



Health in South America 2008

Health Overview Focused on Priority Aspects
of the South American Health Agenda

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Situation Overview Focused on Priority Aspects of the South American Health Agenda

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1. HEALTH STATUS INDICATORS
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Prologue

In our ever more globalized world, the political and economic integration of human groups sharing a common history and border has emerged naturally as a way to face the challenges of this new reality. Because of South America's experience in forming and consolidating integration blocks, the region is able to build on the foundation of present achievements while taking into account lessons learned in the past. Though integration processes are usually primarily motivated by political and economic arguments, the search for consensus and areas of convergence frequently makes the social agenda a catalyst of these processes; after all, it is easier to achieve consensus on the issue of human wellbeing as the overarching objective of society's collective efforts. It is therefore no coincidence that one of the first Councils to be approved in UNASUR was the Council on Health.

Though each country in South America has its own strengths and capacities, it has become increasingly clear that concerted, complementary action of the entire block is needed to successfully face today's challenges, which are configured by forces that transcend national and even regional borders. Health is a clear example of this, and UNASUR offers an opportunity to put into practice what has already been achieved on a smaller scale in other regional integration processes - in the Andean region, MERCOSUR and the Amazon - but over a larger geographic area. This will require a special effort in terms of coordinated, concerted action.

The Special Session of UNASUR Member Countries has issued a clear mandate, which is "to build a context for integration in health matters, incorporating the efforts and achievements of other regional integration mechanisms, promoting common policies and coordinated activities among UNASUR countries." To fulfill this mandate, we must address the present setting, which is characterized by great asymmetries both within and among countries. The first challenge therefore will be to reduce social and health inequities underlying the region's structural problems. To this end, there is the opportunity to recover border areas as places that promote integration and public health development in South America. Locations such as the South American Chaco region, the Lake Titicaca Altiplano area and the Amazon jungle house the poorest municipalities in the entire region, and we have here an opportunity to translate the drive towards integration into tangible results for local populations.

In this regard, the Pan American Health Organization offers UNASUR Member States the benefits and expertise of all present and future bodies, and offers this Council our organization's available technical experience and resources. Furthermore, UNASUR will benefit from the concerted action of other United Nations agencies through mechanisms such as the Pan American Alliance for Nutrition and Development, the Group of Regional Directors Co-sponsoring UNAIDS and the Team of Regional Directors of the United Nations Agencies for Latin America and the Caribbean.

We are certain that PAHO's Health Agenda for the Americas and its Strategic Plan, which were approved by ministers of health of all American nations, will serve as a central point of reference for guiding the Council's work and actions.

Mirta Roses Periago
Director
Pan American Health Organization

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Executive Summary

This document presents an overview of the health situation in South America based on the latest available information. It considers the political, economic and social contexts and emphasizes social determinants and health system organization and performance, with special attention paid to human resources and medicines. The document seeks to offer basic information and a context for discussion, with a view to guiding the development of proposals and plans by specific technical groups of UNASUR Salud. The document has focused mainly on identified priorities in the South American Health Agenda, namely: development and consolidation of the epidemiological shield, development of universal health care systems, universal access to medicines, health promotion and actions on the social determinants of health, and the development and management of human resources in the health sector.

Health in the Context of Development and Social Determinants

Beyond the particularities of individual nations, health in South America is situated in a particular political, economic and human development framework, the evolution of which has been closely tied to global changes over the past three decades. These changes include globalization, democratization, State reform and the changing role of the State, crises in social security systems, and economic growth in the midst of growing social inequity and exclusion. This context has influenced the health of populations in South America, through demographic transitions, changes in the epidemiological profile and changing environmental conditions.

The social context involves a series of social determinants relevant to health. Within countries of the region, unequal opportunities for development are expressed in inequities in health, many of which are interrelated and in turn result in economic privation, poverty and exclusion from the benefits of the market and social protection. These and other conditions affect the quality of life of those inhabiting this region, reducing their chances of achieving better health and make it highly likely that social and economic inequity will

lead to inequity in health. Major social determinants of health include income, employment status, poverty level, education, housing conditions, availability of water and basic sanitation, living in rural areas, and in some cases ethnic, cultural and migratory status. These factors tend to concentrate among certain population groups, leading to marginal living conditions, vulnerability and exclusion and hindering access to health services.

In many countries, the environmental situation has also affected the evolution of political, economic and social realities, with the environmental deterioration (such as deforestation and soil erosion) and unplanned urban and industrial expansion that is harmful to health, especially due to air, water and soil pollution. Natural disasters (and those provoked by humans) and environmental degradation have both direct and indirect consequences on populations. However, awareness of these concerns is growing rapidly in countries of the region and efforts are being made to strengthen legislation, regulation and enforcement of health provisions, with one notable example being the adoption of WHO's International Health Regulations.

Although social determinants of health are well known in countries of South America, dealing with these factors effectively is often beyond the reach of governments and the larger society. Countries have proposed intersectoral policies and plans for social development, and important but limited advances have been secured in many areas (such as reducing poverty, increasing employment, and improving access to water and sanitation). The unfinished agenda continues to be a challenge, however, with countries facing crucial issues such as nutrition and development, mother-child health, health promotion, access to basic sanitation and vector management, and other ways of controlling preventable communicable diseases. Also important are the combined national and international efforts that seek to fulfill the Millennium Development Goals, as well as joint declarations and agreements that have emerged from regional summits on human development issues.

Health Status and Trends

The population of South American countries has experienced uneven growth, with a gradual drop over time and a generally ageing population. This situation has contributed to the process of epidemiological transition, due to the absolute and relative increase in the frequency and prevalence of health problems and needs that rise as people grow older. Some components of health status—especially risk factors, preventable diseases and deaths—are closely linked to social determinants, to intersectoral health promotion and prevention, and to timely and effective access to preventive, curative and rehabilitation measures that allow maintaining and improving health, especially among the most vulnerable population groups. Health conditions also are related to demographic and epidemiological profiles found in different countries and population groups, preventable mortality and morbidity factors that produce the largest disease load, complications and preventable deaths, or at least preventable premature deaths. The harmful effects of communicable diseases that could be prevented and controlled must be added to those of chronic-degenerative diseases. Communicable diseases are responsible for 10.6% of all deaths in the region, while malignant tumors cause 17.1%, diabetes 4.1%, ischemic heart disease 9.4% and vascular-brain diseases another 8.7%. External causes are responsible for 12.7% of all deaths. The rate of maternal and infant mortality is higher in less economically developed countries such as Bolivia, Paraguay and Peru, which have high rates of preventable deaths. Rates of HIV/AIDS and tuberculosis are 0.6 and 73.5 per 100,000 inhabitants, respectively. Inequities in health within individual countries are especially reflected in highly preventable health events that are related to social inequalities (malnutrition, maternal and infant mortality, and communicable disease). Border health issues are currently a high public health priority, and there have been some positive experiences with agreements and mutual cooperation among South American countries in this regard.

Communicable Diseases and the Epidemiological Shield

The frequency and prevalence of some communicable diseases in South America continue to cause many preventable complications and

deaths, especially among poor rural populations. This highlights the urgent need for a national and international epidemiological monitoring network, which could guide responses to prevent and control any outbreaks in a timely and effective manner. Every South American country has approved initiatives to control, eliminate and eradicate vaccine-preventable communicable diseases under the Expanded Program on Immunization (EPI), the success of which has been highly variable in different countries. Since 2003, cases of rubella have dropped by 96% and there is now no endemic transmission of measles. Annual cases of diphtheria have been reduced significantly and no new cases of polio have been recorded.

Malaria, however, is endemic in most South American countries today, with Colombia, Guyana, Surinam and Venezuela having the highest rates. In 2005, 580,589 cases of dengue fever and 41,704 cases of hemorrhagic dengue were recorded in the Andean countries, including 221 deaths, while Southern Cone countries (Argentina, Chile, Uruguay and Brazil) reported 1,859,259 cases of dengue and 4,509 of hemorrhagic dengue, with 258 deaths, most of these in Brazil. The WHO has estimated that there are currently 18 million people infected with Chagas disease in the Americas, and this illness is still strongly endemic in the Amazon subregion. Between 1975 and 1995, an estimated 17,000 people died from this disease each year in Brazil. Cases of jungle yellow fever have been recorded in Bolivia, east-central Brazil, Colombia, Ecuador, Guyana, Peru, Surinam and Venezuela, though no cases of urban yellow fever have been reported since 1942. Cholera occurrence is low in South America and outbreaks have been local and quickly contained, with little public health impact. Human rabies (transmitted by dogs) is being eradicated, although notable isolated outbreaks have occurred in Bolivia and Venezuela. Bolivia, Brazil, Ecuador and Peru have recorded a few cases of the plague, especially in poor and rural areas. Visceral leishmaniasis is endemic, with most cases reported in Brazil (3,000 cases per year on average). Echinococcosis/hydatidosis has been recorded in livestock raising countries such as Argentina, Brazil, Chile, Uruguay, Peru and Bolivia.

The HIV/AIDS epidemic is still most prevalent in high risk groups. Its prevalence among adults 15–49 years old stands at 0.5%. The main channel of

transmission continues to be sexual contact. In 2006, South America recorded more than 285,000 cases of tuberculosis with more than 26,700 deaths annually. From 1975 to 2005, the prevalence and number of deaths from tuberculosis dropped steadily, except for Guyana, which, along with Bolivia, has the highest prevalence and mortality rates of this disease in the region.

South American countries are also alert to the potential emergence of a pandemic such as influenza (human flu) or SARS (severe acute respiratory syndrome). Across the Region and especially in the Andean subregion, coordinated efforts to monitor these diseases and establish an epidemiological shield to maintain the monitoring and response capacity recommended in the International Health Regulations is being strengthened.

Health Systems

The health systems in South American countries have achieved different levels of development. Their organization and structure vary in regard to financing and insurance modes; legal and regulatory structure; the role of the State; degree of integration (coordination, segmentation, fragmentation); participating sectors (public, social security, private); and the organization and integration of assistance networks. A number of countries' health systems have undergone radical changes in their organization, structure, funding and performance, mainly as a result of State health sector reforms carried out during the 1990s.

Populations obtain health coverage through different sub-systems, including the public system, social security, the private system and others, such as the armed forces (each country has different proportions of these). The coverage of the overall health system is high in such countries as Chile, Brazil and Venezuela. Social security in health reaches two thirds of the population in Chile and Colombia, half of the population in Argentina and somewhat less in Uruguay. Other countries have lower coverage. The private sector (for-profit and non-profit) covers approximately one quarter of Ecuador's population and a little under one-fifth of the population in Chile, and reaches much less coverage in other countries. Special health systems are run by the public and private sectors (such as

those of the armed forces, the police and organized workers groups).

Total coverage is universal in most countries, but is limited in less economically developed countries. According to available data (covering the period 2001 to 2006), approximately 45% of the population of Bolivia did not have access to health services and 72.8% did not have social security or health insurance coverage. In Peru, 42.1% of the population did not have social security or private health coverage. In Paraguay, 38.6% of the population did not have access to health services and 81.1% had no social security or private health insurance. In 2006 in Ecuador, 27% of the population did not have access to health services and 76% did not have social security or private health insurance coverage.

Health sector reforms had diverse effects on health systems. These results included separation of functions, in which active participation is shared between the State, insurance companies, health care providers, oversight bodies, and citizens. Decentralization and the growth of the private sector (direct or indirect privatization of insurance and public health care) were encouraged. Changes also occurred in other aspects, such as funding model and sources, health service provision, planning efficiency focus, payment and oversight of health service provision, and the search for new mechanisms to expand coverage (such as the creation of basic packages and extension of social protection), particularly those directed at covering poor and marginalized communities.

At the same time a series of problems emerged, including segmentation, poor integration and competition among different sectors and even within the service network. Increases in private spending in many countries led to the risk of limiting real access to services. The Ministry of Health's oversight became weak (with poor regulation of health insurance markets and health services) and there were deficits in public health funding, which led to decreased performance and efficiency, particularly in the public health system. At the same time, there were incentives for prioritizing curative care rather than preventive action. The network's internal solidarity and efficiency was reduced along with the overall performance and efficiency of the public system. Decentralization was incomplete and poorly

coordinated, which led to more fragmentation of health services, the loss of solidarity within the system and less equitable access to health care and benefits.

From the benefits and problems attributed to health systems reforms there emerged challenges such as: the need to strengthen the oversight role of the health authority; the need to strengthen and monitor essential public health responsibilities; the need to identify mechanisms for integrating the public network (respecting local autonomy) with solidarity and equity; recovering the level of funding and critical resources required to ensure efficient performance of health systems; and strengthening primary health care (poor, at-risk and marginal populations should continue to be a priority). The regulation of the health insurance and health services market is crucial, particularly in view of the current international financial crisis, which may threaten health system funding.

Despite the many advantages and disadvantages of health system changes, the first level of care within a renewed context of primary health care (PHC) has focused on service access and coverage and the system's effectiveness. This focus is reflected in the high level of coverage for immunization and delivery. Half of the countries in the region have universal or nearly universal (over 95%) coverage for vaccination; though this is more limited in Venezuela, Paraguay and Bolivia and poorer, more needy and rural areas in which the population has lower access to medical care.

Human Resources

Health care personnel play a crucial role in health systems. South America currently has approximately 656,000 physicians, 210,000 nurses and 330,000 dentists, which represents a rate of 16.9, 5.4 and 8.8 such professionals per 100,000 inhabitants, respectively. The availability of physicians has increased by 20% from 1995 to 2006. Positive growth has been maintained in the area of human health care resources, but has recently slowed. However, population growth and other limiting factors have affected the number, distribution and training of health care personnel, particularly in the public health system and in the poorest countries. Health care personnel cannot respond to some needs because of lack of personnel, poor distribution, or inadequate methods

and these obstacles are aggravated by internal and external migration. As a result, there is unequal distribution of personnel, with most concentrated in urban areas, and significant imbalances among the health professions. In addition, there is a notorious lack of human resources planning, especially in regard to quantity and quality of health care professionals, and training continues to follow the traditional model. Urban areas have eight to 10 times more physicians than rural ones. This situation is aggravated by the internal migration of professionals from the public to the private sector or from rural sectors to urban ones and their emigration to countries that offer more opportunities. A significant number of countries in the region do not have the personnel required to provide minimal coverage (25 health care workers per 10,000 inhabitants). Current priorities include: the need to improve planning for health personnel availability and distribution (according to criteria based on need and equity), enabling conditions that are compatible with dignified work, a code of ethics on migratory flows, and training and education that are in keeping with the needs of the population in question. In this context, the Twenty Regional Goals on Human Resources in Health have been promoted since 2007. These are based on challenges identified in the Call to Action (Toronto, 2006), which was supported by Member States and linked to renewed PHC (Santiago, 2008).

Policies and Access to Medicines

Access to medicines - essential health care inputs - is quite unequal in South America. New policies must be formulated to improve the availability, quality and use of medicines in a manner suited to the population's needs. In general, countries already have efforts underway to strengthen national regulatory authorities and improve the list of essential medicines, the provision of free critical medicines for certain groups, enhanced regulation, the production and supply of medicines, and the promotion of rational use of medicines.

Given the importance of medicines (as a key industry in the market and an essential health input) South American nations are coming together through international agreements and agendas such as the one currently under implementation through CAN. Along the same lines, UNASUR Salud has prioritized the development of a South American

drug policy and a health production complex to ensure more availability, access, and rational use of medicines in South American countries.

Health Agendas and Integration Processes

Multiple agendas of work related to health exist in South America. These include national, binational, subregional (CAN, MERCOSUR, OTCA), and South American (UNASUR Salud) initiatives. Regional efforts include the Health Agenda for the Americas 2008-2017, while at the global level there is the WHO's agenda and the agendas of the more than one hundred Global Health Alliances. Overall, these agendas share many topics, overlap on some issues and complement each other in regard to actions. Each type and level of agenda has its own objectives and specific expected benefits. The integrated action of UNASUR Salud will become more coordinated and effective as progress is made toward the implementation of strategies and solutions to common problems in the South America region. For this reason, to collaborate on the UNASUR Salud Agenda

countries will need to learn about and coordinate the work of their national agencies. This will allow progress made towards their goals to be shared by all participants through effective information, monitoring and surveillance. Regardless of the strengths and capacities of each individual South American country, it is clear that the entire block must engage in complementary and collaborative action if we are to successfully face challenges that arise from determinants that extend beyond our borders and our Region. Healthcare is a clear example of such challenges and UNASUR offers an opportunity to put into practice what we have achieved on a lesser scale in Andean, MERCOSUR and Amazonian integration but that, over a greater geographic area, requires additional coordination and collaboration. As an agency that specializes in health and forms part of the intergovernmental system of the Americas, PAHO can provide technical advice and accompaniment in the health agenda processes of UNASUR Salud, also including budgetary planning, South-South technical cooperation development and resources mobilization.

1. Introduction

This working document gives a global view of the health situation in South America, with a special emphasis on the aspects that have been given priority in the South American Health Agenda. Thus, it seeks to be one of the basic inputs and an element of confluence for the discussions aimed at developing specific plans to be drawn up by the technical groups of UNASUR Salud.

The health situation, its social determinants and the health systems in the South American countries have many similar characteristics. In addition to the geographic vicinity, this is due to the fact that in general the countries share a common history and culture. These conditions facilitate reaching consensus agreements and developing subregional blocks, whose immediate objectives may be of a different nature (political, economic or commercial) but tend to include social and health agendas (Annex 2). The development of intergovernmental agreement and integration processes multiply in a globalized, dynamic world. Over the past three decades, the health situation has steadily improved in all the South American countries, while their national health systems have continued developing (organization, resources and coverage) and have experienced gradual reforms and adaptations of varying degrees to different political and economic changes involving the Government. Despite the historic improvement and development that has occurred in all the countries, the current health situation is characterized by large inequality, both between countries and within each individual country (Annex 1) (1,2,3,4,5).

The health status is consistently related to the degree of socioeconomic development and the quality of life reached by each country and population group. Health inequity usually reflects the influence of social inequity (differences in aspects like income, employment, education, living conditions, social protection) and unequal access to the health systems. Based on the health agendas and action lines that have been drawn up over the past decades (as in the strategy Health for All), the characteristics of the present situation make it possible to conclude that a series of achievements have been made, although part of the action agenda is still unfinished. In addition new challenges continue to arise as a result of emerging situations like the international financial crisis and the appearance of new risks, diseases and problems that are significant to public health. All this has implications when guiding the development,

compliance and monitoring of the different health agendas, both nationally and internationally (1, 2, 3, 4).

To face this situation, the countries are continuously developing and updating various national policies, plans and actions on health-related matters. The plans and agendas, however, are not always fulfilled as planned because there are multiple political, economic, cultural, and social factors that may hinder compliance with the objectives and goals set. In this regard, international cooperation and the establishment of international alliances and agreements may contribute to greater effectiveness of health actions, thereby benefitting all the countries involved. There are several organizations and integration agreements in South America, which besides having economic, commercial or political motivations, comprise social and health aspects, including joint actions and horizontal cooperation among countries regarding public health priorities. The final objective is to contribute more effectively and with greater solidarity to promote and improve the people's health and the health systems, thereby contributing to their well-being and a better quality of life (2, 4, 6).

The principal intergovernmental integration organizations that include health-related agendas are the Southern Common Market (MERCOSUR for its Spanish acronym), the Andean Community of Nations (CAN for its Spanish acronym), the Amazon Cooperation Treaty Organization (OTCA for its Spanish acronym), the Latin American Integration Association (ALADI for its Spanish acronym), and recently, the Union of South American Nations (UNASUR, for its Spanish acronym). It is worth noting that in addition Guyana and Suriname are members of CARICOM, which simultaneously involves them with another agenda. As a global framework of actions and priorities, the ministers of health of the Region in 2007 approved the Health Agenda for the Americas 2008-2017 (2,3,6,7,8). In the Americas, the

regional integration of the governments and the health component is given by the Inter-American integration system (OAS) and PAHO management

bodies, respectively. Table 1.1 shows the simultaneous participation that each country in South America has in the mentioned organizations.

Table 1.1. Intergovernmental organization of membership of countries of South America

Country	Population 2008 (millions)	Organization of subregional membership					
		CAN	MERCOSUR	OTCA	ALADI	CARICOM	OAS
Bolivia	9.7	CAN	Associated	OTCA	ALADI		OAS
Colombia	46.7	CAN	Associated	OTCA	ALADI		OAS
Ecuador	13.5	CAN	Associated	OTCA	ALADI		OAS
Peru	28.2	CAN	Associated	OTCA	ALADI		OAS
Venezuela	28.1		MERCOSUR	OTCA	ALADI		OAS
Brazil	194.2	Associated	MERCOSUR	OTCA	ALADI		OAS
Argentina	39.9	Associated	MERCOSUR		ALADI		OAS
Chile	16.8	Associated	Associated		ALADI		OAS
Paraguay	6.2	Associated	MERCOSUR		ALADI		OAS
Uruguay	3.4	Associated	MERCOSUR		ALADI		OAS
Guyana	0.7			OTCA		CARICOM	OAS
Suriname	0.5			OTCA		CARICOM	OAS

Source: OPS (2008) Población (5); Estados miembros: www.comunidadandina.org; www.mercosur.org; www.otca.org; www.aladi.org; www.otca.org; www.oas.org (9,10,11,12,13,14).

UNASUR is a new organization, still underway, which represents a new integration experience in South America, bringing together countries that belong to existing subregional organizations like CAN, MERCOSUR and CARICOM. Its objective is creating an opportunity of integration and union in the cultural, social, economic and political spheres with the participation and consensus of all its member countries (8). In December 2008, the Heads of State and Government of UNASUR approved the South American Health Council (UNASUR Salud) and its Working Plan (14). The Working Plan - which will be developed in depth by technical groups or commissions by work areas defined by the Council - has five priority actions:

- Epidemiological shield
- Development of universal health systems.
- Universal access to medicines.
- Health promotion and action on health determinants.
- Development and management of human resources in the health sector.

The epidemiological shield seeks to coordinate surveillance networks and the response of the Member States according to the provisions of the

International Health Regulations, giving priority to the detection and prompt elimination of outbreaks, and the elimination of communicable diseases.

Health promotion and actions on social determinants seek to create the South American Commission of Social Determinants to tackle the health determinants with a special focus on the vulnerable and excluded groups, and high-risk zones (South American Chaco, Altiplano, Guyana Shield, and others), and on equity both within each individual country and among the South American countries (in terms of development).

The development of universal health systems seeks guaranteeing the universal right to health, based on the Primary Health Care strategy, the strengthening of the health ministries, social protection, the development of health services provider institutions, reducing the existing inequalities among the Region's health systems and guaranteeing health care and access to health services, respecting diversity and the different cultures.

Universal access to medicines emphasizes the development of a South American drug policy and

a production system that permits the population to have greater availability and access - at least to essential medicines - as needed.

The development and management of human resources in the health sector is focused on evaluating the progress made by the different subregional groups regarding the identification of their needs of skills and knowledge to develop the essential human resource. This requires close observation and monitoring of the progress made, strengthening public health institutes and schools, education and training institutions in the health area, and a UNASUR Salud scholarship program.

The South American Health Agenda also underlines other priority actions like developing policies and actions (food security, healthy environment and climate change) among sectors; promoting a joint, coordinated response to emergency and disaster situations; and strengthening social participation, by promoting the incorporation of social and community organizations.

To assure the effectiveness of the South American Health Agenda, the principal strategic challenge is harmonizing and integrating the ongoing country plans and agendas with the different subregional agendas and the Health Agenda for the Americas 2008-2017 (3). In the extent that we work in a harmonized, coordinated network where each agenda contributes with specific, aggregate value according to its objectives and particular sphere of action, but contributing to the rest, we will be able to ensure the achievement of the different goals that have been set for the national health systems and the health of the peoples of South America. International integrated health development requires criteria of solidarity and equity by all the countries, so that the different objectives together seek protecting the achievements made in the health sector, working on the unfinished agenda and facing the new health challenges.

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2. Health in the Context of Development

The conditions of health and of the health systems in the countries of South America have been steeped in a complex, dynamic political, economic and social context. This context contains a series of interrelated social determinants that result in the existence of marked social and health inequities. The population groups with lower socioeconomic development are excluded from the benefits of development and social protection, they are more vulnerable and they consistently suffer an excess of avoidable health events.

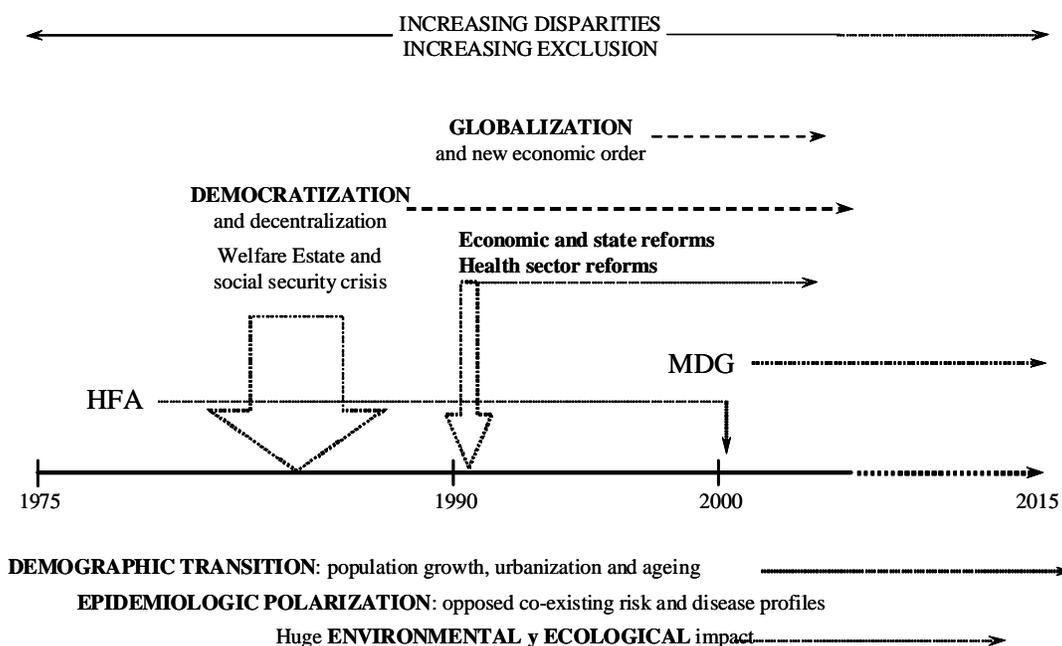
This situation is usually considered by the countries and integration blocks at the time of planning or carrying out health actions. Many of these factors, however, cannot be solved by the health sector or are outside the short-term reach of what each country can solve, especially in those countries with limited economic development. This situation ratifies the priority given by the agenda of UNASUR Salud of establishing a South American Commission of Health Determinants, whose specific working plans seek to focus on vulnerable and excluded groups and specific high risk zones.

2.1. The Political, Economic and Human Development Contexts

Over the past three decades, and because of its close relationship with development, the situation of health and the health sector health in the countries of South America has experienced

changes that reflect the influence of the political, economic and social context worldwide. Although each country has its particularities, the international context has had systematic historical influence on the demographic and health situations (1,2,3). Figure 2.1 illustrates some of the relevant aspects of global changes.

Figure 2.1. Political, social and health context since 1978: from Health for All to the Millennium Declaration



Source: Roses M. (2006). *La Salud en las Américas. Logros y Desafíos. Conferencia Magistral de la Directora OPS/OMS en La Habana, Cuba, Julio de 2006*

In 1978 the countries assumed the strategy Health For All, setting important health goals, originally to

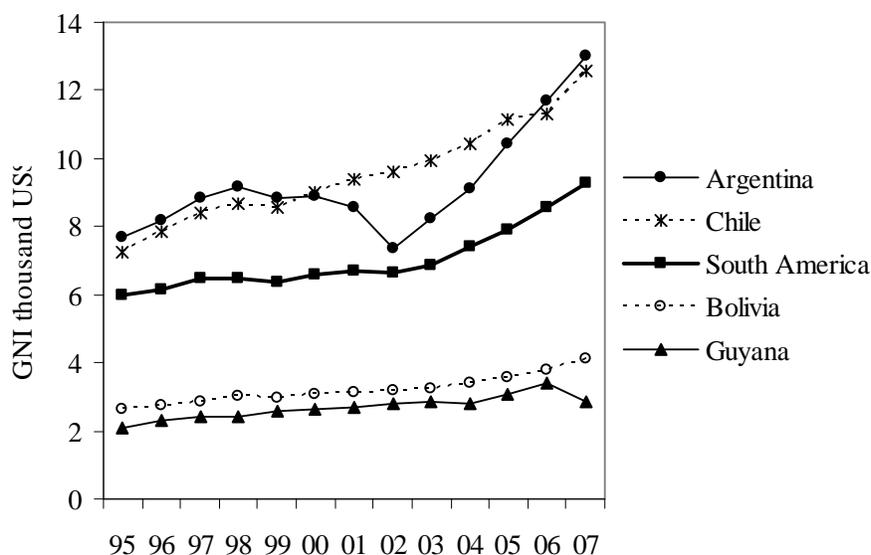
be reached by the year 2000 (1). Political and social changes with globalization processes and

economic and State reforms have occurred in the different countries, which have involved the health sector. Together with the globalization trend, an influential new economic order has appeared. In South America we have witnessed the expansion of democracy, with greater emergence of social policies and progressive integration processes (1,2). At present, globalization and regional integration are complementary processes (1,2). At present, globalization and regional integration are complementary processes affecting the different countries; regionalization seeks to constitute integrated blocks of countries with geographic vicinity and similar history, culture and interests. The group of countries could benefit from that integration, health being one of the priority components that tend to be included (2,3,4).

