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Demographics and health in selected latin american countries

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Introduction

This report, elaborated by the International Observatory of Human Capabilities, Development and Public Policy (UnB/CEAM/NESP), discusses the health situation in 12 selected Latin American countries in the first decade of this millennium. This is a descriptive study using demographic, socioeconomic and mortality indicators.

The region as a whole consists of 46 countries. Its total population is around 603 million inhabitants, of whom more than half (52.1%) are in Brazil (32.9%) and Mexico (19.2%). These two countries coupled with the Andean Region (21.9%) account for about two thirds of the population living in the southern part of the American continent (Table I).

Table I. Latin America and the Caribbean: areas, number of countries and population, 2012

Latin America and the Caribbean	Number of countries	Population in thousands	
		Total	%
Mexico	1	116,147	19.2
Central American Isthmus	7	44,012	7.3
Latin Caribbean	7	36,547	6.1
Andean Region	5	132,289	21.9
Brazil	1	198,361	32.9
Southern Cone	4	68,616	11.4
Non-Latin Caribbean	21	7,179	1.2
Total	46	603,151	100

Source: PAHO – Health Situation in the Americas. Basic Indicators 2012.

Of this universe of 46 countries, 12 were selected for this analysis: besides Brazil and Mexico, the entire Southern Cone (four countries) and the Andean Region (five), a member of the Central American Isthmus (El Salvador) was also included. This means that, geographically and population-wise, the analysis covers almost all of Latin America, as countries not considered in this study, that is, six of the Central American Isthmus and the whole Latin (7) and non-Latin (21) Caribbean, although being a majority numerically (34), have lower relative expression both in demographic and spatial and economic dimensions.

Demography

The population's distribution among the selected countries is as unequal as the aforementioned for Latin America as a whole: Brazil and Mexico account for 60% of inhabitants. Among the other 10, we highlight Colombia and Argentina, respectively, with 9.1% and 7.9% of the group's population. In the other, the relative share varies between 5.7%/5.6% in Venezuela and Peru, both with almost the same number of inhabitants, and 0.6% in Uruguay (Table II).

Table II. Number and percentage of inhabitants of Latin American selected countries 2012

	Inhabitants	
Countries	**Number**	**%**
Argentina	41,119	7.9
Bolivia	10,248	1.9
Brazil	198,361	38.8
Chile	17,423	3.2
Colombia	47,551	9.1
Ecuador	14,865	2.7
El Salvador	6,264	1.2
Mexico	116,147	22.1

Countries	Inhabitants	
	Number	%
Paraguay	6,683	1.2
Peru	29,734	5.6
Uruguay	3,391	0.6
Venezuela	29,891	5.7
Total	521,677	100

Source: PAHO/WHO – Health Situation in the Americas. Basic Indicators 2012.

In the first decade of the millennium (2000-2010), the population growth of countries studied was on average around 15% (Table III). However, this average has polar values: while Uruguay and El Salvador demographically grew only 2.1% and 5.4% respectively, Paraguayan, Bolivian, Venezuelan and Ecuadorian populations rose around 20% (Colombia: 19,5%) or more. Although well above the Uruguayan growth, countries such as Argentina, Brazil, Chile and Peru remained below average; Mexico was slightly higher (13.5%).

Table III. Population of selected Latin American countries and increase (%) between 2000 and 2012

Countries	Population in thousands		Increase
	2000	2012	%
Argentina	36,931	41,119	11.3
Bolivia	8,307	10,248	23.3
Brazil	174,425	198,361	13.7
Chile	15,420	17,423	12.9
Colombia	39,764	47,551	19.5
Ecuador	12,345	14,865	20.4
El Salvador	5,940	6,264	5.4
Mexico	99,960	116,147	16.2
Paraguay	5,344	6,683	25.0
Peru	25,862	29,734	14.9
Uruguay	3,319	3,391	2.1
Venezuela	24,348	29,891	22.7
Total	451,965	521,677	15.4

Source: PAHO/WHO – Health Situation in the Americas, 2012.

Among the countries of the sample subject of this report, Uruguay and Argentina had, in 2001, the highest population percentages, 91.5% and 90.1%, respectively, living in cities. With rates above 80%, they were followed by Venezuela (87.1%), Chile (85.9%) and Brazil (81.7%). El Salvador reported the lowest rate (47%). The general trend in the urbanization rate is growing. In all countries, urban population has increased. In 2012, in addition to Argentina and Uruguay, Venezuela also recorded a level of urbanization over 90%. In the decade, El Salvador was the country with the largest urbanization growth (18 percentage points from 2001 to 2012), leading Paraguay to be the least urbanized of the 12 studied countries in 2012 (Table IV).

Table IV. Urbanization rate (%) in selected LA countries, 2001/2012

	Years	
Countries	**2001**	**2012**
Argentina	90.1	92.6
Bolivia	63.1	67.2
Brazil	81.7	84.9
Chile	85.9	89.3
Colombia	74.3	75.6
Ecuador	66.2	68.0
El Salvador	47.0	65.3
Mexico	74.6	78.4
Paraguay	56.7	62.4
Peru	73.2	77.6
Uruguay	91.5	92.7
Venezuela	87.1	93.7

Source: Health Situation in the Americas. Basic Indicators, 2001/2012.

Population growth is a phenomenon existing in all countries, albeit with different percentages. In Uruguay, for example, the average rate of 0.3%/ year – the lowest among the 12 countries – is up to six times lower than the 1.8% registered in Paraguay, the highest. Only six countries show an average annual growth of less than 1% (Table V).

Thus, this means birth rates remain higher than mortality rates, which means an increased number of inhabitants, not necessarily in the same level in all countries. Differences are significant, as shown in Table V.

