without distinction and includes all relevant sectors (public, private, and nonprofit). It differentiates values, principles, and elements; highlights equity and solidarity; and incorporates new principles such as sustainability and a quality orientation. The renewed definition discards the notion of primary health care as a pre-established set of services, since these should be customized to local needs. Similarly, it dispels the notion of primary health care as defined by specific types of health personnel, since primary health care teams ought to be defined according to needs, cultural preferences, evidence, and available resources. Moreover, it specifies organizational and functional elements that can be measured and evaluated, and which form a logical and cohesive approach for firmly grounding health systems on the primary health care approach. Renewed primary health care intends to guide the transformation of health systems so that they achieve their goals while being flexible enough to change and adapt over time to meet new challenges. It recognizes that primary health care is more than just the provision of health services and that success depends on other health system functions and other social processes.

Due to the great variation in national economic resources, political circumstances, administrative capacities, and historical development of the health sector, each country will need to design its own strategy for primary health care renewal. Figure 5 presents the proposed values, principles, and elements of a pri-

**FIGURE 5. Core values, principles, and elements in a primary health care-based health system.**



**Source:** Pan American Health Organization. *Renewing Primary Health Care in the Americas. A position paper.* Washington, DC: OPS; 2007.

mary health care-based system, Table 24 shows their definitions, and Table 25 the essential elements of a primary health care-based health system.

### The Way Forward

An approach to renewing primary health care will encompass: (1) completing primary health care implementation where it has fallen short (the unfinished health agenda) by guaranteeing all citizens the right to health and universal access, actively promoting equity in health care, as well as improvements in and a better distribution of health and quality-of-life indicators; (2) strengthening primary health care to address new challenges by improving citizen and community satisfaction with services and providers, maximizing the quality of care and management, and strengthening the policy environment and institutional structure necessary for the successful fulfillment of all health system functions; and (3) lo-

cating primary health care in the broader agenda of equity and human development by linking primary health care renewal with efforts (such as the Millennium Declaration) to strengthen health systems, promoting sustainable improvements in community participation and intersectoral collaboration, and investing in human resource development. Success will mean learning from experiences, developing advocacy strategies, and articulating the expected roles and responsibilities of countries, international organizations, and civil society groups involved in the renewal process.

Interest in primary health care has been renewed throughout the world. Various organizations have recognized that strengthening health systems is a prerequisite for assuring economic growth, advancing social equity, improving health, and providing treatments to combat ravaging diseases such as HIV/AIDS. Yet, much work remains to convince the key actors that primary health care is the logical and appropriate locus for collaboration, investment, and action. The time for action is now.

**TABLE 24. Core values and principles of a primary health care-based health system.**

Values	Definition
Right to the highest possible level of health care	The constitutions of many countries and different international agreements (including the Constitution of the World Health Organization) refer to the rights of citizens and the responsibilities of governments and other legally defined players and lay the judicial and legal groundwork to enable citizens to protest when their entitlements are not complied with.
Equity	Counters unfair differences in health status, access to health care, and healthy environments, and in the treatment received in the social services and health care systems.
Solidarity	The extent to which people in a society undertake to work together for the common good to define and achieve a common goal. In local and national governments, this value takes the form of voluntary associations and other forms of participation in civic life.
<b>Principles</b>	
Responsiveness to health care needs of the population	Health care systems should focus on people in order to meet their needs to the fullest extent possible. This implies that PHC should meet the health care requirements of the population based on available evidence, while promoting respect for individual preferences and needs, without considering socioeconomic, cultural, racial, or ethnic status, gender, or other factors.
Quality orientation	In addition to responding to the needs of the population, services should anticipate them and treat every one with dignity and respect, while providing the best possible treatment for their health problems. This means equipping health professionals with fundamental clinical knowledge and with the tools necessary for their continual professional development, and having adequate procedures for evaluating the efficiency, effectiveness, and safety of preventive and curative interventions, assigning resources properly, and having an appropriate incentive system.
Government responsibility and accountability	This principle assures that the government complies with or is forced to comply with social rights and that citizens are protected from encroachment on those rights. It requires the development of specific regulatory and legal policies and procedures to permit citizens to demand their rights if they are not respected. This principle should be applied to all the functions of the health system, regardless of the type of provider (public, private, or nonprofit). It requires continuous monitoring and improvement of the performance of the health system, which should be transparent and subject to social control.
Social justice	The government's activities should be evaluated on how well they assure the well-being of all citizens, particularly the most vulnerable groups.
Sustainability	Requires the use of strategic planning and the creation of lasting commitments. Investments should be sufficient to meet the public's current health care requirements while planning to meet tomorrow's challenges.
Participation	Individuals should be involved in decision-making on the allocation of resources, the establishment of priorities, and in processes to facilitate accountability. Individuals should be capable of making free and informed decisions to improve their health and that of their families. Social participation in health care is one of the facets of general civic participation that permits the health system to reflect social values and is a means of social control over public and private actions that affect society.
Intersectorality	The health sector should work together with other sectors and players to assure the alignment of public policies and programs, maximizing their potential contribution to health and human development.

