

# ARGENTINA



**Sources:** Second Administrative Level Boundaries Dataset (SALB), a dataset that forms part of the United Nations Geographic Database, available at: [http://www.who.int/whosis/database/gis/salb/salb\\_home.htm](http://www.who.int/whosis/database/gis/salb/salb_home.htm), and the Digital Chart of the World (DCW) located at: <http://www.maproom.psu.edu/dcw>. The boundaries and names shown here are intended for illustration purposes only, and do not imply official endorsement or acceptance by the Pan American Health Organization.

**A**rgentina extends for 2,791,810 km<sup>2</sup> on the American continent; it also claims sovereign rights over 969,464 km<sup>2</sup> in Antarctica. From north to south, the country measures 3,694 km, and spans 1,423 km across at its widest point. Argentina's Atlantic coast is 4,725 km long, and its border with Chile, Bolivia, Paraguay, Brazil, and Uruguay is 9,376 km.

## GENERAL CONTEXT AND HEALTH DETERMINANTS

Argentina is governed as a federal republic with a presidential system, and is ruled by its 1853 Constitution; the Constitution was last amended in 1994. The Executive, Legislative, and Judicial branches function independently; administrations serve for four years. The country is divided into five regions: Northwest, Northeast, Cuyo, Central or Pampan, and South, which encompass 24 jurisdictions (23 provinces and the autonomous city of Buenos Aires, seat of the National Government). Each province has its own constitution and elects its governing officials.

### Social, Political, and Economic Determinants

In the second half of the 1990s, changes in the country's productive structure and successive external crises caused an increase in unemployment and poverty and led to a greater income distribution inequality that had never been seen in Argentina. In 1998, as a result of a drop in the gross domestic product (GDP), poverty and inequality worsened; the ensuing financial crisis led to the annulment of the currency board agreement and the devaluation of the Argentine peso early in 2002. Annual per capita income dropped from US\$ 7,470 in 2000 to US\$ 3,670 in 2003, falling further to US\$ 3,580 in 2004 (1). These economic difficulties notwithstanding, the country was able to preserve its high human development index (HDI) rating (0.849), which has continued to gradually increase since 1975, when it was 0.784 (2).

Data on poverty and indigence in the population come from measures gathered by the National Institute of Statistics and Census (INDEC, by its Spanish acronym). The number of households and individuals below the poverty line come from the Household Survey (EPH, by its Spanish acronym), which was first conducted in 1972 and, since 2003, has been conducted quarterly by INDEC. Since 2006, EPH has been conducted in 31 urban clusters (28 up until 2005), which include the 23 provincial capitals that are representative of six of the country's areas: Metropolitan, Pampan, Northwest, Northeast, Cuyo, and Patagonian. Household income is used to determine whether members are able to satisfy essential food and other needs, relying on a "basic basket" of essential food, goods, and services (clothing,

transport, education, health, etc.) as a benchmark. To calculate the percentage of poor households, the number whose income cannot cover the cost of the basic basket (including food, goods, and services) is divided by the total number of households; to calculate the percentage of indigent households the number whose income cannot cover the cost of the basket (including food, but excluding goods and services) is divided by the total number of households. The population living below the extreme poverty line (indigence) increased moderately during the second half of the 1990s: from 7.9% in 1995 to 9.6% in 2000. After the unprecedented 2001 economic crisis, which affected the living conditions of vast population sectors, the figure catapulted to more than 25% in 2002, according to estimates by the Regional Office of the World Bank in Argentina, which defines "extreme poverty" as income under US\$ 1 per person per day, a level never seen in Argentina. This spike in the percentage of indigence was due to a rise in the ranks of unemployed persons and families without any earnings (which skyrocketed from 6.1% to 21.5% between 1990 and 2002) and to the decreased purchasing power of the very poorly remunerated employed.

Within the context of an extraordinary trade surplus, the restoration of order to the fiscal accounts, the normalization of the financial system, and foreign exchange intervention, the economy's extreme volatility was brought under control beginning in 2003. Signs of economic improvement include several consecutive quarters showing growth, a revaluation of the Argentine peso (ARS) (ARS 2.9 = US\$ 1 in August 2005), a reduction of unemployment levels from 15.4% in the second half of 2003 to 12.5% in the first half of 2005 (EPH data), and a 14% decrease in poverty between the second half of 2003 and the second half of 2005. During this period, poverty declined for men and women and in all age groups, decreasing more in the population living below the indigence line in comparison with the non-indigent population living below the poverty line (Table 1). Changes in unemployment and poverty also are indications of economic improvement that is in the consolidation phase, considering the country's yearly growth rate of approximately 9%.

Poverty and indigence are distributed highly unequally in the country, with disparities among and within provinces that reveal a very uneven level of protection of the social and economic rights of Argentineans. In Northwest and Northeast regions,

**TABLE 1. Population of 28 urban clusters, by poverty status, sex, and age group, Argentina, second half of 2003 and 2005.**

Sex and poverty status	Age group									
	Total		0–13 years old		14–22 years old		23–64 years old		65 years old and older	
	2003	2005	2003	2005	2003	2005	2003	2005	2003	2005
Total (thousands)	23,163	23,410	5,870	5,553	3,585	3,669	11,054	11,735	2,654	2,453
	%	%	%	%	%	%	%	%	%	%
Not poor	52.2	66.2	36.6	50.5	42.2	58.1	58.3	72.3	74.4	84.4
Poor	47.8	33.8	63.4	49.5	57.8	41.9	41.7	27.7	25.6	15.6
Not indigent	27.3	21.7	33.4	29.0	31.9	26.8	25.0	18.6	17.4	12.1
Indigent	20.5	12.2	30.1	20.5	25.9	15.1	16.7	9.1	8.2	3.6
Women (thousands)	12,213	12,314	2,892	2,752	1,768	1,845	5,942	6,225	1,611	1,492
	%	%	%	%	%	%	%	%	%	%
Not poor	53.5	66.8	37.0	49.8	44.3	59.8	58.4	72.0	75.2	85.5
Poor	46.5	33.2	63.0	50.2	55.7	40.2	41.6	28.0	24.8	14.5
Not indigent	26.5	21.1	33.0	28.8	31.0	25.8	24.7	18.6	16.6	11.2
Indigent	19.9	12.1	29.9	21.4	24.7	14.4	16.9	9.4	8.1	3.3
Men (thousands)	10,950	11,096	2,978	2,801	1,817	1,824	5,113	5,510	1,043	961
	%	%	%	%	%	%	%	%	%	%
Not poor	50.6	65.4	36.1	51.3	40.2	56.4	58.2	72.6	73.1	82.6
Poor	49.4	34.6	63.9	48.7	59.8	43.6	41.8	27.4	26.9	17.4
Not indigent	28.2	22.3	33.7	29.1	32.6	27.7	25.3	18.6	18.6	13.4
Indigent	21.2	12.3	30.2	19.6	27.2	15.9	16.5	8.8	8.4	4.0

**Source:** INDEC, Permanent Household Survey.

urban clusters have poverty rates that are much higher than the national average for both households and individuals (Figure 1).

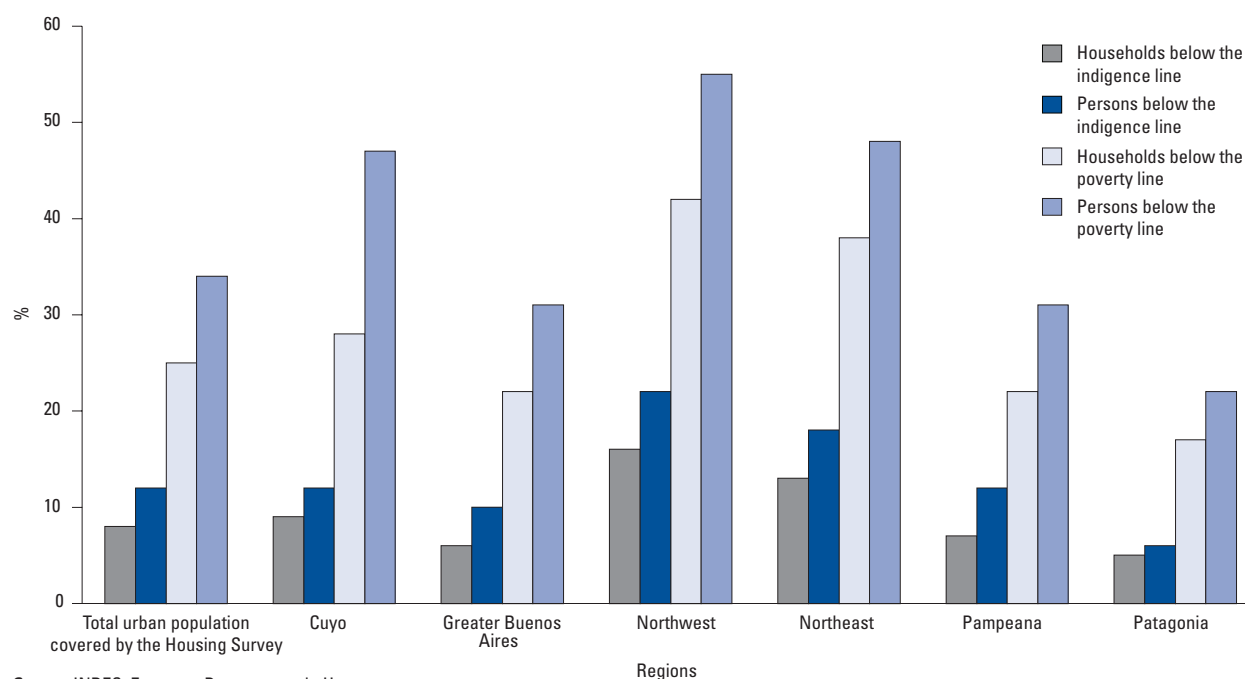
The income-distribution inequality is a factor that plays an important role in the social deterioration, and works relatively independently of trends in poverty and indigence. In the first quarter of 2006, INDEC began publishing data on per capita family income (that is, the average income per person in the household). Results show that 20% of the population can spend between ARS 0 and ARS 140 pesos (US\$ 45) per month. The poorest 10% of the population would have an average income of ARS 50 (US\$ 16), and the wealthiest 10% would have an average income of ARS 1,823 (US\$ 590), for an income gap of 36 between the poorest and the wealthiest segments of the population (this measure is arrived at by dividing the income of the wealthiest 10% of the population by that of the poorest 10%). Table 2 shows the changes in the income gap in 2003–2005.