Table V. Birth and Mortality Gross Rates and Annual Average. Population Growth in Latin American selected countries in 2010

	Gross Rates (per thousand inhabitants)		Annual Population Growth
Countries	**Birth**	**Mortality***	**%**
Argentina	17	8	0.9
Bolivia	26	6	1.6
Brazil	16	6	0.9
Chile	14	6	0.9
Colombia	20	4	1.4
Ecuador	21	5	1.4
El Salvador	20	7	0.5
Mexico	20	5	1.2
Paraguay	24	5	1.8
Peru	20	5	1.1
Uruguay	15	10	0.3
Venezuela	21	5	1.6

Source: WHO, Global Health Observatory Data Repository, 2012.

*Data are from the year 2009.

Although the (gross or net) birth rate, which expresses the number of births per thousand inhabitants, is a widely used indicator, information on fertility is more refined because its calculation considers only women of childbearing age (between 15 and 49 years) and not the whole population.

The fertility rate may be general or age group-specific. For example, in age range 15-19, one can measure the problem of precocious pregnancy. On the other hand, global fertility rate, another widely used indicator, expresses the number of children per woman (Table VI).

Between 2000 and 2009, fertility rates fell in all of the 12 countries, including among adolescents (women aged 15-19). The highest decline

occurred in Colombia (-23.6%). Peru, El Salvador and Paraguay declined somewhat close to -20%. Paradoxically, Venezuela (92.9/1000), with the 3rd highest rate in the 2000 ranking, reduced early fertility by just -4.3% in 2009 (Table VII).

The number of children per woman also shows an overall decline (Table VI). In 2000, Bolivia led the ranking (4.1 children per woman). In 2009, it maintained its status (3.4). The lowest rate with the lowest fall remains in Uruguay, down from 2.2 (2000) to 2.0 (2009).

For example, in Brazil, the aspect of social inequality is embodied in the issue of fertility. In 2000, the average number of children in the poorest families was 5.1 per woman, a so-called African pattern. It fell to 3.6 ten years later. If this trend is maintained, a so-called mere population replacement level will be achieved in this social segment (2.1 children per woman). Among the wealthiest families, the total fertility rate fell from 1.2 in 2000 to 1.1 in 2010 (GOIS; GOES, 2012).

Table VI. Global (number of births per woman) and teenage (number of births per thousand women aged 15 to 19) fertility global rates in selected Latin American countries, 2000/2009

	2000		2009	
Countries	**Global**	**15-19y**	**Global**	**15-19y**
Argentina	2.5	64.3	2.2	55.8
Bolivia	4.1	85.4	3.4	76.8
Brazil	2.4	87.5	1.9	75.7
Chile	2.1	63.7	1.9	57.3
Colombia	2.6	94.1	2.4	71.8
Ecuador	3.0	84.9	2.5	81.9
El Salvador	2.9	99.7	2.3	80.1
Mexico	2.6	75.7	2.4	68.6
Paraguay	3.7	86.1	3.0	70.1
Peru	2.9	65.1	2.5	52.3
Uruguay	2.2	65.0	2.0	60.3
Venezuela	2.8	92.9	2.5	4.3

Source: World Bank, World Development Indicators and Global Development Finance.

Table VII. Teenage fertility rates (number of births per thousand women aged 15 to 19) in selected Latin American countries and percentage variation, 2000-2009

	Fertility rate		Variation
Countries	**2000**	**2009**	**%**
Argentina	64.3	55.8	-13.2
Bolivia	85.4	76.8	-10.0
Brazil	87.5	75.7	-13.4
Chile	63.7	57.3	-10.0
Colombia	94.1	71.8	-23.6
Ecuador	84.9	81.9	-3.5
El Salvador	99.7	80.1	-19.6
Mexico	75.7	68.6	-9.4
Paraguay	86.1	70.1	-18.5
Peru	65.1	52.3	-19.7
Uruguay	65.0	60.3	-7.2
Venezuela	92.9	88.9	-4.3

Source: World Bank, World Development Indicators and Global Development Finance.

Simply, according to Pereira (1995), it is possible to consider two groups of factors that are determinant to fertility: the "basic" and the "immediate". Among the former are the level of education and the urbanization rate. Among the "immediate" are the length of the reproductive period, age at marriage, separation, the couple's infertility, the appropriate use of effective contraception, induced abortion and the incidence of miscarriage (PEREIRA, 1995).

Still, in general, living with mother and child care deficits, Latin American countries face new and increasing demands arising from the aging process of its population and the resulting change in the epidemiological pattern. If, on the one hand, the fall in fertility exerts less pressure on services such as basic education and mother and child care, on the other hand, evidence of the increased and desirable growth of the aging population raises, inexorably, concerns about the need of additional resources to sectors such as health and social security.

Several indicators show the magnitude of the problem. The median age (TableVIII) increased in all countries between 2000 and 2010. It already reaches values equal or greater than 30 years in Uruguay (34), Chile (32) and Argentina (30). The lowest values in 2010were noted in Bolivia (22), El Salvador and Paraguay (23).

Table VIII. Median age in selected Latin American countries, 2000/2005/2010

	Median Age		
Country	**2000**	**2005**	**2010**
Argentina	28	29	30
Bolivia	20	21	22
Brazil	25	27	29
Chile	29	31	32
Colombia	24	25	27
Ecuador	23	24	26
El Salvador	21	22	23
Mexico	23	25	27
Paraguay	20	22	23
Peru	23	24	26
Uruguay	32	33	34
Venezuela	23	25	26

Source: Adapted from Rangel, 2012. CELADE-ECLAC, Revised 2011.