The economic changes related to the neoliberal reforms have had different types of impacts on the countries of South America. In general, economic growth and social development have occurred but

at the same time economic and social inequalities have increased in detriment of the poorer and excluded population groups with less social protection. The group of countries has shown economic growth over the past five-year period, but these countries continue being vulnerable to economic crises like the international crisis affecting the world since 2008. This crisis has implications for the population and the economy, and the latter has a significant impact on health. Over the past five-year period the countries showed a slight drop in unemployment and poverty (although with a larger number of poor and disadvantaged people), and inflation was relatively under control. The countries' vulnerability is related to difficult governance (the States have reduced their size and role), slow decentralization, groups of populations with low quality, informal and unstable employment, and the persistence of social inequalities that have a significant impact on health (2, 3).

Figure 2.2. Trend of Gross National Income (GNI) per inhabitant (adjusted for ppp, thousand US\$) in South America and in those countries with extreme levels, 1995 to 2007



Source: PAHO (2009) PAHO Table Generator for GNI 1995 to 2006; The World Bank, GNIPC Stats for GNI 2007

South America has an average economic development expressed by a Gross National Income (GNI, ppp value in thousand US\$) of US\$9,282 per inhabitant in 2007. In the 1995–2007 period, GNI per inhabitant rose slowly but steadily in all countries in South America (even in the countries with lower GNI) (Figure 2.2). The

income gap among countries, however, has tended to be broader between both ends, especially due to the significant increase in GNI in countries with greater economic growth like Argentina. In the 2001–2005 period, some countries grew at an annual rate of over 7%, like Argentina (7.6%),

Peru, (7.6%) and Uruguay (7.2%), whereas Ecuador grew only 1.0% (4,5).

Because of its magnitude and characteristics, the current international financial crisis may affect the economic development, social development and the environmental sustainability of each country. The Latin American economies are expected to suffer significant slowdown in their economic growth in 2009, growing less than 2% after five years of constant expansion (7,8,9). Although at the beginning the crisis seemed to affect only countries more closely integrated to the financial markets and the international economy (like Argentina, Brazil, Chile and Colombia), current forecasts are that a new phase of the crisis will also affect commodity prices, severely damaging

Argentina, Bolivia, Ecuador, Peru and the Bolivarian Republic of Venezuela (6,7).

Among the most likely scenarios, the crisis is expected to have a negative impact on income distribution (more critical in lower-income households), and to cause a rise in unemployment and in informal employment, which in turn will reduce the average income of the informally employed. The rise in inflation may affect the price of food and, together with poverty, it may negatively affect the nutritional status of the population (6,7,8). To face that situation and prevent a negative social and health repercussion, the countries are adopting various measures, among which are supporting the production market and creating different subsidies until the situation improves.

Table 2.1. Selected development indicators in countries in South America, 2008 or latest year available

Country	Population 2008 (millions)	Gross National Income (ppp) 2007 US\$ thousand	Poverty %	Indigence %	Literacy %	Life expectancy (years) 2008	Human Development Index 2006
Argentina	39.9	12.990	21,0	7.2	97.6	75.5	0.860
Bolivia	9.7	4.140	54,0	31.2	90.3	65.9	0.723
Brazil	194.2	9.370	30,0	8.5	90.5	72.6	0.807
Chile	16.8	12.590	13.7	3.2	96.5	78.7	0.874
Colombia	46.7	6.640	46.8	20.2	93.6	73.1	0.787
Ecuador	13.5	7.040	42.6	16,0	92.6	75.2	0.807
Guyana	0.7	2.880	...	...	...	67.1	0.725
Paraguay	6.2	4.380	60.5	31.6	93.7	72.0	0.752
Peru	28.2	7.240	39.3	13.7	90.5	71.7	0.788
Suriname	0.5	...	...	...	90.4	70.4	0.770
Uruguay	3.4	11.040	18.1	3.1	98.0	76.6	0.859
Venezuela	28.1	11.920	28.5	8.5	...	73.9	0.826
South America	388.0	9.282	32.4	11.1	92.1	73.2	0.810

Source: OPS Indicadores Básicos 2008 (población, alfabetismo, esperanza de vida al nacer), UNDP (IDH 2006); CEPAL 08 (Pobreza e indigencia, sobre la base de tabulaciones especiales de encuestas de hogares de los respectivos países; y de OPS, Salud en las Américas 2007 (pobreza Argentina 2005 y Uruguay 2004)) CEPAL, 2008 (INB por habitante).

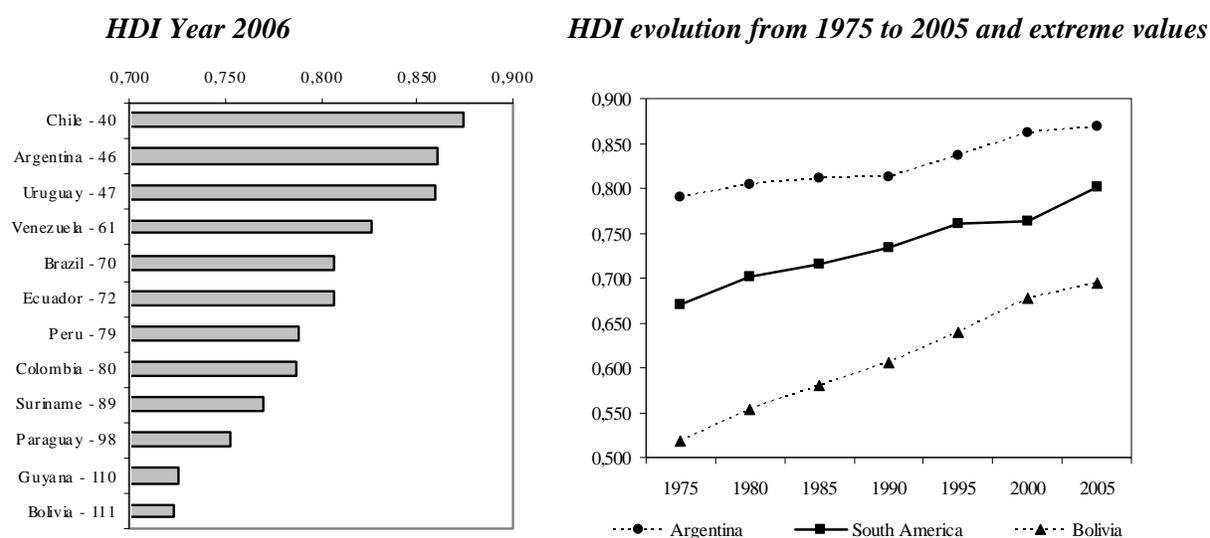
As a summary of economic and human development, Table 2.1 shows some basic socioeconomic indicators, including two that have an incorporated health component: life expectancy at birth and Human Development Index (HDI) (9,10,11,12,13). Chile and Argentina, consistently show higher socioeconomic and health indicators, whereas Bolivia and Guyana have the lowest development and health status, with the lowest life

expectancy at birth. Life expectancy at birth in South America is 73.2 years, with a higher average lifespan for women (76.6 years) than for men (69.6 years). There is a difference of almost 13 years in the life expectancy at birth among the countries that have the maximum and minimum indicators (Chile with 78.7 years and Bolivia with only 65.9 years).

The joint health and development situation reflected by the Human Development Index (HDI) was 0.810 for South America in 2006 (68th in the world ranking), ranging from 0.874 for Chile (40th) to 0.723 for Bolivia (111th) (Figure 2.2). The historical evolution of HDI in South America has

progressively improved between 1975 and 2005 for all the countries, with a gradual decline in the difference between the countries with extreme levels in 2005, which were Argentina with an HDI of 0.854 (38th that year, falling to 46th in 2006) and Bolivia with an HDI of 0.718 (117th) (13).

Figure 2.3. Human Development Index 2006 in countries of South America and evolution from 1975 to 2005



Source: PNUD (2008), Informe de Desarrollo Humano 2007/2008.

Table 2.2. Evolution of life expectancy at birth in countries of South America from 1980 to 2010

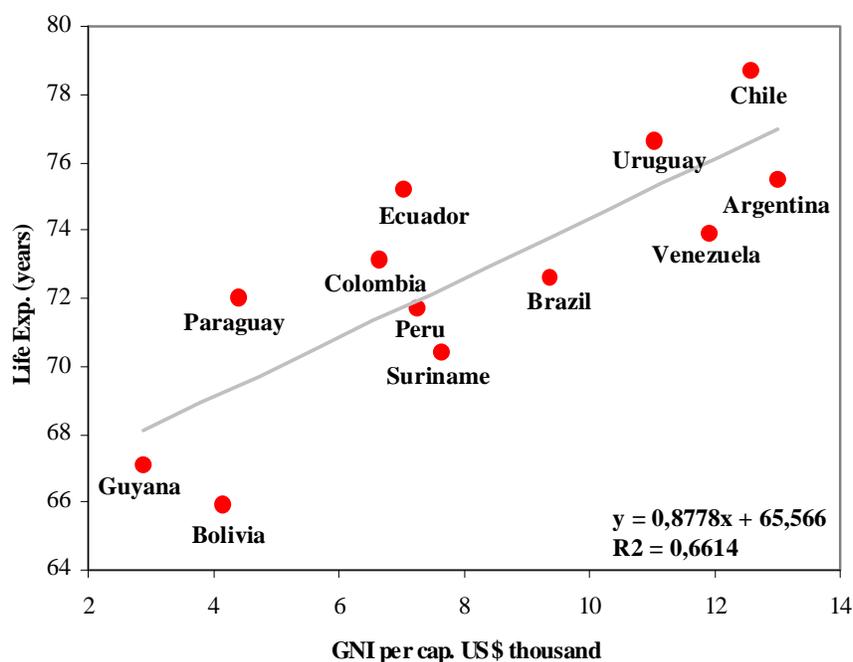
Country	Period					
	1980-1985	1985-1990	1990-1995	1995-2000	2000-2005	2005-2010
Argentina	70.2	71.0	72.1	73.2	74.3	75.2
Bolivia	53.9	57.3	60.0	62.0	63.8	65.5
Brazil	63.6	65.5	67.5	69.4	71.0	72.4
Chile	70.7	72.7	74.3	75.7	77.7	78.5
Colombia	66.8	68.0	68.7	70.3	71.6	72.8
Ecuador	64.5	67.5	70.0	72.3	74.2	75.0
Guyana	60.9	61.8	62.5	62.1	63.6	66.8
Paraguay	67.1	67.6	68.5	69.4	70.8	71.8
Peru	61.6	64.4	66.7	68.4	69.9	71.4
Suriname	67.6	68.2	68.6	69.0	69.1	70.2
Uruguay	65.0	72.1	73.0	74.1	75.2	76.2
Venezuela	68.8	70.5	71.5	72.2	72.8	73.8
South America	65.1	66.9	68.6	70.2	71.7	73.0

Source: CEPAL (2008) Panorama Socioeconómico de América Latina 2008.

Life expectancy at birth, as a basic approximation to the health status, has improved since 1980 in all the countries of South America. It is worth noting that this index rose for the Region eight years between the 1980-1985 period and the 2005-2010 period (Table 2.2). In the countries with a higher economic level, however, life expectancy at birth is

considerably higher than in countries with a lower economic level. For 2008, life expectancy at birth was estimated at 67.1 years for Guyana and 65.9 years for Bolivia; the latter figure being almost 13 years less than the life expectancy at birth for Chile (9,12).

Figure 2.4. Relationship between GNI per inhabitant (ppp value) and life expectancy at birth in the countries of South America



Source: CEPAL, 2008 para INB por habitante (valor ppp) 2007; Indicadores Básicos 2008, OPS, para esperanza de vida al nacer (años) 2008.

In the countries of South America there is a clear relationship between GNI per inhabitant and life expectancy at birth (Figure 2.4). Chile, Uruguay, Argentina and Venezuela have the best economic development and the highest life expectancy, whereas Guyana and Bolivia have a GNI that is one third or less than the highest group. GNI for low development countries is estimated at a little over US\$ 4,000 and life expectancy at birth at less than 68 years. For countries with similar economic development levels, however, there are differences in the life expectancy at birth, which probably reflects the heterogeneous influence of the multiple social determinants and the different coverage and effectiveness of the health systems. The countries with more equitable income distribution reach comparable life expectancy levels and sometimes

even higher than wealthier countries with more unequal income distribution (4).

2.2. The Social Context: Social Determinants of Importance to Health

Within the countries, the different development opportunities are expressed in social inequalities; therefore, the poor and those excluded from market and social protection benefits are highly vulnerable; and socioeconomic inequity may strongly contribute to health inequity. Among the social determinants of importance to health are economic income, employment, poverty, education, living conditions, access to water and basic sanitation, living in rural areas, and some ethnic, cultural and migration conditions, which concentrate in population groups suffering

hardship, vulnerable and excluded, with fewer opportunities to have access to health services (with the exception of services that can expand

their coverage to reach the most needy groups, like in the case of Chile (2,3,4).

Table 2.3. Share of income or spending of the population in countries of South America

	Survey Year	Share of income or expenditure (%)				Inequality measures		
		Poorest 10%	Poorest 20%	Richest 20%	Richest 10%	Richest 10% to poorest 10%	Richest 20% to poorest 20%	Gini Index
Argentina	2004	0.9	3.1	55.4	38.2	40.9	17.8	51.3
Bolivia	2002	0.3	1.5	63.0	47.2	168.1	42.3	60.1
Brazil	2004	0.9	2.8	61.1	44.8	51.3	21.8	57.0
Chile	2003	1.4	3.8	60.0	45.0	33.0	15.7	54.9
Colombia	2003	0.7	2.5	62.7	46.9	63.8	25.3	58.6
Ecuador	1998	0.9	3.3	58.0	41.6	44.9	17.3	53.6
Guyana	..	..	..	..	..	..	..	..
Paraguay	2003	0.7	2.4	61.9	46.1	65.4	25.7	58.4
Peru	2003	1.3	3.7	56.7	40.9	30.4	15.2	52.0
Suriname	..	..	..	..	..	..	..	..
Uruguay	2003	1.9	5.0	50.5	34.0	17.9	10.2	44.9
Venezuela	2003	0.7	3.3	52.1	35.2	48.3	16.0	48.2

Note: Gini Index indicated in %
Source: UNDP. Human Development Report 2007/2008

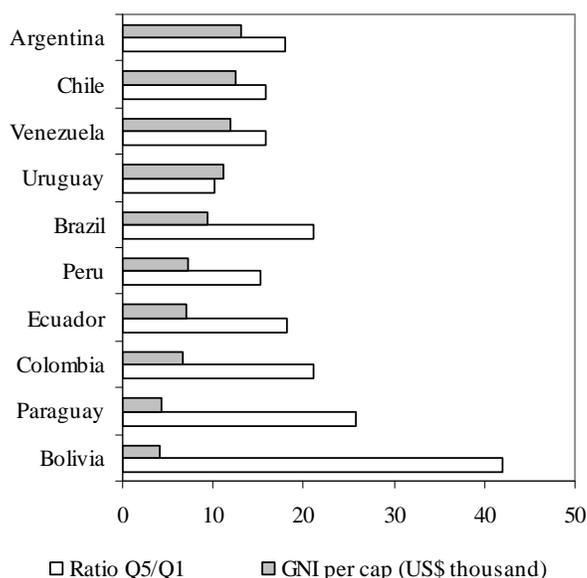
2.2.1. Economic income

The different population groups in the countries of South America have a different share of income or spending, which becomes more marked when comparing the richest and poorest deciles or quintiles (Table 2.3). In the countries with lower economic development, income inequality between the different population quintiles is even greater, like in the case of Paraguay and Bolivia (Figure 2.5) (13). Although there has been some progress

in recent years towards better income distribution, income disparity continues being significant and unfair.

Between 2002 and 2007, income asymmetry (represented by the Gini Index) has slightly diminished in most countries of South America, although the degree of inequality is quite different between the countries, being maximum in Brazil (a Gini of about 0.650) and minimum in Uruguay (a Gini of about 0.450) (13).

Figure 2.5 *Gross National Income (GNI) per inhabitant 2007 and ratio between the highest income quintile (Q5) and the lowest income quintile (Q1) in countries of South America, 2000-2005*



Source: CEPAL, 2008 para INB 2007 and OPS, 2008 para razón Q5/Q1

Note: Income ratio between the richest quintile (Q5) and the poorest quintile (Q/1) ordered by GDP (US\$ thousand 2007, ppp). No data available for Guyana and Suriname.

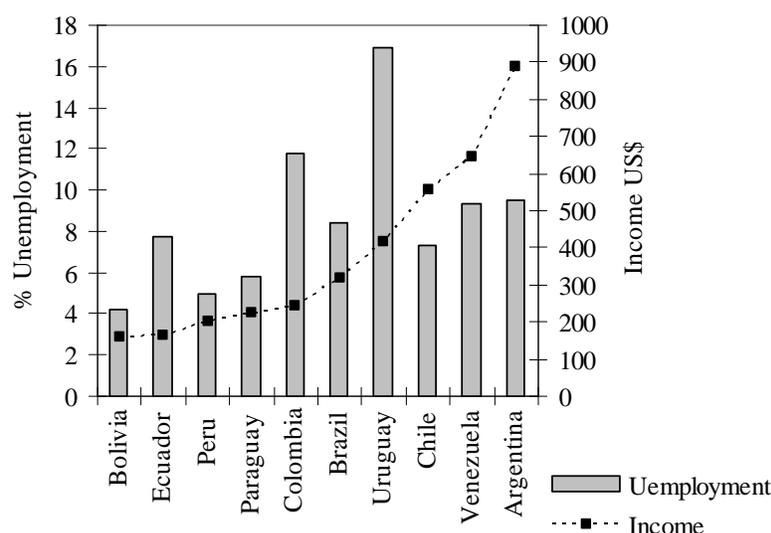
Source: CEPAL (2008) Panorama Socioeconómico de América Latina 2008.

2.2.2. Employment

In 2006 almost all the countries of South America had an unemployment rate below 10%, but the average income of each employed worker varied greatly, reaching almost US\$900 in Argentina and a little over US\$150 in Bolivia (Figure 2.6 and Table 2.4) (9). In general, the income per worker grows when the countries have greater economic development. Men are consistently better paid than

women (US\$447 and US\$298, respectively) and workers from high and medium-productivity sectors earn more than those from lower-productivity sectors, especially in countries with lower economic growth. In Peru, for example, workers from the high and medium-productivity sectors earn 2.6 times more, in Bolivia 2.4 times more and in Paraguay 2.3 times more; however, in Brazil, which has greater global economic development, workers only earn 2.2 times more.

Figure 2.6. Unemployment rates and income (US\$ per year 2000) per employed worker in countries of South America, 2006 or latest year available



Note: No data available for Guyana and Suriname.

Source: CEPAL (2008) Panorama Social de América Latina 2008. CEPAL: Santiago

Table 2.4. Income and salaries (US\$) of workers employed in sectors with different productivity, men and women, in countries in South America, 2006 or latest year available

País	Year	Total			Low productivity			High and middle productivity		
		Total	Men	Women	Total	Men	Women	Total	Men	Women
Argentina	2006	890	1055	665	783	1010	506	963	1084	787
Bolivia	2004	157	192	113	110	138	81	266	286	228
Brasil	2006	318	374	245	189	244	134	411	451	347
Chile	2006	555	639	428	437	586	287	607	657	516
Colombia	2005	243	276	201	227	290	159	260	262	258
Ecuador	2006	162	185	126	117	142	86	220	234	194
Paraguay	2005	224	275	162	149	188	108	338	385	265
Peru	2003	202	253	138	127	156	98	333	384	237
Uruguay	2005	417	477	341	240	294	184	471	542	592
Venezuela	2006	646	704	553	568	658	412	728	754	688
South America		384	447	298	# 360	197	465	398	754	688

Note: US\$ per year 2000

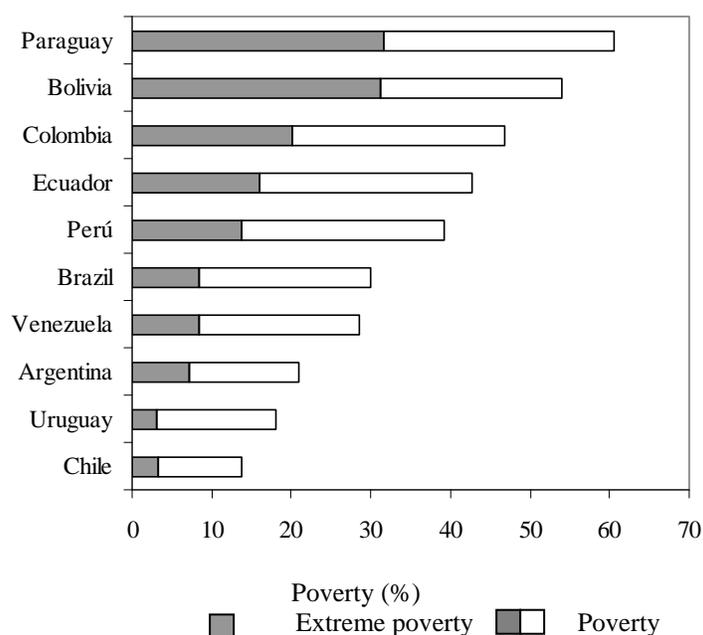
Source: CEPAL (2008) Panorama Social de América Latina 2008. CEPAL: Santiago

2.2.3. Poverty

Between 2006 and 2007, 125.3 million inhabitants in South America were below the poverty line, almost one third of the population (32.4%), 42.9 million of which lived in extreme poverty

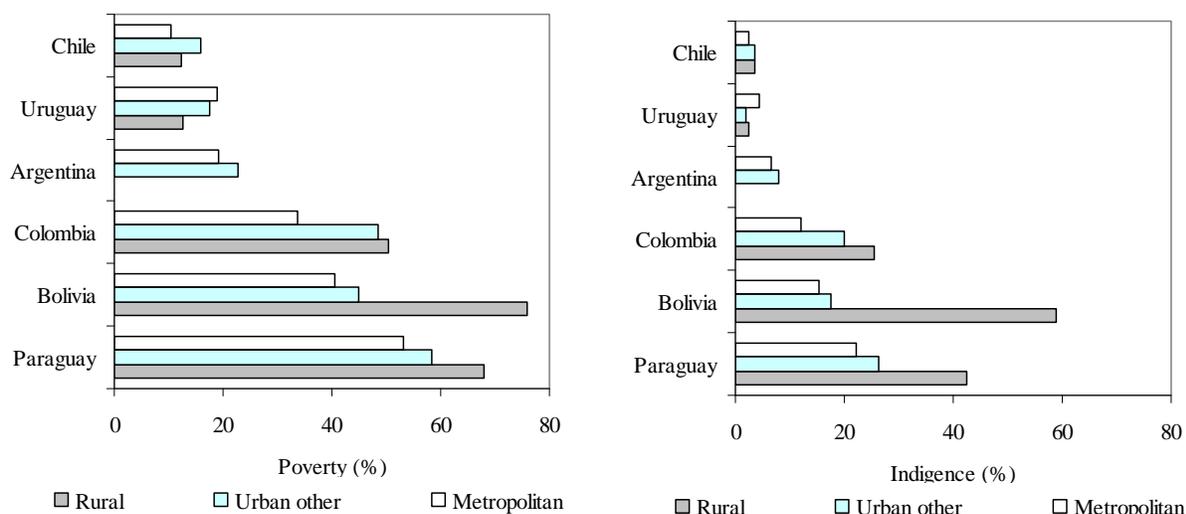
conditions—more than one of every ten inhabitants (11.1%) (9). There is great variation in the percentage of poverty among the countries of South America (Figure 2.7). This is related to both the economic status of each country and the income disparity in each country.

Figure 2.7. Share of poverty and extreme poverty in countries of South America, 2006-2007



Source: CEPAL (2008). Panorama Social de América Latina 2008. Information not available for Guyana and Suriname.

Figure 2.8. Poverty and extreme poverty in metropolitan areas and rest of urban and rural areas in selected countries of South America for 2007 or latest year available



Note: Countries with urban and rural information collected by ECLAC 2008. There is no rural data for Argentina. Source: CEPAL (2008) Panorama Social de América Latina 2008

Uruguay and Argentina went through an economic crisis that made it difficult to reduce poverty at the beginning of this decade, but both countries subsequently experienced an economic recovery that permitted them to improve those conditions

(9). According to ECLAC (2008), the rise in average income has been the predominant factor to reduce poverty and extreme poverty between 2002 and 2007 in countries like Argentina (urban area), Colombia, Ecuador (urban area) and Venezuela

(which showed a significant drop in poverty), whereas more than half of the reduction of poverty and extreme poverty in Bolivia, Brazil and Chile (besides Paraguay, in the case of extreme poverty), results from the distribution effect (9). In the different countries, poverty increases consistently from metropolitan sectors towards other urban and rural sectors (Figure 2.8).

In another approach to extreme poverty, 41% of Bolivians and 36% of Peruvians have unsatisfied basic needs (UBN), a category that meets three or more of the following indicators: low housing

quality (wall, roof and floor materials); lack of drinking water; no access to sanitation (sewerage system, W.C. connected to some sewage discharge system), lack of electric light, overcrowding (three or more people per room), lack of access to education (children between 7 and 12 years old attending an education establishment), and no consumption capacity by households (Table 2.5). The rural sectors in each country consistently have a higher level of extreme poverty, accounting for more than three fourths of the rural population in Peru and Bolivia (77% and 76%, respectively).

Table 2.5. Persons in an extreme poverty* situation according to unsatisfied basic needs (UBN) and deprivation according to health-related indicators, countries of South America, 2003-2006.

Country	Year	Extreme poverty *			House's floor	Access to drinking water	Sewage system
		Total	Urban	Rural			
Argentina	2006	...	2.0	...	1.5	1.2	13.9
Bolivia	2004	40.9	19.8	76.1	36.5	33.1	46.8
Brasil	2006	4.4	2.3	14.9	...	14.8	26.1
Chile	2006	1.5	0.5	8.4	7.8	3.7	6.7
Ecuador	2002	...	7.2	...	5.6	10.6	17.0
Paraguay	2005	21.3	7.4	40.4	16.4	31.2	35.2
Peru	2003	35.9	13.9	77.2	42.6	27.3	39.2
Uruguay	2005	...	0.9	...	...	1.9	6.6
Venezuela	2006	7.7	...	...	7.0	9.4	8.7

Note: (*) Deficit in three or more of the following indicators: housing quality, access to drinking water, sanitation, electric light, overcrowding, access to education, consumption capacity of households. No data available for Colombia, Guyana and Suriname.

Source: CEPAL (2008), Objetivos de Desarrollo del Milenio. La progresión hacia el derecho a la salud en América Latina, CEPAL: Santiago

2.2.4. Education

Education is also related to the socio-economic development status and in turn it constitutes an important social health determinant. Literacy in the Region rose from 88% of the population in 1980 to 93.7% in 2005, with different increases in school attendance in most countries. Nevertheless, access to education continues being higher for boys than for girls, particularly in rural areas and the quality of education differs according to family income. As a result of these disparities, some people have less opportunities of developing healthy life styles and having access to quality employment and better living conditions (9,13).

In general, the countries of South America have high literacy rates and the historical improvement of education is reflected in the higher literacy rate of the young generation group (97.1%) compared with the rate estimated for total adults (90.6%), and the higher percentage of children enrolled in primary education (Table 2.6) (13). Notwithstanding, there are limitations in the coverage of secondary education in those countries with less economic development and a larger rural population (among other factors that restrict education) like in Guyana, Ecuador, Paraguay and Bolivia.

Table 2.6. Literacy indicators and level of education in countries of South America, 2006

	Literacy (%)		% enrolled in education		Education Index
	Adult pop. (15+ years)	Young pop. (15 to 24 y.)	Primary	Secondary	
	Argentina	97.2	98.9	99.0		97.0	0.946
Bolivia	86.7	97.3	95.0	85.0	0.885
Brazil	88.6	96.8	95.0	...	0.888
Chile	95.7	99.0	90.0	100.0	0.918
Colombia	92.8	98.0	87.0	81.0	0.875
Ecuador	91.0	96.4	98.0	76.0	0.877
Guyana	...	...	...	64.0	0.939
Paraguay	93.5	95.9	88.0	81.0	0.864
Peru	87.9	97.1	96.0	90.0	0.885
Suriname	89.6	94.9	94.0	...	0.848
Uruguay	96.8	98.6	93.0	91.0	0.955
Venezuela	93.0	97.2	91.0	91.0	0.886
South America	90.6	97.1	93.8	88.5	0,893

Source: UNDP (2008) Human Development Report 2007/2008.

2.2.5. Drinking water and basic sanitation

At different coverage levels achieved in each country, the rural sectors have less access to drinking water and sanitation (Table 2.7). This is

more critical in countries which at a national and sub-national level have areas with lower socio-economic development (Bolivia and Paraguay) and with a high percentage of rural population (Colombia and Brazil) (11).