Research conducted between 1992 and 2005 by the Center for Distribution, Labor, and Social Studies (CEDLAS, by its Spanish acronym) at the National University of La Plata showed that the Gini coefficient of per capita family income increased from 0.45 to 0.50, according to data for the first half of 2005. The poorest quintile's share of national income, on the other hand, decreased in the same period, from 4.8% to 3.1%; that of the wealthiest quintile increased from 50.6% to 54.7% (3). In considering these two measurements in the context of improvements in the percentages for poverty and indigence, it becomes clear that inequality is one of the most important social questions to be resolved.

In 2003, the Government gave human rights policy a central position within the work agenda. Thus, it began to tackle the repeal of impunity laws, created the Investigation Unit of the National Commission for the Right to Identity, launched “Memory Space” in what had been the headquarters of the Navy’s Mechanics School (ESMA, by its Spanish acronym), and reactivated the investigation regarding the fate of the thousands of disappeared victims of State terrorism. The country still faces situations that affect the human rights of specific population groups, however, such as children and youth who break criminal laws and institutionalized psychiatric patients; there also are still cases of child exploitation and reports of torture and other mistreatment of persons detained in police stations or prisons.

The country also has advanced in terms of gender equality. Noteworthy at the institutional level is the incorporation of all human rights treaties dealing with gender equality into the National Constitution, including the Convention on the Elimination of All Forms of Discrimination against Women (CEDAW). In 2006, the National Congress ratified the Optional Protocol, whereby Argentinean women now can bring complaints regarding the infringement of their rights to an international and impartial tribunal of experts. The National Congress also enacted legislation dealing with surgical contraception (Law No. 26,130) and with comprehensive sexual education (Law No. 26,150). The National Law on Quotas No. 24,012/91 made it possible to increase the number of women in elective positions in the Legislative Branch, from 1.4% in the National Senate in 1998, to 34.7%

**FIGURE 1. Poverty and indigence incidence, total urban population covered by the Housing Survey and by statistical region, Argentina, second semester of 2005.**



Source: INDEC, Encuesta Permanente de Hogares.

in 2001, and to 41.7% in 2003. Most provinces also have approved local laws that echo substantive aspects of the national law. Thus, female participation in provincial legislatures increased from 22.2% in 2000 to 26.6% in 2004.

In October 2003 the Government reiterated its commitment to achieving the Millennium Development Goals (MDGs). After a slow start marked by the restructuring of the unit responsible for coordinating MDGs, in 2005 the Government completed an evaluation on the process and redefined certain goals. Meanwhile, the various objectives were prioritized at the sector level. Thus, MDG 5 (improve maternal health), 6 (combat HIV/AIDS and other diseases), 7 (ensure environmental sustainability), and 8 (develop a global partnership for development) are clearly spelled out in the Ministry of Health's agenda and in the 2004–2007 Federal Health Plan. Moreover, interest in the MDGs emerged at the sub-national level, and provinces such as Tucumán, Mendoza, La Rioja, and

San Juan set or are in the process of setting their own objectives for achieving the MDGs (see Table 3).

The country is close to achieving MDG 2 (universal primary education), as indicated by the net enrollment rate in primary school (98.1%), the rate of those who remain in school in the fifth year/grade (90.7%), and the literacy rate among 15–24-year-olds (98.9%) (4). According to INDEC (1991 and 2001 censuses), the percentage of illiterates decreased from 3.7% in 1991 to 2.6% in 2001, with equal percentages for men and women, but some provinces continue to lag in certain indicators. In the northeast (Chaco, Formosa, Corrientes, and Misiones) illiteracy rates are higher than 6%. Among individuals over 64 years old nationwide, the illiteracy rate is 6.2%, a rate that trebles in the aforementioned provinces (20.2%, 20.7%, 18.8%, and 16.3%, respectively). There also is a gap of 2 to 3 percentage points between women and men, with men lagging.

**TABLE 2. Income gaps by median and average per capita family income, 28 urban clusters (trimesters without Christmas bonus), Argentina, 2003–2005.**

	2003		2004		2005	
	4th qtr.	2nd qtr.	4th qtr.	2nd qtr.	4th qtr.	2nd qtr.
10th decile median/1st decile median	31	29	27	27	24	24
10th decile average/1st decile average	47	41	38	37	32	32

Source: Permanent Household Survey.

**TABLE 3. Selected Millennium Development Goals, indicators and targets, Argentina, 2007, 2011, and 2015.**

Indicator	Reference data		Most recent available data		Targets		
	Year	Value	Year	Value	2007	2011	2015
<b>Improve maternal health (MDG 5)</b>							
Maternal mortality rate per 100,000 live births	1990	52.0	2004	40	3.7		1.3
% of live births delivered by a doctor or midwife	1990	96.9	2004	99.0	99.0		99.0
Gini coefficient for maternal mortality rate	1990	0.346	2004	0.303	0.344		0.311
<b>Combat HIV/AIDS, Chagas' disease, TB, and malaria (MDG 6)</b>							
Prevalence of HIV in pregnant women 15–24 years old (%)	2000	0.64	2003	0.39	0.35		0.32
Prevalence of condom use in youths 15–24 years old (%)			2003	61.0	67.0		75.0
Mortality rate from HIV/AIDS (per 100,000 population)	1990	0.9	2003	4.2	3.8		3.5
Incidence rate of HIV/AIDS (per 100,000 population)	1990	17.0	2003	49	42.0		37.0
Morbidity rate for TB (per 100,000 population)	1990	38.1	2003	32.0			23.1
Mortality rate for TB (per 100,000 population)	1990	4.26	2003	2.4	2.1		1.21
% of TB cases detected and cured with DOTS	1989	64.6	2003	77.6	82.0		90.0
Mortality rate for malaria (per 100,000 population)	1990	0.0	2004	0.0	0.0		0.0
% of population in areas at risk for malaria that apply effective prevention and treatment measures	1990	100.0	2004	100.0	100.0		100.0
Annual parasite index (per 1,000 population)	1990	0.765	2004	0.057	< 0.1		< 0.1
% of endemic provinces that certified interruption of vector transmission of Chagas' disease	2001	21.1	2004	26.3	42.1		100.0
<b>Ensure a sustainable environment (MDG 7)</b>							
Surface area covered with native forest (%)			2002	11.60	11.2	11.3	
Total surface area in the country protected to maintain biodiversity (%)			2003	6.30	7.3	8.3	> 10
Equivalent tons of petroleum to generate US\$ 1,000 of GDP			2003	0.2	0.2	0.2	—
Share of renewable sources in the TPES (Total Primary Energy Supply) (%)			2003	9.90	9.9	> 10	> 10
Population with access to publicly supplied drinking water (%)					80.8	82.4	> 84
Population with sewerage coverage (%)					47.9	51.5	> 55
Deficient housing with irregular ownership (%)			2005	6.4	5.6	4.8	3.9

In 2001, about 6% of the total population had completed a university degree, two percentage points higher than in 1991. Among the population over 15 years old, men have higher percentages at intermediate or low educational levels (incomplete primary, complete primary, and incomplete secondary), while the women surpass men in complete secondary and incomplete and complete university levels. According to data from the 2001 National Population Census developed by INDEC's Sectoral Statistics Directorate, 8.7% of the population over 15 years old completed university studies (7.0% of the men and 10.3% of the women). According to EPH data, in the second half of 2004 the educational levels of men and women in urban clusters were more even, with the exception of completion of university education, in which the 3-percentage-point difference in favor of women remained the same. Data from INDEC's Sectoral Statistics Directorate based on the 2004 National Teacher Census of the Ministry of Education, Science, and Technology show that 821,726 teachers worked in formal educational establishments in 2004, that is, 25.3% more than in 1994. The 2005 National Health

and Nutrition Survey showed that 32.2% of the 311,000 households surveyed received some type of food assistance, with percentages ranging from 0.1% in the province of San Luis to 50.3% in Chaco.

Of the households included in the 2001 National Population and Housing Census, 96.6% used water from the water supply system; of these, 84.1% had water supplied to the home and the remaining 12.5% had water supplied somewhere on their property. The lack of a safe water supply is of great concern throughout the country. Even in the Buenos Aires Metropolitan Area there are major deficiencies (5) that go beyond marginalized, poor areas, extending to residential areas that have no publicly supplied water or have water supplied that may not be sanitary. Such is the case with the high levels of nitrate in the publicly supplied water, whose use by nursing mothers, children, and pregnant women is not recommended. Various toxic substances also are present in the aquifers used for human consumption: for example, long-term intake of arsenic in the water may cause chronic endemic hydroarsenicism. It has been established that 34% of the

inhabitants of the province of Chaco are at risk for hydroarsenicism, 45% in La Pampa, 34.5% in San Luis, 24% in Santiago del Estero, and 26.5% in Santa Fe (6).

According to the Ministry of Justice, Security, and Human Rights' National Directorate of Criminal Policy, the crime rate (including any crime, be it sex crimes; crimes against individuals, property, liberty, the State, or the community; or crimes involving narcotics or other special laws) showed a rising trend over the past decade, although there was a decline from 2002 to 2003 (350.2 per 10,000 as compared with 369.7 per 10,000). The same source indicated that the prison population has been rising steadily since 1999, reaching 9,246 in 2003. The 2005 Amnesty International report calculates that there is a prison population of 62,500 in Argentina, which would mean that there is severe overcrowding.

### Demographics, Mortality, and Morbidity

Argentina's projected population for 2005 was 38,592,150. The growth rate has been declining steadily in recent five-year periods: 1.3% in 1990–1995, 1.1% in 1995–2000, and 0.9% in 2000–2005. In the latter two five-year periods, the net migration rate decreased (dropping from 0.06% to 0.05%). Between 1980 and 2005 there was a gradual aging of the population: the aging index (population over 65 years old divided by the population under 15 years old, multiplied by 100) increased from 26.6 to 37.9. Conversely, the Fritz index (population 0–19 years old divided by the population 30–49 years old, multiplied by 100) declined from 161 to 143. This translated into changes in Argentina's population structure, whereby the mature population has increased in relation to the young population. The active population structure (population 40–64 years old divided by the population 15–39 years old, multiplied by 100), on the other hand, was younger in 2005 than in 1980 (active population structure indices of 63.5 and 67.2, respectively).<sup>1</sup>

The average annual birth rate per 1,000 population declined steadily from 1980–1985 (23.1) to 2000–2005 (18.0), and this trend is expected to continue at least until 2010–2015. The general mortality rate per 1,000 inhabitants also declined slightly between 1980–1985 (8.5) and 2000–2005 (7.9). The average number of children per woman decreased from 3.2 in 1980–1985 to 2.4 in 2000–2005, while the general fertility rate dropped from 97.0 per 1,000 women to 72.2 in the same period. It is estimated that in 2010–2015, the number of children per woman will decrease to 2.2 and the general fertility rate will be approximately 66 per 1,000 women.