The trend of aging population is confirmed by other indicators such as the percentage of population over 60 years, the aging index and the dependency ratio. The former (Table IX) shows that, at the beginning of the millennium, only three countries (Uruguay, Argentina and Chile) had percentages of elderly above 10%. Brazil (10.2%) joined the club in the late 2010s. CELADE/ECLAC projections point to eight countries for the late 2020s. In 2030, when Uruguay, who leads the ranking, and Chile reach more than 20% of elderly in their populations, Paraguay will remain the "youngest country"in the bloc, with 12% of men and women over 60 years (for more details see: Rangel, Leonardo. Social Security in Latin America).

Table IX. Trends of population (%) aged over 60 in selected Latin American countries, 2000/2010/2020/2030

Country	2000	2010	2020	2030
Argentina	13.6	14.6	16.4	18.3
Bolivia	6.4	7.1	8.7	10.8
Brazil	8.1	10.2	14.0	18.0
Chile	10.2	13.1	17.6	23.0
Colombia	6.9	8.6	12.0	16.2
Ecuador	7.4	9.0	11.9	15.4
El Salvador	8.0	9.4	10.8	13.3
Mexico	7.5	9.2	12.5	17.0
Paraguay	6.5	7.7	9.7	12.0
Peru	7.2	8.8	11.1	14.5
Uruguay	17.4	18.5	20.2	22.3
Venezuela	6.7	8.6	11.5	15.1

Source: Adapted from Rangel, 2012. CELADE-ECLAC, Revised 2011.

The aging index links the elderly to the youth segment of the population. The highest rate recorded also belongs to Uruguay (78.3%), followed by Argentina and Chile. Bolivia (19.4) and Paraguay (23.5) have the lowest rates. In five countries (Colombia, Ecuador, El Salvador, Mexico and Peru), the index recorded is around 30%.

Table X. Population (%) aged up to 15 and 60 and over and aging index in selected Latin American countries, 2010

Countries	Population (%)		Aging index
	Up to 15 years	60 years and over	
Argentina	25	15	60.0
Bolivia	36	7	19.4
Brazil	25	10	40.0
Chile	22	13	59.1
Colombia	29	9	31.0
Ecuador	30	9	30.0
El Salvador	32	10	31.3
Mexico	29	9	31.0
Paraguay	34	8	23.5
Peru	30	9	30.0
Uruguay	23	18	78.3
Venezuela	29	9	31.0

Source: World Bank, World Development Indicators and Global Development Finance.

The dependency ratio, in turn, links both economically-dependent segments (young and elders) to the economically active population, making the index especially important in studies on the financing of social security and health care services (PEREIRA, 1995).

The highest rates, above 80%, in the first year of the millennium were recorded in El Salvador, Bolivia and Paraguay. The lowest rates were slightly above 60% (Brazil and Chile). However, in 2010, the decline was widespread, setting what demographers call demographic bonus, the setting in which most of the population is of working age. Just as a matter of reference, the dependency ratio in the United States and Canada in 2005 was 49.4 and 44.4 per 100 inhabitants, respectively.

CELADE/ECLAC projections quoted by Rangel (2012) indicate that, in 2030, seven countries (Brazil, Chile, Colombia, Mexico, Peru, Uruguay and Venezuela) will record a dependency ratio upswing compared to the previous decade (Table XI). The same source states that, in 2050, all 12 countries will show higher figures than in the previous decade.

Table XI. Dependency ratio* in selected Latin American countries, 2000/2010/2020/2030

Countries	2000	2010	2020	2030
Argentina	70.9	65.3	64.9	64.1
Bolivia	85.6	75.9	65.5	59.0
Brazil	60.6	55.3	52.3	57.7
Chile	61.3	54.4	59.1	68.0
Colombia	65.8	59.6	60.7	64.9
Ecuador	71.8	64.8	61.2	60.8
El Salvador	86.2	70.7	60.8	57.4
Mexico	68.2	59.1	55.8	58.1
Paraguay	80.8	70.0	63.6	58.4
Peru	70.4	63.2	59.2	59.6
Uruguay	72.2	69.3	68.8	70.4
Venezuela	68.0	61.6	60.6	61.5

*DR = ((pop. 0-14+pop.60 and over) /pop.15-59)*100.

Source: Adapted from Rangel, 2012. CELADE-ECLAC, Revised 2011.

Socioeconomic Aspects

Although important, demography is not the sole socioeconomic determinant of health conditions. Income, education, availability of certain services, such as basic sanitation, among other factors, have a leading role in shaping the health profile of any social conglomerate, regardless of its spatial dimension or demographic size. However, the common feature of all these factors in Latin America is inequality between countries in its quantifiable expressions.

For example, per capita income, a classic indicator of a nation's wealth, is low and, as a rule, has an unequal distribution in Latin America. Only one country (Argentina) among the 12 has a per capita income above PPP int. $ 15,000 PPP. In the immediate next level are, in descending order, Chile, Uruguay, Mexico, Venezuela and Brazil, with income between PPP int. $ 14,000 PPP and PPP int $ 11,000 PPP. In both 2000 and 2010, Bolivia had the lowest per capita income. Likewise, growth rates in the decade

have been uneven: only Peru and Ecuador achieved growth of over 80%. At the opposite extreme, Venezuela and El Salvador had an increase of about 45%. The remaining countries obtained more modest results, ranging from 50% to 60%.