Table 2.7. Urban and rural coverage of drinking water and sanitation in countries of South America, 2000-2005

Country	Drinking water (%)			Sanitation (%)		
	Total	Urban	Rural	Total	Urban	Rural
Argentina	96	98	80	91	92	83
Chile	95	98	72	94	97	74
Venezuela	83	85	70	68	71	48
Uruguay	100	100	100	100	100	99
Brazil	91	97	58	77	84	37
Peru	84	92	63	72	85	36
Ecuador	95	98	91	84	91	72
Colombia	93	99	77	78	85	58
Paraguay	77	94	52	70	89	42
Bolivia	86	96	69	43	54	22
Total	91	96	66	78	84	48

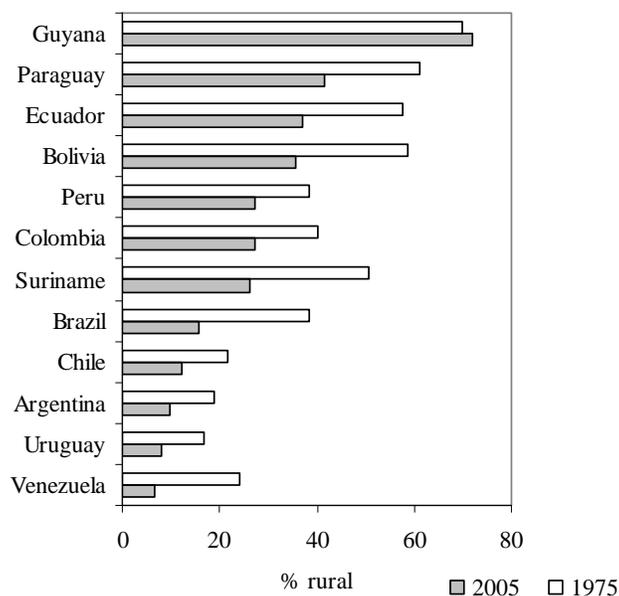
Source: OPS (2008) Situación de salud de las Américas. Indicadores Básicos 2008.

2.2.6. Rural population

Almost one fifth of the population of South America lives in rural areas (18.3%). The less developed countries also tend to have a larger rural population, like Guyana (71.8%), Paraguay (41.5%) and Bolivia (35.8%) (Figure 2.9) (14). Since 1975, when almost one third of the population lived in rural areas (36.2%), urban areas

have expanded in all countries, in many of them with absolutely no planning at all. Although this phenomenon of increasing urbanization facilitates physical nearness to services, it may be associated with the adoption of unhealthy consumption patterns and life styles—inadequate diet, obesity, a sedentary life style, substance abuse—, the deterioration of social support networks, and an increase in injuries and violence (2,3,14).

Figure 2.9. Rural population in countries of South America, 1975 and 2005



Source: CEPAL (2008) Objetivos de Desarrollo del Milenio. La progresión hacia el derecho a la salud en América Latina y el Caribe CEPAL: Santiago, www.eclac.org

As indicated in other sections of this document, life in rural sectors is related to lower income, lower housing conditions, and less education and sanitation, all of which are social determinants related to health events and deaths that can be prevented. In rural areas, there is also less access to health care, especially to more complex health services (2, 4, 6).

2.2.7. Social vulnerability

There are population groups in South America that because of their socio-economic conditions, displacement, ethnic or cultural origin, and geographic location are extremely vulnerable to the adverse circumstances of the physical or social environment, showing greater risk factors and a

higher probability of becoming ill and dying. To this we can add less social protection and lower access to health care because of geographic (in the case of rural areas or poor settlements on the outskirts of large cities), cultural or economic barriers (3,4).

Social vulnerability based on the estimation of unsatisfied basic needs (UBN) is consistent with the level of socio-economic development and the percentage of people under the poverty line in the countries. (Annex 3). The information based on census data from the PAHO/CELADE Project on social vulnerability ratifies the high degree of unsatisfied basic needs in Bolivia, which contrasts with the relatively low level in Argentina, Brazil and Chile (11).

Table 2.8. Percentage and number of indigenous inhabitants in countries of South America, 2004

Indigenous proportion	Quantity of indigenous inhabitants (thousand)		
	Less than 100	100 to 500	More than 500
More than 40%			Peru Bolivia Ecuador
5% to 40%	Suriname		Chile
Less than 5%	Guyana	Argentina Brazil Paraguay Venezuela	Colombia

Sources: OPS (2007), Salud de las Américas 2007, Basado en reportes de evaluación de la década internacional de los pueblos indígenas en el mundo, OPS, 2004; Pueblos indígenas, pobreza y desarrollo, Banco Mundial 2005; Lancet 2006; 367: 1859-69

Thought there is not a precise estimate for the region, an important part of the population in South America is made up of indigenous inhabitants, especially in Peru, Bolivia and Ecuador (Table 2.8). The indigenous peoples, however, tend to be particularly vulnerable in health matters. Because of factors like socio-economic and cultural aspects, the fact of living in rural areas and their lower possibility of integrating to productive markets, so

they have less opportunities of enjoying healthy living conditions and life styles, and of benefiting from health promotion and prevention (4,9). The different countries consistently record an increase in poverty in groups of indigenous or Afro-descendant populations, especially in rural areas, reflecting the vulnerability of such groups (Table 2.9) (4,9).

Table 2.9. Poverty (%) in population groups and indigenous and Afro-descendant groups in urban and rural areas of selected countries of South America, 2007 or latest year available

		Urban area		Rural area	
		Not indigenous or afro-descendent	Indigenous or afro-descendent	Not indigenous or afro-descendent	Indigenous or afro-descendent
Bolivia	2007	11.3	21.4	46.8	63.8
Brazil	2007	6.3	9.5	17.8	21.4
Chile	2006	3.1	4.2	3,0	6.2
Ecuador	2007	11.6	20,0	20.7	32.3
Paraguay	2007	18.1	31.7	26,0	47,0

Source: CEPAL (2008) Panorama Social de América Latina 2008. CEPAL: Santiago

2.2.8. Exclusion and social protection

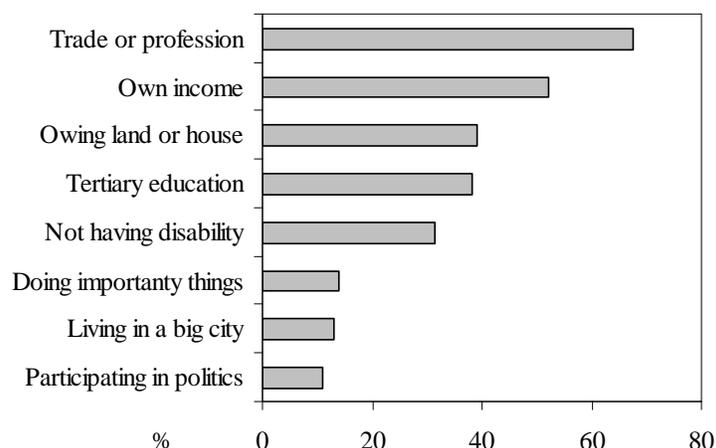
There are different factors that contribute to exclude persons from the benefits of the productive market and the social network. These factors concentrate on people who are socio-economically deprived, poor and who are not inserted in the social network. Persons perceive that there are a series of things they consider important to feel part

of society (Figure 2.10) (9). Two thirds of the people mention as their first priority, having a skill or profession (67.7%) and half of them consider important having one's own income (52.0%). Owning a house, land or property and higher education are also highly valued (39.1% and 31.4%, respectively). Almost one third (31.4%) of the people perceive the importance of not having any disability and this is a factor that has health

implications (prevention, management, rehabilitation, promotion of healthy life styles). The expectation of living in a big city motivates

migrations and has economic, social and health implications.

Figure 2.10. Principal types of things that persons should have to feel part of society in South America, 2007.



Note: Percentage of people that perceive things they should have to be part of society. Data for Guyana and Suriname not included.

Source: CEPAL (2008) Panorama Socioeconómico en América Latina y el Caribe, en base a tabulaciones especiales de la Encuesta Latinobarómetro 2007. Caribe CEPAL: Santiago

Table 2.10. Social security coverage in selected countries of South America, 2006 or latest year available

Country	Year	Total	Area		Urban area		Women	Men
			urban	rural	formal	informal		
Argentina	2006	...	60.0	...	68.8	22.3	55.0	64.1
Bolivia	2004	15.6	20.2	9.0	44.4	6.0	16.6	14.8
Brazil	2006	49.5	56.0	20.5	78.7	35.1	48.3	50.4
Chile	2006	66.7	68.1	55.7	82.6	51.6	62.9	69.0
Ecuador	2006	28.7	33.1	20.4	59.6	14.9	30.4	27.6
Paraguay	2005	14.1	20.0	6.0	46.5	4.4	15.3	13.4
Peru	2003	13.7	20.1	3.4	46.2	4.7	9.8	16.8
Uruguay	2005	...	61.1	...	82.7	40.5	60.7	61.5
Venezuela	2006	60.9	...	...	68.6	16.1	65.0	58.2

Source: CEPAL (2008) Panorama Socioeconómico en América Latina y el Caribe, CEPAL: Santiago

Social protection through social security is important for the population that works and can contribute to the social security systems. Social security coverage permits workers to be socially protected by affiliating to social security systems and having access to the health insurance systems. In 2006, two thirds of the workforce stated being affiliated to a social security system (66.7%). In Venezuela this percentage was somewhat lower

(60.9%) and half of the employed in Brazil enjoyed this condition (49.5). Coverage in urban sectors is noticeably higher than in rural sectors; it is also higher in the formal urban sector and in men (Table 2.10) (9). In all the countries there is a significant correlation between the household's income level and social security coverage, as higher-income workers can pay a higher contribution, thereby enjoying greater coverage (9).

2.3. The Environmental Context

South America has remarkable natural resources and environmental conditions that represent a huge wealth for the Region (water, natural gas, forests, agriculture and livestock potential). The industrialization process and mass exploitation of natural products like forests, however, leads to a significant deterioration of the environmental conditions. Deforestation, soil erosion and desertification are affecting all the countries in the Region to a greater or lesser extent, threatening food and water supply safety, and increasing the people's vulnerability to natural disasters (3,4).

Accelerated and uncontrolled urban and industrial growth with lack of urban planning has led to greater pollution of the air (especially from industrial and vehicle sources), water and soil. New urban settlements, made up of groups like migrants from rural areas, in general, have restricted economic, housing, sanitation and living conditions, which together restrict the opportunities of having physical and social environments that permit enjoying a healthy life style, making health promotion and prevention more difficult (limited social network, little education, inadequate diets, substance abuse and violence) (3,4).

Natural disasters and those caused by man affect the environment and the health status of the Region's population both directly—like in the case of earthquakes or flooding—or indirectly, like deforestation or the loss of green areas in polluted cities with high population density. Climate change, due to different causes but chiefly from industrialization, which deteriorate ecological conditions, implies risks, which there is complete awareness of, however, no effective control measures have been implemented yet (4).

Greater commercial trade and movement of people (facilitated by globalization) and the free trade agreements entered into have conducted to strengthening the sanitary legislation, controls and surveillance so that the countries and regions are alert to face the emergence of any serious, unforeseen public health problem that may affect the environmental conditions and the health of the people. This aspect is duly addressed in the International Health Regulations, as well as in the local and international efforts to apply it (16, 17).

2.4. Implications for an Integrated Health Agenda

The countries have a varying degree of knowledge, monitoring and surveillance of health and development. The agendas, however, may be better guided and coordinated (and adapted to emerging conditions like the current international financial crisis) if the countries know these aspects and they are duly monitored. In this regard, the objective of UNASUR Salud of promoting comprehensive information and communication systems is extremely relevant. This requires an active network including an integrated system reflecting the countries and agendas included in each level. Because of the multiple information systems (approaches, coverage, quality, performance, information managed), perhaps establishing a South American Observatory in Health may be more operational. The Observatory would be based on the different specific information, surveillance and monitoring systems and it would be a tool for policymaking and making decisions on development. Its components would be useful to guide the health sector's action, the intersectoral action and the joint and proactive action of the international agendas and entities.

The social determinants that are relevant to the population's health status have historically been a major concern to the countries of South America; however, many of the determinants exceed the efforts of the governments and health sector. In general, the countries have set policies and intersectoral plans that take development into consideration and important partial achievements have been obtained in many areas (3,4). The unfinished agenda continues being a challenge with regard to crucial matters like nutrition and development, mother-child care, health promotion, basic sanitation conditions, vector management, and other factors that favor the persistence of avoidable communicable diseases.

The follow up and priority given to the efforts to comply with the Millennium Development Goals of the United Nations are also contained in the statements of the joint agreements made in the regional summits on subjects related to human development subjects (14, 15).

The proposal made by UNASUR Salud of creating a Commission of Social Determinants evidences

that this subject has priority implications for an integrated regional approach seeking to improve social determinants and preventing them from resulting in health inequities (16).

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3. Health Conditions and Trends

Health conditions—especially risk factors, avoidable disease and death—have some components that are closely linked to social determinants, intersectoral action of health promotion and prevention, and timely, effective access to prevention, treatment and rehabilitation measures that permit maintaining and improving the health of the population, especially of the most vulnerable groups.

Health conditions are also related to the demographic and epidemiological profiles of the different countries and population groups, as well as to the more relevant mortality and avoidable morbidity that cause the biggest burden of disease, complications and avoidable deaths or at least premature deaths. In this regard, the UNASUR Salud Agenda has main focus on communicable diseases.

3.1. Demographic Aspects

The population of the countries of South America has shown unequal growth, with a gradual reduction in its pace, changes in its age composition and a marked trend towards the aging of the population. This has contributed to an epidemiological transition process due to the absolute and relative increase in the incidence and prevalence of health problems and the needs that increase with age (1,2,3).

South America has a total of 388 million inhabitants and its countries have populations of varying sizes. Brazil has almost 200 million

inhabitants, whereas Suriname has less than half a million. Between 1975 and 2005, the South American population increased by 72.8%, although there are countries like Venezuela and Paraguay where the population more than doubled (Table 3.1). From 2005 to 2015 (the year when the fulfillment of the Millennium Development Goals will be assessed) the population will grow at a slower rate, especially in countries like Uruguay, which have an aging population and low fertility rates (11). These changes in the number and composition of the population by age group must be considered in the projections of local and international health action.

Table 3.1. Size and increase of the population of the countries of South America between 1975 and 2015.

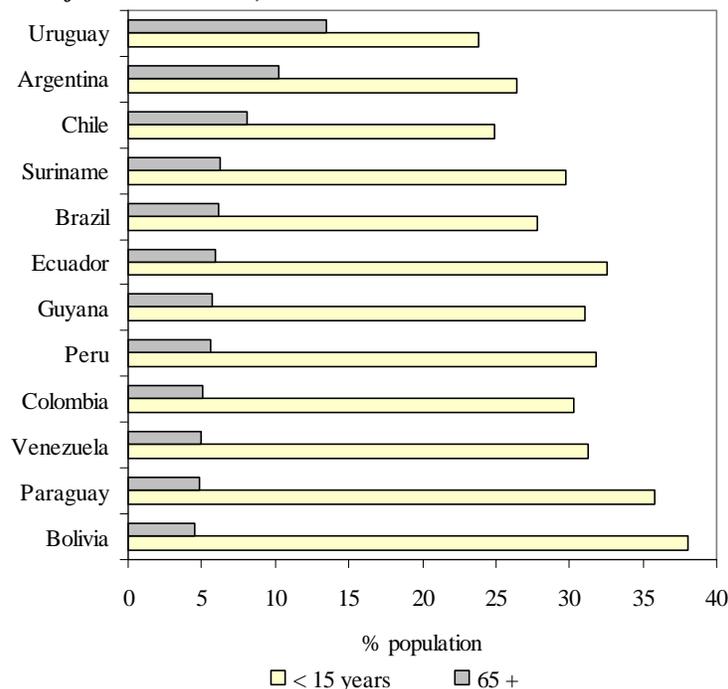
	Population 1975 (millions)	Increase between 1975 & 2005 %	Population 2005 (millions)	Increase between 2005 & 2015 %	Population 2015 (millions)
Argentina	26,0	48,8	38,7	10,3	42,7
Bolivia	4,8	91,7	9,2	18,5	10,9
Brazil	108,1	72,8	186,8	12,4	210,0
Chile	10,4	56,7	16,3	9,8	17,9
Colombia	25,3	77,5	44,9	12,9	50,7
Ecuador	6,9	89,9	13,1	11,5	14,6
Guyana	0,7	0,0	0,7	0,0	0,7
Paraguay	2,8	110,7	5,9	18,6	7,0
Peru	15,2	79,6	27,3	12,8	30,8
Suriname	0,4	25,0	0,5	0,0	0,5
Uruguay	2,8	17,9	3,3	3,0	3,4
Venezuela	12,7	110,2	26,7	17,2	31,3
South America	216,1	72,8	373,4	12,6	420,5

Source: UNDP (2008), Human Development Report, 2007/2008.

South America has 112.1 million children under 15 years old (28.9%), 251.2 million inhabitants between 16 and 64 years old (65.7%) and 24.7 million people 65 years old and over (6.4%). The age composition is also historically related to the socioeconomic development because while the more developed countries have a larger proportion of adults 65 years old and over and a smaller proportion of children, like Argentina and Uruguay, the lower-income countries, like Bolivia and Paraguay, have one third less than the proportion of elderly existing in the more developed, aging countries and a larger proportion of children (Figure 3.1) (11). Poor countries tend to have a younger population, which has implications for the disease type and burden that predominates

in children, on one hand, and in the elderly, on the other hand. The increase in the elderly population also has implications regarding more complex and expensive health care services required by this age group, which concentrates chronic diseases and the final phase of diseases (2). Along with this, we have the damages caused by communicable diseases, which can be prevented and controlled (especially in locations with less socioeconomic development and areas with vector-borne diseases) and chronic-degenerative diseases, which have increased due to life style changes and the aging of the population; therefore, chronic, non-communicable diseases and injuries replace communicable diseases as the leading causes of death and as the greatest disease burden (2,3,4).

Figure 3.1. Proportion (%) of children under 5 years old and adults 65 years old and over in the countries of South America, 2005



Source: UNDP (2008), Human Development Report 2007/2008.

Populations are influenced by the migration from rural to urban areas within the countries and migration among countries. International migrations constitute one of the most complex and challenging situations in the countries of the subregion, because the origin and destination patterns constantly change; there are, however, interregional and intraregional flows that have been more or less characterized. In general, there is a

labor-motivated migration pattern linked to the profound economic asymmetries among the countries. Another important cause for migrating is the displacement of populations due to political violence and internal conflicts, like in the case of Colombia. The United Nations High Commissioner for Refugees (UNHCR) estimates the number of internally displaced people in the countries of the Andean Subregion at between 2 and 3.3 million,

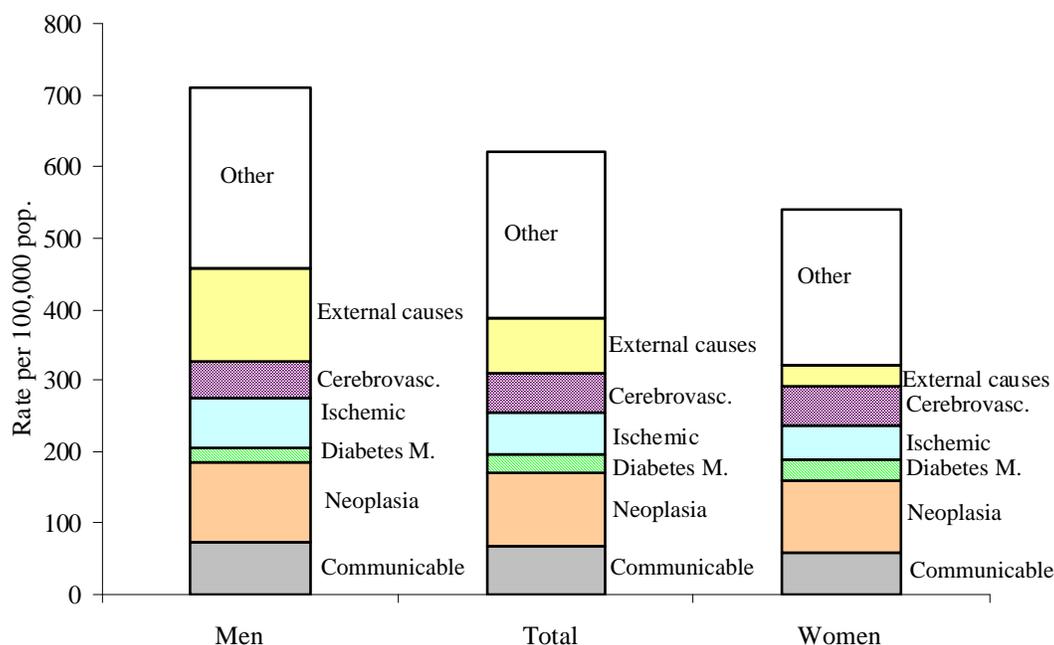
many of whom seek for refuge in other countries in the subregion (2,3).

3.2. Mortality and Morbidity

Every death that occurs is important, especially when it reflects the most visible end of an iceberg of problems, diseases and risk factors that could have duly been prevented and treated, at least to avoid disease complications, disabilities and premature deaths. In this regard, the most relevant mortality is the one that occurs in excess (in relation to countries with greater socioeconomic development and lower mortality) and most of which can be considered avoidable, like communicable diseases that can be prevented and controlled (through vaccination, vector control and timely health care), external causes (like

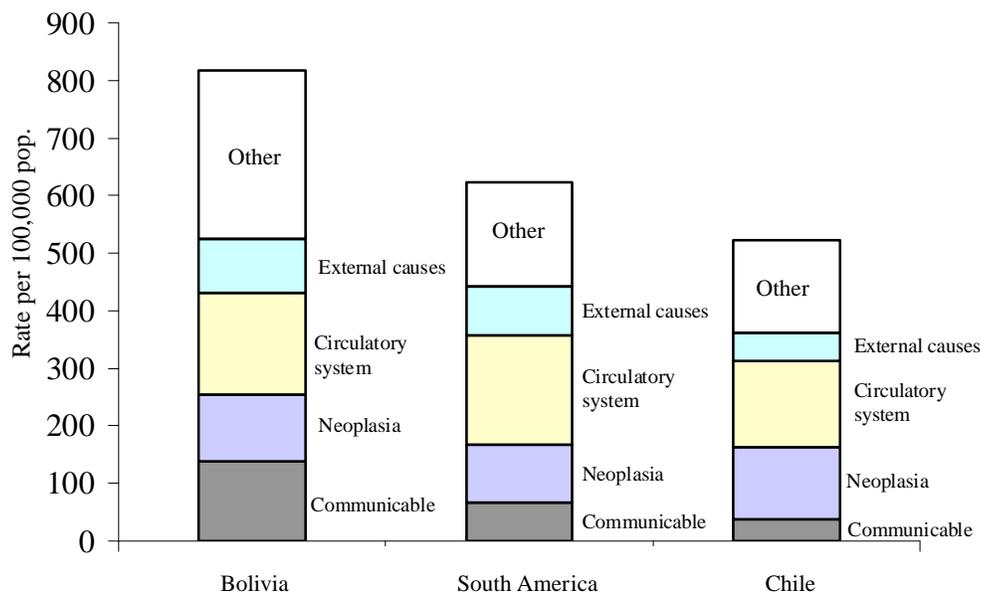
homicides, suicides, traffic accidents, and labor accidents) and chronic diseases, their risk factors and their progressive complications. Communicable diseases cause 10.6% of deaths (10.2% in women and 10.9% in men). Malignant tumors cause 17.1% of deaths, diabetes 4.1%, ischemic heart diseases 9.4%, vascular brain diseases 8.7%, and external causes 12.7%. The latter cause 18.0% of deaths in men and only 5.2% in women. Figure 3.2 shows the causes of mortality per sex. When comparing mortality of Bolivia and Chile, which have the highest and lowest life expectancy at birth, respectively (Figure 3.3), we can see that Bolivia has a higher rate of preventable deaths, which is even more marked in the case of deaths caused by communicable diseases and external causes (2,5).

Figure 3.2. Principal causes of mortality (per 100,000 inhabitants) in men and women in South America, 2003 – 2005 period.



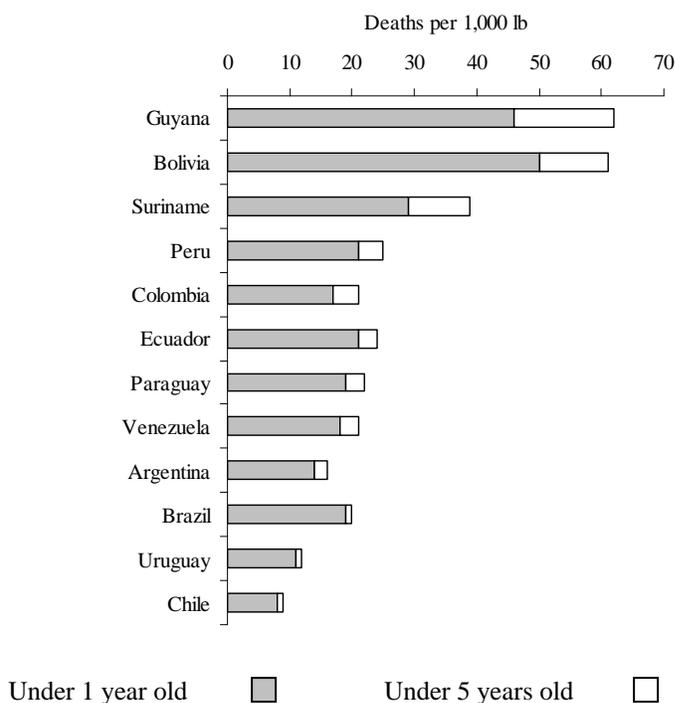
Source: OPS (2008), Situación de Salud de las Américas. Indicadores Básicos 2008.

Figure 3.3. Principal causes of death (per 100,000 inhabitants) in South America and in Bolivia and Chile (the countries with the highest and lowest mortality, respectively), 2000 – 2004 period.



Source: OPS (2007), Situación de Salud de las Américas. Indicadores Básicos 2007.

Figure 3.4. Infant mortality and mortality of children under 5 years old in countries of South America 2006



Source: OPS (2008) Indicadores Básicos 2008 and WHO (2008) Countdown to 2015, Tracking Progress in Maternal, Newborn & Child Survival.

Mortality due to some avoidable causes, such as cervical and breast cancer, septicemia, malnutrition and acute respiratory infections, can be reduced with greater effectiveness and coverage of primary health care (3.4). Because of the historical priority that has been given to maternal and infant care, infant mortality has steadily fallen in South America, although there are still differences among the countries, which are associated with the level of development of each one and the influence of the different social determinants on health. Figure 3.4 summarizes mortality in children under 5 years old

in the countries of South America in 2006, with its components of mortality in the newborn, rest of the first year of age and between 1 and 4 years old.

Table 3.2 summarizes the general trend of a marked reduction shown by mortality of children under 5, child and maternal mortality in the countries of South America between 1990 and 2006. There are substantial differences, however, between the national levels of maternal and infant mortality, which in turn is related to the socioeconomic development of the countries (7).

Table 3.2. Variation in infant, children under 5 and maternal mortality rates in countries of South America

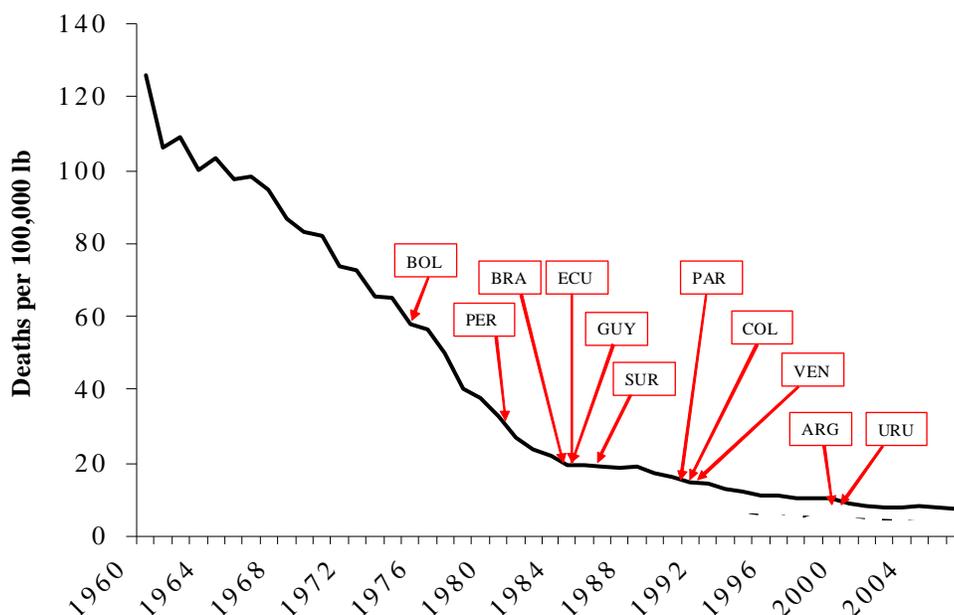
País	Infant mortality rate			Mortality rate under 5 year			Maternal mortality rate		
	1990	2006	Variation %	1990	2006	Variation %	1990	2005	Variation %
Argentina	25	14	-44,0	29	16	-44,8	100	77	-23,0
Bolivia	89	50	-43,8	125	61	-51,2	650	290	-55,4
Brazil	48	19	-60,4	57	20	-64,9	220	110	-50,0
Chile	16	8	-50,0	21	9	-57,1	40	19	-52,5
Colombia	26	17	-34,6	35	21	-40,0	100	130	30,0
Ecuador	43	21	-51,2	57	24	-57,9	150	210	40,0
Guyana	64	46	-28,1	88	62	-29,5	470	161	-65,7
Paraguay	33	19	-42,4	41	22	-46,3	160	150	-6,3
Peru	58	21	-63,8	78	25	-67,9	280	240	-14,3
Suriname	35	29	-17,1	48	39	-18,8	72	72	0,0
Uruguay	20	11	-45,0	23	12	-47,8	85	20	-76,5
Venezuela	27	18	-33,3	33	21	-36,4	120	57	-52,5
South America	41	19	-53,7	51	21	-58,8	189	119	-37,0

Source: WHO (2008), Countdown to 2015, Tracking Progress in Maternal, Newborn & Child Survival. Maternal mortality data; Suriname; 2005 projection, Lancet 2007.