Life expectancy at birth has increased in the past 25 years. In 1980–1985 it was 70.2 years (66.8 for men and 73.7 for women), while in 2000–2005 it averaged 74.3 (70.6 for men and 78.1 for women).

In 2001–2005, the Federal Capital and the provinces of Buenos Aires, Catamarca, Córdoba, La Pampa, La Rioja, Neuquén, Salta, San Juan, San Luis, Santa Cruz, and Tierra de Fuego experienced internal migration. In the same period, international migration resulted in the net loss of 70,000 men and 30,000 women. The 2001 census enumerated 1,531,940 foreigners in Argentina (699,555 men and 832,385 women). More than 900,000 came from bordering countries, most (325,046) from Paraguay, followed by Bolivia (233,464). Italians and Spaniards were the most numerous among European immigrants, although they came to Argentina as part of a long-standing process, and most of them are older than 65 years old. According to INDEC data for 2005, the indigenous peoples with the highest populations are the Mapuche in Patagonia; the Kolla in Jujuy and Salta; the Toba in Chaco, Formosa, and Santa Fe; and the Wichi in Chaco, Formosa, and Salta. These four peoples represent 53% of the 402,921 persons included in the national survey. The rest of the population was divided among 17 other indigenous peoples. At least one member in 2.8% of the country's households identified him- or herself as belonging to or having descended from an indigenous group.

The general age-adjusted mortality rates are slightly higher in the most depressed regions, especially for women. The adjusted mortality rates due to malignant neoplasms are higher in the provinces and regions with higher socioeconomic levels, which is the reverse of the situation for infectious diseases. Upon analyzing the standardized mortality rate for 1999–2001, statistically significant higher rates were seen in the departments of the Northeast for infectious diseases and external causes in both sexes, and for cancer of the uterus in women. Malignant neoplasms have statistically significant higher rates in certain departments of the provinces of Buenos Aires and Entre Ríos, as does suicide in certain departments in the country's central and southern regions (7).

In 2004, mortality from diseases of the circulatory system was 247.2 per 100,000 inhabitants in men and 229.0 per 100,000 in women. The sharp decline in cardiovascular diseases between 1990 and 2004 and the increase in mortality from "other causes" are noteworthy. National experts who were consulted agree that, while a decline in real mortality from cardiovascular diseases has been observed, much of the difference is due to a change in medical certification practices, which has led to an increase in the certification of respiratory insufficiency, which in this report falls under "other causes." This practice, then, masks an important number of ill-defined causes, a problem which the health authorities are addressing. (See Table 4.)

The mortality rate from malignant tumors remained stable in both men and women, as can be seen by comparing the 2004 and 1990 rates. Death rates from external causes decreased in both sexes in 2004 as compared to 1990, but mortality from infectious diseases increased during the period. Mortality from conditions originating in the perinatal period dropped by almost half between those two years. "Other causes" did increase during the

<sup>1</sup>The source of the basic data for this entire section is INDEC; based on them, the demographic indices presented here were developed.

**TABLE 4. Mortality by broad groups of causes, by age group, Argentina, 2004.**

	Total		Age group									
			0–4		5–9		10–19		20–59		60 and older	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1. Circulatory system	90,993	31	171	1	37	4	179	6	11,798	22	78,660	35
2. Malignant tumors	54,956	19	126	1	126	15	298	9	13,558	25	40,742	18
3. External causes	18,094	6	803	7	320	39	1,851	57	9,757	18	5,273	2
4. Childhood diseases	13,343	5	536	4	51	6	114	4	3,241	6	9,364	4
5. Perinatal	5,538	2	5,538	45	—	—	—	—	—	—	—	—
6. Other	89,374	30	4,367	36	262	32	685	21	12,024	22	71,834	32
7. Ill-defined	21,753	7	681	6	35	4	122	4	3,408	6	17,394	8

period, as did “ill-defined causes.” The leading cause of death in 2002–2004 was cardiac insufficiency, followed by ischemic heart disease in men and cerebrovascular disease in women. The two causes responsible for most of the potential years of life lost (PYLL) in both sexes were perinatal causes and congenital anomalies. The third leading cause in men was traffic accidents; in women, it was cerebrovascular disease.

A report by a working group on mortality (still subject to review and not yet published) analyzed the pace of change in potential years of life lost (PYLL) between 0 years old and 75 years old in 1997–2003. In men, PYLL due to ischemic heart disease and cardiac insufficiency decreased by 4.3% and 6.2% per year, respectively. An overall increase in mortality from septicemia, diabetes, acute respiratory infections, urinary tract diseases, and especially, self-inflicted injuries (7.2% per year) and assaults (5.7% per year) has been noted. In women, PYLL due to malignant tumors of the breast and of the uterus decreased 2.5% and 3.6% per year, respectively. In both sexes, PYLL due to malnutrition decreased by more than 3% per year.

The leading natural or human-caused threats to which the country is exposed are floods (75%), storms (15.9%), urban fires (7.4%), snowfall (5.2%), and forest or vegetation fires (3.8%), as well as earthquakes, volcanic activity, and technological disasters. The most severe floods occur in the River Plate Basin, which includes the Paraná, Paraguay, Iguazú, and Uruguay rivers and their leading tributaries and minor outlets, and they affect the provinces of Misiones, Corrientes, Entre Ríos, Formosa, Chaco, and Santa Fe, as well as the Pampa plains, where they affect the provinces of Buenos Aires, La Pampa, the southern part of Santa Fe, and the southern part of Córdoba.

## HEALTH OF POPULATION GROUPS

### Children under 5 Years Old

There are 3,349,278 children in this age group, representing 9.2% of the country’s population. Between 1990 and 2004, infant

mortality decreased 43.8%. Although deaths from avoidable causes have declined, in 2000 they still accounted for nearly two of every three infant deaths. In 2003, 53% of infant deaths were due to conditions originating in the perinatal period, 22% to congenital malformations, 10% to conditions of the respiratory system, 5% to infectious and parasitic diseases, and 3% to accidents. In 2004, 57% of postneonatal mortality was avoidable with prevention and appropriate treatment, and 56% of neonatal mortality was avoidable with timely diagnosis and treatment during pregnancy and childbirth, and with diagnosis and treatment of the newborn. In that same year, differences were observed among provinces, with infant mortality rates ranging from 25.1 per 1,000 live births in Formosa (Northeast Region) and 21.8 in Catamarca (Northwest Region) to 4.1 in Tierra de Fuego and 8.7 in the Federal Capital (8). The Northeast Region had the highest infant mortality rate in 2004 (20.0 per 1,000 live births), and Patagonia Region had the lowest (12.2 per 1,000 live births). The uneven distribution of infant mortality among the provinces, using the Gini index, increased between 1990 and 2002, decreasing again starting in 2002. A study classified infant mortality trends at the departmental level in 1994–2003 into five categories: markedly declining, moderately declining, indefinite, moderately increasing, and markedly increasing (9). Even wider gaps are seen when infant mortality is analyzed by the mother’s level of education. In fact, during 2002–2004, the relative risk to infants born to illiterate mothers in comparison with infants born to mothers who had completed university training was 15.1 (infant mortality rate of 97.6 per 1,000 live births in illiterate mothers and 6.5 per 1,000 live births in university-educated mothers). Based on data from the Ministry of Health’s National Directorate of Health Statistics, it is possible to conclude that the relative risk between these two groups in 1995–1997 was 10. The concentration coefficient in 2004, using the percentage of unmet basic needs (UBN) as a socioeconomic variable, was –0.103.

Argentina’s infant mortality goal is the internationally established MDG of reducing the 1990 infant mortality rate by two-thirds by 2015; it is possible that the country will achieve it

before the target date. The 2005 infant mortality rate of 13.3 per 1,000 live births was published in August 2006, showing progress toward achieving the goal.

Mortality in children under 5 years old also has decreased in the past 15 years. Between 1990 and 2004, it dropped from 29.6 deaths per 1,000 live births to 16.6 per 1,000 (or from 622.5 per 100,000 population to 365.9 per 100,000 population). In this case, the Gini coefficient also showed an increased inequality among jurisdictions, from 0.113 in 1990 to 0.132 in 2002, slightly decreasing to 0.120 in 2003. The Government took on an additional goal when it signed on to the MDG to reduce inequalities among jurisdictions in infant mortality and in mortality in children under 5 years old by 10% between 1990 and 2015, as measured by the Gini coefficient.

In 2004, conditions arising in the perinatal period and congenital anomalies were responsible for 53% and 22% of deaths in this age group, respectively; influenza and pneumonia were responsible for 4.0% and 4.2%, respectively.

### Children 5–9 Years Old

According to the 2001 census, this population group totaled 3,471,217 (9.6% of the total population). In 2004 there were 831 deaths of children 5–9 years old, for a specific rate of 23.9 per 100,000 population, considerably lower than the 33.5 per 100,000 rate seen in 1990. External causes continue to rank as the leading cause of death, representing 38.5% of all causes; 43.1% for males. Traffic accidents were the leading cause of death in this group for both females and males, followed by congenital malformations in females and malignant neoplasms of the lymphatic tissue in males.