Table XII. Gross National Income per capita in PPP int $ and increase % between 2000 and 2010 in selected Latin American countries, 2000-2010

Countries	Gross National Income		
	Per capita PPP int $		Increase
	2000	2010	%
Argentina	8,870	15,570	75.5
Bolivia	3,080	4,640	50.6
Brazil	6,820	11,000	61.3
Chile	8,910	14,640	64.3
Colombia	5,730	9,060	58.1
Ecuador	4,350	7,880	81.1
El Salvador	4,500	6,550	45.6
Mexico	8,780	14,400	64.0
Paraguay	3,370	5,080	50.7
Peru	4,780	8,930	86.8
Uruguay	8,490	13,620	60.4
Venezuela	8,380	12,150	45.0

Source World Bank, World Development Indicators and Global Development Finance.

The crux of the issue of poverty in Latin America lies in the inequality existing in varying degrees in all countries of the region. The recent study "State of Latin America and Caribbean Cities" released by the UN-Habitat reveals that Colombia, followed by Brazil and Bolivia, are the three most unequal countries in Latin America according to the Gini index. This indicator ranges numerically from 0 (zero) to 1. Zero corresponds to the total equality of income among people. At the other extreme, value 1 would mean that only one person would hold all the income. In other words, the more the index nears 1, the more unequal a country or region would be.

Table XIII ranks the 12 countries selected and indicates which ones have improved and worsened between 1990 and 2010.

Table XIII. Inequality ranking* of selected Latin American countries

Rank	Countries
1	Colombia
2	Brazil
3	Bolivia
4	Chile
5	Mexico
6	Paraguay
7	Argentina
8	Ecuador
9	El Salvador
10	Peru
11	Uruguay
12	Venezuela

Source: Scheme adapted from an article by Lage and Roldão (2012).

Between 1990 and 2000	
Improved	Worsened

Obs. Includes only the 12 countries selected.

Among the important determinants to achieve an adequate level of health, education and sanitation are almost always the first mentioned.

In the first case, the usual reference is basic education. While values pointed to literacy rates seem high in general, inequalities between countries or gender are clear. As noted by Corbucci (2012, p. 4), countries like Uruguay (98.3%), Argentina (98.1%) and Chile (97.1%) "have already achieved literacy levels comparable to those in Southern Europe". In contrast, El Salvador remains with the lowest rate (83.4%), even after a 4.7% increase after 2000. Nevertheless, it is the only country in the group with a literacy rate below 90%. Brazil and Bolivia also had similar increases over the same period (Table XIV).

Regarding gender difference, it can be noted that men and women in Argentina and Chile had roughly the same level of literacy (97.2/97.3% and 96.6/96.4%) in 2005, respectively. Differences favorable to women in percentage points recorded in the same year in other countries ranged from 7.9% in Peru and 0.2% in Chile (Table XV).

Table XIV. Literacy rate of the population aged 15 and over in selected Latin American countries, 2000/2005/2010

Countries	2000	2005*	2010
Argentina	96.9	97.2	98.1
Bolivia	85.6	88.3	90.6
Brazil	86.4	88.9	90.4
Chile	95.7	96.5	97.1
Colombia	91.8	92.9	94.1
Ecuador	91.9	93.0	93.2
El Salvador	78.7	81.1	83.4
Mexico	90.5	92.6	93.1
Paraguay	93.3	94.4	95.3
Peru	89.9	91.6	93.0
Uruguay	97.8	98.0	98.3
Venezuela	93.0	94.0	95.2

Table XV. Literacy rate per gender in selected Latin American countries, 2005*

Countries	Men	Women
Argentina	97.2	97.3
Bolivia	93.8	83.0
Brazil	88.7	89.0
Chile	96.6	96.4
Colombia	92.8	93.1
Ecuador	94.4	91.7
El Salvador	83.6	78.8
Mexico	94.3	90.9
Paraguay	95.2	93.6
Peru	95.6	87.7
Uruguay	97.5	98.4
Venezuela	94.2	93.8

Source: Adapted from Corbucci (2012).

*PAHO – Health Situation in the Americas. Basic Indicators 2005 (for the year 2005).

In the age range 15-19 years, primary education completion rate in 2010 was only less than 90% in El Salvador (76.1%) and Paraguay (89.3%). Argentina, Chile, Mexico and Uruguay are the countries with the best performance (over 95%). Other countries are located between the two groups, but all with percentages above 90% (Table XVb).

Primary education completion before the age of 15 is greater than 90% in eight countries (Argentina, Chile, Colombia, Ecuador, Mexico, Paraguay, Peru and Uruguay). El Salvador has the lowest rate (76.5%).

Table XVb. Primary education completion rate of the population aged up to 15 years and in the age range 15-19 years, 2010

Countries	15-19 years*	15 years**
Argentina	97.8	96.0
Bolivia	93.0	87.0
Brazil	94.7	87.4
Chile	98.7	97.7
Colombia	93.6	90.4
Ecuador	94.6	94.0
El Salvador	76.1	76.5
Mexico	95.7	95.5
Paraguay	89.3	90.4
Peru	93.9	91.3
Uruguay	96.7	96.9
Venezuela	93.5	...

*Educational Panorama 2010: remaining challenges/Regional Education Indicators Project Summit of the Americas. **Educational Tendencies Information System in Latin America/Featured Data 21: Challenges in Universalizing Elementary Education - April 2011. Source: Corbucci, 2012.

In poor and/or developing countries, access to drinking water supply and sewage services today is a major tool to reduce mortality, particularly in childhood, and thereby increases life expectancy by virtue of its effectiveness, particularly in reducing waterborne diseases.

The universalization of water and sewage services is closely linked to economic and social development. The United States and Canada have long reached that goal. Progress has been slow in Latin America, at least in the 12 countries now studied.