As empirical reference, figures 3.5 and 3.6 indicate the mortality recorded in Chile between 1960 and

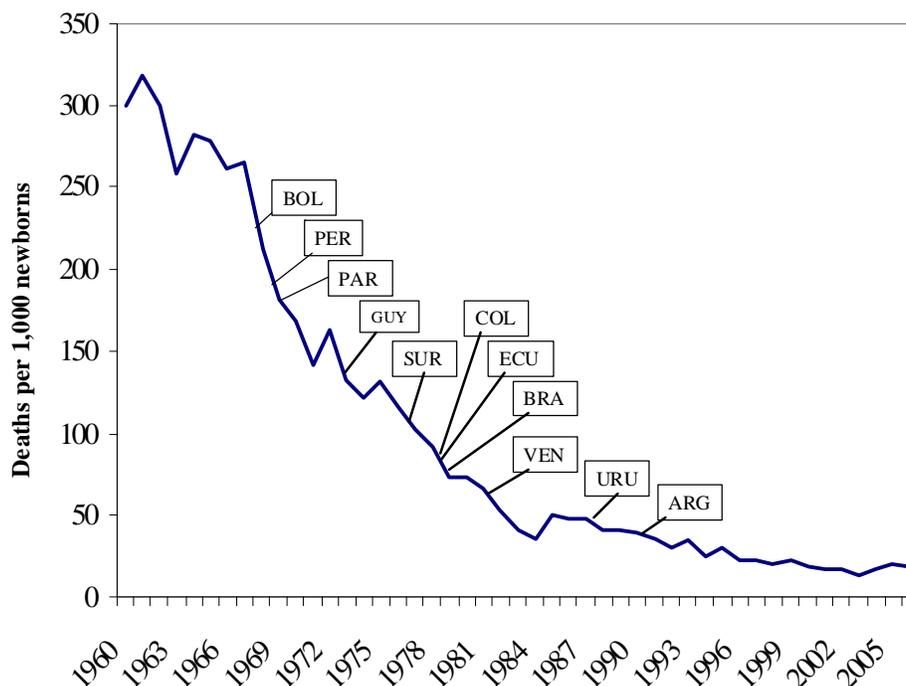
2006 and the level estimated for each country in 2006.

Figure 3.5. Child mortality in Chile 1960-2006, as empirical reference for 2006 mortality in the countries of South America



Source: OPS (2008) *Indicadores Básicos 2008*, Ministerio de Salud de Chile, *Serie de Estadísticas Vitales*; Jiménez J. and Romero M.I., Reducing Infant Mortality in Chile: Success in two phases *Health Affairs* 2007; 2:458-65.

Figure 3.6 Maternal mortality in Chile 1960-2006, as empirical reference for 2006 mortality in the countries of South America



Source: OPS (2008) *Indicadores Básicos 2008*; Ministerio de Salud de Chile, *Serie de Estadísticas Vitales*.

Table 3.3. Level and principal causes of maternal mortality in countries of South America with different health care coverage, 2007.

Countries	Health care coverage %	Maternal mortality rate (per 100.000 newborns)		
		16-49	50-100	> 100
Argentina, Chile, Uruguay	Contraception 75% - 80% Antenatal 80% -100% Child delivery 80% -100%	Abortion Preeclampsia & eclampsia Haemorrhage		
Brazil, Colombia, Ecuador, Venezuela	Contraception 40% - 70% Antenatal 65% -95% Child delivery 67% -98%		Preeclampsia & eclampsia Haemorrhage Abortion	
Bolivia, Paraguay Peru	Contraception 28% - 60% Antenatal 50% -85% Child delivery 30% -85%			Haemorrhage Preeclampsia & eclampsia Obstructed partum

Source: Schwarcz & Fescina, Updated in 2007: Maternal Mortality in Latin America and the Caribbean. Schwarcz & Fescina , The Lancet 356. December 2000.

Table 3.3. summarizes the consistence between higher maternal mortality in countries with a lower economic level (like Bolivia, Paraguay, Peru), which have highly avoidable causes of maternal deaths, like obstructed labor and lower health care coverage in relation to contraception and prenatal control and delivery assistance (10).

It is increasingly acknowledged that the intervention of risk factors of the principal causes of mortality cannot be controlled by the health sector, like external deaths, cardiovascular diseases, diabetes, chronic obstructive pulmonary diseases, and HIV/AIDS. In the case of communicable diseases, there is a special focus on HIV/AIDS as a new threat and on the reappearance of tuberculosis and malaria. These three diseases represent a special challenge for the Global Fund, especially created to combat such diseases. Among communicable diseases, there is persistence of the traditional threats like malaria and new ones have appeared like HIV/AIDS, and others have reappeared like tuberculosis, and changes have

occurred in the characteristics of some agents, like the influenza virus, whose variants could provoke a pandemic with serious consequences. Along with this, a group of diseases that have a disproportionate impact on developing countries and that are closely related to poverty, still subsist.

The rate of HIV/AIDS and tuberculosis is 0.6 and 73.5 per 100 thousand inhabitants, respectively. The countries of South American have shown a different evolution in HIV/AIDS prevalence between 2001 and 2007, with a slight rise in Bolivia, Columbia, Paraguay, Peru and Venezuela. In Suriname, prevalence has practically doubled during that same period (Table 3.4). On the other hand, there has been a general downward trend in the prevalence and mortality of tuberculosis, with the exception of Guyana, where prevalence more than tripled and mortality grew more than four fold and at present, together with Bolivia, they have the highest prevalence and mortality rates due to tuberculosis in South America (11).

Table 3.4. Variation in HIV/AIDS and tuberculosis prevalence rates, and mortality due to tuberculosis in countries of South America, in relation to a previous year taken as reference

Country	HIV/AIDS prevalence rate (15-49 years) per 100,000 pop.		Tuberculosis prevalence rate per 100,000 pop.		Tuberculosis mortality rate per 100,000 pop.	
	2001	2007	1990	2006	1990	2006
Argentina	0,7	0,5	113	48,5	10	5,2
Bolivia	0,1	0,2	454	266,3	42	29,9
Brazil	0,6	0,6	146	55	14	4
Chile	0,3	0,3	90	16,3	8	1,3
Colombia	0,5	0,6	90	58,5	8	6,3
Ecuador	0,3	0,3	315	194,9	29	25,8
Guyana	2,5	2,5	61	215,4	6	28,8
Paraguay	0,4	0,6	118	100,4	11	11,8
Peru	0,4	0,5	618	187,4	57	16,4
Suriname	1,3	2,4	152	95,5	14	13,1
Uruguay	0,3	0,6	54	31	5	3,3
Venezuela	0,6	0,8	68	51,6	6	5,6
South America	0,5	0,6	174,3	73,5	16,2	6,9

Source: CEPAL (2008) *Objetivos de Desarrollo del Milenio. La progresión hacia el derecho a la salud en América Latina y el Caribe* ECLAC: Santiago, www.eclac.org

3.3. Inequalities in Health

Inequalities in health within the countries are particularly evidenced in highly avoidable health events like malnutrition, maternal and child mortality and communicable diseases that can be prevented and controlled, which are influenced by social determinants. Table 3.5 shows the consistent inequality of moderate and severe child malnutrition according to income quintiles in some countries that had available data (12). Consistently, there is an inverse correlation between moderate and severe malnutrition and the income level (and the social determinants that, in turn, are associated with income). Likewise, Table 3.6 shows that in different countries there is a clear, consistent difference between the poorest 20% and the richest 20% of the population in relation to stunting in

children under 5, infant mortality and mortality in children under 5 years old.

This consistent inverse correlation also occurs in relation to other sensitive indicators like infant mortality and low birth weight. Figure 3.7 shows the infant mortality rate (IMR) and low birth weight (LBW) in Departments of Bolivia and Provinces of Argentina, ordered by Human Development Index (HDI). Bolivia and Argentina have the lowest and highest HDI, respectively. The IMR in all of the Departments in Bolivia is higher compared with Argentina; however, both countries show a steady downward trend related to the increase in human development, in an asymptotic manner. Low birth weight also shows a clear downward trend in each country, although there is no single global trend line (13,14).

Table 3.5. Moderate and severe malnutrition (%) according to income quintile in selected countries of South America, 2005 or latest year available

	Quintil of income					Total
	Lowest Q	Q 2	Q 3	Q 4	Highest Q	
Moderate Undernutrition						
Bolivia 2003	7.0	5.5	2.7	2.2	1.2	4.1
Brazil 1996	6.9	3.3	1.6	0.8	2.2	3.5
Colombia 2005	6.9	3.9	3.1	2.5	1.9	4.0
Paraguay 1990	3.1	2.9	1.6	1.2	0.7	2.1
Peru 2000	8.8	3.9	2.3	0.9	0.7	4.1
Severe Undernutrition						
Bolivia 2003	3.3	2.4	0.8	0.4	0.3	1.6
Brazil 1996	2.3	0.5	0.5	0.9	0.0	1.0
Colombia 2005	1.2	0.8	0.3	0.9	0.8	0.8
Paraguay 1990	0.9	0.8	1.0	0.4	0.3	0.7
Peru 2000	2.4	0.9	0.3	0.2	0.1	1.0

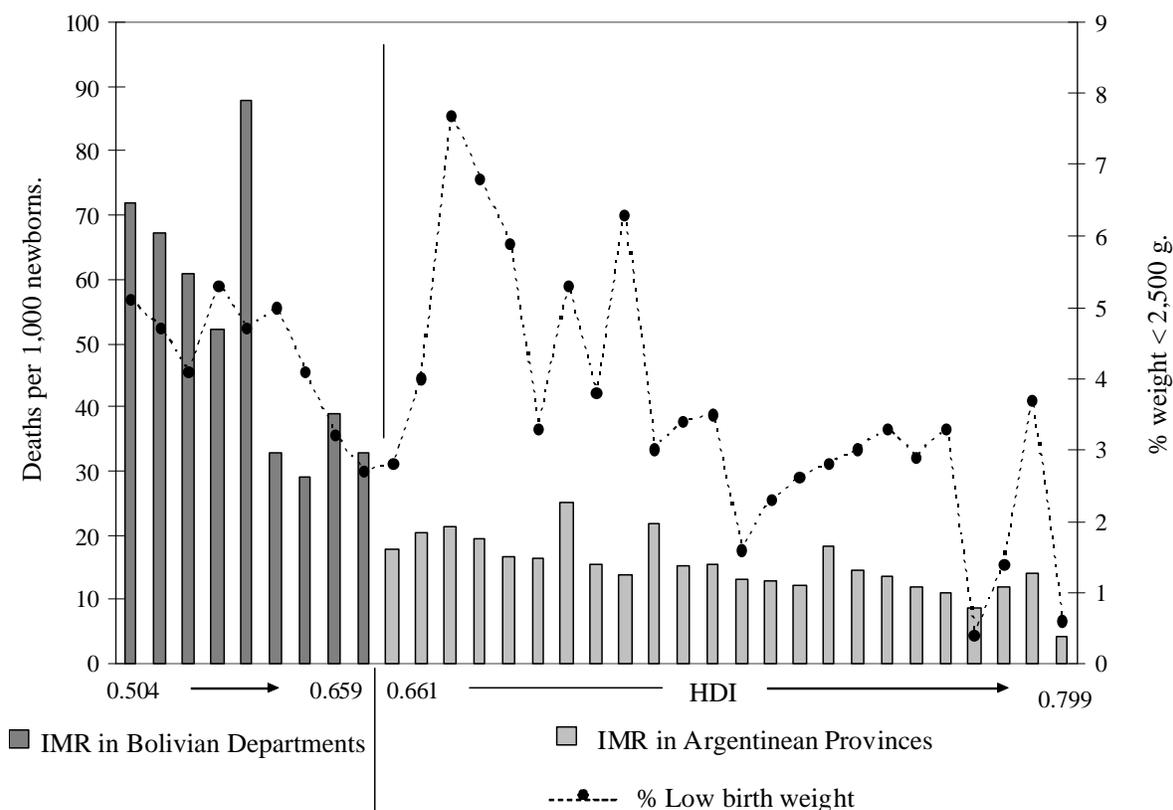
Source: World Bank (2009) HNP Stats 2008; www.theworldbank.org (revised 03.09).

Table 3.6. Nutrition inequalities and infant mortality according to income quintile in selected countries of South America

Country	Survey year	Children < 5 years old with low height / age		Infant mortality rate per 1,000 newborns		Mortality rate in children < 5 years old, per 1,000 newborns	
		Poorest 20%	Richest 20%	Poorest 20%	Richest 20%	Poorest 20%	Richest 20%
Brazil	1996	23	2	83	29	99	33
Colombia	2005	20	3	32	14	39	16
Peru	2004-05	46	4	46	6	63	11
Paraguay	1990	23	3	43	16	57	20
Bolivia	2003	42	5	72	27	105	32

Source: UNDP (2008), World Health Report 2007/2008

Figure 3.7. Infant mortality rate (IMR) and low birth weight (LBW) in Departments of Bolivia and Provinces of Argentina, ordered by Human Development Index (HDI).



Source: Ministerio de Salud y Deportes de Bolivia and PAHO/WHO (2005), Atlas de Salud 2005 - Bolivia; Ministerio de Salud de la Nación and PAHO/WHO, Indicadores Básicos - Argentina 2006.

The marked health inequality within the countries is related to the multiple socioeconomic determinants, cultural, ethnic, demographic, physical environment aspects, living in a rural area, and having access to public health and individual assistance services.

With respect to the contribution of health to the equitable distribution of wealth, experience shows that interventions aimed at permitting the maximum development of the child's potential, improve his/her access to a productive job and may consequently result in generations with greater possibilities of social mobility, which continues being severely hampered in most countries (2).

3.4. Health on National Borders

Health on national borders is being given great importance at present in the countries of South America and it is significant for PAHO's integration action. South America also actively

participates in the processes of globalization and mass trade that characterize today's economy. In recent decades, trade has become easier among the neighboring countries and the daily movement of persons between countries has also increased a great deal, facilitated by the current land and air traffic conditions and the practically free entrance to neighboring countries. The mass increase in the exchange of people and products at border zones represent different epidemiological and public health risks. In that respect, the International Health Regulations have become an essential tool to guide and establish safeguard conditions in public health matters. The Regulations grant particular importance to the border zones and the international points of entry and exit of people. It has permitted to strengthen the national systems and international epidemiological surveillance systems. This aspect has already been contemplated in the health agenda of CAN, MERCOSUR and now UNASUR. The Epidemiological Surveillance Committees and the

prevention and control of communicable diseases are noteworthy, as well as the coordination among the different countries favored by the organizations mentioned above. Surveillance has also included the issue of intoxications due to pesticides and the quality of water, like in the case of the border between Colombia and Ecuador. The Andean Health Plan on the borders also includes a comprehensive analysis of the health situation. Because of the importance and urgency of applying the International Health Regulations and learning about its application, Colombia, Brazil and Peru have agreed to strengthen the following functions on their borders: conducting studies on prevalence, performance and availability of services for people with HIV (between Colombia and Ecuador), and developing health care models for the indigenous population (between Colombia and Venezuela). The capacity to respond to epidemiological surveillance has also improved through epidemiological training, the implementation of situation rooms and the use of geographic information systems (15).

Uruguay and Brazil are working on different matters of common interest on their border zones, like promoting productive and healthy communities in these areas; formulating strategies to control zoonoses; conducting integrated health and agricultural actions; food security; and the creation of joint bodies to carry out local integration (15).

PAHO has been contributing with different subregional projects like the Southern Cone Hydatidosis Surveillance and Control Project and the control of Chagas disease (15).

3.5. Implications for an Integrated Health Agenda

In general, the health status of the population, the physical and social determinants and the actions of the health sector have already been contemplated in the different policies and plans of each country.

The current international financial crisis has broad potential repercussions on the countries of the Region. This represents a challenge, which requires a thorough revision and follow up, together with implementing the actions necessary to adequately face and overcome the crisis.

The decentralization processes and the way of distributing resources and health services require considering the various health needs of the different population groups, with a special emphasis on the poorer, rural, excluded and vulnerable groups.

Like the experience of various countries, integration organizations already have a view of the health status of the population, the physical and social determinants and the actions of the health sector in the countries of the Region. That is reflected in the health priorities set by CAN, MERCOSUR, OTCA, CARICOM and the Health Agenda for the Americas 2008-2017.

Following up and seeking compliance of the Millennium Development Goals also help to focus the international efforts on critical health issues like nutrition, mother and child health and relevant diseases like tuberculosis, malaria and HIV/AIDS.

One of the core implications of UNASUR - beyond the creation of virtual communication and surveillance systems – it could be the establishment of integrated UNASUR Salud observatory, made up of a network of national health laboratories focused on relevant public health matters with the purpose of supporting relevant, effective policies and plans and making evidence-based decisions to contribute to achieving the ultimate goal, which is preserving and improving the health of the people of South America.

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4. Communicable Diseases and the Epidemiological Shield

The incidence and prevalence of some communicable diseases in South America, especially in poor and rural populations continue generating a large number of deaths and complications that can be prevented. This makes national and international epidemiological surveillance extremely necessary in order to give relevant, timely prevention and control responses. The working plan on the epidemiological shield seeks to coordinate the surveillance and response networks of the Member States as established in the International Health Regulations (IHR). The detection and elimination of communicable diseases and the ensuing epidemiological response may be more effective with the coordinated effort of an epidemiological shield under the joint action of UNASUR Salud (1).

Communicable diseases, especially those subject to prevention and control, mainly affect millions of poor, vulnerable people in South America who have adverse living conditions and have little access to health promotion and prevention, and to effective health care. These diseases significantly affect indigenous populations, minority ethnic groups, residents of rural, marginal zones, and migrant workers. This results in sizable direct and indirect costs (treating the disease and its complications, and lower productivity). Epidemiological surveillance and the health sector's adequate response capacity are fundamental to control communicable diseases, which can be considerably reduced and controlled through effective access to quality health care, including at least critical levels like primary health care, universal vaccination, low-cost medicines, and the improvement of environmental conditions (2,3).

Emerging and reemerging diseases are increasingly becoming a threat to global health security, with the generation of outbreaks in a country or region, which may disseminate to another. Some outbreaks of emergent or reemergent diseases (like avian flu) in the world have required international public health interventions leaving useful lessons, increasing surveillance and response capacity in the different countries, and contributing to the rapid acceptance and use of the International Health Regulations (IHR) (2).

4.1. Communicable Diseases

4.1.1. Vaccine-preventable diseases

Since 2003, the countries of the Americas have been seeking to eliminate *rubella* and the *congenital rubella syndrome (CRS)*, principally through the routine use of the vaccine against

rubella until reaching immunization coverage of at least 95%, implementing a one-time mass vaccination of men and women in all countries with endemic transmission and continue using the measles-rubella vaccine in follow-up campaigns to eliminate measles (2). Rubella and CRS must also be integrated to the epidemiological surveillance system and the diagnostic capacity of the laboratories must be strengthened (with virus isolation). As of 2005, almost all births had potential access to the combination measles, mumps and rubella vaccine (MMR). All the countries have integrated rubella and measles surveillance, although it still needs strengthening. The partial result of the introduction of rubella vaccine is that rubella incidence has declined 96% (almost 90% of those cases occurred in countries that had not yet launched campaigns). The implementation of the rubella-elimination strategy contributes to consolidate the elimination of *measles* in the Region. Since 1994, countries have sought to interrupt the indigenous transmission of measles (2). The measles epidemic that affected Venezuela between 2001 y 2002 is considered the last endemic transmission in the Region.

Tetanus cases have declined after the widespread use of tetanus toxoid both in children and women of child-bearing age, linked to the prevention of *neonatal tetanus*. Nevertheless, the disease continues to occur in unvaccinated populations that are at risk of suffering wounds and in places where there are *Clostridium tetani* spores; in other words, in rural, poor, livestock-raising areas with populations that do not have adequate health services. Most of the cases that have occurred annually, which are fewer than 1000 in all the Americas, have been men 15 years of age or older. Neonatal tetanus incidence is less than 1 per 1000 live births, although there may be subreporting in areas with limited surveillance (2).

The annual number of cases of *diphtheria* reported has declined dramatically as a result of the widespread implementation of the Expanded Program on Immunization. As of 2000, there have been outbreaks in Columbia (2000) and Paraguay (2002), related to decrease in vaccination coverage (2). All countries in South America vaccinate against *poliomyelitis* and maintain acute flaccid paralysis surveillance according to international standards, with monitoring of the vaccination programs. No annual cases of poliomyelitis have been reported and there is flaccid paralysis in less than 1 per 100,000 inhabitants (2).

4.1.2. Vector-borne Diseases

Malaria and *dengue* continue being important public health problems in all the countries of the Andean subregion with the exception of Chile. At present, malaria is endemic in most of the countries. The countries with the highest indices are Columbia, Guyana, Suriname and Venezuela. Lack of access to appropriate diagnosis and treatment against the parasites that cause the disease limits its reduction. All of the countries where malaria is endemic have prevention and control programs, including interventions against vectors (2). The campaigns to eradicate the mosquito were highly successful in the 1950s reducing the endemic disease in several countries; however, programs became unsustainable and the problem reappeared (2). In 2005, the Andean subregion recorded 580,589 cases of dengue and 41,704 cases of dengue hemorrhagic fever with 221 deaths. Bolivia had the highest incidence rates per 100,000 inhabitants in 2003 (327.4), 2004 (369.5) and 2005 (222.1). Countries in the Southern Cone (Argentina, Chile, Uruguay and Brazil) reported 1,859,259 cases of dengue, 4,509 cases of dengue hemorrhagic fever and 258 deaths. Brazil reported the most cases (99.6%), whereas Chile and Uruguay retained their transmission-free status (2).

PAHO estimates the current number of cases of human infection due to Chagas' disease in the Americas at 18 million, 2.4 million of which will develop into serious heart conditions and 400,000 into digestive megaformations. The annual incidence of vector-born cases is estimated at 41,000 resulting in 18,000 deaths. Some 40 million people in Latin America are at risk of contracting

the infection (2). The Amazon subregion maintains a significant percentage of endemic Chagas' disease (2.9).

Although there has been a trend to the reduction in the number of human cases over the past 5 years, *yellow fever* continues being a serious public health problem in the Americas. The strengthening of epidemiological surveillance and the introduction of epizootic surveillance have permitted defining more accurately the areas of occurrence of the disease in its jungle transmission form. The current area of circulation of the yellow fever virus (enzootic area) includes the north of South America, the east portion of Ecuador, Peru and Bolivia, the northeastern departments of Argentina and Paraguay, and an extensive strip in the north and south of Brazil, adjoining the countries mentioned above. In Brazil, the enzootic area extends to the east-central region and partially occupies the south-east region. The strategy of most of the enzootic countries of vaccinating residents, people from areas originating migrations and the introduction of the vaccine in the immunization calendar of adopted children, has resulted in a reduction of cases. The early detection of cases or epizootic and the timely adoption of measures to control outbreaks have prevented the occurrence of extensive outbreaks. The presence of the vector in the urban form of the disease, the *Aedes Aegypti* mosquito, many times with high infestation rates leaves the Region vulnerable to the occurrence of urban yellow fever. In 1998, indigenous cases were identified in an urban area near Asunción, Paraguay. Another recent event of epidemiological relevance has been the occurrence of the intensive circulation of the yellow fever virus identified by a vast epizootic that extended from Trinidad and Tobago, Venezuela and Brazil to the north of Argentina.

Yellow fever remains a serious public health problem in several tropical areas of the Americas. Despite the effectiveness of the vaccine against the disease, it has not been possible to adequately control it yet. Cases of jungle yellow fever are recorded in Bolivia, the east-central region of Brazil, Colombia, Ecuador, Guyana, Peru, Suriname and Venezuela. No urban yellow fever case has been reported since 1942 (2). In 2003 there was an increase in yellow fever incidence due to outbreaks in Colombia (112 cases), Brazil (64 cases), Venezuela (34 cases), and Peru (26 cases).

Limited outbreaks and isolated cases were reported between 2004 and 2005. Cases continue to occur mostly among young adults 15-40 years old, predominantly males. National plans of action have included vaccinating all residents or migrants to risk areas, strengthening surveillance and promptly responding to outbreaks. Bolivia, Columbia, Guyana, Peru and Venezuela have introduced national coverage of the vaccine against yellow fever for all children 1 year old (2).

The occurrence of *cholera* cases in South America is low and it has been limited to clusters that were rapidly contained with very low impact on public health. Most countries maintain relevant cholera surveillance (2).

4.1.3. Zoonoses

Human rabies transmitted by dogs is in the elimination phase, although wild rabies outbreaks transmitted by vampires have occurred in the Amazon region, mainly affecting native Amazon communities (2). There was considerable deterioration in the epidemiological situation of canine rabies in Bolivia in 2004, with outbreaks in La Paz, Cochabamba and Santa Cruz de la Sierra. That same year, there were also concerns over the situation in the state of Zulia in Venezuela. In 2004, the number of cases of human rabies transmitted by blood-feeding (vampire) bats for the first time exceeded the number of cases of human rabies caused by dog bites. There were 51 reported cases of human rabies transmitted by blood-feeding bats in 2005 in the Amazon region of Brazil, Columbia and Peru (2).

At present, the number of reported cases of *plague* is not very high. Bolivia, Brazil, Ecuador, and Peru have reported cases. All other countries in the Region are considered disease-free. In the period covering 2001 to 2005, there was an average of 12 cases reported per year for the countries with endemic areas. Peru reported the largest number of cases (16) in 2005. The disease generally affects extremely poor people living in remote, rural communities, with limited access to health services and no basic infrastructure. Their dwellings are highly vulnerable exposing them to the forces of nature and to epidemiological risk factors (2).

Visceral leishmaniasis is endemic in Latin America, with risk factors for the disease detected

in Argentina, Bolivia, Brazil, Columbia and Venezuela. Most cases of the disease in the Region were reported in Brazil, with an annual average of 3,000 cases (2). Although the disease was characteristically found in rural areas, it has been recently reported in urban areas of large cities in the Region. Animals, mainly dogs, are the main reservoirs; therefore, it is basically a zoonotic disease. The annual number of cases of *leishmaniasis cutanea* in South America is much larger than the annual number of cases of visceral leishmaniasis, although the latter is potentially fatal (2). *Schistosomiasis* has been reported in 3 countries in South America, *lymphatic filariasis* in 2 countries, *onchocerciasis* in 4 countries and *geohelminthiasis* in most of the countries in the Region.

Echinococcosis/Hydatidosis constitutes a serious public health problem in regions of the world whose economy is based mainly on livestock-raising. South America is considered one of the areas most hardly hit by the disease, although there are no consolidated statistics on disease incidence due to methodological differences in data collection (2). The species that cause polycystic hydatidosis are found mainly in the north of South America (Brazil, Columbia, Ecuador, and Venezuela) and they are perpetuated principally through cycles involving wild hosts. The most affected regions of South America are Argentina (Río Negro, Chubut, Tierra del Fuego, Corrientes and Buenos Aires provinces); Brazil (the state of Río Grande do Sul); Chile (chiefly Regions VII, X, XI, XII); Uruguay, and the mountainous areas of Peru and Bolivia (2).

4.1.4. HIV/AIDS and other sexually transmitted infections

The *HIV/AIDS* epidemic is still concentrated on high-risk groups. Prevalence in adults 15-49 years old is 0.5%, whereas in men who have sex with men it exceeds 10%, although there is broad variability depending on the city and the population group studied. The primary transmission route is sexual intercourse. The groups with prevalence rates more than 5% are men who have sex with men (for example, in Lima, Peru, it was 21% in 2002), male commercial sex workers, injection drug users, (for example 7.8% in Argentina) and female commercial sex workers. In Suriname, 21% of the female sex workers were infected with HIV

in 2003, while in Guyana the prevalence rate was 31% in 2000. Other groups with high HIV prevalence rates are prisoners, migrant workers, members of the armed forces, truck drivers, and other transport workers, and workers in mines and other isolated places (2). Most countries still have epidemics concentrated in risk groups. UNAIDS estimated that 140 thousand children under 15 years old in Latin America and the Caribbean had HIV in 2005. Coinfection of HIV and tuberculosis (2005) occurs in less than 1% of HIV infection prevalence (2).