### Adolescents 10–14 and 15–19 Years Old

The 10–14-year-old group totaled 3,427,200 in 2001, and the 15–19-year-old group totaled 3,188,304 (9.5% and 8.8% of the total population, respectively). That year, a total of 3,249 deaths were recorded (1,003 in the group 10–14 years old and 2,246 in the group 15–19 years old), with specific rates of 0.29 and 0.67, respectively, and a male/female ratio of 2.1:1. In the group 10–14 years old, external causes were responsible for 40.7% of all deaths, and for 63.5% in the group 15–19 years old. The suicide rate was 16.65 per 100,000 population among males 15–19 years old. For the group as a whole (10–19 years old), the leading cause of death in males in 2002–2004 was homicide, and in females, traffic accidents; the second leading cause in both sexes was suicide. As of December 2005 there were 1,671 cases of HIV/AIDS recorded in the country among 13–19-year-olds, with a male/female ratio of 1.96:1 for diagnoses of AIDS and 0.8:1 for HIV-positive diagnoses.

In 2004, the lifetime prevalence of alcoholic beverage consumption in youths 12–15 years old was 38.7%; the lifetime prev-

alence of tobacco use was 11.2%. With regard to the use of illegal substances, the prevalence was 0.8%; marijuana was far and away the drug of choice for youths who consume these substances (0.6%). Prevalences in the year prior to the survey were 34.0% for alcohol, 8.7% for tobacco, and 0.7% for illegal substances. In terms of consumption in the month prior to the survey, percentages were 15.2%, 6.4%, and 0.2%, respectively (10).

Among adolescents 14–19 years old, 61.4% reported that they had had sexual relations at least once (68.4% among males and 54% among females). The average age at the time of first relations is 15 years old (15.1 in females and 14.8 in males). Some 73.3% of adolescents used a condom the first time they had sexual relations (11).

In 2004 there were five deaths among adolescents 10–14 years old due to problems related to childbirth and 24 in the group 15–19 years old; the number of live births for mothers 10–14 years old was 2,629, and 103,809 in the group 15–19 years old. Of live births in 2004, 14.6% had mothers under 20 years old.

### Adults 20–59 Years Old

In 2001, there were 17,952,174 persons aged 25–59 years (49.5% of the total population). Between 1990 and 2004 there was a decline in mortality rates due to malignant neoplasms in men and women in this age group, and an increase in mortality from infectious diseases. The leading cause of death in men in 2002–2004 was ischemic heart disease and in women, malignant neoplasm of the breast; the second leading cause for both sexes was cerebrovascular disease. In 2005, 72.7% of women 18–59 years old with unmet basic needs (UBN) had only public health service coverage; among men in this age group, the percentage was 67.8%. Among women without schooling, 68.5% had only public health service coverage, as compared with 9.8% of women who had completed university studies; in men the percentages were 64.8% and 9.6%, respectively. The prevalence of tobacco use among poor women with UBN was nearly the same as that of women whose basic needs are met (30.4% and 29.4%, respectively), but they had much lower rates of giving up tobacco use (7.9% and 13.9%, respectively); this difference is accentuated when the proportion of former smokers among uneducated women (4.3%) is compared to that of university graduates (17.3%). In men, the proportion of smokers among the poor (48.1%) is higher than among those whose basic needs are met (37.5%). In both groups, the proportions of former smokers were 15.1% and 17.6%, respectively. Among men, the significant difference in the proportion of former smokers by level of education (13.0% of those without formal schooling and 23.8% of those with university degrees) remained the same. Just 19.6% of the poorest women had ever had a mammogram, as compared to 44.9% of those whose basic needs are met. The proportion of uneducated women who had had this test was 17.5%, as compared to 64.4% of those with university degrees. In terms of prevention of cervical cancer, 62% of women

with UBN had had a Papanicolaou test as compared with 78.1% of those whose basic needs were met. Some 57.2% of uneducated women had had a Papanicolaou test, while 90.8% of women with university degrees had had one.

The proportion of uneducated women who fail to protect themselves during sexual relations was 39%, while the proportion of those with university degrees was 29%. For males, behavior in terms of protection during sexual relations is similar to that of women (28.7% with UBN and 26.9% with basic needs met), but it is markedly worse when considering the level of education (55.4% among those without formal education and 31.5% among those with university degrees) (12).

Maternal mortality has changed little in the past decade (see Table 3), and the national rate was approximately 40 deaths per 100,000 live births. Nevertheless, there are differences among the provinces, with much higher figures seen in the Northeast and Northwest (Corrientes 104, La Rioja 136, and Jujuy 131); the figure in the Federal Capital was 20 in 2004. The Gini coefficient was 0.303 that year, which indicates a marked inequality in the distribution of maternal mortality among the Argentine provinces. The concentration coefficient in 2004, using the percentage of UBN as a socioeconomic variable, was  $-0.234$  (8).

### Older Adults 60 Years Old and Older

The percentage of persons older than 60 years old in 2001 was 13.4% (4,871,957); the percentage of those older than 65 years old was 9.9%, and the percentage of persons older than 80 years old was 2.1%. Between 1990 and 2004, mortality from infectious diseases increased and mortality from external causes decreased for men and women in this age group. Cardiac insufficiency was the leading cause of death in men and women; the second leading cause was ischemic heart disease in men and cerebrovascular disease in women. Life expectancy at 65 years old in men was 14 years and in women it was 19 years, while for individuals 80 years old it was four years in men and six in women.

In 2001, 19.6% of persons 65 years old and older lived alone, 44.6% lived in nuclear family households (just the couple or one or both partners with unmarried children), 34.9% lived in extended- or blended-family households, and 0.9% lived in non-family households, a category that may include old-age homes and residences for the elderly not identified as such. In May 2002, 30.3% of older adults who lived in urban areas lived below the poverty line. In 2001, 81.3% of the population over 65 had health coverage through social security, a health insurance plan, or mutual insurance. According to the National Survey of Risk Factors for Noncommunicable Diseases, in 2005, among women over 60 years old with UBN, 52.7% did not have social security coverage, as opposed to 11.3% of women whose needs were met; 54.4% of the former perceived their overall health as average or poor, as opposed to 40% of the latter (12). Of persons over 65 years old living in urban areas, 46.6% were members of the National Insti-

tute for Social Security for Retired People and Pensioners (PAMI, by its Spanish acronym), 12.5% were not enrolled in any plan (neither PAMI, social security, prepaid health insurance plan, nor mutual insurance), and the rest were covered by some other social security plan or mutual insurance plan (a combination of PAMI and social security or private health insurance plans). Between 2001 and 2005 there was a 6.2% increase in health coverage of one type or the other for older adults, although in 2001 the information came from the census and in 2005 it came from a survey. Of this population group, 12.7% needed assistance from third parties to carry out activities of daily living or instrumental activities of daily living (or everyday activities such as the ability to make purchases, prepare food, do housework, handle finances).<sup>2</sup> In the group 65–69 years old, 5.4% needed assistance from third parties; this figure increased to 9.6% in the group 70–79 years old and to 30.9% among those older than 80 years old.

### Workers

Insurers of occupational risks, who provide health coverage to workers, reported 494,847 accidents in 2004, 19.4% more than in 2003; 83.5% were accidents in the workplace; 0.16% of them ended in death (12% more than in 2003). The highest accident rates are in the construction industry, with an incidence index of on-the-job accidents and occupational illnesses (II AT/EP, by its Spanish acronym) of 165; the index reflects the number of workers injured because of work or while working in a one-year period, for every 1,000 workers covered. Manufacturing industries rank second, with an II AT/EP of 116, and agriculture, third, with an II AT/EP of 113. If one considers the index of incidence of decedents (IIf), however, which reflects the number of injured workers who die because of work or while working in a one-year period, for every million workers covered, the activities with the highest numbers of deaths are mining and quarrying (IIf 600.6), with construction coming in second (IIf 317.1), and agriculture, third (IIf 286.9). The highest index of on-the-job accidents is found in small and midsized enterprises (13).

Because of the 2001 crisis, many formal-sector workers lost their jobs and joined the ranks of those working in the informal labor sector, with 446,686 workers leaving the Insurers of Occupational Risk coverage system (13). Consequently, a high percentage of the population was left without health coverage and had to rely on overextended public health services, and this crisis was aggravated by the lack of medical supplies.

Urban trash recyclers became entrenched as a result of the crisis. Work and sanitary conditions for this group, which operated outside the formal employment systems, deserve special attention. There are many children and adolescents who work this way

<sup>2</sup>This functionality in the elderly is measured with the IADL scale developed by M. P. Lawton and E. M. Brody and that evaluates independence, partial dependence, and total dependency levels.

in the country's cities (50% of all recyclers in the autonomous city of Buenos Aires) (14), and they are exposed to infectious agents and toxic substances, and run the risk of accidents, cuts, and skin problems.

It was estimated that in 2001, 4.7% of children 5–14 years old (6.6% of males and 2.9% of females) worked and that 3.6% worked fairly regularly. There were considerable differences by age and sex, however. In the group 10–14 years old, 7.8% worked, while in the group 5–9 years old, 1.7% worked; 65% of these children helped their parents, relatives, or neighbors, and 35% worked outside their immediate social circle. One of the principal consequences of child labor is that children drop out of school or must repeat grades. Of the children who worked during the year, 7.1% did not attend school, a threefold rate than that for the group of children who did not work (2.1%) (4).

A 2005 study on the behavior of sex workers in Argentine cities (15) showed that the average age for starting this line of work was 20.9 years, three years younger for men and transvestites. Financial need, along with the impossibility of obtaining other work, were the main reasons for entering sex work; according to the same study, the need to acquire money to acquire drugs was not an important reason for entering this type of work. Of those surveyed, 93.8% reported that they always used a condom during vaginal sex, 90.3% during anal sex, and just 8.5% during oral sex. Of those surveyed, 88.9% said they had had the HIV test at some point; the percentage dropped to 78.4% among men.

### Persons with Disabilities

In 2002–2003, 7.1% of the population that lived in localities of more than 5,000 inhabitants had some type of disability; 20.6% of the households in these localities included at least one person with a disability. In the Cuyo (8.9%), Pampan (7.9%), and Northwest (7.6%) regions, the percentage of the population with a disability was higher than the national average. Of the population 65 years old and older, 28.3% had some type of disability. Some 73.9% of persons with disabilities had just one disability, 20.2% had two, and 5.9% had three or more. About 32% were motor disabilities, 14% were visual disabilities, 12% were auditory disabilities, and 12% were mental disabilities. Some 38.4% of persons with disabilities did not have any social security coverage and just 14.6% had a disability certificate (16).