Regarding drinking water, data from 2002 (PAHO/WHO, 2005) show an average coverage of 89% for Latin America for the population as a whole and 69% for the rural population; the rate rises to 96% in the urban area. Values were lower for access to improved sanitation; benefits reached, respectively, 74%, 84% and 44% of the total, urban and rural population.

Ten years later, as shown in Table XVI, access to sanitation in urban areas of the region remained stable, but there has been progress on all

other issues, both in water supply and in waste management. Despite the increase of fifteen percentage points in the period, the rural sanitation coverage issue remains a major challenge in this area.

Table XVI. Share of the Latin American population with access to improved sources of water and sanitation, 2002/2012

		Water			Sanitation	
Years	**Total**	**Urban**	**Rural**	**Total**	**Urban**	**Rural**
2002	89	96	69	74	84	44
2012	94	98	81	79	84	59

Source: Health Situation in the Americas. Basic Indicators, 2002 and 2012.

Of the 10 countries selected (without information about Argentina and Venezuela), in 2012, only Uruguay had universalized (urban and rural population) drinking water and sanitation (sewage) services. However, in urban areas, it can be said that four other countries (Brazil, Chile, Colombia and Paraguay) also had virtually achieved universal coverage of access to drinking water (percentage of 99% and 100%). Regarding this goal – safe water in urban households –, the other countries are relatively close (rates greater than 90%) (Table XVII). The farthest country (Peru) has 91% coverage.

As for access to sewage systems, results are more modest, although, in 2012, two countries, besides Uruguay (100%), have reached more than 90% of the total population with this service: Chile (96%) and Ecuador (92%). Mexico (85%), El Salvador (87%), Brazil (79%), Colombia (77%), Paraguay (75%) and Peru (71%) had rates above 70% (Table XVII).

But major difficulties lie in relation to that goal – access to "improved sanitation sources" – in at least two very clear aspects: first, the plight of Bolivia, where only 27% of the total population has access to these services – in cities, the rate rises to 35%, dropping to 10% in rural areas; and second, the low percentage (below 50%) of rural population benefiting from these services, also found in Brazil (44%), Paraguay (40%) and Peru (37%) (Table XVII).

Table XVII. Share of the population of selected Latin American countries with access to improved water and sanitation sources, 2012

Countries	Access to improved sources					
		Water			Sanitation	
	Total	Urban	Rural	Total	Urban	Rural
Argentina	...	98	...	...	...	...
Bolivia	88	96	71	27	35	10
Brazil	98	100	85	79	85	44
Chile	96	99	75	96	98	83
Colombia	92	99	72	77	82	63
Ecuador	94	96	89	92	96	84
El Salvador	88	94	76	87	89	83
Mexico	96	97	91	85	87	79
Paraguay	86	99	91	75	90	40
Peru	85	91	65	71	81	37
Uruguay	100	100	100	100	100	100
Venezuela	...	...	...	...	...	...

Source: PAHO/WHO, Health Situation in the Americas. Basic Indicators 2012.

Health under the perspective of selected indicators

Besides its use in demography, life expectancy at birth is one of the most used tools to reveal the health status of a population. It is a synthesis indicator, which combines the mortality at different ages, turning it into a single value. Immune to the influence of the age structure of populations, this indicator is often used for international comparisons or between population groups within the same country. Moreover, it is a positive way to measure collective health, commonly done through the use of negative indicators that measure the absence of health, such as mortality and morbidity rates (PEREIRA, 1995).

Life expectancy or average life expectancy "indicates the average number of years that an individual of a given age is likely to live, on the assumption that mortality rates remain the same in the future" (PEREIRA, 1995, p. 135). It can be calculated either at birth or at any age (Ibidem), when it would indicate the number of years left to live.

In the period 1990-2009, all countries studied now recorded increased life expectancy, albeit with widely varying values. While Paraguay and Argentina increased 1 and 2 years, respectively, total life expectancy (men and women), El Salvador (eight years), Bolivia (eight years) and Peru (seven years) achieved far more expressive results.

Data from 2009 show Chile (79), Peru, Uruguay, Colombia and Mexico (all four with 76 years average life expectancy) as the countries of greater longevity. If, on the one hand, no country reported that year, average life expectancy greater than or equal to 80 years for both sexes, on the other, Bolivia (68) was the only one with life expectancy below 70 years. Two decades earlier, in 1990, the two most long-living countries were Argentina and Paraguay (73 years), followed by Chile, Uruguay and Venezuela (72 years).

Inequality between men and women on this issue is a natural phenomenon, but it does not occur with the same intensity in all countries. The difference in favor of women reaches eight years in El Salvador and seven in Brazil, Colombia, Uruguay and Venezuela; the smallest difference (4 years) was recorded in Bolivia (Table XVIII). High mortality rates from violence (external causes), which usually victimize more men than women may, at least in part, explain the discrepancy; these seem to be the case of El Salvador, Colombia, Venezuela and Brazil.

Table XVIII. Life expectancy at birth (per gender and total) in selected Latin American countries, 1990/2000/2009

Countries	Life expectancy at birth								
	1990			2000			2009		
	Men	Women	Total	Men	Women	Total	Men	Women	Total
Argentina	69	76	73	71	78	75	72	79	75
Bolivia	57	63	60	61	66	64	66	70	68
Brazil	63	70	67	67	74	70	70	77	73
Chile	69	76	72	73	80	77	76	82	79
Colombia	66	75	70	68	77	73	73	80	76
Ecuador	67	72	69	70	76	73	73	78	75
El Salvador	59	70	64	67	74	70	68	76	72
Mexico	68	74	71	72	77	74	73	78	76
Paraguay	71	76	73	71	77	74	72	77	74
Peru	67	72	69	70	74	72	74	77	76
Uruguay	69	76	72	71	79	75	72	79	76
Venezuela	70	74	72	71	77	74	71	78	75

Source: WHO, Global Health Observatory Data Repository, 2012.