The countries of South America have shown a different HIV/AIDS prevalence evolution in the period covering 2001 to 2007, with a slight increment in Bolivia, Columbia, Paraguay, Peru,

and Venezuela. Prevalence in Suriname has almost doubled over the same period (Table 4.1). The incidence rate is higher in Suriname and Venezuela, with 45 and 44 per 100,000 inhabitants, respectively. Along with AIDS, other sexually transmitted infections (STIs) are also important. It is estimated that 50 million new cases of STIs occur in the Americas each year, although the magnitude of the epidemic is difficult to measure, therefore there are no more accurate estimations of the problem available. The countries where congenital syphilis cases are reported annually show a rising trend. In Venezuela the number of cases grew from 50 in 2000 to 135 in 2002 and in Brazil, the congenital syphilis rate per 1000 thousand live births rose from 1 in 2001 to 1.5 in 2003 (2,6).

Table 4.1. Incidence and prevalence rates per 100,000 inhabitants of HIV/AIDS in countries of South America

Country	HIV/AIDS	HIV/AIDS prevalence	
	incidence rate	rate (15-49 years)	
	per 100,000 pop.	per 100,000 pop.	
	2006	2001	2007
Argentina	3,6	0,7	0,5
Bolivia	2,0	0,1	0,2
Brazil	17,2	0,6	0,6
Chile	2,5	0,3	0,3
Colombia	1,6	0,5	0,6
Ecuador	3,6	0,3	0,3
Guyana	25,8	2,5	2,5
Paraguay	5,6	0,4	0,6
Peru	3,5	0,4	0,5
Suriname	45,3	1,3	2,4
Uruguay	4,9	0,3	0,6
Venezuela	43,8	0,6	0,8
South America	13,1	0,5	0,6

Source: Incidencia: OPS (2008) Indicadores básicos 2008 Prevalencia: CEPAL (2008) Objetivos de Desarrollo del Milenio. La progresión hacia el derecho a la salud en América Latina y el Caribe CEPAL: Santiago, www.eclac.org

4.1.5. Chronic communicable diseases

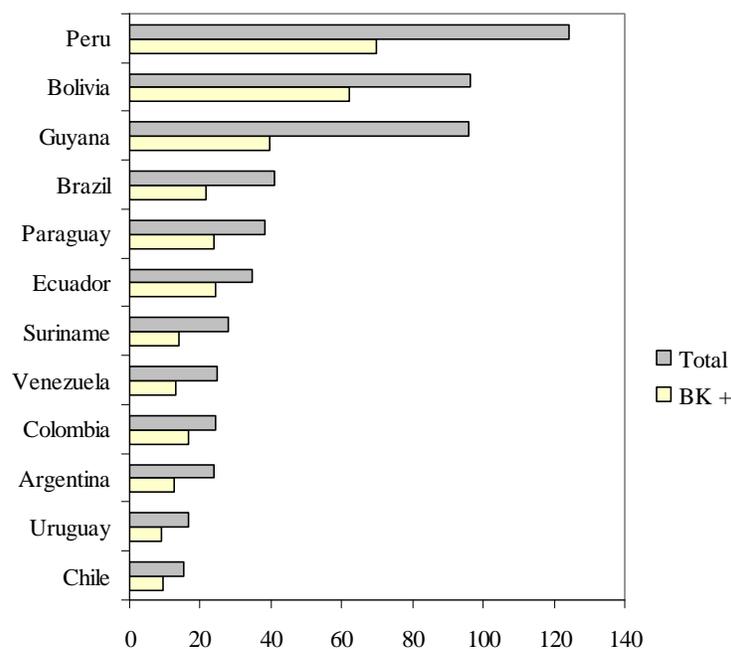
In 2006, South America recorded more than 275,000 cases of tuberculosis (a prevalence rate of 73.5 cases per 100,000 inhabitants), with more than 26,700 deaths per year (mortality rate of 73.5 cases per 100,000 inhabitants). The incidence rates are higher in Peru, Bolivia and Guyana (Figure 4.1). Between 1975 and 2005, tuberculosis prevalence

and mortality has shown a general downward trend, except for Guyana where prevalence more than trebled and mortality grew more than four fold, and today, together with Bolivia, they have the highest tuberculosis prevalence rates (215.4 and 366.3 per 100,000 inhabitants, respectively) and the highest mortality rates (28.8 and 29.9 per 100,000 thousand inhabitants, respectively). The differences in the incidence of tuberculosis are also

observed within the countries. The countries that have been given priority for the control of tuberculosis include Bolivia, Brazil, Columbia, Ecuador, Guyana and Peru. Nearly 40% of cases with positive bacilloscopy correspond to men 15-

44 years old. High morbidity from tuberculosis in children is particularly relevant in public health, because it indicates the high degree of *Mycobacterium tuberculosis* in the community (2,6).

Figure 4.1. Tuberculosis incidence rates per 100,000 inhabitants in countries of South America, 2006



Incidence rate per 100,000 inhabitants

Source: OPS (2008) Situación de salud en las Américas. Indicadores Básicos 2008

In 2005, the Region recorded a *leprosy* prevalence rate of 0.39 per 10,000 inhabitants and a detection rate of 4.98 per 100,000 inhabitants. Among the new cases registered in 2005 (in countries reporting more than 100 cases), Brazil recorded more than 38,000 cases. There is a great variety in the proportion of multibacillary cases among the

countries (Table 4.2). The variation in the proportion of children under 15 years old affected by the disease ranges from 9.5% in Bolivia and 1.3% in Argentina, whereas the proportion of new cases with grade II disability also varies among the different countries.

Table 4.2. Profile of the new cases of leprosy recorded, countries that reported more than 100 cases, South America, 2005.

Country	Number of notified cases	Proportion of cases (%)			% disability grade II
		multi-bacilar	women	children	
Argentina	484	79.1	40.9	1.3	1.6
Bolivia	114	35.9	41.2	9.6	1.7
Brazil	38410	50,0	46.3	8.4	4.9
Colombia	585	68.7	...	3.2	9.7
Ecuador	116	62.9	35.3	0,0	0,0
Paraguay	480	77.7	38.5	3.9	7.9
Venezuela	768	64.5	33.9	7.2	6.1

Source: *Salud en la Américas 2007*, based on the *Informe Anual de Lepra de los países, 2005*.

4.1.6. Emerging diseases

Influenza or human flu due to new virus subtypes, a viral disease that can occur when a new strain of influenza virus emerges and adapts to enable transmission from person to person, can rapidly spread throughout the world resulting in a

pandemic. It can affect a large number of the population with widespread and sustained effects, greatly exceeding the resources of each country, state and municipality. This implies the need for all countries to develop pandemic preparedness plans (2).

Table 4.3. Deaths, hospital admissions and outpatient consultation in a moderate or severe influenza pandemic (with a clinical attack rate of 25%) in South America, (population 2006)

Potential impact	Pandemics Scenario			
	1968 (mild)		1918 (severe)	
Deaths	223.786		1.619.627	
Range	88.151	438.621	420.142	3.617.025
Hospital admissions	978.687		7.901.427	
Range	307.422	1.297.529	2.136.145	10.995.159
Outpatient consultation	51.022.156		45.854.011	
Range	40.006.498	73.135.475	38.918.514	61.764.114

Source: Adapted from OPS (2007) *Salud de las Américas 2007*

Despite the progress made regarding surveillance and preparedness to face an eventual pandemic, a sustained domestic and international effort is required to implement adequate vigilance and have adequate response capacity. Table 4.3 illustrates a scenario of deaths, hospitalizations and visits to physicians that would be originated by a moderate impact influenza pandemic (like an epidemic occurred in 1968) or a severe pandemic (like the one that occurred in 1918), assuming a clinical

attack rate of 25%, for a population volume like the one in 2006 in South America. Given that this type of scenario is uncertain, a broad range of potential impacts is set forth. Potential figures are very important to guide the degree of preparedness that countries must have as to their policies, plans, budgets and health facilities (2).

The *severe acute respiratory syndrome* (SARS) was first recognized in February 2003 in Hanoi,

Vietnam. It is believed to have originated in southern China in 2002 and passed to Hong Kong in 2003. Shortly after that year, the WHO considered it a global threat. To date no cases have been reported in South America. The number of cases that have occurred until now in 26 nations around the world since 2003 (9,096 probable cases, with 774 deaths) demonstrate the possibility of a resurgence of a SARS outbreak, therefore,

stressing the need for all countries to maintain adequate surveillance and response capacities (2). There is a relatively low number of cases of *hantavirus respiratory syndrome* reported annually in the countries that report cases since 1993 (Table 4.4); however the fatality rate of the disease is 15.7%. The largest number of cases is recorded in Brazil, Argentina and Chile.

Table 4.4. Cases of hantavirus respiratory syndrome in countries of South America, 1993-2005

Country	Cases	Deaths	Fatality rate (%)
Argentina	643	11	1,7
Bolivia	70	5	7,1
Brazil	664	121	18,2
Chile	455	149	32,7
Paraguay	99	13	13,1
Uruguay	48	13	27,1
Venezuela	2	0	0,0
Total	1 981	312	15,7

Countries with reported cases in the 1993-2005 period
Source: OPS (2007) *Salud de las Américas 2007*

4.2. Coordinating Surveillance and Establishing the Epidemiological Shield

The different domestic and subregional health agendas in South America agree on the countries' approach to face as effectively as possible all problems related to communicable diseases that are relevant to public health, including subregional alliances and integration processes. In that regard, the purpose of the South American epidemiological shield is to coordinate the policies and plan the responses—already agreed upon among the Andean countries—of the countries of South America. With respect to the epidemiological shield, the Work Plan of the South American Health Agenda, points out the three elements: coordination of surveillance networks and response of the Member States as established in the IHR; detection and prompt response to outbreaks; and elimination of communicable diseases.

Coordinating surveillance networks and response of the Member States as established in the IHR

These Regulations were adopted for the first time in 1969 to survey, report and control six

communicable diseases, namely, cholera, plague, yellow fever, smallpox, recurrent fever and typhoid. It was amended in 1973 and subsequently in 1981, when only three diseases had to be reported to the WHO: cholera, plague and yellow fever (7). In 2005, the World Health Assembly adopted the IHR, which entered into force in June 2007. This is a legally binding instrument, whose aim is “to prevent, protect against, control and provide a public health response to the international spread of disease in ways that are commensurate with and restricted to public health risks, and which avoid unnecessary interference with international traffic and trade” (7).

All countries of South America have adhered to the IHR, both individually and in the sphere of the CAN and MERCOSUR subregional initiatives, and they assume them as the guidance and regulatory framework to coordinate the surveillance networks. The IHR refers to public health information and response and describes the actions to be developed, strengthened and maintained by the countries in order to have the basic capacity to detect, evaluate and report events. By virtue of the IHR (2005), the states are required to report WHO any events that

may constitute a public health emergency of international concern (PHEIC). Each country must evaluate any event occurred in its territory, based on a decision tool and within no more than 24 hours, it must report WHO about its occurrence and the health measure applied.

In the surveillance network, each country has its own National IHR Focal Point (CNE for its Spanish acronym), which reports to WHO Contact Points located in each of the regional offices, like PAHO for the region of the Americas, where WHO's contact point for the IHR is the Communicable Diseases Project, Health Surveillance and Disease Prevention and Control Area (HSD/CD) at PAHO.

Because diseases that spread rapidly require highly sensitive and timely surveillance systems that permit acting immediately to prevent an outbreak and to control an epidemic, global collaboration and the establishment of national and international epidemiological surveillance networks is needed (7).

The Andean Region has the Andean Network of Epidemiological Surveillance (RAVE for its Spanish acronym), which has been meeting annually since 2001 at the Andean Forums of Epidemiological Surveillance in the CAN, organized by ORAS-CONHU in coordination with PAHO. The diseases that the Andean Network of Epidemiological Surveillance (RAVE) has proposed to cover are: cholera, dengue, hemorrhagic dengue, Chagas disease, yellow fever, malaria, rubella/measles and Venezuelan equine encephalitis. In the Andean Region there are also specific projects that include epidemiological surveillance like the Project for Malaria Control on Border Areas of the Andean Region: A Community-based Approach (PAMAFRO for its Spanish acronym) and the PASAFRO Network of the Andean Health Plan on the Borders, under whose framework, standards and instruments have been created to carry out epidemiological surveillance and to address outbreaks with a special emphasis on the border zones of Andean countries.

The MERCOSUR has created commissions to work on harmonizing legislations and coordinating the actions between the participating states on matters like epidemiological surveillance, health surveillance and sanitary control to promote and

protect health, the lives of people and eliminate barriers to regional trade and to integral and quality health services, thereby contributing to the integration process. The events that must be reported in the MERCOSUR are any outbreak or public health event of international importance (PHEIC); cholera, acute Chagas disease, diphtheria, meningococcal disease, yellow fever, dengue fever and hemorrhagic dengue, human flu caused by new virus subtypes, hantavirus, malaria, plague, poliomyelitis, human rabies, rubella, and congenital rubella syndrome, measles, congenital syphilis, severe acute respiratory syndrome (SARS), neonatal tetanus, and smallpox. The document on Epidemiological Surveillance and Control of Priority Diseases and Outbreaks among MERCOSUR Member States was approved in 2008 by the Common Market Group. This document contains the list of diseases, laboratory diagnosis, prevention and control measures, and information systems (recording, consolidation and analysis).

In 2007, the XXVIII Meeting of Health Ministers of the Andean Health Area (REMSAA) approved resolution XXVIII/428 referring to the bases of the coordination of the Surveillance Networks in South America and of the implementation of the IHR to coordinate tools and procedures. In the VI Surveillance Forum held in Lima, the task and mission of the RAVE was evaluated as well as the coordination of the different subregional networks (ANDINA, MERCOSUR, PAMAGRO, PASAFRO). Subsequently in the VII Andean Forum of Health and Epidemiological Surveillance on the Borders (Caracas, April 2008) and the V Joint Meeting of the subregional surveillance networks of emerging and reemerging diseases, discussions and proposals were carried out on the harmonization of the surveillance tools and procedures as well as mechanisms to strengthen the basic vigilance and response capacities.

The main purpose of the VIII Andean Forum of Health and Epidemiological Surveillance on the Borders and the joint Meeting of the South American Network of Surveillance of Emerging and Reemerging Diseases (Asunción, April 2009) was contributing to strengthen coordination and consolidation of the Surveillance Networks and the Public Health Response in the region to address the common and emergent health problems according to IHR guidelines.

Detection and prompt response to outbreaks

The occurrence of events that may signify a potential risk and exceed the limits of the States, makes the existence of early alert systems and of highly sensitive surveillance mechanisms critical to permit detecting such events rapidly and to respond promptly to control them, thereby minimizing their impact on public health and on international traffic and trade. The IHR (2005) establish the basic capacities the countries must have to carry out appropriate surveillance and response, permitting them to develop surveillance activities, submit reports, report, verify, respond and collaborate, as well as develop actions in designated airports, ports and ground crossings. To that end, the countries must develop and have permanent public health response capacities both at the community level and/or primary level, and at the intermediate and national levels.

The local level must have the capacity to detect events that represent morbidity and mortality exceeding that foreseen for a determined time and place; to immediately report to the appropriate public health response level any information available; and, to immediately apply preliminary control measures. The intermediate level must have the capacity to confirm the status of the reported events and support or apply additional control measures, to evaluate the reported events and, if they are urgent, to communicate the essential information to the national level. The national level must assess the situation within 48 hours and inform WHO within 24 hours following the detection of a PHEIC through the National IHR Focal Point (CNE), when the assessment indicates that the event must be reported, thereby quickly alerting the international community.

The countries must have an appropriate legal framework with clear, explicit institutional responsibilities that permit them to implement their actions of event detection, verification, assessment, and control. The rapid response teams are required to be duly trained and provided with all the necessary resources and facilities to be prepared to act 24 hours, 7 days a week. Appropriate interinstitutional coordination mechanisms must be in place to permit their operation.

At the global level, there is a Global Outbreak Alert and Response Network (GOARN), a

technical collaboration mechanism between existing institutions and networks that pool human and technical resources for the rapid identification, confirmation and response to epidemic outbreaks of international importance. The WHO coordinates the international response using the resources of this network.

Elimination of communicable diseases

All the countries of South America have approved the initiatives related to the control, elimination and eradication of vaccine-preventable communicable diseases that are part of the Expanded Program on Immunization (EPI), which have a very different incidence rate in the different countries of South America. Some of the “so called” *unattended diseases* are in the same situation. Whether because the importance of these diseases as a disease burden has declined significantly or due to other circumstances, the intervention to eliminate and subsequently eradicate them has not been completed. Such is the case of leprosy and Chagas disease. Other diseases like human rabies transmitted by dogs, *tuberculosis*, *bovine brucellosis* and *foot and mouth disease* must also be incorporated in the group of communicable diseases. Although foot and mouth disease is not a zoonosis, its presence is a strong limitation to the production and trade of foodstuffs of animal origin.

4.3. Implications for an Integrated Health Agenda

In general, UNASUR countries already have significant information and surveillance for the diseases of interest for the epidemiological shield, and the subregional entities have made considerable progress in this respect. There is a critical mass of experts on the subject and periodical meetings held in different gatherings and forums contribute to unify criteria and guide the development of the information, surveillance and action systems at the different levels.

The agreements to develop an active surveillance network to guide towards a timely, effective response must maintain a permanent surveillance and action capacity under the directives of the IHR, address the emerging health issues and harmonize the epidemiological surveillance mechanisms of the different national agendas and of CAN,

MERCOSUR and OTCA, with the integrated approach of UNASUR.

The work on border-related issues is essential and must be a joint concern of UNASUR members. The basic capacity for adequate surveillance and timely, pertinent response to the public health problems that may unexpectedly emerge must be enhanced and maintained.

Strengthening and monitoring of the immunization systems is very important and a constant effort must be made in this regard especially in places with low health care coverage and unattended populations. Although the national coverage may be high, there are inequalities between the different areas and population groups. Initiatives like the Vaccination Week in the Americas may contribute to expand coverage, especially by reaching groups that are not sufficiently covered.

Places with greater risk of outbreaks or with an increase in the incidence of communicable diseases—like populations in poor, rural, socially excluded, and border areas—may have smaller surveillance and response capacity. Therefore, it is important to generate a universal, active surveillance network and to implement permanent monitoring of the network's structure and performance and of the countries' response.

The capacity acquired in the surveillance and response excellence centers and in national assistance, research and training centers is fundamental to improve the capacity of the places that need it, through network information and communication and training of critical personnel.

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5. Health Systems

The work agenda of UNASUR Salud seeks developing health systems that guarantee the universal right to health, with a special focus on the Primary Health Care strategy. The opportunity of promoting Social Health Protection schemes may create the conditions to permit health systems to better address the needs of the population and their right to health.

5.1. Organization of Health Systems

The health systems in South American countries have achieved different levels of development. Their organization and structure vary in regard to financing and insurance modes; legal and regulatory structure; the role of the State; degree of integration (coordination, segmentation, fragmentation); participating sectors (public, social security, private); and the organization and integration of assistance networks.

The population obtains health coverage through different subsystems, including the public system, social security, private system, and others like the health services of the armed forces. Annex 4 shows population coverage per system in the countries of South America, based on data collected by PAHO from different sources for the publication of Health in the Americas 2007, with 2001-2006 data (1).

According to the above source, health system coverage is high in countries like Chile (in terms of guaranteed services for some priority diseases, with 100% coverage), Brazil, where it covers 80% of the population (Single Health System) and Venezuela with 66% coverage.

Social security covers 68% in Chile (FONASA), 67% in Columbia (Contribution System and Private Insurance), 51% in Argentina (Social Works), 45% in Uruguay (Mutuales), whereas in the other countries it covers a lower percentage of the population.

The private sector (for-profit and non-profit) covers approximately one fourth of the population in Ecuador (26%), 17% in Chile (ISAPREs) and it has smaller coverage in the other countries. It is worth noting that the complementary system is difficult to estimate because it is frequently exercised in a complementary way by the same personnel that work in the public sector and there are no harmonized official statistical records of the

work carried out by the formal and informal private sector.

There are other state or private sectors that have their own health systems (special systems), like the armed forces, police and organized groups of workers (like the workers of oil companies in Venezuela).

There is universal global coverage in most countries. However, coverage is limited in the countries with less economic development: In 2003-2004, in Bolivia approximately 45% of the population did not have access to health care and 72.8% did not have any social security coverage or a private health insurance. In 2006, social security coverage or private health insurance in Peru was estimated at 42.1%. In 2005, in Paraguay 38.6% of the population did not have access to health care and 81.1% did not have social security coverage or private health insurance. In 2006, in Ecuador, 27% of the population did not have access to health services and 76% did not have social security coverage or private health insurance.

According to WHO and ASDI (2003), the principal causes attributed to social exclusion in Bolivia are poverty, lack of education of the mother and ethnic group; in Ecuador, insufficient health infrastructure; in Paraguay ethnic origin and lack of infrastructure (electricity, sanitation) and health; and in Peru poverty, living in rural areas and ethnic origin (1).

Thirteen percent of the population in Chile does not have public health coverage or private health insurance, but that group does not belong to formal workers or to the poor segment of the population (who are automatically covered by the public system).

Suriname has partial coverage estimated at 64% of the population, which is a combination of the public and private systems, whereas Guyana also

has a combination of the public and private systems with decentralized health and different types of non-coordinated actions (2).

The organization, structure, performance and funding of the health systems of the countries of South America were subject to different degrees of changes, mainly as a result of similar, radical State reforms that also included the health sector in most of the countries, carried out especially in the '90s (1).

Some of the outcomes worth noting are:

- Identification and separation of health care functions in which active participation is shared between the State and a new series of players like insurance companies, health care providers, oversight bodies and citizens .
- The growth of the private health sector was promoted as well as the direct or indirect privatization of the insurance systems and public health system.
- There was a change in the funding model and in the sources of funding, with a stress on financial sustainability. The public system had endured a long financial crisis.
- Many countries improved the performance of the health care services by adopting different measures like introducing planning efficiency, and payment and oversight of health services provision.
- Expanding health care coverage was pursued, especially for those sectors that did not have access and did not have the economic, cultural or geographic resources to have access to the services. Special budgets were created and mechanisms were adopted like the creation of basic packages to cover poor, marginalized communities.
- The public health system was decentralized giving greater power and autonomy to the local levels, encouraging the participation of health care personnel and of the population (OPS, Salud en las Américas 2007, based on the revision of the profiles of the health systems of countries) (1).

A series of problems, however, were detected in relation to the reforms:

- The system's segmentation increased with multiple poorly integrated, competing players and systems. Increasing competition between insurance companies and health care providers to capture clients with the capacity to pay increased segmentation. The proportion of private and out-of-pocket spending predominated in many countries and in population groups not adequately covered by insurance, health becoming a heavy burden for such population, which may result in a barrier to health care.
- There was inadequate distribution of spending and low efficiency with an increase in transaction costs. In addition, the Ministry of Health's oversight became weak with poor regulation of health insurance markets and health services.
- In most countries, public spending—public funding deficit for health—declined dramatically while out-of-pocket spending rose. The decline in funding and the strict control of costs reduced public health infrastructure and human resources, resulting in lower performance and efficiency, especially of the public health system.
- The application of private criteria (quasi-market logic) in the public sector with an emphasis on the competition inside the services network reduced internal solidarity, the network's efficiency, and the global performance and efficiency of the public system.
- The incorporation of economic incentives to the provision of individual health services led to stressing curative actions over preventive care.
- The introduction of basic packages for the poor increased the fragmentation of the health systems. The creation of separate funds for the population with different paying capacity led to the loss of the system's solidarity and deepened inequity in access to health care and health outcomes. Coverage did not increase as expected and demand increased with a critical reduction of the health resource.
- Incomplete decentralization undermined the stewardship capacity of the health authority,

which could not ensure the system's integrity and equity among the different areas (*OPS, Salud en las Américas 2007*, based on the revision of the countries' health system profiles) (1).

The benefits and problems attributed to the reform processes in the health systems have set challenges like: the need to strengthen the oversight role of the health authority, the need to strengthen and monitor essential public health functions; the need to identify mechanisms for integrating the public network (respecting local autonomy) with solidarity and equity; recovering the level of funding and critical resources required to ensure efficient performance of the health systems; and strengthening of primary health care (poor, vulnerable and excluded populations should continue to be a priority. The regulation of the insurance and health care markets is crucial, particularly with the emergence of the international financial crisis, the impact of which has to be faced by each country because of the consequences it implies, which may threaten health system funding.

The reform processes in the '90s were concentrated on financial and organizational aspects, leaving essential aspects of public health aside, and the role of the State became weakened in key areas. The principal limitations for the further development and strengthening of the health systems' structure and performance are, in general, related to the deficit of public funding for health, along with inadequate distribution in spending, low efficiency and varying degrees of weakness in the institutional capacities of the national health authority, which affect the sector's conduction, in other words, the formulation, execution and evaluation of public policies; regulation, for example, of insurance systems and access to public

health products; supervision and control of interventions and outcomes; performance of the essential public health functions; and economic-financial management and generation of resources.

Thus, sector segmentation is maintained and deficiencies persist in the level of spending and in health funding policies. There are spending deficiencies that result in high vulnerability, depending on external resources, and higher out-of-pocket spending. This affects poor populations most. The allocation of resources continues being disconnected from the services outcomes and performance. Clinical management is still insufficient, with predominance of the curative model, leaving primary care and public health actions in a second place (1,3).

5.2. Financing

Around 2005, public spending on health in the countries of South America represented approximately 2.9% of the GDP, which is equivalent to an annual spending of US\$108 dollars per inhabitant. National spending on health is closely related to the country's economic income; it exceeds US\$1,000 per inhabitant per year in Argentina, but it is less than US\$200 in countries like Peru, Bolivia, Ecuador, and Guyana (Table 5.1) (1). Public spending in health is US\$574 per inhabitant in Argentina but it is less than US\$100 in Paraguay and Ecuador.

Since 1990, public social spending per inhabitant has increased in all the countries but growth is more marked in the countries with greater economic development like Argentina and Chile (Table 5.2).

Table 5.1. Public social spending and on health in countries of South America, 2007

Country	National expenditure in health		Public expenditure in health	
	US\$ per capita	as % of the GDP	US\$ per capita	as % of the GDP
Argentina	1.045	8,6	574	4,7
Bolivia	178	7,1	105	4,2
Brazil	530	7,0	...	3,4
Chile	827	8,3	442	4,4
Colombia	402	6,0	229	3,4
Ecuador	166	4,6	80	2,2
Guyana	45	1,1	...	1,1
Paraguay	290	6,6	96	2,2
Peru	197	3,8	120	2,3
Suriname	237	3,8	....	3,8
Uruguay	781	9,0	554	6,4
Venezuela	348	6,3	194	3,5

Note: Calculation based on US\$ of the year 2000. No information available for Guyana and Surinam.
Source: CEPAL (2007), *Salud de las Américas 2007*, based on ECLAC social spending data (1).

Table 5.2. Public social spending per inhabitant on health in countries of South America, 1990-2005

Country	1990-1991	1992-1993	1994-1995	1996-1997	1998-1999	2000-2001	2002-2003	2004-2005
Argentina	264	321	363	356	393	378	295	347
Bolivia	...	...	30	33	33	36	37	36
Brazil	119	87	150	138	137	150	160	180
Chile	62	82	97	113	130	144	153	156
Colombia	18	23	60	69	75	61	57	50
Ecuador	18	21	11	12	10	10	15	19
Paraguay	4	16	18	20	20	16	17	16
Peru	15	15	25	29	31	32	34	37
Uruguay	142	160	196	151	169	153	105	107
Venezuela	79	89	56	59	70	71	66	77
South America	101	93	133	129	134	138	134	150

Note: Calculation based on US\$ of the year 2000.

Source: CEPAL (2008) Los Objetivos del Milenio. La progresión hacia el derecho a la salud en América Latina y el Caribe.

5.3. Health Services: Access and Coverage

The available indicators of access to health services and coverage of health services refer particularly to national health care programs that are generally provided at a local level especially primary health care (Table 5.3). Half of the countries have universal or practically universal basic vaccination

coverage (over 95%), but there are countries with greater restrictions like Venezuela, Paraguay and Bolivia (5). Even in countries with high coverage, there may be coverage limitations in areas with greater poverty, needs and rural density, and with less access opportunities. Although there is practically universal coverage of delivery in half of the countries, there are still limitations to maternal

health care in countries and places with less development (5). This makes it necessary to focus health care priorities on places with fewer resources and services, greater needs and where

health events which can be prevented occur (like maternal and infant deaths and diseases subject to vaccination control).

Table 5.3. Indicators of coverage of health assistance activities in countries of South America, 2007 or latest year available

Country	Health care coverage (%)		Immunization coverage (%)				% women using contraception
	Antenatal	Ch. delivery	DPT3	Polio3	BCG	Measles	
Argentina	88.4	99.4	96	94	100	99	68
Bolivia	79.1	62.5	82	82	86	83	21
Brazil	97.4	97.1	98	100	100	100	81
Chile	96.0	99.7	96	95	98	92	64
Colombia	93.5	96.9	93	93	93	95	56
Ecuador	...	80.0	100	100	100	100	66
Guyana	96.3	96.6	94	94	97	96	34
Paraguay	85.3	88.2	78	78	78	80	73
Peru	91.0	71.0	87	87	100	95	71
Suriname	94.4	99.6	88	90	n/a	85	46
Uruguay	94.9	98.7	95	95	99	97	78
Venezuela	...	95.0	61	67	82	56	30
South America	84.3	93.8	93	94	97	95	69

Source: OPS (2008) Indicadores Básicos PAHO 2008 (5).

Despite the emphasis on primary care, within a concept renewal perspective, health care services tend to continue to be focused on the curative model centered in hospitals and in individual care (1).