### Ethnic Groups

Argentina's health statistics are not broken down by ethnic group, and that impedes having the necessary information for a precise diagnosis of the health status of the country's indigenous peoples. The Ministry of Health implemented the National Health Program for Indigenous Peoples, aimed at taking actions based on respect for cultural diversity. The provinces in which this program is being carried out are Chaco, Formosa, Jujuy, Misiones,

Salta, and Tucumán. The program seeks to strengthen the role of the health promoters; promote the creation of intercultural opportunities; generate cultural awareness among health teams; foster environmental improvement, care, and protection; implement health education activities; improve food and nutritional safety; and coordinate actions with other ministerial programs and entities (17). The report on the HIV/AIDS situation in 2005 included the results of a study of behavior and knowledge about the disease among native peoples (18). HIV is seen as an "external problem," a "white problem;" ignorance about the disease and failure to use condoms are widespread in this population (19).

## HEALTH CONDITIONS AND PROBLEMS

### COMMUNICABLE DISEASES

#### Vector-borne Diseases

No cases of **yellow fever** have been recorded in the country since 1966; since 1998, serologic studies conducted on samples that tested negative for dengue and other arboviruses also have tested negative for yellow fever. In July 2001, the National Epidemiologic Surveillance System issued a warning about the existence of an epizootic that had begun two months earlier in howler monkeys in land bordering the state of Rio Grande do Sul, Brazil. Well-defined ecological niches, the absence of adequate surveillance, and low coverage with yellow fever vaccine were seen as warranting fear of a jungle yellow fever risk scenario similar to that experienced in 1966. In addition, high indices of *Aedes aegypti* in large cities near the border increased the risk, because of the possibility of urbanization of yellow fever. In response, vaccination was stepped up, and 98.9% coverage was achieved in the risk areas. The house indices of *A. aegypti* infestation fell below 2% in the communities in the risk area.

Between 1997 and late 2005 there were 2,799 cases of **dengue** and five outbreaks, in 1998, 2000, 2002, 2003, and 2004; there were 1,522 cases reported in 2004. The provinces of Salta, Jujuy, Formosa, and Misiones reported autochthonous cases; 72.5% of the cases during that period were in the province of Salta. The 34 cases reported in 2005 were considered to be imported from neighboring countries. In 1998–2004, serotypes DEN-1, 2, and 3 circulated; in 1998, DEN-2; in 2000 and 2002, DEN-1; in 2003 DEN-1, 2, and 3 (in the province of Salta); and in 2004, DEN-3. In April 2006, an outbreak of dengue was declared in the provinces of Misiones, Formosa, Salta, and Jujuy, with almost 300 suspected and 56 confirmed cases; the outbreak concentrated in Puerto Iguazú, with serotype DEN-3 being identified.

In terms of controlling the transmission of *Trypanosoma cruzi* as a way to combat **Chagas' disease**, there are very different situations in the country, ranging from zones where transmission has been interrupted to zones with reliable proof of vector transmission through reporting of acute cases requiring vigorous control

actions. It is estimated that approximately 4,810,000 persons in 962,000 homes in 19 provinces live in endemic zones, albeit concentrated in periruban and rural areas. The poorest sectors are the most affected.

The provinces have been classified into the following categories: seven provinces are considered to be at high risk (Formosa, Chaco, Santiago del Estero, Córdoba, La Rioja, San Juan, and Mendoza); seven are considered to be at moderate risk (Salta, Tucumán, Catamarca, San Luis, Santa Fe, Corrientes, and Misiones); five are considered to be at low risk (Jujuy, Entre Ríos, La Pampa, Neuquén, and Río Negro), in which interruption of vector transmission has been certified; and the rest are considered only at risk for non-vector transmission. In 2004, the indices of house infestation by *Triatoma infestans* in high-risk provinces ranged from 5% to 26%. Coverage of control in blood banks was increased, and a prevalence of 3.2% (1%–13%) was found. The identification of infected pregnant women has not been optimal, and just 15% of the 1,500 potentially infected and treatable newborns are detected each year. The leading impact indicator—prevalence in children under 5 years old—was 4.2% as measured in 13 provinces. Future goals for the Chagas' control program are shown in Table 3.

At this writing, Argentina's endemic region for **malaria** consists of a moderate-risk zone that includes the departments of Orán and San Martín, province of Salta, encompassing some 28,000 km<sup>2</sup>, with an annual parasite index of less than 1%. The low-risk zone includes the rest of the province of Salta and the provinces of Jujuy, Misiones, and Corrientes. In 2000, there were 440 positive samples, 215 in 2001, 125 in 2002, 124 in 2003, 116 in 2004, and 215 in 2005. Between 50% and 75% of cases are imported.

Under the framework of the Argentina/Bolivia Agreement for Bilateral Technical Cooperation, surveillance and control activities have been undertaken with personnel from the National Coordinating Office for Vector Control in slightly more than 140 Bolivian border localities since 1996. In 2006 there was an outbreak of malaria in the Puerto Iguazú area, province of Misiones, near the border with Paraguay and Brazil; the outbreak was concurrent with an outbreak of classical dengue in the area, and 14 cases of malaria were detected. The surveillance and control actions carried out by the national and provincial programs included vector control through spatial spraying of insecticides and actively searching for undetected cases in the population.

Since **hantavirus** was first detected in Argentina in 1992, 714 cases have been confirmed. Reports of cases are on the rise—in 2002, 89 were reported. Several species and types of hantavirus that cause disease in humans have been described in the country: Andes virus; three Andes-like viruses (Hu39694, Lechiguanas, and Orán); Laguna Negra-like virus; and Bermejo virus. Three endemic regions have been identified: Salta and Jujuy in the northern region; Buenos Aires, Santa Fe, and Entre Ríos in the central region; and Neuquén, Río Negro, and Chubut in the southern region. The hantavirus increase mostly occurred in the central region, which had 60% of the reported cases; the southern

and northern regions remained stable. Variations in the behavior of rodent populations in each risk area result in differences in the dynamic of the disease from region to region that, in turn, make case emergence seasonally specific to each region. Cases increase between April and June in the south and center regions, and between October and December in the northern region. For the timely identification of cases, surveillance of nonspecific febrile syndrome was implemented as an initial measure in provinces that had seen cases. In 2004 and 2005 new areas were identified, such as along the Uruguay River in Entre Ríos, the northern stretch of the Paraná River in Misiones, and the city of Santa Fe.

In 1993–2005, 1,747 cases of **Argentine hemorrhagic fever** were reported, and 641 were confirmed. After a spike in 1998, reports of cases steadily dropped until 2005, when a new increase was recorded. The original fatality rate of Argentine hemorrhagic fever, which exceeded 50%, was reduced to 30% after maintenance therapy was standardized, and then fell to 2%–12% with the availability of the specific treatment (immune plasma). The development of the attenuated live Junín virus vaccine (Candid #1), and its administration to the population at highest risk, was an important achievement in decreasing the incidence of the disease: comparing pre-vaccine and post-vaccine 10-year periods, on average cases decreased from 9.8 per 100,000 population to 2.6.

The **Saint Louis encephalitis virus** has been recognized in Argentina since 1963. Retrospective serologic analyses conducted on temperate-zone patients showed the appearance of acute febrile illnesses associated with this virus in 0.9% to 1.8% of subjects. Just seven cases were reported between 2002 and 2004. In January 2005, an outbreak was declared in the province of Córdoba, with 55 cases (mainly in the capital and Greater Córdoba) and nine deaths. The virus was isolated in a batch of *Culex quinquefasciatus* mosquitoes captured in the homes and surrounding area of the cases. In 2006, cases were reported in the provinces of Córdoba, Santa Fe, and Entre Ríos.

### Vaccine-preventable Diseases

Argentina remains free of **poliomyelitis** and **measles**. The last recorded case of poliomyelitis from wild poliovirus was seen in 1984, and the last case of measles was reported in 2000. Regional surveillance indicators established by PAHO are, for the most part, being satisfactorily met and, since 1995, vaccination coverage has exceeded 90%, although both the indicators and the coverage vary somewhat from province to province. For example, in 2004 the coverage for DPT-Hib (diphtheria, pertussis, tetanus, and *Haemophilus influenzae* type b) reached a national average of 95.3%, but two jurisdictions (autonomous city of Buenos Aires and San Juan) had coverage under 90%. For the triple viral vaccine (measles, mumps, and rubella), the national average was 100%, but the province of Chubut only reached an 88% coverage.

**Neonatal tetanus** is no longer a public health problem as defined by PAHO (less than 1 case per 1,000 live births); cases of tetanus in all ages decreased from 220 in 1980 to 14 in 2005.

With the exception of **pertussis**, practically all the vaccine-preventable diseases have shown a marked decline in the past since the mid-1990s (1996–2005). Only pertussis outbreaks were observed in 2003–2005 in at least four provinces: Catamarca and Neuquén in 2004, and Salta and Tucumán in 2005. The highest attack rates were recorded in children under 5 years old, and they were concentrated in children under 1 year old, although cases also have been reported in adolescents and adults.

The **rubella** vaccine was introduced into the national vaccination system in 1998, with two doses of the triple viral vaccine (at one year and upon starting school). In 2003, use of the MR vaccine (measles and rubella) was initiated for all women immediately after delivery or immediately after abortion, and at the age of 11 for all children who had not had at least two doses after the age of 1. Coverage achieved since the introduction of the vaccine were between 90% and 100%. To eliminate **congenital rubella syndrome**, a national rubella vaccination campaign targeting all women 15–39 years old (estimated at 7,400,000) and at-risk men was proposed for September and October 2006.

Argentina is surrounded by countries with moderate endemicity and foci of high endemicity for **hepatitis A**. As a result, the hepatitis A vaccine was introduced into the national vaccination system in 2005; all children are administered a single dose at 12 months of age. An evaluation is planned to measure the effect of this strategy and help decide whether a second dose is needed. According to data from the National Epidemiologic Surveillance System, 63,006 cases of hepatitis A and non-specific hepatitis were reported (173.8 per 100,000 inhabitants) in 2004. This indicated an increase with respect to 2003 (139 per 100,000 inhabitants). In 2004 the Northwest and Cuyo regions had rates higher than the national rate (251 and 201, respectively).

With PAHO support, Argentina initiated surveillance of **rotavirus diarrhea** in sentinel centers in 2004. Partial results indicate that rotavirus disease is an important public health problem in the country. Several studies have been conducted to analyze the burden of rotavirus disease (20, 21, 22). The National Regulatory Authority has registered the rotavirus vaccine; it has been administered in the private sector since early 2006, but its inclusion in the national system over the short term is not expected.