When one examines the length of a decade (2000-2009), it can be seen that in 2009 most countries had increased life expectancy at birth by up to three years. Argentina (75) and Paraguay (74) remained stable. Only Peru and Bolivia increased four years. Overall, in 2009, people aged 60 years could enjoy between 18 (Bolivia) and 23 (Chile, Colombia, and Ecuador) additional years of life; with 22 years in Venezuela and 21 years in the remaining countries (Table XIX).

Table XIX. Life expectancy at birth and at age 60 in selected Latin American countries, 2000/2009

	Life expectancy			
	At birth		At 60	
Countries	**2000**	**2009**	**2000**	**2009**
Argentina	75	75	21	21
Bolivia	64	68	17	18
Brazil	70	73	19	21
Chile	77	79	21	23
Colombia	73	76	22	23
Ecuador	73	75	21	23
El Salvador	70	72	21	21
Mexico	74	76	21	21
Paraguay	74	74	21	21
Peru	72	76	20	21
Uruguay	75	76	21	21
Venezuela	74	75	21	22

Source: WHO, Global Health Observatory Data Repository, 2012.

The maternal mortality rate (MMR) is defined as the amount of women dying during pregnancy, childbirth and the postpartum period per 100,000 live births. In 2010, Peru, with an MMR of 200/100,000 LB showed the best rate reduction result (-66.5%) in the last decade. Meanwhile, Bolivia, Brazil and Chile achieved reductions greater than 50%. Argentina, Venezuela, Uruguay and Chile, which had the lowest rates among the 12, progressed in a peculiar way. Argentina, because it was the only country to worsen its result (+8.4%); Venezuela, for having the second worst performance (rate fell only -2.1%); finally, Uruguay and Chile because they have had the best MMR reduction performance since 1990 (Tables XX and XXI).

Table XX. Maternal mortality rates estimates*, 1990-1995-2000-2005-2010

Countries	1990	1995	2000	2005	2010
Argentina	71	60	63	69	77
Bolivia	450	360	280	240	190
Brazil	120	96	81	67	56
Chile	56	40	29	26	25
Colombia	170	130	130	100	92
Ecuador	180	150	130	110	110
El Salvador	150	130	110	94	81
Mexico	92	85	82	54	50
Paraguay	120	120	110	110	99
Peru	200	170	120	90	67
Uruguay	39	35	35	31	29
Venezuela	94	98	91	94	92

*Number of deaths in women during pregnancy and childbirth, per 100 thousand live births, estimated according to the regression model which uses information about fertility, birth attendants and HIV prevalence.

Source: World Bank, World Development Indicators and Global Development Finance.

Table XXI. Maternal mortality rates variation % 1990/2010

Countries	1990	2010	Variation %
Argentina	71	77	8.4
Bolivia	450	190	-57.8
Brazil	120	56	-53.3
Chile	56	25	55.3
Colombia	170	92	-45.8
Ecuador	180	110	-38.9
El Salvador	150	81	-46.0
Mexico	92	50	-45.6
Paraguay	120	99	-17.5
Peru	200	67	-66.5
Uruguay	39	29	-25.6
Venezuela	94	92	-2.1

Source: World Bank, World Development Indicators and Global Development Finance.

In the first decade of the millennium, neonatal mortality declined in all countries selected; the percentage of reduction ranged from 50% (El Salvador) to 16.6% (Chile). Bolivia, which had the highest ratio in 2000 (31/1000 live births LB), reduced it by 25% while maintaining the same relative rank in 2010.

The lowest rates in 2000 were recorded in the so-called Southern Cone: Chile (6/1000 LB), Uruguay (9/1000 LB) and Argentina (11/1000 LB). During the decade, the largest infant mortality rate (IMR) declines were recorded in El Salvador (-50%), Peru (-47%) and Mexico (-41%). El Salvador's remarkable progress changed the ranking; the sequential order of countries with the lowest rates became: Chile (5/1000 LB), Uruguay (6/1000 LB) and El Salvador (6/1000 LB), followed by Argentina and Mexico, both with the same rate (7/1000 LB) (Table XXII).

Table XXII. Neonatal mortality rate and variation % between 2000 and 2010

	Death during the first month of life per thousand live births			Variation %
Countries	**2000**	**2005**	**2010**	**2000-2010**
Argentina	11	9	7	-36.6
Bolivia	31	27	23	-25.8
Brazil	19	15	12	-36.8
Chile	6	5	5	-16.6
Colombia	16	14	12	-25.0
Ecuador	14	12	10	-28.6
El Salvador	12	9	6	-50.0
Mexico	12	9	7	-41.6
Paraguay	18	16	14	-22.2
Peru	17	13	9	-47.0
Uruguay	9	7	6	-33.3
Venezuela	13	11	10	-23.1

Source: WHO, Global Health Observatory Data Repository, 2012.

IMR in 2000 ranged between 60/1000 LB in Bolivia and 9/1000 LB in Chile. Uruguay (15/1000 LB) and Argentina (18/1000 LB) were the clo-

sest of Chile. Six countries were somewhere in the range of 20/1000 LB (Colombia, Ecuador, El Salvador, Mexico, Paraguay and Venezuela). It is worth reminding that Netherlands and Sweden had already achieved rates of 16/1000 LB about 50 years ago (BRAZIL, 1966).