Income inequalities are also related to insurance disparities; in Peru, for example, the higher-income quintile has 6.8 times more coverage than the lower-income quintile and in Bolivia this ratio is

5.4 times (6,12). The coverage of actual access to health services is also consistently related to the income level, as recorded in some selected countries of South America (Table 5.4 (6,12)). In countries with different levels of economic development, households in the lower income quintile consistently have less coverage of delivery assisted by qualified personnel and vaccination of children under one year old (Table 5.5).

Table 5.4. Coverage of health services per quintile of income in selected countries of South America, 2000

Country	Coverage %	Poorest quintile	Second quintile	Third quintile	Fourth quintile	Richest quintile
Bolivia	56,7	19,8	44,8	67,7	87,9	97,9
Brazil	87,7	71,6	88,7	95,7	97,7	98,6
Colombia	84,5	60,6	85,2	92,8	98,9	98,1
Paraguay	66,0	41,2	49,9	69,0	87,9	98,1
Peru	56,4	14,3	49,6	75,4	87,2	96,7

Source: OPS (2004) Estado de Salud de la Niñez 2004. OPS: WDC (7)

Table 5.5. Inequalities in delivery assistance and immunizations according to income quintile in selected countries of South America

Country	Year	Child deliveries attended by trained staff (%)		Children 1 year old with total immunization (%)	
		Poorest 20%	Richest 20%	Poorest 20%	Richest 20%
Brazil	1996	72	99	57	74
Colombia	2005	72	99	47	72
Peru	2004-05	34	100	65	73
Paraguay	1990	41	98	20	53
Bolivia	2003	27	98	48	57

Source: UNDP (2008), World Health Report 2007/2008 (8).

5.4. Primary Health Care

Most health actions that may contribute to preventing and controlling risks, diseases and highly avoidable damage and avoidable and premature deaths are within the scope of primary health care (PHC), which is carried out jointly with the community and the different system players, who give new legitimacy to primary health care and to the public policies that support it.

Limitations in health services and their interaction with the community limit the expected impact of the health systems to preserve, prevent and improve the population's health: health promotion, extended immunizations program, health care during the entire life cycle, with an emphasis on maternal and children aspects. Also, because of a double inequity given by the tendency to exist less resources and service provision where they are most needed, the limitations in primary health care prevent the health system from being successful in improving equity in health and in health care. The reforms that lead to the uncoordinated decentralization of the services network and the competitive search of efficiency (quasi-markets) have been related to difficulties to improve equity and diminish the health events that occur in excess in poor countries and areas and which can be prevented (1).

Despite the achievements made, the proposed goal Health for All - in which primary health care had a central role - was not reached in the Americas in 2000. This means that part of the agenda is still unfinished. In the interim, the world evolved undergoing different political, social and health changes that had an influence on the health systems and primary health care, which has led to revise

and renew the PHC (Primary Health Care) strategy (9,10,11,12). This is currently considered an important strategy—from the health and development perspective—to contribute to reach the United Nation's Millennium Development Goals and Health for All. Given the importance and validity of PHC, PAHO and the governments have encouraged a “process of renewal” of PHC, which is reflected in the PAHO proposals in 2005 and WHO proposals in 2008, ratified by the countries of the world (10,11). This strategy can also significantly contribute to fulfill the Millennium Development Goals (MDGs) and there are lessons learned and good practices that can be currently applicable to primary health care (9,10).

The challenges regarding actions related to PHC can be summarized in the points of the Declaration: Renewing Primary Health Care in the Americas (Montevideo, 2005). In the declaration, the countries undertook to:

- Facilitate social inclusion and equity in health
- Promote health systems based on PHC
- Maximize health promotion and integral, integrated health
- Encourage intersectoral work
- Guide towards quality health care and patient safety
- Strengthen human resources in health
- Establish the structural conditions that permit renewing primary health care
- Guarantee financial sustainability
- Promote research and development and the use of appropriate technology
- Consolidate international cooperation networks and associations in support of primary health care

5.5. Tasks Faced by the Health Systems

The outlook of the health situation and trends and their determinants in the Region of the Americas make it necessary to develop strategies to reduce inequalities that exist among the countries and inequities within the individual countries. These strategies must permit to continue advancing in the social protection of the population by means of health systems based on the primary health care strategy and healthy public policies formulated jointly with the community, and directed by knowledgeable, respected health authorities (3).

PAHO is giving particular emphasis to the promotion of “Social Protection in Health Schemes” (SPHS) like “these public interventions aimed at permitting groups and/or individuals to meet their health needs and demands through adequate access to health care and/or other health goods, adequate quality services or health opportunities, provided with timeliness and dignity, regardless of their payment capacity” (11). The idea is not only improving the available health services, but also, permitting all the population to have access to them as well as ensuring their financial sustainability. The concept of the social protection of health had to be redefined to consider equity and human rights in access to health care, but in the context of the magnitude and sustained nature of poverty in many countries.

Social protection and health care institutions must be strengthened. Adequate development will permit reducing the existing asymmetries between the Region’s health systems, with improved and more equitable access to and coverage of health care services.

In order to attain equity, the interventions to enhance health must meet the needs of each group taking into consideration the specific characteristics of each one. Interventions must give priority to the poor, excluded, vulnerable sectors of the population, including the indigenous peoples and gender equality must be promoted in the formulation and application of the health policies and plans. It is essential to provide women with continuous sexual and reproductive health care; youths must also be guaranteed comprehensive health care; and special health care programs for the elderly must be devised to maintain their functionality. It is necessary to have information

and carry out follow-up and assessment of health care inequalities, as well as of the interventions in specific groups and the fulfillment of goals and objectives (3).

The recovery or strengthening of the institutional capacities of the national health authority include strengthening the sector’s direction (formulation, execution and evaluation of public policies), regulation (for example, of the mechanisms to ensure and permit access to health public goods), supervision and control of the interventions and results, better performance of the essential public health functions, adequate economic-financial management, and generation of resources (3,12).

National health systems face similar challenges, which have been specified in the Health Agenda for the Americas (2007). These include:

- Strengthening the ministries of health and the National Health Authority, with supporting legal frameworks to direct, lead and be accountable for the health systems.
- Regulate the provision of health care by the National Health Authority in the public and private sectors, to contribute to achieve the national health goals.
- Develop public policies to progressively expand access, funding and solidarity of the social protection systems.
- Increase social protection and access to quality health care.
- Promote access to medicines and health technologies.
- Strengthen financial safety and financing solidarity.
- Promote greater investment on health and accountability in the allocation, mobilization and management of resources.
- Efficient performance in the direction, regulation and management of the health systems.
- Improve the management capacity of the services.

- Strengthen management and development of health workers.
- Increase efficient, effective service provision.
- Incorporate quality control throughout the system and health services.
- Include evidence in the definition of appropriate practices.
- Redirect health services towards management models that favor health promotion, disease prevention and that have a family and community focus (3).

The primary health care strategy and the renewing efforts that the countries of the world have committed themselves to make are crucial to advance towards universal, equitable access to health care. It is focused on expanding the sphere of public health activities—under the leadership of the National Health Authority—to promote healthy public policies through the concerted action between institutions, between sectors and in conjunction with the community (3).

To have a greater impact, it is important to effectively protect the poorer, excluded and vulnerable population, addressing the principal health determinants, especially those related to social exclusion, risk exposure, unplanned urban development, and climate change. It is also important to put a special emphasis on health care in rural, periurban and marginal areas where services are fewer or practically inexistent (3).

The strategy seeks a multicultural and gender approach with active social participation. To that end, the services must be culturally accepted and they must include local, harmless, traditional and, if possible, effective practices, including promoting the indigenous peoples' own health systems.

To integrate this to the rest of the health care network, reference and counter-reference systems must be strengthened. Likewise, to guide the planning, management and improvement of primary health care and its impact, the information systems and local and national health surveillance systems must be improved (3).

5.6. Implications for an Integrated Health Agenda

An integrated health agenda, in the way that it has already been specified in some agendas, requires knowing and making a follow up of the health systems' conditions, regarding their organization, funding, insurance coverage and provision, structure, distribution, and impact, to contribute to preserve and improve the health conditions of the population.

The framework of the Health Agenda of the Americas together with the concrete aspects of each specific agenda, may contribute to develop an approach that may permit the countries to advance in a solidary, equitable manner, with an emphasis on areas where poor, vulnerable, excluded people are concentrated.

Primary health care, already contained in several agendas, is an important strategy that permits increasing the health systems' coverage and effectiveness with the help of other sectors and the community.

The MDGs may be a priority approach to action, together with an emphasis on primary health care and intersectoral work on relevant social determinants of health. The different alliances of countries, agencies and other players (like Nutrition and Development, HIV, AIDS, and Mother-Child) also contribute elements that may be harmonized and coordinated for the common benefit of the different agendas.

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6. Human Resources in Health

Health personnel are a crucial component of health systems. The current priority of this essential resource is related to the need of improving its availability, distribution (according to need and equity criteria), work conditions, efficiency, professional development, planning, and training. In addition to the efforts made by each country, the joint action of the Member States of UNASUR Salud may make an effective contribution to better develop and manage health human resources.

Following the experience of countries and The Andean Health Plan, the agenda of UNASUR Salud proposes evaluating the progress made by the different subregional groups regarding the identification of skills and knowledge needs in order to develop the health human resource, and a UNASUR scholarship program.

6.1. Availability of Professionals

Due to different reasons, among which economic development and personnel training in the different countries and the resulting benefits and costs of the recent health reforms are worth noting, there are a series of limitations that tend to repeat themselves in the countries, especially in those that base their coverage and performance on the public health system. Frequently health personnel is scarce, poorly distributed and poorly prepared to meet the

population's health needs. This is aggravated by the migration of professionals within countries and their emigration to wealthier countries; unequal personnel distribution, both in number and quality, which is concentrated in urban areas, with significant imbalances in some professions; and the fact that there continues to be lack of planning of human resources, both in quantity and quality. On the other hand, human resource training continues to follow a traditional model (1,2).

Table 6.1. Physicians, nurses and dentists per 10,000 inhabitants in countries of South America, 2005 or latest year available, and variation in the availability of physicians per 10,000 inhabitants between 1995 and 2005.

	Human Resources per 10,000 pop.			Increase (%) in availability of doctors between 1995 and 2005
	Doctors	Nurses	Dentists	
Argentina	32.1	3.8	9.3	19.8
Bolivia	7.6	3.2	1.2	123.5
Brazil	16.4	5.5	11.6	25.2
Chile	9.3	4.3	1.8	-13.9
Colombia	12.7	6.1	7.8	28.3
Ecuador	15.4	5.2	1.7	15.8
Guyana	2.2	3.4	0.1	-33.3
Paraguay	6,0	2.8	0.9	-17.8
Peru	11.5	7.6	1.1	17.3
Suriname	8.2	15.8	0.9	9.3
Uruguay	38.7	10.2	12.4	8.7
Venezuela	20,0	4.5	5.7	3.1
South America	16.9	5.4	8.5	20,0

Note (a): In Chile, the figure does not include private sector physicians and nurses. If we add these professionals, the rate of physicians in Chile is 18.1 per 10,000 inhabitants and the rate of nurses 9.4 per 10,000 inhabitants.

Source: Indicadores Básicos OPS 2007 y 2008 y generador de tablas OPS (2008) (3).

South America currently has approximately 656 thousand physicians, 210 thousand nurses and 330 thousand dentists, which means a rate of 16.9, 5.4 y 8.8 per 10,000 inhabitants respectively (table 6.1) (3). Between 1995 and 2005, the availability of physicians grew 20%. There continues to be a positive growth of health human resources but it is starting to show a downward trend.

Some recent Andean country initiatives now permit to add the collective intelligence of Observatories of Human Resources in Health (ORHS) with the monitoring they may make of the 20 regional goals. Table 6.2 shows the established density of health personnel of 25 per 10,000 inhabitants as a minimum standard. In addition a ratio of one qualified nurse per physician (1:1) would be a standard to pursue for 2015.

Table 6.2. Health personnel density and physician: qualified nurse ratio per 10,000 inhabitants in some Andean countries (2009)

Country	Density of health staff: doctors + nurses + midwives per 10,000 pop.	Ratio of doctors to registered nurse
Colombia	23.8	1.9
Ecuador	17.4	2.4
Peru	19,5	1.0
Chile	32.7	1.9

Source: OPS (2009) Monitoreo de las metas regionales de RHUS en la Sub-región andina

It is estimated that most of the countries (especially in places with greater poverty, needs and exclusion) do not have the personnel necessary to reach a sufficient coverage level, especially in populations where there is no private market and, therefore, exclusively depend on the support of the public health systems, like the cases of Paraguay (9,1), Bolivia (10,8) and Guyana (9,2). In the 2000–2004 period there was a significant increase in the number of health personnel in some countries: Bolivia increased by 120%, Paraguay 44% and Colombia 24%. In MERCOSUR countries, the number of physicians exceeded that of nurses in a 5:1 ratio.

6.2. Distribution of Health Care Personnel

The various limitations that health care personnel are subject to are increased by the migration of professionals within the national territory (for example, from the public to the private sector or from rural to urban areas) and emigration to countries that offer better professional prospects.

Most of the countries of the Americas are being affected by this phenomenon, which must be faced within the countries and at an Inter American and global level, as a significant number of countries of the Region do not have sufficient personnel to cover their minimum needs (25 health workers per 10,000 inhabitants) (1).

There is a wide disparity in the distribution of health workers; urban areas have 8 to 10 times more physicians than rural areas. Some countries have important imbalances in their health professional offer with very few nurses per physician and absence of other essential professionals. Women account for almost 70% of the health labor force, but they occupy very few management positions and they usually are paid lower salaries, additionally they are the first to be affected by unemployment. Training of human resources continues to be based on traditional methodologies that do not encourage leadership and creativity. Planning of the human resource continues being limited (1).

Table 6.3 *Physician-nurse ratio per 10,000 inhabitants in provinces and departments with higher and lower availability, and ratio between extremes in selected countries of South America*

	Doctors			Nurses		
	Maximum	Minimum	Ratio	Maximum	Minimum	Ratio
Argentina	105,0	10,4	10,1	7,2	0,3	24,0
Bolivia	5,3	1,3	4,1	4,6	0,8	5,8
Colombia	14,7	6,0	2,5	4,3	1,9	2,3
Ecuador	24,4	5,7	4,3	9,2	1,5	6,1
Paraguay	19,6	1,2	16,3			
Peru	17,7	3,3	5,4	14,5	2,9	5,0

Source: OPS (2007) *Salud en las Américas 2007 (1)*.

Table 6.3 shows the inequality in the subnational distribution, illustrated in the physician-nurse ratio per 10,000 inhabitants in provinces and departments that have the highest and lowest availability of these professionals and the ratio between those extremes in some selected countries of South America (1).

6.3. Migration of Health Care Personnel

Limited availability, distribution and training of health personnel are aggravated by migration of personnel within the national territory and emigration to wealthier countries (2). Migration of human resources is an extremely complex phenomenon that is related to problems in the labor markets of the countries of origin and it tends to strip younger, better qualified individuals who are easily inserted in the recipient labor market. There are two main forms through which professionals work outside their countries of origin. Sometimes they migrate definitively—at least according to the expectations of the emigrants—and sometimes temporarily, like the case of Cuban physicians working in Venezuela (4), which in 2007 had 25,000 Cuban health workers cooperating in the country. Migration of health personnel from Ecuador, Peru and Columbia to Chile contributes professionals to primary care municipal services.

Some training programs for health professionals in the countries of the Region indirectly facilitate migration of their graduates and there is evidence that some medical schools have programs that are not in line with the health needs and problems of the country or with the technological levels available. This generates a high level of dissatisfaction and encourages emigration. There is

limited information about the problem and little capacity to adopt effective measures to prevent it, especially when the country of origin loses valuable human resources (that cannot be recovered in the short term) (2). The CAN has an Andean Observatory of Human Resources in Health, whereas the MERCOSUR has made progress in its international agreements on migration of health personnel, including the regulation of the migration of health professionals in that subregion.

6.4. Education and Training

Training of human resources continues based on traditional methodologies that hardly contribute to the development of leadership and creativity (2). There are a number of experiences in the Region that reflect the interrelation between health professional training institutions and health services, ministries or secretariats. These interactions have recently been incremented and continue to consolidate. The National Assistance – Training Commission (CONDAS) was created in Chile and in Brazil, the consolidation of the Network of Observatories of Human Resources generated a context of collaboration between the creators of the Single Health System (SUS) and the academic environment. Significant progress has also been made in Bolivia, Ecuador and Paraguay (2).

The opportunities of professional training in most countries of the Region and the profiles of the graduates have significant differences with the demand of health services and the needs of the population. This situation is aggravated by the feebleness of the mechanisms necessary for the

continuing education of health personnel. Despite the consensus about the importance of establishing health systems based on primary care, there is a relative lack of professionals whose training is focused on family health. Primary health care contents are generally weak in the curriculum of the basic training programs of health professionals and technicians, although they are much stronger in the training programs of nurses.

Over the past few years there has been a considerable increase of private health professional training centers in most countries, which together with the weakness or lack of regulating mechanisms to guarantee training quality, results in the fact that frequently graduates do not have the required skills. It is worth noting that 90% of the countries consulted consider that general State regulations on training contents are inadequate and that there are limited incentives to promote designing health professional training programs in line with the countries' realities (1).

Some countries have advanced in educational regulations. In Colombia, a decree was issued to guarantee the quality of the training of health professional. In Peru undergraduate compulsory training requirements were established for the faculties and schools of medicine, and in Bolivia several professions of the public system have accreditation processes.

This integrated multinational approach confirms that a matter that has been neglected in the health work plans may become a core element in the international actions in a relatively short period. It also evidences the value of leadership at the time of promoting international commitment and horizontal cooperation to start national and regional changes.

6.5. A New Agenda for Human Resources in Health

The Region continues showing inadequate quantity and quality planning of human resource requirements (2). In 2005, 28 countries of the Americas and different international agencies agreed on determined lines of action to overcome human resource difficulties. The Toronto Call to Action defined the need of a) defining policies and plans to meet the changing needs of the health systems and generate the labor capacity to

implement and revise them periodically; b) place the different types of health professionals where they are needed; c) control migration and displacement of health workers so that all the population has continuous access to health care; d) create healthy occupational environments and e) promote cooperation among the teaching institutions and the health services to make sure that health workers study programs are consistent with the needs of the population (4).

In October 2007, the Member States of the Region of the Americas committed themselves to pursue 20 regional goals on Health Human Resources to be fulfilled by 2015. This permits to make the five already mentioned challenges operational. The latest regional meeting held in Santiago in November 2008 promoted this agenda linking it with renewed primary health care and established new guidelines to aim at new developments.

In the integration context, a core component of the human resource planning strategy consists of finding ways of curbing or reducing the deleterious effects of the migration of health workers from developing countries to developed countries to a minimum considering that their work is indispensable in their countries of origin. Although this is a common phenomenon worldwide, the entire Region of the Americas has joined forces to adopt measures in this regard; Argentina, Brazil, Canada, Chile, Colombia, Ecuador, the United States, Peru, Uruguay, and Venezuela are involved in multinational studies on the migration of physicians and nurses in the Americas (4).

6.6. Observatories of Human Resources

In PAHO, the strengthening of the policies and information connected with human resources in health has occurred in relation to the observatories of human resources in health, a network of research, analysis, exchange of information, and promotion of the cause devised to guide the policies on human resources (4).

The initiative of the observatory was created with the purpose of collecting information and scientific evidence that would serve as a basis to formulate policies, renew and improve the labor force, and strengthen the relationships between the trade unions, the academy, and the health authorities to

correct the deficiencies and imbalances in the distribution of health workers (4).

By 2006, the network was made up of 26 countries compared with only nine at the beginning and in addition it had 40 work nodes and stations in a widely known network that has conducted national analysis and studies, and has generated a movement that is currently a regular component of the policy planning and design activities in the American countries. At present, many of these countries, like Brazil, Columbia, Cuba, Nicaragua, and Peru have a unit of the observatory in the institutional structure of their health ministries (4).

6.7. Implications for an Integrated Health Agenda

The countries of South America, in general, have already incorporated the human resource improvement component in their national health plans (although such plans may not be effectively implemented), indicating that priority has been given and there is experience in the matter at a national level. Along with this, the Andean Plan of Human Resources of CAN also contributes with a significant operational and empirical base to address the human resource subject at an international level.

The subject of migrations is a concern that can be best addressed with a supranational vision as; in general, it escapes national plans and efforts, especially in those countries that lose valuable qualified personnel. A joint view of horizontal cooperation is required, seeking agreements and promoting incentives that contribute to prevent losses of personnel in some health systems whose personnel emigrates.

The training and accreditation of the health human resource is an important issue that has been set forth in some agendas, and that would be benefitted by a broader international view to homologate criteria and contribute to the distribution of health personnel using personnel criteria. This would also provide labor satisfaction and motivation, thereby promoting stability, professional development and growth of the critical, qualified health resource, in line with national needs.

Finally, the perspective of going ahead with the 20 goals on human resources in health in an operational way at the level of the South American countries, as achieved by some Andean countries at the moment, provides a new integrated view so that health personnel may contribute to achieve the Millennium Development Goals for 2015 making the health systems of South America emblematic examples of the right to health.

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7. Policies and Access to Medicines

Access to medicines - essential health inputs - in the countries of South America varies significantly. To improve availability, quality and use of medicines according to needs, a series of limitations and difficulties must be improved in the formulation of policies and in the regulation, production, sale, supply, distribution and rational use of medicines, as needed.

The countries of South America are facing this situation both at a national level and in agreements and international agendas, like the one carried out in the CAN. In that same line, UNASUR Salud gives priority to the development of a South American drug policy and a health productive complex in order to have greater availability, access and rational use of medicines in the countries in South America.

7.1. Access to Medicines

The limitations and inequalities to have access to health services include access to medicines, at least access to essential medicines by persons that cannot pay to acquire them in the market. Access and the effective use of medicines to a great extent depend on the family income and the household's spending capacity. Policies and strategies have

been developed in several countries of South America to increase availability and coverage of medicines like the implementation of free programs for the needy population. Table 7.1 highlights types of free medicines that the countries deliver for priority diseases (like tuberculosis, malaria and AIDS), vaccines (expanded immunization programs) and vulnerable groups of the population (mother child).

Table 7.1. Free medicines for groups of population or disease in countries of South America

Type of free medicine	Countries	
	n	%
Any type of free medicine	11	100
Medicines for tuberculosis	1	100
Medicines for malaria	8	73
Medicines for children under 5 years old	9	82
Vaccines in Expanded Immunization programs	11	100
Medicines for HIV/AIDS	10	91
Medicines for pregnant women	9	82

Note: Includes 11 countries (no data available for Venezuela)

Source: PAHO (2008), Overall pharmaceutical situation WHO, Level I_AMRO ANALYSIS_tables_sept2008.

Although progress has been made, it is still necessary to develop and/or strengthen the policies that cover the entire production process, sale, distribution, and rational use of medicines. This includes transparency in the sanitary approval procedures, establishing appropriate quality standards and disseminating information about medicines (1,2,3)

7.2. Policies on Medicines and Regulatory System

There are frequently conflicting interests between giving priority to commercial interests (of the market) and the right of people to use medicines as needed. The formulation and implementation of pharmaceutical policies involves health, industrial, scientific and technological aspects. Some countries have regulatory bodies like Brazil and Argentina, which are assuming acknowledged leadership in pharmaceutical policies. Ecuador approved a relatively broad law on generic medicines in 2000 to ensure production and access to medicines, forcing the use of more inexpensive

medicines in the public sector and that at least 20% of production was made up of generic medicines. Countries like Bolivia, Chile, Peru, and Uruguay have increased public purchases, thereby increasing the availability of pharmaceutical products (1).

The Pan American Network for the Harmonization of Pharmaceutical Regulations (PARF network) is the regional strategy to support the national and subregional processes. The main objective of the PARF is contributing to the quality, safety and efficacy of pharmaceutical products, producing a series of relevant documents and educational activities in regulatory matters (1).

Over the past few years, PAHO has supported the strengthening of the National Regulation Authorities (NRA) (3,4,6,7). To monitor medicines in the countries, WHO has a tool that permits countries to identify the essentials functions, detect

strengths, weaknesses, and potential aspects that guide towards the preparation of an institutional development plan. The regulatory system requires having all the juridical instruments, infrastructure and personnel necessary to develop those control functions in accordance with the area of competence of the NRA. In addition to the purpose of contributing to strengthen the NRAs and the conviction that it is the body responsible for guaranteeing the population, safe, effective and proven medicines. Between 2002 and 2007, PAHO has contributed to revise the implementation and development of NRA's essential functions in the countries, in order to determine the needs related to training, training modules, regional forums, requirements to grant licenses to medicines and vaccines, and other country initiatives (4). Table 7.2 and Figure 7.1 summarize compliance with the different functions in 10 countries of South America (3).

Table 7.2. Percentage of compliance with the regulating system and control functions

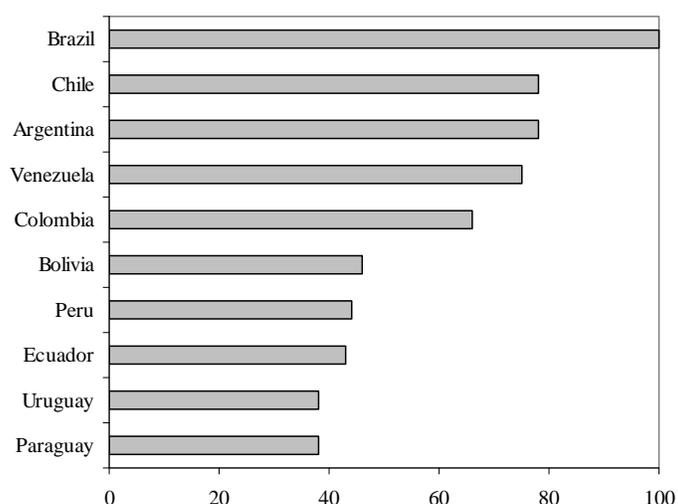
Country	Regulatory system	Registry	Quality control laboratory	Stock liberation	B.P.M	Post trade control	Clinical trials	Total
Argentina	86	78	75	75	83	50	100	78
Bolivia	71	56	58	50	50	12,5	25	46
Brazil	100	100	100	100	100	100	100	100
Chile	86	89	83	75	100	37,5	75	78
Colombia	86	67	75	50	83	50	50	66
Ecuador	57	56	58	75	33	25	0	43
Paraguay	57	56	50	0	50	50	0	38
Peru	57	44	50	50	33	25	50	44
Uruguay	57	56	58	50	17	25	0	38
Venezuela	71	78	100	100	50	50	75	75
South America	71	66	63	50	59	47	44	58

Source: OPS (2006), Revisión de Funciones de Organismo Regulator de Medicamentos. Working document THR, OPS: WDC

All the countries of South America have the legal instruments necessary to exercise the function of authorizing and controlling medicines and the total quality concept is being developed in several countries. Transparency and responsibility have acquired special importance in recent years motivating a series of initiatives to guarantee these matters. There are several countries in the Region,

however, whose hierarchic structure is incompatible because they are also are part of the National Regulation and Production Authority. Most of the countries do not have a medium and long-term institutional development plan. The NRA has limited capacity to assess, control and supervise biotechnological products and vaccines.

Figure 7.1. Global compliance (%) with the regulatory system and control functions



Source: PAHO (2006), Revisión de Funciones de Organismo Regulador de Medicamentos. Documento de trabajo THR, PAHO: WDC

The countries have a long experience in the quality control of medicines, with the development of a regional network of quality control laboratories. Each subregion has at least one laboratory with proven capacity, which may eventually provide services to countries that do not have quality control laboratories of biological products.

Notwithstanding, there are limitations of resources and personnel to consolidate good quality control and in some countries where there is state production there is some confusion about the skills and attributions of a NRA quality control laboratory.

Table 7.3. Compliance with drug regulations in countries of South America

Policy area covered	Countries	
	n	%
Regulatory national authority (RNA)	12 of 12	100
Trade Authorization	11 of 12	92
Autorization for drug production	11 of 12	92
Autorization for drug distribution	11 of 12	92
Existing legal basis for import and export authorization	11 of 12	92
RAM monitoring	8 of 12	67
Compulsory prescription of generic drugs in the private sector	6 of 12	50
Allowed generic substitution in the private sector	9 of 10	90
Allowed generic substitution in the public sector	10 of 10	100
Carrying out inspections to pharmaceutical facilities	10 of 12	83
Requirements for regulatory transparency, responsibility and conduct code	12 of 12	100

Note: The areas investigated include between 10 and 12 countries.

Source: PAHO (2008), Overall Pharmaceutical Situation WHO, Level I_AMRO ANALYSIS_tables_sept2008

Table 7.3 summarizes compliance with drug regulation by the countries of South America. There is good compliance in most countries but

there are limitations in the monitoring and role of the private sector. The health ministries, as the entities responsible for the countries' public health

and, therefore, of pharmaceutical regulations, must lead this process through the national regulation and sanitary control bodies, actively participating at the subregional, regional and global spheres aiming at greater and better harmonization of pharmaceutical regulations. Together with the health ministries, other state institutions like the ministries of commerce, industry or education, participate in the harmonization processes. The private sector is chiefly represented through the pharmaceutical industry. Its representatives must adopt and enforce regulatory requirements to guarantee and improve the quality, effectiveness and safety of medicines and vaccines, as well as ensuring the truthfulness of the associated information. Other relevant players are the academic community, consumer protection organizations and other groups of interest in the field of medicines and pharmaceutical products, through surveillance, social accounting and proposals to improve the system (1).