### Intestinal Infectious Diseases

There are little data on the prevalence of **intestinal parasitosis** in Argentina. A 2002 study conducted in extremely poor areas in Santa Fe showed a prevalence of ascariasis in schoolchildren in excess of 80% (23).

### Chronic Communicable Diseases

New cases of **tuberculosis** in all its forms have been decreasing, with 38.1 per 100,000 population in 1990 and 29.1 per 100,000 in 2005. That same year, the provinces with the highest rates were Salta (79.4 per 100,000 population), Jujuy (70.5), and Chaco

(48.2); those with the lowest were Mendoza (7.9), San Juan, and La Rioja (8.7 in each case).

In 2003–2004, the concentration coefficient, using unmet basic needs (UBN) of Argentina's departments as a socioeconomic variable, was 0.22. Approximately 35% of tuberculosis cases were seen in 20% of persons living in departments with higher percentages of UBN. In 2005, 85.3% of tuberculosis cases were pulmonary, 13.3% affected children under 15 years old, and, among the pulmonary cases in individuals over 15 years old, 72.6% were bacteriologically confirmed. That same year, eight cases of tuberculous meningitis were reported in children under 5 years old, seven of whom lived in the province of Buenos Aires.

In 2005, 3.9% of persons living with AIDS were co-infected with tuberculosis (445 cases of tuberculosis in 11,242 AIDS cases), a similar figure as seen in 2003 and 2004 and lower than that recorded in 2001, when the highest percentage, 6.4%, was reached. The mortality rate from tuberculosis fell from 3.6 to 2.2 cases per 100,000 population, for a drop of 39.8% between 1990 and 2004. The provinces with the highest mortality rates in 2003–2004 were Jujuy (9.0 per 100,000 population), Formosa (7.1), and Chaco (6.1); those with the lowest mortality rates were La Pampa (0.6), La Rioja (0.7), and Neuquén (0.9).

In 2003, information was collected on treatment results of 78.5% of tuberculosis patients with positive bacilloscopy. Among them, the success rate was 76.6%, the abandonment rate, 10.8%, and the mortality rate, 6.9%. There were five jurisdictions with abandonment rates higher than the national average, including the province of Buenos Aires and the autonomous city of Buenos Aires, which had 39% of the evaluated cases with positive bacilloscopy, with abandonment rates of 14.4% and 12.8%, respectively. The provinces of Formosa, Mendoza, and Corrientes had abandonment rates of 13.5%, 15.1%, and 26.3%, respectively. Of patients with positive bacilloscopy, 57.8% received Directly Observed Treatment, Short Course (DOTS), with variations from 0% to 100%, depending on the jurisdiction. In eight jurisdictions, DOTS coverage exceeded 95%: the five jurisdictions of the southern region (Tierra del Fuego, Santa Cruz, Chubut, Río Negro, and Neuquén), Chaco, Santa Fe, and Córdoba. Yet, four jurisdictions had DOTS coverage below 40%: the autonomous city of Buenos Aires (33.9%), the province of Buenos Aires (31.3%), Misiones (23.6%), and Santiago del Estero (0%). Progress toward the MDG pertaining to tuberculosis is shown in Table 3.

**Leprosy**, which is endemic in Argentina, is distributed in 12 provinces, mainly in the provinces of Northeast, Northwest, and Central; the disease is considered to be of moderate magnitude in the country. The trend in case detection stabilized in the 1990s at 450–500 new cases per year; the prevalence decreased from 0.82 per 10,000 population in 1997 (the year that marked achievement of the goal of eliminating leprosy as a public health problem) to 0.22 per 10,000 in 2005. In the latter year the prevalence/detection quotient was 1.5, while in 1997 it was 5.3. Multibacterial forms predominate in persons older than 15 years old, and there

was a decreasing number of cases with grade 2 disability at the time of diagnosis. The current strategy, with a national prevalence under 1 per 10,000 population, gives priority to active case search and the estimation of hidden prevalence.

### Acute Respiratory Infections

In 1997–2005, between 800,000 and 1 million cases of **influenza-type syndrome** per year were reported to the National Epidemiologic Surveillance System. The epidemic years were 1999, 2003, and 2004, and in those years hospitalizations increased to the overflow point, especially in pediatric hospitals. In 2005, 959,046 cases of influenza-type illnesses were reported, for a rate of 2,644.9 per 100,000 population. That same year, laboratory surveillance of 22,480 samples from patients with acute lower respiratory infection established 2.8% of positive diagnoses for **influenza A** and 0.5% for **influenza B**; in 2,436 samples from patients with influenza-type syndrome detected in the sentinel units, 5.6% of diagnoses were positive for influenza A and 1.1% were positive for influenza B.

### HIV/AIDS and Other Sexually Transmitted Infections

Estimates made in 2005 by the Joint United Nations Program on HIV/AIDS (UNAIDS), the World Health Organization (WHO), and the National Program Against Human Retroviruses, AIDS, and Sexually Transmitted Diseases showed that approximately 127,000 (numbers ranging from 115,000 to 134,000) persons were living with HIV/AIDS in Argentina, 60% of whom were unaware of their serologic status. Between 1982, when the first case was recorded in the country, and December 31, 2005, 30,496 cases of AIDS and 32,411 HIV-infected persons were notified to the National Program. The leading characteristics of the epidemic in Argentina are: 1) it increasingly affects women, which increases the risk of vertical transmission, and the highest concentration of cases occurs in sexually active age groups; 2) it essentially affects the economically active age groups in both sexes, that is, individuals 25–34 years old; 3) it is increasingly being transmitted through heterosexual relations (55.6% of cases in 2004), and 4) it affects the poorest and least educated sectors. The

incidence of HIV infection shows a rising trend, with values of 1.5 per 100,000 population in 1990, 4.03 in 2000, and 10.01 in 2004. The male/female ratio for AIDS dropped from 6.5:1 in 1990 to 2.4:1 in 2004; for HIV infection it was 1.3 men for every woman in 2004. Fully half of persons living with AIDS are 25–34 years old. Children under 13 years old represented 9.7% of the total recorded cases, with 94.8% of them caused by vertical transmission. AIDS is concentrated in the main urban centers: Greater Buenos Aires, Rosario, Córdoba, and Santa Fe. The mortality rate from AIDS in 2004 was 3.8 per 100,000 population.

In terms of other sexually transmitted infections, 675 cases of congenital **syphilis** were reported to the National Epidemiologic Surveillance System in 2002; in 2003, 742 cases were reported, and in 2004 and 2005, 838 and 583, respectively, for rates of 0.9–1.2 per 1,000 live births. The most seriously affected regions were Northwest and Northeast, especially the latter, where the rates in 2002–2005 were 4.5, 3.7, 2.6, and 2.1 times higher than the overall national rate. Table 5 shows rates of congenital syphilis and other sexually transmitted infections, by region, between 2002 and 2005.

### Zoonoses

In 2005, programs were developed to prevent the entry of **avian flu** and **bovine spongiform encephalopathy** into the country; a drill was held with public and private sector institutions to prepare for the possibility. The program for the control of **foot-and-mouth disease** continues to be implemented throughout the national territory, in order to hold on to the “free with vaccination” status. **Animal rabies** remains endemic in the country’s north, with cases reported in dogs and bovines in the provinces of Jujuy and Salta. In 2005, 66 cases of animal rabies were reported nationwide (34 in bovines, 16 in dogs and cats, 8 in bats, and 8 in other animals).

In April 2006, an outbreak of **West Nile virus** in horses was declared in the province of Entre Ríos, the first time such an outbreak had been seen in Argentina. Detection and laboratory diagnosis were rapid and the surveillance system was activated. The country has human and laboratory resources for diagnosing infection with this virus.

**TABLE 5. Rates<sup>a</sup> of congenital syphilis and other sexually transmitted infections (STIs), by region, Argentina, 2002–2005.**

	Congenital syphilis				Other STIs				
	2002	2003	2004	2005	2002	2003	2004	2005	
Central	0.5	0.8	1.0	0.8	41.0	39.4	33.7	30.0	
Cuyo	0.1	0.1	0.6	0.5	29.3	28.6	41.6	23.0	
Northeast	4.5	4.2	3.2	1.7	236.7	313.0	371.9	339.8	
Northwest	1.0	0.8	1.3	0.9	287.6	310.8	344.2	274.3	
South	0.3	0.4	0.2	0.3	44.5	49.8	59.7	66.1	
<b>Total</b>	<b>1.0</b>	<b>1.1</b>	<b>1.2</b>	<b>0.9</b>	<b>86.8</b>	<b>95.7</b>	<b>102.9</b>	<b>88.4</b>	

<sup>a</sup>Rates for congenital syphilis are presented per 1,000 live births; rates for other STIs are presented per 100,000 population.

**Source:** National Epidemiologic Surveillance System, Ministry of Health.

**TABLE 6. Nutritional and metabolic deficiencies (%), by region, Argentina, 2005.**

	Argentina	Greater Buenos Aires	Cuyo	Northeast	Northwest	Central	South
Low weight-for-age	3.8	3.3	4.0	5.8	3.9	3.7	2.6
Low height-for-age	4.2	3.7	3.5	4.8	4.0	4.9	3.6
Low weight-for-height	1.2	1.1	2.8	1.2	1.2	1.1	1.0
High weight-for-height	6.6	8.3	5.1	3.0	4.4	7.2	6.3
Anemia in children 6 months to 5 years	15.9	17.9	10.0	22.1	14.0	13.8	15.6
Anemia in children 6 to 23 months	33.2	34.9	23.5	33.2	44.0	30.1	30.9
Overweight, women 19–49 years	24.9	24.8	24.4	20.2	28.1	24.9	26.5
Obesity, women 19–49 years	19.4	18.2	15.9	21.1	20.4	20.5	22.6
Anemia, women 10–49 years	17.1	20.6	14.7	21.8	15.7	12.6	16.2
Cholesterol >170 mg/dl, women 10–19 years	21.5	23.2	30.5	19.4	19.9	34.3	17.0
Cholesterol >200 mg/dl, women 20–49 years	23.4	27.2	12.0	19.8	17.3	28.1	20.4

Source: 2005 National Health and Nutrition Survey.