Following the trend of neonatal mortality, IMR had also declined significantly in all countries by 2010. Decrease was around 50% in Peru and Ecuador, and 45% in Brazil. Even in Uruguay, which in 2000 had the second lowest rate (15/1000), the fall was 40%. Nevertheless, it did not change the ranking of the three best ranked countries. In 2010, Chile (8/1000), Uruguay (9/1000) and Argentina (12/1000) upheld the top three spots, regardless whether Chile's IMR percentage fall (-11.1%) was the least expressive of all the 12 countries (Table XXIII).

Table XXIII. Infant mortality rate in countries in selected Latin American countries and variation % 2000/2010

Countries	Death during the first month of life per thousand live births			Variation % 2000-2010
	2000	2005	2010	
Argentina	18	15	12	-33.3
Bolivia	60	50	42	-30.0
Brazil	31	23	17	-45.1
Chile	9	8	8	-11.1
Colombia	23	19	17	-26.1
Ecuador	27	22	18	-33.3
El Salvador	28	20	14	-50.0
Mexico	24	19	14	-41.6
Paraguay	29	25	21	-10.5
Peru	31	22	15	-51.6
Uruguay	15	12	9	-40.0
Venezuela	21	18	16	-23.8

Source: PAHO/WHO: Basic Health Indicators, 2001, 2005 and 2012.

The evolution of infant mortality (under five years) was no different: widespread, but uneven development (Table XXIV). In El Salvador and Peru, the fall was over 50%, in Brazil and Mexico, -47.2% and -41.3%, res-

pectively. The smallest decrease percentage wise occurred in Chile, which is not surprising, since it is the country that, in 2000, had the lowest infant mortality (11/1000 LB). The (seeming) paradox is known: the higher the IMR, the less complicated is its prevention. As the rate decreases, large positive leaps become more difficult. That is because while diseases with less complex prevention are being eliminated or reduced (for example, diarrheal disease), problems – for example, prematurity – that require more intensive care and more sophisticated therapeutic resources not always available to the most vulnerable segments grow proportionately.

Table XXIV. Infant mortality per thousand LB and variation (%) between 2000 and 2010 in selected Latin American countries

Countries	Deaths per thousand live births in children below the age of 5 years			Variation % 2000-2010
	2000	2005	2010	
Argentina	20	17	14	-30.0
Bolivia	82	67	54	-34.1
Brazil	36	26	19	-47.2
Chile	11	9	9	-18.2
Colombia	27	23	19	-29.6
Ecuador	33	26	20	-39.4
El Salvador	34	23	16	-52.9
Mexico	29	22	17	-41.3
Paraguay	35	29	25	-28.6
Peru	41	28	19	-53.6
Uruguay	17	14	11	-35.3
Venezuela	25	21	18	-28.0

Source: WHO, Global Health Observatory Data Repository, 2012.

The classification of Latin American countries according to the magnitude of each group of diseases that make up their epidemiological profiles can surprise anyone expecting a homogeneous healthcare setting when it comes to a universe of countries from the same hemisphere with

countless similar social and economic aspects. Indeed, despite existing commonalities, several differences are noticeable both in the socioeconomic status, as pointed out in this text, and the epidemiological structure, as we intend to demonstrate below.

Data from 2010 (PAHO, 2012) expressed in the annex summarize the nosological overview of the 12 countries, in which the following aspects are highlighted:

Diseases such as cardiovascular ones, diabetes, cancer and external causes emerge as epidemics of the twenty-first century;

Ischemic heart diseases and cerebrovascular diseases are the leading cause of death in Latin America seen as a whole. Neoplasms appear in second place. However, this ranking is not repeated when ischemic and cerebrovascular diseases are split. In this case, malignant neoplasms rank first in both the Latin American average and in seven countries (Argentina, Brazil, Chile, Ecuador, Paraguay, Peru and Uruguay);

External causes are the leading cause of death in Colombia, El Salvador and Venezuela, which would feature these countries as the most violent of the group from the perspective of this indicator. The various manifestations of violence emerge as the 2nd issue in Brazil, Chile, Ecuador and Uruguay;

Among the six disease groups explained in the annex, diabetes is also the leading cause of death in Mexico and the disease of lesser epidemiologic magnitude in Argentina (15.7/100,000), Chile (17/100,000), in Colombia (24.2/100,000), in Uruguay (12.5/100,000) and Venezuela (30.1/100,000); and

In 2010, communicable diseases (CD) were the leading cause of mortality in Peru (149.6/100,000), the second in Argentina (64.8/100, 000) and the least important among the six in Mexico (34.1/100,000). In the middle of the last century, Netherlands and Denmark had achieved rates of 27.2/100,000 and 38.3/100,000, respectively (EPEA, 1966). It is worth noting the peculiar importance of CDs particularly on the issue of inequalities among countries studied. Although current rates are much better off than those observed 50/60 years earlier, around 500/100,000 for Brazil, 152.4/100,000 for Venezuela, 336/100,000 for Colombia, 374/100,000 for Chile and 473/100,000 for Mexico, progress has been clearly uneven. Since then, the reduction of CDs

in Brazil and Colombia was approximately 86%, while Venezuela, Chile and Mexico reported declines of around 72% (EPEA, 1966).

In the first decade of the millennium, communicable diseases, malignant neoplasms, external causes and the all causes group grew differentially in the 12 countries covered in this report. The broadest variation occurred among the first type, since CD-related mortality rates fell in seven of eight countries. The somewhat unusual exception was Argentina, where the CDs increased significantly (+33.2%). Chile, which had the lowest rate at the onset of the decade, had the largest decrease (-55.8%).