**Source:** Pan American Health Organization. Renewing Primary Health Care in the Americas. A position paper. Washington DC: OPS; 2007.

**TABLE 25. Essential elements of a primary health care-based health system.**

Universal access and coverage	Financing and organizational provisions should cover the entire population, eliminating barriers to access, reflecting needs, preferences, and local cultures, protecting people from financial risks, and meeting the objectives of equity.
First contact	Primary care should operate as the gateway to the health and social services system for all new patients and as the place where the majority of problems are resolved. A health system based on primary care strengthens this type of attention by operating as the first level of care, although some of its functions extend beyond that level.
Comprehensive, integrated, and continuous care over time	The range of services available should be adequate for providing and integrating health promotion, disease prevention, early diagnosis, curative and palliative care, rehabilitation, and support to enable patients to manage on their own.
Family and community orientation	Primary care takes a public health approach that uses community and family information to assess risks and prioritize interventions. Families and communities are the first rung on the ladder of planning and interventions.
Emphasis on disease prevention and health promotion	Primary care involves health promotion, public health, and regulatory and policy approaches, in order to improve labor conditions and safety, reduce environmental risks, and coordinate population-based health promotion with other sectors.
Appropriate care	A health system based on primary care does not focus on care of an organ or a disease, but rather its activities focus on individuals as whole persons during their life cycle. It assures that interventions are pertinent, effective, efficient, and safe and that they are based on the best clinical evidence available.
Active participation mechanisms	Actions that help to ensure transparency and accountability on all levels, including empowering people to better manage their own health and encouraging communities to become active participants in establishing health priorities and in system management, evaluation, and regulation.
Solid legal, political, and institutional framework	Part of the leadership function of the health system consists of identifying, empowering, and coordinating the players, actions, procedures, and legal and financing systems that enable the PHC system to carry out all its specific functions transparently, subject to control by society and free of corruption.
Policies and programs that favor equity	Activities to overcome the negative impact of social inequity on health and assure that everyone is treated with dignity and respect. Should incorporate both horizontal and vertical equity.
Optimum organization and administration	Practices to enable innovation to continuously improve the organization and supply of safe care, which should comply with quality levels, offer satisfactory working conditions for health personnel, and respond flexibly to people's needs.
Adequate human resources	Health care providers, community workers, administrators, and auxiliary personnel should possess an adequate mix of skills and knowledge. They should also be able to rely on a productive work environment, training to maximize interdisciplinary teams, and incentives to treat people with dignity and respect. This requires strategic planning, long-term investments, and coordination of national and international human resource policies.
Adequate and sustainable material resources	Resources should be sufficient to provide universal coverage and access based on the best available data and analysis of the health situation.
Intersectoral actions	Primary care, the health system, and other sectors should work together to promote health and human development addressing health determinants through linkage with the public education system, the workplace, economic and urban development programs, agricultural development and marketing programs, potable water and sewage services, etc.

**Source:** Pan American Health Organization, Health Systems Strengthening Area, Health Policies and Systems Development Unit.

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