7.3. Production and Supply of Medicines

The medicines market has shown steep growth worldwide. Only over the past five years it expanded more than 50% (1). In 2006 the countries of South America that led sales were Brazil (US\$8,150 million) and Argentina (US\$2,148 million) (1). The pharmaceutical industry is currently globalized. In Argentina, local capital producers have the greatest share of the market (50% of the laboratories), followed by Chile with 43%, Uruguay with 26% and Brazil with 25% (1). None of the countries is completely self-sufficient. Imported products in Brazil account for 19% of the market, in Argentina 30%, in Peru 40%, in Uruguay 50%, and in Ecuador 80% (1).

Two thirds of medicines in Latin America are paid by households and only one third from other sources. In Chile, public purchases of medicines rose considerably with the system of Universal Access with Explicit Guarantees (AUGE), accounting for approximately 30% of total spending; in Brazil the Single Health System (SHS) provides 25% of total medicines that circulate in the country, in Peru public sector acquisitions represent 21% and in Argentina approximately 15% (1).

More than half of the inhabitants have difficulties to have access to essential medicines. The prices of the medicines are the main obstacle, although

access also depends on the population's income. When prices are adjusted for purchasing power, Uruguay—which has the lowest average price—has the highest prices. Another barrier has been attributed to the fact that the rapid innovating pace of the industry is not consistent with the problems that prevail in the countries and in less developed areas (1). The use of lists of essential medicines, besides guiding production and acquisition activities, permits assigning priorities and adequately solving the problems of access and rational use of medicines. The use of these lists of medicines should be compulsory in public institutions and recommended to the private sector. All the countries of South America have lists of essential medicines and they use them to guide public sector purchases; however, less than half of the price of such medicines is reimbursed by public and private health insurances.

The List of Essential Medicines serves as a guide for the procurement of medicines by the public sector and it is used as primary reference in some countries to reimburse the medicines financed by private health plans (9). Most of the countries have incorporated rules to promote prescription in the public sector according to the common international denomination, but a minority applies it in the private sector (2,3). In Argentina, 78% of prescriptions include the generic name.

Frequently isolated, disconnected procurement processes, parallel distribution systems, and duplication of functions at a district and national levels are observed, without any coordination at all. Also, supply of products is often ensured through isolated procurement processes that do not take into account the importance of implementing and monitoring the entire system, leading to shortage and an increase in costs, and the available funding is not used (1). The cost of medicines in the public sector continues rising. In Brazil the cost of medicines in 2006 accounted for approximately 11% of the national health budget, 5% higher than in 2002.

PAHO's Strategic Fund is a technical cooperation tool created to support countries to plan the procurement and purchase of strategic supplies for public health. The Strategic Fund provides technical support for the procurement and regulation of supply, especially of basic products related to HIV, a very complex area with regard to

procurement because of the challenge of projecting needs when there are different lines of treatment; the determination of the status of the product patents; and the policies of differentiated pricing which are applied by some manufacturers throughout the Region. The countries that participate in the Strategic Fund are trying to work together to face the similar challenges in the procurement and supply of other complex high-cost medicines, including immunosuppressors and cancer-treatment medicines (1).

7.4. Intellectual Property, Innovation and Access

The measures to protect intellectual property in the countries of South America vary greatly, especially in the application of the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) of the World Trade Organization (WTO). The legislations of some countries are considered in TRIPS plus (which grants greater rights to the patent owner), like Chile, Brazil, Peru, and Colombia; others, however, like Venezuela, Ecuador and Bolivia have less stringent legislations and there are particular cases like Argentina. In addition, most countries are members of the World Intellectual Property Organization (WIPO), and as parties thereof, they are Contracting States of the Patent Cooperation Treaty (PCT), which establishes bilateral patent-acknowledgement mechanisms (10,11).

WHO has an Intergovernmental Working Group (IGWG) on Public Health, Innovation and Intellectual Property and has approved a WHO draft document on intellectual property: The countries of the Americas held meetings to deal with this matter and there was subregional consensus about a set of alternative proposals to the WHO draft. The Rio document (2007) was developed for the Region, which was supported by several countries of the Region including Chile, Ecuador, Brazil, Venezuela, and Argentina. The contents of the document provide an overview of the future challenges (10,11).

7.5. Rational Use of Medicines

The current world market trends and its distortion of considering medicines as goods have generated significant problems, increase in self-medication, indiscriminate rise in consumption levels,

resistance to antimicrobial agents, and aggressive campaigns to advertise and promote medicines, which has a negative influence on the processes of prescription, dispensation and use. The countries have acknowledged the existence of health risks associated with the irrational use of medicines, especially with regard to self-medication and non-authorized prescription. Health professionals and patients frequently forget that no drug is completely safe and that not always the best drug is the most innovative or expensive one. Also, there is a growing trend to attribute pathological states to persons in physiological conditions or to assign medicines exaggerated properties, which have not been demonstrated or are inexistent (8).

The selection of a list of essential medicines is a powerful instrument to guarantee the rational use of medicines. The National Therapeutic Forms (NTF) and the Standardized Treatment Guides (STG) are of obligatory use in some institutions but they frequently are not part of the medical practice and, therefore, a great deal of effort, training and institutional coordination is required for their fulfillment.

Self-medication continues to be a problem in the Region, especially the use of antibiotics. The sale without prescription of these medicines, together with the high rate of erroneous prescription, significantly contributes to the resistance to antimicrobial agents. Among the countries' strategies to deal with this problem, Chile adopted regulatory measures in 1999, which have been successful in reducing the use of antibiotics (1).

Considering elements like the users' right to have access to information and the need of rationalizing the use of medicines is fundamental. This requires developing strategies that promote the rational use of medicines, taking into account that no drug is free of risks. Also, citizen involvement must be considered, not only as users of the products or services, but also as guarantors of their own rights.

7.6. Implications for an Integrated Health Agenda

The networks, forums and initiatives that have been developed subregionally and regionally in the area of medicines, are one step forward and an important basis for the subsequent improvement of policies and access to medicines, as pursued by the

different Agendas, like the ones developed in the Andean Community of Nations (ORAS-CONHU) and PAHO. However, this is a complex issue because of the serious limitations related to production, price, sale, supply, access, and use of medicines, especially of some essential medicines. This particularly affects those who depend on the public services to have access to medicines and the poorer people (who generally are the ones that need them most).

It is important to continue making joint, integrated efforts to develop, implement and strengthen the policies that favor access, quality and rational use of medicines, applying transparency strategies to the health authorization procedures, establishing appropriate quality standards, and disseminating information related to the products.

When there are market limitations to permit the population to have access to medicines, it is important to have a set of agreements for the production, sale and acquisition of essential medicines in order to ensure the population better access, especially the poorer and underprivileged people.

Harmonization and working networks have been facilitated by the Pan American Network for Drug Regulatory Harmonization (PANDRAH) and the dialogue among the National Regulation Authorities (NRA). This network may continue strengthening its regional strategy to support the national and subregional processes. The strategic approach of PAHO/WHO may be useful to guide the national and subregional strategies for the rational use of medicines.

It is important to monitor all the phases of policy improvement, supply and access to medicines (at least to essential medicines) in the countries of South America. The WHO database (Overall Pharmaceutical Situation, WHO) used by PAHO (updated for 2008) is a useful monitoring tool (2). The creation of the Andean Drug Observatory (and a Portal) is also an important tool to adequately follow the progress made in the development of

policies, and access and adequate use of medicines in the countries of South America.

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8. Multiple Health Agendas in the Integration Processes

There are multiple, simultaneous health agendas in South America: national, binational and, subregional, which are related to cooperation among countries or integration organizations (CAN, MERCOSUR, OTCA) and South American organizations (UNASUR Salud). Also, at a continental level there is the Health Agenda of the Americas 2008-2017 and at a global level, the WHO Health Agenda, plus those developed by more than one hundred Global Health Alliances. This set of agendas—at different levels—in general cover similar subjects; therefore, they overlap and complement each other in their area and scope of action.

Each type and level of agenda, however, is specific and has autonomous objectives and benefits. This chapter focuses on the different existing agendas, the health aspects covered by them, the areas of those agendas established in the South American integration processes, and the added value both of PAHO's technical cooperation and the development of alliances for health-related purposes.

The situation represents an opportunity and challenge for UNASUR Salud, whose action will be more coordinated, integrated and effective, in the extent that steady progress can be made in the implementation of strategies and in the solution of problems that are common to the South American Region, considering the existing resources and proposals. This implies that the joint work of the countries in the UNASUR Salud Agenda requires knowing and harmonizing the work of the different national agendas aimed at objectives that can be reached by all its participants and supported by effective systems of information, monitoring and surveillance. Annex 2 contains the summary of the priority matters covered by the national and international health agendas in South America.

8.1. National Health Agendas

The national health agendas have many common aspects and subjects but also specific characteristics of each country. The health situation of the countries of South America permits identifying common aspects with great similarities in health conditions, health systems and the political, social and economic context. Each country, however, has its own problems and a particular approach to face and address the principal needs and priorities. Also, the feasibility of implementing policies, plans and programs varies among the countries (1). That is why the national agendas have specific characteristics and the international agendas share common aspects. This permits horizontal work and cooperation, which is beneficial to all the countries.

Among the subjects that are generally covered by the national health agendas (in policies and plans) are (2):

- Promoting and improving social determinants relevant to health, with an emphasis on equity and intersectoral action
- Strengthening the regulatory role of the health authority, adequate health sector financing, and ensuring access of the population to quality health systems
- Communicable diseases of importance to public health, including prevention, control and surveillance, and the arrangements to address the application of the International Health Regulations
- Non-communicable chronic diseases of greater relevance to public health
- Environmental conditions and occupational health
- Strengthening the health systems with an emphasis on assistance service networks, development of human resources, medicines, primary health care and the search for greater efficiency, pertinence, distribution and effectiveness
- Diversity and multi-cultural approach
- Active participation of the population and network of community organizations in health

To fulfill these objectives, the national health agendas have the support of international cooperation, both financial and technical, provided by bilateral, multilateral or private partners. Cooperation may be provided through corporations, philanthropic foundations or NGOs. Horizontal cooperation provided among countries with the same subregion is also worth noting, which is contained in the working agenda of all the health integration processes in South America (2). To ensure greater effectiveness and coordination of the cooperation from different agencies and agendas, they must be harmonized and aligned. Therefore, it is important to be familiar with the different international integration and cooperation agendas that cover the countries of South America.

8.2. Technical Cooperation among Countries

The countries of the Region also establish health-action agendas through Technical Cooperation among Countries (TCC), which is essentially a process through which two or more countries work together to develop individual or collective capacity through the cooperative exchange of knowledge, skills, resources, and technology. The purpose is contributing to develop the capacity of one or more countries, strengthen their relationships, increase exchange, generation, dissemination, and use of technical and scientific knowledge, as well as training human resources and strengthening their institutions. Ideally, TCC activities must be started, organized and managed by the same countries, under the direction of the relevant government, and the participation of the institutions and the public and private organizations (UNDP 1998). In this type of cooperation, the countries share experiences and technical capacities as well as their own resources, and take advantage of external advice and financial support, when necessary (1,3). The TCC was based on the concept of Technical Cooperation between Developing Countries, and PAHO - among the organizations of the United Nations System - has assigned a specific sum of its budget to favor and materialize the TCC, which in turn is an ideal mechanism and an opportunity to establish alliances and develop networks with different sectors of society, with the purpose of addressing determining factors of health with concrete actions

and public policies to achieve the highest possible level of health for all.

As an empirical model of TCC with a subregional focus, eleven countries of South America have developed the Technical Cooperation Project on vaccination against measles and rubella, aimed at populations located in border areas where there is traffic to and from Brazil and Argentina, with the purpose of contributing to eliminate rubella and the congenital rubella syndrome, and consolidating the elimination of measles in the Region of the Americas, by vaccinating 95% or more of the target population in border points (3,4).

8.3. The Health Issue in South American Integration Processes

The countries of South America participate simultaneously in different subregional integration blocks and subregional health alliances, which coincide in some cases with the economic integration organizations. In general, priority is given to political and economic agreements and interests, where countries try to maintain a balance between the autonomy of each country and the integration in blocks that permits more effectively facing the international market and globalization (1). These processes have extended to cover other relevant issues, like those related to health and social matters. This permits two or more countries to work together to build individual and group capacities through the exchange of knowledge, skills, resources, and technologies, in areas like disease control, risk management, environmental health, family and community health, health services, emergencies and catastrophes, and humanitarian aid (2).

The integration process of the Andean Area was materialized in 1969, and its current Member States are Bolivia, Colombia, Ecuador, and Peru. Associated members are Argentina, Brazil, Paraguay, and Uruguay.

The Andean Community of Nations (CAN for its acronym in Spanish) includes the Hipólito Unánue Agreement on Health (ORAS-CONHU for its Spanish acronym), which defines integration in the health area with a dynamic agenda, whose Maximum Directive body is the Meetings of Health Ministers of the Andean Area (REMSAA for its Spanish acronym). Its technical secretariat is

exercised by ORAS-CONHU, created to implement the agreements of the Ministries of Health of the Andean Region with the priority of coordinating and supporting the efforts of the Member States, individually or collectively, to improve the health of their peoples. Also, it coordinates and promotes actions to improve health, with an emphasis on developing subregional systems and methodologies, and it coordinates health actions with other subregional, regional and international bodies (2,5).

Within the REMSAA framework, progress has been made with regard to access to medicines, like the joint negotiation with respect to medicines to treat HIV/AIDS. To address border health issues, ORAS-CONHU is implementing the Andean Health Plan on the Borders (PASAFRO for its acronym in Spanish), as well as the PAMAFRO Project (Malaria Control in the Border Zone of the Andean Region with a community base) to reduce malaria in the border zones with highest malaria incidence in the subregion (2,5).

The lines of action in the five strategic areas approved by the Ministers of Health developed by the Andean Health Body are:

1. Health Integration Area: Integration Agenda; Andean Health Program in Border Zones (PASAFRO), Malaria Control Project in Border Zones (PAMAFRO).
2. Area of Epidemiological Surveillance and Environmental Health, Epidemiological Surveillance, Environmental Health and Water, Emergencies and Disasters.
3. Area of Drug Policy and Health Technology: Policy and Access to Medicines and Biological Products, Health Technology.
4. Human Resources Area: Human Resources in Health, Economy and Health.
5. Health Promotion and Protection Area: Fight against the Smoking, Intercultural Health, HIV/AIDS, Prevention of Teenage Pregnancy, Eradication of Infant Malnutrition, and Workers' Health.

MERCOSUR was created in 1991 as a commercial treaty that subsequently evolved to a common market with the economic, political and social integration of its members, together with public policies in matters like health, education, environment, employment, democracies, and

human rights. It has an emphasis on community participation and equity (regional asymmetries) (4). The Meetings of Health Ministers of the MERCOSUR and the Associated States (RMSMEA for its Spanish acronym) are in charge of harmonizing health policies, while Working Subgroup No. 11 focused on health, works on the harmonization of regulations. In addition, other working subgroups focused on agriculture and environment (No. 6 and 8, respectively) also include health-related subjects. Health is a subject that is addressed in one way or another in other working groups like the MERCOSUR Education Working Group (6).

As an integration process, the health challenges addressed by MERCOSUR all have to do with sustaining ongoing efforts to harmonize regulations as the basis for free trade in health products. It seeks to improve the institutional performance of regulatory agencies and the harmonization of relevant regulations, including provisions relating to good manufacturing practices and quality control for the pharmaceutical industry, blood and blood products, medical supplies, household health supplies and chemicals, information and epidemiological information processing systems, and technology evaluation, among others. It is also focused on access to timely information; organ, tissue, and cell donation and transplants; implementation of International Health Regulations, a health surveillance system for dengue and other diseases; improving health conditions in border communities; developing an integrated policy for controlling HIB and STD epidemics; sexual and reproductive health; an integrated smoking control policy; oversight in management of natural disasters and incidents with hazardous materials; an environmental and occupational health policy; public health research; and equitable access to knowledge as a health-related regional public good in MERCOSUR (2,6).

RMSMEA has technical groups in charge of analyzing and reviewing proposals that are subsequently submitted to the consideration of the Ministers of Health. These are coordination groups, intergovernmental commissions and *ad hoc* groups (4). Working Subgroup No. 11 includes three specific commissions:

- Commission of Products for Health (that covers psychotropic medicines and narcotics; blood and

blood products, medical supplies, cosmetics, domestic health supplies)

- Commission of Health Care Services (professional development and exercise; evaluation and use of technologies in health services)
- Health Surveillance Commission (non-communicable diseases)

The Amazon Cooperation Treaty Organization (OTCA) was created in 1978 to promote joint actions aimed at the harmonic development of the Amazon Basin, with the common commitment of preserving the environment and rationally using Amazon natural resources, in line with the principles of sustainable development (7). Unlike CAN and MERCOSUR, OTCA has more specific objectives; therefore its nature and structures are different. OTCA operates through Commissions, one of which is the Special Commission of the Amazon on Health (CESAM for its Spanish acronym), with which PAHO/WHO have been cooperating since 2001. The purpose of this commission is promoting the sustainable development of the relevant Amazon territories of the signatory States, so that such joint actions produce equitable and mutually beneficial results; as well as the environmental preservation and the preservation and rational use of those territories (2,7).

OTCA has a technical cooperation agenda based on a Framework Agreement between OTCA and PAHO that includes, among others, a series of relevant areas:

- Development of OTCA institutional capacities and strengthening commissions related to health and the environment;
- Environmental health, including management of the water resources of the cross-border basin of the Amazon River;
- Communicable diseases, with an emphasis on malaria and the epidemiological surveillance network;
- Sustainable development of the Amazon territories;
- Improvement of the quality of life and access to health services by Amazon populations.

As another phase of this entire integration process in the countries of South America, UNASUR has recently created the South American Health

Council (UNASUR Salud), which is being implemented by the different countries and it is creating the groups that will permit consolidating and executing the Council's work plan.

The decision that establishes the South American Health Council (UNASUR Salud) stipulates that it a permanent entity formed by Ministers of Health of UNASUR, whose general objective is "consolidating South America as a place with integrated health that will contribute to Health for All and development, incorporating and integrating the subregional efforts and achievements of MERCOSUR, ORAS-CONHU and OTCA" (8).

The Health Agenda of the Americas 2008-2017, which was approved by all the ministers of health of the Region in 2007, defines the following areas of action for the Region:

- Strengthening the national health authority
- Addressing health determinants
- Taking advantage of knowledge, science and technology
- Strengthening solidarity and health safety
- Reducing health inequalities among countries and the inequities within them
- Reducing risks and the disease burden
- Increasing social protection and access to quality health services
- Strengthening management and the development of the people who work in the health sector (9,10).

This Agenda is consistent with the countries' directives and also with global priorities related to primary issues like dealing with communicable and non-communicable diseases, equity and social determinants, strengthening of the health systems, and primary health care strategies.

The Global Agenda to fulfill the Millennium Development Goals (MDGs), ratified by the Heads of State in 2000 with the Statement on the Millennium, is focused on overcoming underdevelopment and it includes objectives directly related to health (child mortality, maternal mortality, infection caused by HIV/AIDS, malaria, tuberculosis, and other infectious diseases). The rest of the objectives are closely related to health, especially those that constitute relevant social determinants like poverty, education and malnutrition (10,11,12).

The Health Agenda of the Americas 2008 – 2017, is in line with the Millennium Development Goals and WHO's Eleventh General Working Program, with a vision to achieving a healthier, more equitable Region, where each person, each family and each community has the possibility of developing its maximum potential. In addition, this is an important initiative that may serve as a framework to harmonize and coordinate the existing Agendas at a national and international level in South America (1,9).

8.4. PAHO Cooperation Strategies

Since its foundation, PAHO has significantly contributed to promote and catalyze cooperation among its Member States in relation to common health initiatives, whose current framework for action is determined by the Health Agenda for the Americas, 2008-2017 (1). By resolution of the 45th Directive Council, PAHO has the explicit mandate of supporting the health-related action plans of the different subregional integration processes of the Americas. To that end, alliances have been promoted with the bodies responsible for coordinating the regional integration processes in the health area. Since 2006, PAHO uses Biennial Program Budgets (BPB) that have a subregional approach. These technical cooperation programs are agreed upon and assessed among others, with the MERCOSUR and the Andean Community of Nations (CAN). The purpose is to strengthen the structures and mechanisms of those bodies to contribute to effective health development (1,10).

PAHO's technical cooperation strategy, in line with the strategies of WHO's Eleventh Work Plan and Medium-Term Strategic Plan, establishes cooperation priorities in its Strategic Plan 2008-2012, with 16 Strategic Objectives and region-wide expected results, including:

- Reducing the health, social and economic burden of communicable diseases
- Combating HIV/AIDS, tuberculosis and malaria
- Preventing and reducing morbidity, disability and mortality from chronic non-communicable conditions, mental disorders, violence and injuries
- Improving health during key stages of life (maternal, childhood, adolescence, adult, elderly)
- Reducing the health consequences of emergencies, disasters and conflicts, and minimize their social and economic impact
- Promoting health and preventing risk factors such as smoking the use of alcohol and medicines, unhealthy diets, lack of exercise, and risky sexual practices
- Addressing the underlying social and economic determinants of health
- Promoting healthier environments as well as public policies to combat environmental threats to health
- Improving nutrition, food safety and security throughout the life cycle
- Improving the organization, management and delivery of health services
- Strengthening leadership, governance and the evidence base of health systems
- Ensuring improved access, quality and use of medical products and health technologies
- Ensuring an available, competent, responsive and productive health workforce
- Extending social protection through fair, adequate and sustainable financing
- Providing leadership, strengthening governance and fostering alliances with Member States, the United Nations system and other stakeholders to fulfill the mandate of PAHO/WHO
- Developing and sustaining PAHO/WHO as a flexible, effective organization, enabling it to carry out its mandate more efficiently and effectively (1,10).

The Secretariat of the Pan American Health Organization/World Health Organization (PAHO/WHO) applies Technical Cooperation among Countries (TCC), as a unique solidarity and horizontal cooperation tool to strengthen the countries' institutional capacities to respond to their health needs. The mission of the Pan American Health Organization (PAHO) establishes "leading the strategic collaboration efforts of the Member States and other allies to promote health equity, combat disease, improve the quality and lengthen the lives of the peoples of the Americas (13)." Technical Cooperation among Countries (TCC) is a fundamental tool for the organization to fulfill its mission. For PAHO/WHO, the TCC is a privileged form of health cooperation, whose potential must be more intensely exploited to face the new challenges and make more rapid progress towards achieving the Millennium Development Goals. Within the framework of the Organization

Change Strategy assumed by PAHO/WHO's Director since 2004, five strategic objectives have been set, among which two are included: "Better responding to the countries needs" and "Adopting new Technical Cooperation methods," which stress the renewed commitment of the Organization with TCC. This commitment implies "working in close connection with all the political, technical and social networks, mobilizing all the resources and alliances available or to be created..." Thus, PAHO/WHO has the capacity to "continue being at the service of the Member States, proposing goals and more successful strategies to ensure the fulfillment of the unfinished strategy, sustaining the achievements reached, and facing the new challenges (3). The project to combat hydatidosis in Peru and Uruguay and the vaccination campaign against measles and rubella in MERCOSUR cross-border areas, for example, are noteworthy (2,4).

8.5. Developing Health-Related Alliances

In recent years global networks of multiple partners have been developed, including bilateral, multilateral, and private partners and the civil society, which have converged to develop alliances in priority issues related to health and development, in which PAHO and the countries have been actively involved. In the region of the Americas, we have the Inter-agency Consensus Strategy to Reduce Neonatal Morbidity and Maternal Mortality, the Alliance for Maternal, Infant and Child Health; the program "Faces, Voices and Places", the initiative "Hunger- Free Latin America", the initiative "Towards the Eradication of Child Malnutrition", among others (10). Among the most recent ones are:

- The initiative—Lets Act Today for Mothers and Children—which pursues improving the health of mothers, the new born and the child, based on horizontal cooperation and the support of a large global network of participants (governments, institutions, donors, UN agencies). The initiative is led by Chile's President, Michelle Bachelet, and the President of Brazil, Luiz Inácio Lula Da Silva, who created a political, technical, and financial cooperation platform, which was joined by the entire Region. This alliance is inserted in the Partnership for Maternal, Neonatal and Child Health (PMNCH), which corresponds to a large global network of countries, agencies and donors.

- The Pan American Alliance for Nutrition and Development, an institutional and interagency initiative, will make it possible to join and coordinate efforts and international cooperation resources to promote, agree on, implement, monitor, and assess effective multisectoral and interprogram interventions based on the evidence, responding to a multiple cause approach of malnutrition.
- The Regional Directors Group (RDG) of Latin America and the Caribbean, which cosponsors ONUSIDA, pursues harmonized, coordinated action among the different agencies and countries that face the complex HIV/AIDS problem.

8.6. Implications for an Integrated Health Agenda

Upon reviewing health-related agendas and projects in regional integration we conclude that there are health issues that are included in the different agendas, like epidemiological aspects, including malaria, tuberculosis, and HIV/AIDS; the improvement of health systems; health actions in border zones; and joint efforts of countries to integrate health agendas.

The challenge is supporting each specific agenda and at the same time harmonizing, coordinating and/or integrating efforts to carry out efficient, effective actions that have a real impact. Adequate knowledge and monitoring of each agenda and the overall setting (including objectives, actions, expected impact, financing, coverage of countries or vulnerable groups, international commitment) will permit ensuring the best mutual cost-benefit for the countries, agencies and participating Member States, with the ultimate goal of preserving and improving the health and living conditions of the population of South America.

The integrated work of the governments on the fulfillment of the MDGs, including priority health matters and the most relevant social determinants of health is an important opportunity to strengthen the national and subregional agendas regarding mother-child health, AIDS, tuberculosis, malaria, and malnutrition. Using international alliances to deal with these matters, which at a national level comprise the most relevant sectors and players of society, also represents the possibility of achieving

results that would not be attained in an isolated manner, and at the same time it sets forth the great challenge of a joint, integrated action, as well as adequate monitoring of the components and factors that will permit to comply with the goals and objectives set at different levels.