Malignant neoplasms fell in Chile (-3.4%) and even more in Mexico (-9%) and Venezuela (-15.5%). In the five countries (Argentina, Brazil, Colombia, Ecuador and El Salvador) where the problem grew, El Salvador had the highest percentage increase (27.8%) (Table XXV).

Table XXV. Rates of mortality from communicable diseases (CDs) and malignant neoplasms adjusted per age in selected Latin American countries

	CDs			Neoplasms		
Countries	**1995-2000**	**2007-2009**	**Variation %**	**1995-2000**	**2007-2009**	**Variation %**
Argentina	51.5	68.6	33.2	119.9	124.0	4.2
Bolivia	...	...		...	...	...
Brazil	90.6	74.8	-17.4	109.1	122.3	12.1
Chile	67.5	29.8	-55.8	124.2	120.0	-3.4
Colombia	58.2	51.5	-11.5	106.6	121.9	14.3
Ecuador	116.0	70.8	-38.9	100.1	104.4	4.3
El Salvador	127.7	87.5	-31.5	80.2	105.5	27.8
Mexico	63.7	36.6	-42.5	82.9	75.4	-9.0
Paraguay	...	72.0	...	...	118.8	...
Peru	...	145.5	...	...	136.6	...
Uruguay	...	6.7	...	...	168.4	...
Venezuela	62.6	51.9	-17.1	133.1	112.5	-15.5

Sources: 1. Basic Indicators, Health Situation in the Americas, 2011.

2. Basic Indicators. Health Situation in the Americas /WHO/PAHO, 2011.

Venezuela and El Salvador reported high mortality from external causes, especially the former country, where the increase neared 72%. In El Salvador, the growth of trauma and violence in general was much lower (12.1%). The largest drop occurred in Mexico (-33.8%) and the lowest in Argentina (-3.7%) and Ecuador (-5.6%).

Eight countries showed decreased rates of mortality from all causes. The largest declines occurred in Peru (-21.8%) and Ecuador (-15.1%). Increases occurred only in El Salvador (6.7%), Paraguay (4.2%) and Colombia (2.9%) (Table XXVI).

Table XXVI. Rates of mortality from external causes and all causes adjusted by age in selected Latin American countries

	External causes			All causes		
Countries	**1995-2000**	**2007-2009**	**Variation %**	**1995-2000**	**2007-2009**	**Variation %**
Argentina	48.3	46.5	-3.7	6.2	6.0	-3.2
Bolivia	...	...		12.3	...	...
Brazil	95.8	83.3	-13.0	8.2	7.4	-9.7
Chile	57.6	45.5	-21.0	5.4	4.9	-9.2
Colombia	127.5	108.4	-14.9	6.9	7.1	2.9
Ecuador	92.0	86.7	-5.6	7.3	6.2	-15.1
El Salvador	121.2	135.9	12.1	7.4	7.9	6.7
Mexico	86.0	56.9	-33.8	6.3	5.8	-7.9
Paraguay	...	81.1	...	7.1	7.4	4.2
Peru	...	72.4	...	8.7	6.8	-21.8
Uruguay	...	54.8	...	7.2	6.7	-6.9
Venezuela	59.5	102.3	71.9	7.0	6.8	-2.8

Sources: 1. Basic Indicators, Health Situation in the Americas, 2011.

2. Basic Indicators. Health Situation in the Americas/WHO/PAHO, 2011.

Final considerations

The indicators discussed in this paper clearly point to the population's aging, albeit with varying levels of speed arising from heterogeneity in health conditions among countries involved. But, for now, the 12 countries are enjoying the so-called demographic bonus, which is when the active population between 15 and 60 years of age is higher than that of children and adolescents (0-15 years) and elderly (over 60 years).

Pari passu with demographic changes, the prevailing nosological profile in a population in an epidemiological transition stage is changing. In this context, infectious and parasitic diseases tend to give way to chronic degenerative diseases and trauma (external causes).

Inequalities in health exist in two forms: the so-called natural and unfair inequalities, that is, those featuring inequity situations. Among the first, we highlight the territorial extension, historically consolidated in each country, except one or two contentious issues always solvable through diplomacy and/or international courts, and the epidemiological issue, in which the classic example is the life expectancy difference between men and women.

But those that matter are the unfair inequalities or socioeconomic inequities, such as those pointed out in this text, because they should be addressed by social and economic policies of each country in synergy with international promotion and cooperation agencies actions.

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Annex

Mortality rates per 100, 000 inhabitants adjusted by age, according to some groups of causes in selected Latin American countries, 2010

Causes	Argentina	Bolivia	Brazil	Chile (b)	Colombia (b)	Ecuador	El Salvador (b)	Mexico	Paraguay	Peru	Uruguay (b)	Venezuela (b)	Latin America
Communicable diseases	64.8	...	66.9	28.3	46.4	58.7	80.1	34.1	69.9	149.6	36.0	42.0	59.5
Malignant neoplasms	118.5	...	110.7	120.0	88.0	92.2	97.5	73.7	112.4	128.0	144.0	95.6	103.7
External causes	43.6	...	82.1	45.5	107.9	88.6	136.4	62.9	75.7	...	52.7	103.4	77.4
Diabetes mellitus	15.7	...	34.3	17.0	24.2	40.4	39.2	89.6	57.3	19.1	12.5	30.1	43.3
Ischemic heart diseases	37.1	...	62.0	37.8	101.7	19.7	61.6	74.0	75.9	31	43.0	102.7	66.1
Cerebrovascular diseases	35.9	...	61.3	41.2	51.2	32.2	23.4	33.8	75.9	29.7	47.1	50.7	47.9

F(b) Data from 2008. Source: PAHO - Health Situation in the Americas. Basic Indicators, 2012.