## NONCOMMUNICABLE DISEASES

### Metabolic and Nutritional Diseases

According to the Ministry of Health's 2005 National Nutrition and Health Survey, almost half of Argentine women are overweight or obese (Table 6). A study covering four cities in Argentina's central area showed that between 22.4% and 30.8% of persons older than 20 years old were obese, and between 6.5% and 7.7% of them had **diabetes mellitus** (24). According to the data from the National Survey of Risk Factors for Noncommunicable Diseases (2005), 15.8% of the uneducated population older than 18 years old said they had hyperglycemia, as opposed to 5.3% of university graduates.

### Cardiovascular Diseases

Various blood pressure studies showed wide variability in the prevalence of **hypertension**. In a study conducted in Córdoba in persons 15–85 years old, the prevalence was 29.9%; just 13.0% of hypertensive individuals were being treated and under control (25). In another study involving four cities in the country's central area, the prevalence of hypertension in individuals over 20 years old ranged from 27.9% to 43.6%; the prevalence of hyperlipidemia ranged from 24.2% to 36.4%. According to the Ministry of Health's 2005 National Nutrition and Health Survey, approximately one woman in five aged 10–49 years old has high cholesterol.

According to the National Survey of Risk Factors for Noncommunicable Diseases (2005), 56.8% of the uneducated population had had their cholesterol checked at least once and, of those, 44.4% said it was high. The proportions were 79.1%, and 26% among those who had completed university training. Among Argentines older than 18 years old with no schooling who were interviewed, 49.2% said they did not have high blood pressure, as opposed to 72.7% of university graduates.

### Malignant Neoplasms

Between 1997 and 2004, malignant neoplasms were the second leading cause of death, after diseases of the circulatory system, and represented 18%–19% of all deaths. Between 1980 and 2001, the mortality rate from **lung cancer** declined by approximately 1% per year in men. In women, however, rates rose approximately 1.5% per year, except in Cuyo, where the rates remained virtually the same. In terms of **breast cancer**, mortality rates have declined in women under 65 years old since 1991, but they increased 1.6% per year among women older than 74 years old starting in 1980. In the country as a whole, and more so in certain provinces, **cancer of the uterus** is a serious public health problem. Since 1991, a small decrease in mortality from this cancer has been noted, except in the Northwest region, where there was a slight increase of 0.2% a year.

## OTHER HEALTH PROBLEMS OR ISSUES

### Disasters

The database of the country's disasters in recent years showed that floods prevailed. In areas vulnerable to floods, community leaders were trained in risk management so they could come up with the solutions most appropriate for their natural, economic, social, and political context (26). The worst natural disaster in recent years was doubtless the flood in the city of Santa Fe in April 2003, which left more than 30% of that city's population under water, and resulted in 75,036 people being evacuated, 20,000 homes damaged, and 13% of available hospital beds lost.

### Violence and Other External Causes

The Ministry of Justice's Victimization Survey, conducted in the autonomous city of Buenos Aires in 2003, showed that 37.5% of persons older than 14 years old said they had been the victim of at least one crime (mostly crimes against property), a lower

figure than ones seen in 2000, 2001, and 2002, according to the National Directorate of Crime Policy.

The Injury Surveillance System was put in place in September 2004; by June 2006, 36 sentinel units had been included. Data accumulated up to that date on 27,836 accidents indicate that 81.3% were unintentional, 10.4% were intentional against others, 1.7% were self-inflicted, and the rest, undetermined. Most accidents are concentrated in persons 15–29 years old (34.6%) and in persons 30–44 years old (19.6%); 68.4% are minor, 25.9% are moderate, and 5.7% are serious. Men are the victims in 66.9% of accidents, the male/female ratio is of 2.02:1, and 0.56% of injury events cause death, with a male/female ratio of 2.8:1.

### Mental Health and Addictions

There are no updated national epidemiologic data on mental health, except for the results of the disabilities survey. In 2004, 7.8% of the population 16–65 years old had consumed an illegal psychoactive substance at least once, 2.1% had done so in the year before the survey, and 0.8% had done so in the month before the survey. Marijuana and cocaine are the most used substances, in that order.

### Oral Health

Based on prior favorable experiences, such as a more than 40% reduction in the DMF (decayed, missing, and filled teeth) index in the province of Santa Fe between 1990 and 2000, the fluoridation of water for human consumption in provinces that require it was reactivated in 2005. It is expected that in 2010, about 50% of the population will be receiving fluoridated water. Moreover, the criteria for conducting an epidemiological survey in all the provincial jurisdictions were standardized.

### Hemolytic Uremic Syndrome

The rate of hemolytic uremic syndrome among children under 5 years old was approximately 8.5 per 100,000 children in this age group between 1995 and 2000; since 2001 it has never fallen below 10.4, and it peaked in 2005 (13.9). The mortality rate remained stable in 1995–2005, with an average of 3.3%, a minimum of 2.2% in 1998, and a maximum of 4.8% in 2001. In 2005 the mortality rate was 3.4%. In 2005, 464 cases of hemolytic uremic syndrome were reported, 62% in children under 2 years old. The majority of cases occurred in the warm months (55%). The provinces with the highest hospital-reporting rates were La Pampa (34.4 per 100,000 children under 5 years old) and Neuquén (31.6).

## RESPONSE OF THE HEALTH SECTOR

### Health Policies and Plans

Since 2002, a Consultative Council has provided a forum for discussion and for forging national-level agreements on health matters with the country's various sectors. The Council ranks in-

clude various players connected to the health system, including representatives of community organizations; health providers, financiers, and professionals; universities; and well-respected institutions and individuals. The Council also has four standing committees: Human Resources, Costs and Financing, Technology, and Noncommunicable Diseases.

By constitutional mandate, the provinces are responsible for caring for the population's health. The municipalities, especially those with the highest populations and greatest economic resources, also plan and implement health activities. The transfer, in the early 1990s, of a group of hospitals and specialized institutes from the federal Government to the provinces was one of the last stages in the decentralization of the health services. This complex process resulted in varying levels of hospital autonomy, administrative and financial management, human resources policies, and services delivered to the population. In turn, this diversity made it impossible to offer a standard coverage of public health care for all the population. Moreover, geographic location also affects access to public health units.

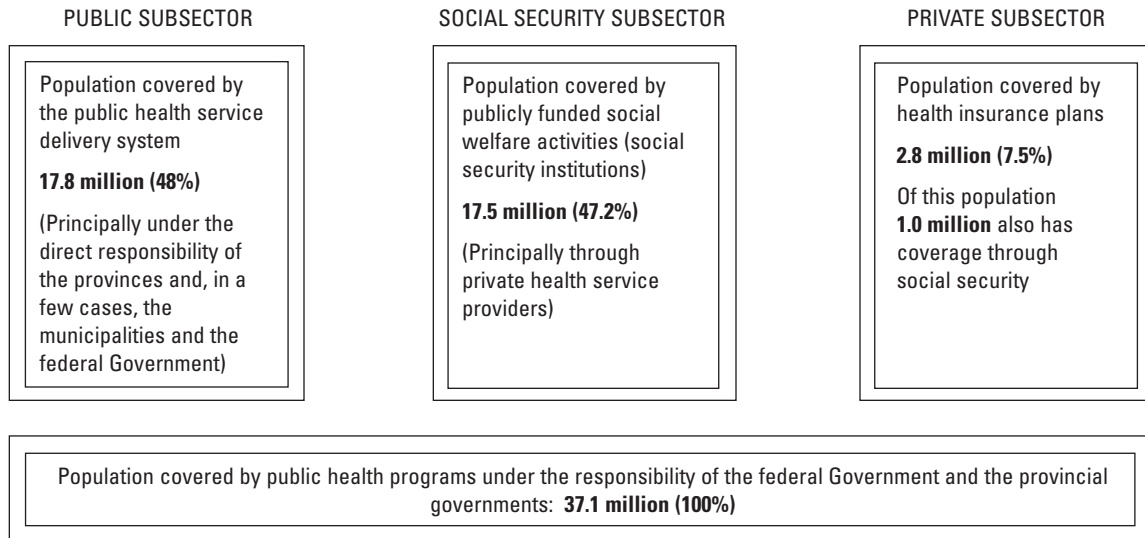
In the provinces, the performance of essential public health functions is the responsibility of ministries or secretariats of health, with institutional development varying according to the size of the population and the available resources. Health services are delivered through provincial public sector networks and by the private sector. In provinces with higher populations and more economic resources, municipalities administer primary health care services and, in some cases, more complex hospitals, although proportionally there are few municipal health care facilities. In 2006, some provinces were actively devolving primary health care level services to the municipalities. Social security and the private sector have clearly separate functions: the entities responsible for handling financing (social security and health insurers) do not operate their own services as a rule, and instead contract them out to public and private providers throughout the country.

### Health Strategies and Programs

During the social and economic upheaval the country lived through in 2001–2005, dialogue channels became consolidated among various players dealing in health at different levels of the State, and this dialogue continued in subsequent years. Finally, at the Council of Federal Health Agencies (COFESA, by its Spanish acronym), one of the leading forums where provinces and the federal Government formulate health policies by consensus, the bases of the 2004–2007 Federal Health Plan were agreed on; the Plan was submitted by Argentina's President in May 2004. The Plan set four avenues for action and embraced the primary health care strategy as the cornerstone for the system's organization. Priority was given to strengthening equality of access to health care and to promoting community participation at all levels. The established targets complemented the country's agreement in connection with the Millennium Development Goals.

**FIGURE 2. General scheme and estimated coverage of the health system, Argentina, 2001.**

Total population: 37.1 million



**Source:** Adapted from: González García G., Tobar F. *Salud para los argentinos* 2003. Estimates based on the 2001 National Census of Population and Housing (INDEC) and the 2001 Quality of Life Survey (Social Policy Evaluation and Monitoring System, under the Ministry of Social Development and the Environment).

### Organization of the Health System

Argentina's health system reflects the federal nature of the country's government, whereby provinces retain the authority to manage and deliver health care within their jurisdiction. The system encompasses three subsectors: public, private, and social security. The latter two are closely connected, given that the institutions responsible for social security contract out many health services to private health service providers of different types and sizes (Figure 2).