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Annex 1. Core Health Indicators Profile for South America, 2008

Indicator	Year	Value	Level in countries	
			Maximum	Minimum
Demographic indicators				
Total population (million)	2008	388	194.2	0.5
Crude birth rate (1,000 inhabitants)	2008	19.1	26.8	14.9
Average annual births (thousand)	2008	2130.5	3672.1	8.9
Average annual deaths (thousand)	2008	716.5	1241.1	3.2
Annual demographic growth (%)	2008	1.2	1.8	-0.3
Global fertility rate (children/woman)	2008	2.3	3.4	1.9
Urban population (%)	2008	82.9	93.4	28.4
Dependence ratio (100 inhabitants)	2008	53.3	70.7	47.3
Life expectancy at birth (years) total	2008	73.2	78.7	65.9
Life expectancy at birth (years) men	2008	69.8	75.6	63.8
Life expectancy at birth (years) women	2008	76.6	81.7	68
Socioeconomic indicators				
Literate population (15 years and +) (%) total	2007	92.1	98	90.3
Literate population (15 years and +) (%) men	2007	92.4	97.6	90.1
Literate population (15 years and +) (%) women	2007	91.7	98.3	85.4
Calorie availability (Kcal/pc/day)	2003	2886	3146	2219
Gross national income (US\$ per capita 2006) current value	2006	4419	6810	1100
Gross national income (US\$ per capita 2006) value ppp	2006	8549	11670	3410
GDP annual average growth (%)	2005-2006	5.4	10.3	3.7
<i>Under the international poverty line (%)</i>				
Income ratio 20% higher/20% lower	2000-2005	19.4	42	10.1
Total improved sources of drinking water	2006	90.7	100	77
Urban improved sources of drinking water	2006	96.1	100	85
Rural improved sources of drinking water	2006	66.2	100	52
Population with improved sanitation facilities (%)				
- total	2006	77.8	100	43
- urban	2006	84.4	100	54
- rural	2006	48.2	99	22
Mortality indicators				
Maternal mortality ratio (100,000 lb) rate	2006	80.2	229	18.1
Infant mortality rate (1,000 nv)rate	2006	19.4	54	7.6
Mortality of <5 years old (1,000 lb) – UN estimate	2006	27.6	63	9
Mortality of <5 years old (1,000 lb) – WHO estimate	2006	21	62	9
Recorded deaths < 5 years old, due to acute diarrhea (%)	2006	4.2	9.9	0.5
Recorded deaths < 5 years old, due to acute resp. infection (%)	2006	6.8	15.5	3.7
Estimated mortality rate - homicides men (100,00)	(2003-2005)	50.1	112.3	4.4

inhabitants)				
Estimated mortality rate - suicides (100,00 inhab.)	(2003-2005)	5.6	25.1	1.7
Homicide mortality rate ratio (men : women)	(2003-2005)	10	13.9	3.3
Estimated mortality rate – land traffic accidents (100,00 inhabitants)		18.2	22.6	8.6
Incorrectly defined or ignored cause (%)	(2003-2005)	8.9	45	0.6
Mortality under-registration (%)	(2003-2005)	16.5	67.3	1.4
General mortality rate (all causes) (1,000 inhab.)				
- total estimated	(2003-2005)	6.2	9.3	4.3
- total adjusted	(2003-2005)	6.8	9.5	4.9
- men estimated	(2003-2005)	7.1	9.8	4.8
- men adjusted	(2003-2005)	8.1	10.5	5.8
- women estimated	(2003-2005)	5.4	8.9	3.7
- women adjusted	(2003-2005)	5.6	8.5	4
Mortality rate – communicable diseases (100,000 inhabitants)				
- total estimated	(2003-2005)	65.5	140.7	33.2
- total adjusted	(2003-2005)	74.5	182.3	30.8
- men estimated	(2003-2005)	72.3	149.9	35
- men adjusted	(2003-2005)	86.2	197.6	36.4
- women estimated	(2003-2005)	58.9	131.6	31.5
- women adjusted	(2003-2005)	63.9	169.3	25.9
Mortality rate – malignant tumors (100.000 inhabitants)				
-total estimated	(2003-2005)	106	240.4	56
- total adjusted	(2003-2005)	112.6	158.4	66.7
- men estimated	(2003-2005)	111.3	285.1	55
- men adjusted	(2003-2005)	126.8	212	69.7
- women estimated	(2003-2005)	101.2	199	57
- women adjusted	(2003-2005)	102	124.2	65.6
Mortality rate - diabetes mellitus (100,000 inhabitants)				
- total estimated	(2003-2005)	25.6	53	13.9
- total adjusted	(2003-2005)	28.1	64.8	13.7
- men estimated	(2003-2005)	22.8	44.3	13.6
- men adjusted	(2003-2005)	26.9	56	15.5
- women estimated	(2003-2005)	28.6	61.8	14.1
- women adjusted	(2003-2005)	29.3	73.2	12.3
Mortality rate - ischemic heart diseases (100,000 inhabitants)				
- total estimated	(2003-2005)	58.1	94.7	21.3
- total adjusted	(2003-2005)	64.1	104.2	25.9
- men estimated	(2003-2005)	67	109.6	25.8
- men adjusted	(2003-2005)	79.7	123.8	32.9
- women estimated	(2003-2005)	49.4	80.8	16.8
- women adjusted	(2003-2005)	50.5	86.5	19.4
Mortality rate – cerebrovascular disease (100,000 inhabitants)				
- total estimated	(2003-2005)	54.2	120.6	26.8
- total adjusted	(2003-2005)	57.8	126.5	31.6
- men estimated	(2003-2005)	54	110.5	27.1

- men adjusted	(2003-2005)	62.4	140.9	33.9
- women estimated	(2003-2005)	54.7	132.6	26.4
- women adjusted	(2003-2005)	54.2	114	29.3
Mortality rate – external causes (100,000 inhabitants)				
- total estimated	(2003-2005)	78.5	109.3	46.4
- total adjusted	(2003-2005)	79.1	122.2	43.7
- men estimated	(2003-2005)	128.1	181.7	72
- men adjusted	(2003-2005)	127.7	165.3	69
- women estimated	(2003-2005)	28.1	76.3	18
- women adjusted	(2003-2005)	30.7	94.9	16.4
Morbidity indicators				
DMFT Index	1995-2004	2.8	4.6	1.3
Tuberculosis incidence rate (100,000 inhabitants) total	2005	42	124.4	15.1
Tuberculosis incidence rate (100,000 inhabitants) KB+	2005	23.5	69.8	9.2
Population at risk for malaria (%)	2006	11.3	32.5	0
Malaria API (1,000 hab.)	2006	14.4	101.6	0
Reported cases of malaria	2006	250.9	458.5	0
Reported cases of dengue	2006	292.9	560	0
AIDS incidence rate (100,000 inhabitants)	2005	13.1	45.3	1.6
Men:women ratio in cases of AIDS	2005	2.5	6.4	1.1
Prevalence of low birth weight (<2,500 g) (%)	2000-2006	7.6	12.6	5.4
Indicators of resources, access and coverage				
Human resources per 10,000 inhabitants - physicians	2005	16.9	38.7	2.2
Human resources per 10,000 inhabitants - nurses	2005	5.3	10.2	2.8
Human resources per 10,000 inhabitants - dentists	2005	8.5	12.4	0.1
Hospital beds per 1,000 inhabitants	2004-2007	2.1	4.1	0.9
National spending on health (public spending) of GDP	2004	3.6	7	2.1
National spending on health (private spending) of GDP	2004	3.2	6.1	0.7
Health care provided by qualified personnel (%) - prenatal	2007	84.4	97.4	79.1
Health care provided by qualified personnel (%) - delivery	2007	93.8	99.7	62.5
Immunization coverage children under 1 year (%) - DPT 3	2007	92.9	100	61
Immunization coverage children under 1 year (%) - POLIO 3	2007	94.1	100	67
Immunization coverage children under 1 year (%) - BCG	2007	96.9	100	78
Immunization coverage children under 1 year (%) measles/SRP	2007	94.6	100	56
Use of contraceptives (women, all methods) (%)	2004-06	69.2	81	21

Source: Indicadores Básicos de Salud OPS 2008

Annex 2. Summary of Priority Issues Covered in National and International Health Agendas

Organization - Agendas	Relevant matters
National agendas	<ul style="list-style-type: none"> • Formulating health policies and national health plans that seek to improve the health of the population and the structure and performance of the health systems • Promoting and improving the social determinants that are relevant to health with an emphasis on equity and intersectoral action • Strengthening the regulatory role of the health authority, adequate funding of the health sector, and ensuring access of the population to the health systems • Communicable diseases important to public health, including their prevention, control and surveillance, plus the arrangements to apply the International Health Regulations • Non-communicable chronic disease of greater relevance to public health. • Environmental and occupational health conditions • Strengthening the health systems with an emphasis on the development of human resources, medicines, primary health care, and pursuing greater efficiency, pertinence, distribution, and effectiveness • Diversity and multicultural approach • Active participation of the population and community organizations in health
CAN	<ol style="list-style-type: none"> 1. Health Integration Area <ul style="list-style-type: none"> • Integration Agenda • Andean Health Plan on the Borders (PASAFRO) • Malaria Control Project in Border Zones (PAMAFRO) 2. Area of Epidemiological Surveillance and Environmental Health <ul style="list-style-type: none"> • Epidemiological Surveillance • Environmental Health and Water • Emergencies and Disasters 3. Area of Policy on Medicines and Health Technology <ul style="list-style-type: none"> • Policy and Access to Medicines and Biological Products • Health Technology 4. Area of Human Resources <ul style="list-style-type: none"> • Health Human Resource • Economics and Health 5. Area of Health Promotion and Protection <ul style="list-style-type: none"> • Fight against Smoking • Intercultural Health • HIV/AIDS • Prevention of Teenage Pregnancy • Child Malnutrition • Workers Health
MERCOSUR	<ul style="list-style-type: none"> • Health Products <ul style="list-style-type: none"> Psychotropic Medicines and Narcotics Blood and Blood Derivatives Medical Products Cosmetics Household Health Supplies • Health care Services <ul style="list-style-type: none"> Professional Development and Practice Assessment and Use of Technologies in Health Services • Health Surveillance <ul style="list-style-type: none"> Health Control at Ports, Airports, Train and Bus Terminals and Border

	<p>Crossings Non-Communicable Diseases Subjects of Meetings of MERCOSUR Health Ministers:</p> <ul style="list-style-type: none"> • Dengue • Medicines Policy • Public Health and Intellectual Property • Policy against Smoking • Articulation Nucleus • Sexual and Reproductive Health • HIV–AIDS • International Health Regulations - IHR • Health Determinants • Citizens' Participation in Health • Primary Health Care - PHC
OTCA	<ul style="list-style-type: none"> • Development of OTCA institutional capacities and strengthening of the health and environment-related commissions • Environmental health, including management of water resources in the cross border basin of the Amazon River • Communicable diseases, with an emphasis on malaria and the epidemiological surveillance network • Sustainable development in the Amazon territories • Improving quality of life of the Amazon populations and providing them access to health services
UNASUR	<ul style="list-style-type: none"> • Epidemiological Shield: Coordinating vigilance and response networks of the Member States according to the International Health Regulations; prompt detection and elimination of outbreaks; and eliminating communicable diseases • Developing universal health systems Guaranteeing the universal right to health based on Primary Health Care Strengthening the health ministries, social protection, and the development of health care institutions Reducing asymmetries between regional health systems • Universal access to medicines Developing a South American drug policy and production complex • Promoting health and acting on social determinants Creation of the South America Commission of Social Determinants Emphasis on vulnerable, excluded populations and high-risk areas (like the South American Chaco, the Altiplano, the Guyana Shield, and others) Equity both within each country and among the countries (in terms of development) • Development and management of health human resources Monitoring progress made Strengthening public health institutes and schools, and professional training and development institutions UNASUR Salud scholarship program <p>Other matters:</p> <ul style="list-style-type: none"> • Intersectoral policies and actions: food safety, healthy environment, climate change, and others • Response to emergencies and disasters. • Social participation, incorporation of social and community organizations
Health Agenda for the Americas 2008 - 2017	<ul style="list-style-type: none"> • Strengthen the national health authority • Tackle health determinants • Take advantage of knowledge, science and technology • Strengthen health solidarity and safety • Reduce health inequities among the countries and within each country

	<ul style="list-style-type: none">• Reduce disease risks and burden• Increase social protection and access to health services• Strengthen management and development of people who work in the health sector
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Annex 3. Structural Determinants of Health in Municipalities of South America

Annex 3 presents an analysis of the social vulnerability of the municipalities of South America on the basis of the indicators of unsatisfied basic needs (UBN-4 and UBN-Sanitation)^a, considering measures of central tendency and variability, mapping of percentages and identification of extreme cases^b.

Economic conditions of social vulnerability in the municipalities of South America

The analysis of social vulnerability in South America according to the percentage of households with UBN-4 at a municipal level reveals two very marked phenomena. On one hand, *coexistence of extremely unequal levels both at a national and municipal level*. On the other hand, *the presence of very notorious geographic patterns or social vulnerability “belts” that extend beyond the political-administrative limits mentioned above*.

The information contained in Table 1 shows the measures of central tendency and variability for the whole of South America, and of the countries that make it up, around the year 2000. On average, 21% of the municipalities of South America have households with UBN-4. The countries with the highest municipal average of UBN-4 are Bolivia (86.1%), Ecuador (45.2%) and Paraguay (35.6%).

Table 1. Measures of central tendency and variability. Percentage of households with UBN-4, municipalities of South America. Census around the year 2000.

Sub region/Country	Media	Median	Standard Deviation	Coefficient of variation	Minimum	Maximum	Range
South America	21,4	16,9	17,7	82,6	0,0	100,0	100,0
Argentina	16,9	15,4	9,0	53,2	1,9	68,5	66,6
Bolivia	86,1	88,0	9,3	10,8	50,6	100,0	49,4
Brazil	16,2	14,7	9,5	58,7	0,0	78,4	78,4
Chile	18,2	18,1	5,6	30,6	2,6	53,0	50,5
Ecuador	45,2	44,3	11,8	26,0	20,3	83,4	63,0
Paraguay	35,6	35,1	10,4	29,2	9,8	69,0	59,2
Venezuela	31,2	31,1	10,0	32,1	4,3	71,9	67,6

Source: Prepared in the PAHO/ECLAC agreement Framework.

In general, *we can see an inverse relationship between UBN-4 and the coefficient of variation: the higher the former, the lower the latter, and vice versa*. In other words, when the indicator has high average municipal levels, the municipalities are similar among themselves. Conversely, municipalities of countries with low average vulnerability have municipalities with both high and low vulnerability levels. Thus, *the countries with lower municipal UBN-4 averages (Brazil, Argentina, Chile), also show the highest municipal heterogeneity (coefficients of variation of 59%, 53%, and 31%, respectively), whereas the country with the highest UBN-4 (Bolivia) has the lowest coefficient of variation (11%)*. In that respect, the municipalities of Bolivia are an

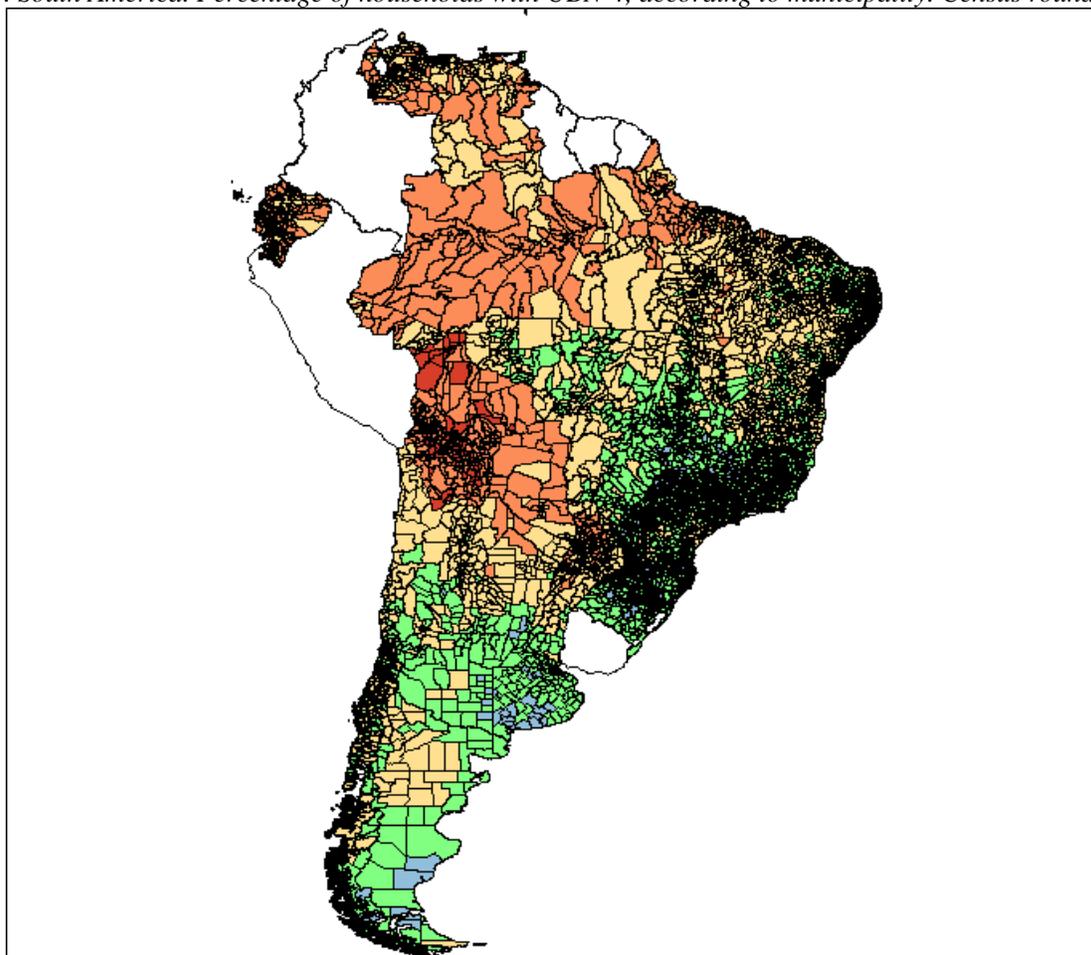
^a The former contemplates housing construction material, overcrowding, education, and the economic capacity of the households. The second takes into account the extent of sanitation, basically drinking water and sewerage, because of the relevance they have to health. It is sufficient to consider that access to drinking water is one of the most important factors in reducing infant mortality.

^b This part is a synthesis of a document that is being prepared defined as “Atlas of Sub-National Social Vulnerability and its Impact on Health in Latin America and the Caribbean,” developed within the framework of a joint project between PAHO and ECLAC. This study is based on the use of the census of the 2000 round. A series of countries have not been included, either because at the time of the research they had not conducted censuses (Peru), there was no census micro data bases available (Colombia), or because the census carried out did not provide the information required (Uruguay).

extreme case, and most of them have high vulnerability incidence, which permits us to state that there is extended poverty (50% of the municipalities have more than 88% of households with UBN-4). On the other hand, the indicators for Brazil, Argentina and Chile reflect a relatively low incidence of vulnerability but with greater disparities within the country (this results from the coexistence of municipalities with low and high poverty due to UBN-4).

Notwithstanding the municipal indicated heterogeneity based on the coefficient of variation, Map 1 shows a first approximation to the idea that it is spatially configured, which is evidenced in the *extent of “nodes” or “belts” of very notorious social vulnerability, which are defined by geographic contiguity of municipalities with highest UBN-4*. There would apparently be reasons directly and indirectly associated with the geographic location (like accessibility, natural wealth, competitive advantages, local productive development, etc.), which may be the reasons for inequality.

Map 1. South America. Percentage of households with UBN-4, according to municipality. Census round 2000.



Source: Prepared in the PAHO/ECLAC agreement Framework.

Map 1 shows the distribution of the UBN-4 percentage of the municipalities of South America. As we can see, the highest levels are in Bolivia. This set can be continued to the south and north of the country. In the first case, we can see a set of municipalities extending from the north of Chile and Argentina to the northeast portion of Paraguay and southeast of Brazil. The social vulnerability belt has its maximum expression in Bolivia, it continues north, including municipalities on the northeast of Brazil and southeast of Ecuador. Less spatially connected, we can also see a nucleus of municipalities in the Bolivarian Republic of Venezuela, which have high UBN-4 percentages and is located towards the center-south of the country.

Sanitation conditions of social vulnerability in the municipalities of South America

Table 2 includes basic measures of the central tendency and variability for the percentage of households with **Sanitation-UBN** of the municipalities of South America, around 2000.

In South America, *the municipalities with the highest average level of Sanitation-UBN are those of Bolivia (78.0%), Brazil (70.8%) and Ecuador (69.4%)*. These figures are more than 10 times higher than those recorded in the municipalities of Argentina (5.6%), the country with the lowest level of Sanitation-UBN in the Region.

Upon comparing the coefficients of variation of the Sanitation-UBN among the municipalities of South America, we confirm that there is *great heterogeneity* (a coefficient of variation of 57%).

Table 2. Measures of central tendency and variability. Percentage of households with Sanitation-UBN, municipalities of South America, per country. Census round 2000.

South America	Media	Median	Standard Deviation	Coefficient of variation	Minimum	Maximum	Range
South America	60,2	68,2	34,3	56,9	0,1	100,0	100,0
Argentina	5,6	3,6	6,3	113,3	0,1	45,9	45,8
Bolivia	78,0	80,3	15,5	19,9	22,8	100,0	77,2
Brazil	70,8	80,8	29,0	41,0	1,4	100,0	98,6
Chile	19,9	16,8	16,6	83,6	0,1	86,5	86,5
Ecuador	69,4	72,5	17,3	25,0	11,8	98,1	86,3
Paraguay	21,8	17,7	16,3	74,7	2,5	97,7	95,2
Venezuela	19,5	16,8	13,1	67,0	0,6	80,8	80,2

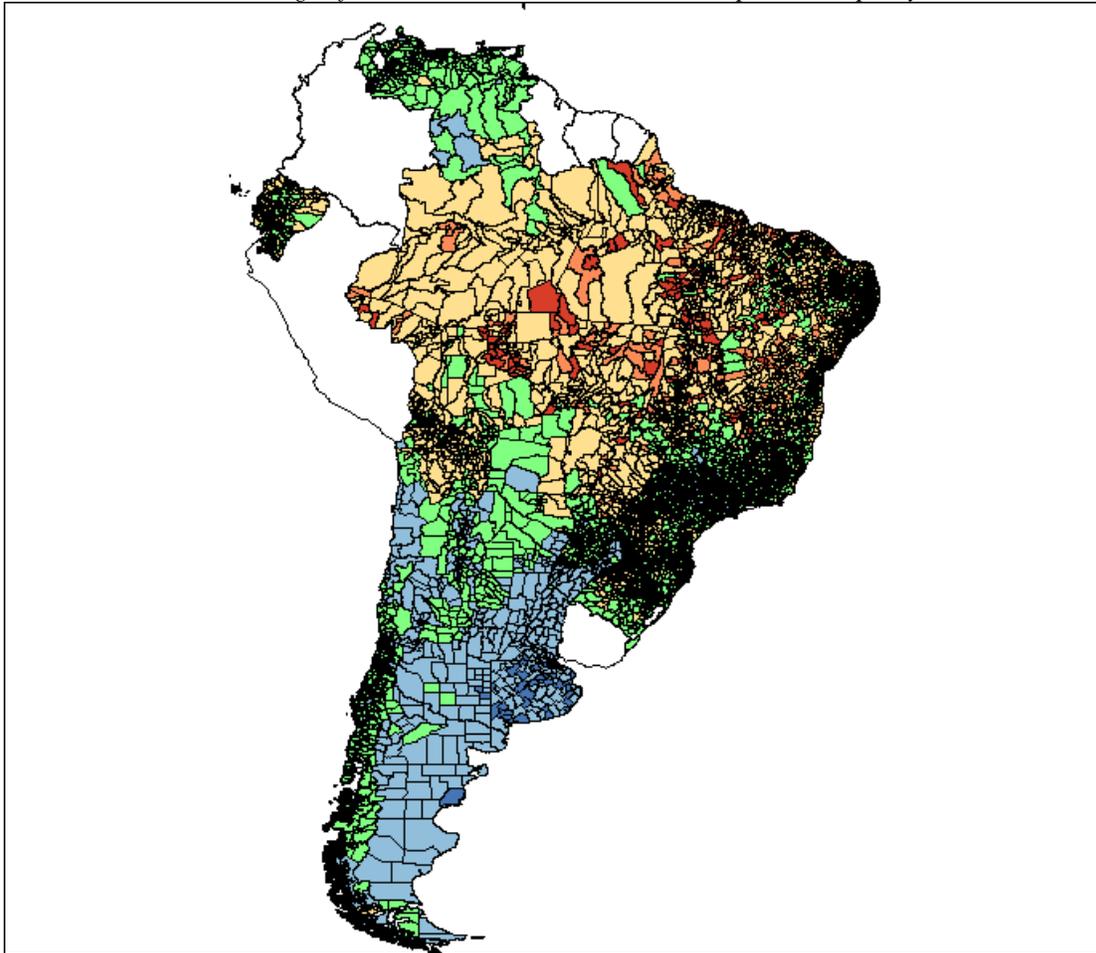
Source: Prepared in the PAHO/ECLAC agreement Framework.

In general, within each region, *we also confirm that the municipalities of the countries with the lowest levels of Sanitation-UBN are in turn the ones that show highest heterogeneity among municipalities and vice versa*. In South America, the municipalities of Argentina stand out because they have the lowest average percentage of Sanitation-UBN but a very high coefficient of variation (113%). Although, less marked, that pattern also characterizes Chile, Paraguay and the Bolivarian Republic of Venezuela. On the other end, we have Bolivia and Ecuador, whose municipalities record the highest average levels of Sanitation-UBN and, at the same time, the lowest regional inequality for this indicator (coefficient of variation of 20-25%). The only exception to the general pattern is Brazil, which has a very high average municipal percentage of Sanitation UBN with considerable geographic differences (coefficient of variation of 41%).

Notwithstanding the high regional heterogeneity and the high Sanitation-UBN within the countries, we can see important spatial patterns, which are in part similar to the ones seen before (percentage of UBN-4), as we can see on Map 2.

In South America we can see a large set of municipalities, basically located towards the north of Brazil, that have very high Sanitation-UBN (over 72% of households). This special configuration extends to the municipalities of the north of Paraguay and to the west of Bolivia, to end up in a few municipalities in the north of Chile and Argentina (characterized by the lower percentages of Sanitation-UBN of the group, but the highest within their respective countries).

Map 2. South America. Percentage of households with Sanitation-UBN, per municipality, Census round 2000.



Source: Prepared in the PAHO/ECLAC agreement Framework.

Also, but in an isolated manner, we can distinguish sets of municipalities that tend to have similar higher Sanitation-UBN within their respective countries (like in the central area of the Bolivarian Republic of Venezuela or in the south of Chile). In Ecuador, although practically one half of the municipalities show very high levels of Sanitation-UBN, we cannot observe a general spatial distribution pattern, which shows a fragmentary appearance.

Annex 4. Health Systems in the Americas: Coverage of Population by Subsystem, 2001–2006

Country	Year	Source	Subsystem	Population Coverage per Subsystem
Argentina	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 (<i>Obras Sociales</i>).
			Private	7.9%: prepaid health care.
			Others	3.2%: double health insurance coverage, principally through private plans (voluntary membership in prepaid plans, labor accident insurance, etc.)
Bolivia	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 Public Health Ministry and Sports (theoretical coverage).
			Social security	25%: National Health Fund [CNS] (20.8%); other health insurance funds (4.2%): Oil Industry Health Fund [CPS], University Social Security [SSU], Private Banks Health Fund [CSPB], Military Social Insurance Fund [COSSMIL], CSC, CSCO, SINEC, COTEL.
			Private	12% out-of-pocket payments for services and private health insurance.
			No coverage	45% has no access to health services. 72.8% has no social security coverage or private health insurance.
Brazil	2003–2006	Agencia Nacional de Salud Suplementaria (ANS), Ministerio de Salud, Brasil, Caderno de Informação de Saúde Suplementar. Rio de Janeiro, 2006.	Public	80.4%: exclusive coverage of the Single Health System (SUS) (basic health care coverage 98%; Family Health Program coverage 68.4%).
			Private	19.6%: Complementary Health Care (group plans offered by private companies 14.4% and individual and family plans 5.2%); 3.8% Complementary Dental Service. Beneficiaries of private insurances maintain the right to complete coverage by the SUS.
Chile	2003		Public	100%: services guaranteed by the plan of Universal Access with Explicit Guarantees (AUGE) (public or private provision).
			Social security	68.3%: National Health Fund (FONASA) (legal coverage).
			Private	17.6%: Health insurance institutions (ISAPRE).
			Others	3%: Armed forces.
			No coverage	12.8%: no known coverage of public insurance or private health insurance (they are usually covered by other private systems).
Columbia	2004	Cardona JF, Hernández A, Yepes, F. La seguridad social en Colombia. Rev Gerenc Polit Salud. 2005; 4(9)81–99.	Public	29%: “ <i>vinculados</i> ” (population not members of a social security system but with access to limited health and benefit plans paid for with national, regional and municipal resources); theoretical coverage under the Basic Health care Plan (collective public health care).
			Social security	67.1% (32.8%, contribution system; 34.3%, private insurance companies; Health Promotion Companies [EPS]; fully and partially subsidized system; public insurers: Subsidized System Administrator [ARS]). (The contributive and subsidized social security systems, and the different partially subsidized plans have different programs of services and benefits).

			Others	3.9%: special systems (armed forces, police, oil industry workers).
Ecuador	2006	Palacio A. Programa de aseguramiento universal de salud, Ecuador, 2006. Mesa-Lago C. Op. cit. PAHO. Exclusión en salud en países de América Latina y el Caribe, 2004		28%: access to the Ministry of Public Health services (theoretical coverage)
			Social security	21%: Ecuadorian Social Security Administration (IESS); 11% (general insurance 9%, pensioners 2%); Rural Social Insurance 7%; armed forces and police 3% (Armed Forces Social Security Administration [ISSFA], Police Social Security Administration [SSPOL]).
			Private	26% (non-profit 6% [<i>Junta de Beneficencia</i> , NGOs and municipalities]; for profit 20% [private health insurance 3%; out-of-pocket to private services 17%]).
			No coverage	27%: with no access to health services. 76%: with no social security or private health insurance.
Guyana	2006			There is no national health insurance system. The National Health Plan manages a social insurance program that is compulsory for employees and self-employed workers 16 to 60 years old.
Paraguay	2005	Mesa-Lago, C. Op. cit. PAHO. 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 other type of health insurance (individual, labor, family, military, police, or foreign).
			Private	7.0%: out-of-pocket pay for services.
			No coverage	38.6%: with no access to health care. 81.1%: with no public coverage or private health insurance
Peru	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 Services Providers [EPS]; armed forces and police 3%).
			Private	10.0% (private insurance 2%; out-of-pocket payment for services and traditional medical care 8%).
			No coverage	42.1%: no public coverage or private health insurance.
Suriname	2005		Public	54% (Ministry of Health: 30%; Ministry of Social Affairs: 24%).
			Social security	27%: State Medical Insurance Fund (SZF); 21%: Medical Mission (with subsidy of the Government of Suriname: 6%).
			Private	13% private insurance (employer insurance plans: 10%; private health insurance: 3%).
			Others	1%
			Uninsured	5%
Uruguay	2006		Public	45.3%: Ministry of Health and State Health Services Administration (ASSE).
			Social security	45.0%: labor risk insurers
			Others	7.6% (Health care provided by armed forces 5.3%; police 2.3%).
			Private	1.8%: private health insurance with full coverage
Venezuela	2000 2005 2006	Mesa-Lago C. Op. cit. PAHO. Barrio adentro: derecho a la salud e inclusión social en	Public	65.6%: access to health care provided by the Ministry of Health (estimated theoretical coverage of the population not insured by the Venezuelan Social Insurance Administration [IVSS]); <i>Misión Barrio</i>

		Venezuela, 2006.		<i>Adentro</i> : provides primary health care for 73% of the population.
			Social security	34.4%: IVSS.
			Private	30.0% (estimated, may be a combination of public and private).

Source: OPS (2007) *Salud de las Américas 2007*