In 2006, the health system was characterized by a high level of segmentation and fragmentation, which resulted in poor coordination among subsectors, inequality in financing, inequities in health care quality, and many access barriers for some population groups. In 2003, social security institutions covered approximately 17.5 million people (47.2% of the total population), distributed throughout almost 300 entities of varying sizes and importance. It is estimated that the public subsector covered 17.8 million persons (48%) and private health insurance plans covered 2.8 million persons, of which 1 million also had social security coverage.

Throughout its history, the health system has operated with a degree of inefficiency and inequity. The diverse coverage that is available affects the 24 provincial public systems, approximately 300 national social security institutions, 24 provincial social security institutions, a few dozen health insurance plans, private health insurance plans, and many mutual insurance systems; the National Institute for Social Services for Retired People and Pen-

sioners, known for its Spanish acronym, PAMI, also is affected. In 1993 a "free choice" option became available to workers affiliated with the social security system, as part of a deregulation effort and to improve efficiencies. The fragmentation and lack of coordination of this group of institutions have curtailed the establishment of a unified, efficient, universal health system. Thus, social security is managed by institutions that vary greatly in terms of the type of population they serve, the coverage they offer, the financial resources per member, operating modalities, and health service networks they contract out to.

The Ministry of Health is responsible for determining the health sector's objectives and policies and for executing the plans, programs, and projects for the area under its jurisdiction, which are developed in accordance with directives from the Executive Branch. The Ministry also oversees the operation of the health services, facilities, and institutions, and conducts the overall planning for the sector in coordination with provincial health authorities. It is also responsible for issuing regulations and procedures to guarantee the quality of health care, as agreed to by consensus with the provinces, and participates in approving the health facility projects that are built by private companies. Through the National Food, Drug, and Health Technology Administration, the Ministry participates in matters related to the development, distribution, and marketing of products directly related to health. The Administration is responsible for implementing and enforcing compliance with legal, scientific, technical, and administrative provisions under its jurisdiction.

The Superintendency of Health Services is the regulatory and controlling agency overseeing those who handle the National Health Insurance (social security) System. Within the Congress, the Senate's Health and Sport Committees and the Chamber of Deputies' Social Action and Public Health Committees are responsible for passing judgment on health and medical-social activities; hygiene; sanitation; preventive medicine and nutrition; hospital subsidies; and societies, corporations, or institutions that carry out health-related activities.

### Public Health Services

The 2004–2007 Federal Health Plan assigns priority to primary care and allocates more funds toward promotion and prevention activities. The Plan considers the gradual, systematic, and organized decentralization of these activities and plans for local governments to take on the implementation of this strategy by developing healthy policies, providing information, and modeling conduct.

Various national programs are being implemented in Argentina with the goal of preventing and controlling certain diseases which, because of their importance, require special efforts from the authorities and civil society. The principal programs and their objectives are described below.

The National Program to Combat Human Retrovirus and Sexually Transmitted Infections aims to prevent sexual and perinatal transmission; to prevent transmission through blood, hemoderivatives, and transplants, and during invasive procedures; to prevent the spread of infection among drug users; to reduce the individual, family, and socioeconomic impact of the epidemic; to reinforce analysis of the epidemic's situation and trend; and to consolidate its administrative and management aspects. The program provides antiretroviral drugs to HIV-infected persons.

The National Program for the Control of Tuberculosis is part of the country's health structure, whereby its activities are carried out through the health services. The Program has four levels (central, provincial, intermediate, and local), each with well-defined responsibilities. The central level is at the Ministry of Health, and the responsible entity is the National Institute for Respiratory Diseases Dr. Emilio Coni, which falls under the National Administration of Laboratories and Health Institutes Dr. Carlos G. Malbrán, headquartered in the city of Santa Fe. The provincial level includes the country's 23 provinces and the autonomous city of Buenos Aires. The Program's goals are to reduce morbidity and mortality from tuberculosis, transmission of tuberculous infection, and resistance of *Mycobacterium tuberculosis* to antibiotics. The Program's strategic objectives are to strengthen the reliance of the Directly Observed Treatment, Short Course (DOTS) strategy in all jurisdictions of the country and target efforts in priority departments where the magnitude of the disease is greater.

The National Program for the Control of Chagas' Disease consists of 19 provincial programs; it conducts health promotion and disease prevention activities, as well as diagnosing and treating the disease. The Program does not include any rehabilitation, although it endeavors to improve the hospital network for caring for cardiopathies and transplants. Different parties plan and execute activities, including agents of the national and provincial jurisdictions, health professionals or health promoters, municipal officials, and community leaders, who have the support and supervision of the national commission for vector control.

In 2004–2005, the Ministry of Health launched the National Mass Parasite Eradication Program. Working through the Programa Remediar (a program that distributes medication without charge to vulnerable populations), the Program began an intense campaign that first worked to identify the most problematic foci in the province of Santa Fe and gradually extended the effort to the other affected provinces; mebendazole was distributed to population groups without basic sanitary services.

The Tobacco Control Program channels its work along five key avenues: restrict tobacco advertising, increase the price of cigarettes, launch a strong social-communication campaign, create smoke-free environments, and offer smoking-cessation services.

The Renal Health Program, executed by the Ministry of Health's Special Programs Administration, aims to prevent kidney disease and promote health within the social security system. Along with the Superintendency of Health Services, the Argentine Cardiology Society, and the Argentine Federation of Cardiology, it has developed a program for identifying risk factors and primary prevention of cardiovascular diseases, targeting men 30–49 years old and women 40–59 years old.

The National Program for Healthy Sexuality and Responsible Reproduction was established in 2002 through the enactment of Law No. 25,673. In its early years, the program focused on strengthening provincial programs by providing technical assistance, training, and financing human resources to reinforce existing teams. In 2006, hormonal contraceptives, IUDs, and condoms were distributed for free to 1,925,950 men and women who sought care through the public system. Women covered by social security or health insurance plans under the Compulsory Medical Program also were ensured coverage.

Problems with basic sanitation remain unresolved. According to the 2001 National Census of Population and Housing, just 47.2% of the households were connected to a sewer system, 24.2% relied on septic tanks and drainage pits, and the remaining 27% relied on wells or had no means of disposal.

By Executive Branch decree, the National Agency for Water and Sanitation Works has been charged with constructing Argentina's major basic sanitation works. In 1993, the State made Aguas Argentinas responsible for managing the drinking water and sewer services for the autonomous city of Buenos Aires and 17 metropolitan area sections (where a third of the country's

## Healthy Sexuality and Responsible Procreation

Beginning in 2001, one-third of maternal deaths in Argentina were due to abortions to terminate unwanted pregnancies, one of every seven women giving birth were adolescents, and two-thirds of reported AIDS cases were acquired by having unprotected sex. In addition, the population's most vulnerable sectors—youths, women, and the poorest groups—had serious problems accessing information on responsible procreation. Moreover, it was clear that nearly all maternal deaths could be drastically reduced through prevention efforts and by providing proper care during pregnancy and delivery.

Given these factors, the Government embraced far-reaching decisions that led to effective actions designed to overcome the problems. In October 2002, Law No. 25,673, which created the national healthy sexuality and responsible procreation program, was enacted by broad parliamentary consensus and strong support of nongovernmental organizations and civil society. Early on, the program aimed at strengthening provincial programs by providing technical assistance, as well as training and financing of human resources to bolster existing teams. The program also acquired and then distributed throughout the country contraceptives at a cost of several tens of millions of Argentine pesos.

In 2006, some two million men and women coming to the public health system for care had access to free hormonal contraceptives, IUDs, and condoms. Women enrolled in the social security system and health insurance schemes also were covered through the Compulsory Medical Program. That same year, the National Congress promulgated Law No. 26,130, dealing with surgical contraception, and Law No. 26,150 dealing with comprehensive sexual education; it also ratified the Optional Protocol of the Convention on the Elimination of All Forms of Discrimination against Women (CEDAW), whereby Argentinean women now can bring claims regarding the infringement of their rights to an international and impartial tribunal of experts.

population lives); it produced 3,100,000 m<sup>3</sup> of water per day. In March 2006 the contract was rescinded, and the State assumed responsibility for providing this service. To this end, it made important investments and created Agua y Saneamiento de Argentina, a state-owned enterprise.

A little more than 2,200 municipalities have been given primary responsibility for handling a household waste management service. In some cases, the collection and disposal of household waste is carried out by the municipality itself; in many other instances, the service has been outsourced to private companies. According to official data for 2004, Argentina produces 12,325,000 tons of household waste every year, with an average per capita rate of 0.91 kg/day. The autonomous city of Buenos Aires is among the heavier producers, with average waste generation of 1.52 kg/inhabitant/day; Misiones is among the lowest, with 0.44 kg/inhabitant/day (5).

In 2004, the Government, through its Secretariat for the Environment and Sustainable Development, drew up the National Strategy for the Comprehensive Management of Urban Solid Waste, in order to assess the solid waste situation and come up with appropriate waste treatment and technology for disposing solid waste in an environmentally sound manner. In September 2004, Law 25,916 on management of household solid waste was enacted. As a supplement to the National Strategy for the Com-

prehensive Management of Urban Solid Waste, the National Strategy on Hazardous Household Waste was presented in 2005. The latter strategy aims to address the handling of this waste by promoting its separate collection. In 2005, the Ministry of Health, assisted by the Maternal and Child Health and Nutrition Program, diagnosed waste management in hospitals; it acknowledged that there were major deficiencies, but also identified potential referral centers for managing waste in health facilities through an appropriate action plan implemented in 2006.

Law 20,284 of 1973 established air-quality standards and set levels for issuing contamination alerts, alarms, and emergencies. Regulations for this law were never enacted, rendering the legislation barely operational. Decree 831/93, which promulgates regulations for National Law 24,051 on hazardous waste, establishes guidelines for gaseous emissions and air quality; values have not been updated, however.

Law No. 1,356 on the atmospheric contamination of the autonomous city of Buenos Aires establishes air quality standards and requires ongoing monitoring. Currently, the autonomous city of Buenos Aires monitors and controls fixed and mobile air-pollution sources. The Dock Sud petrochemical plant, which is located extremely close to the city, has approximately 60 smokestacks that release an average of 15 million m<sup>3</sup> an hour of air with various polluting gases. A recent study shows high levels of ben-

zene, toluene, lead, and sulphur dioxide (27), with higher concentrations than WHO recommends.

Argentina is party to the Stockholm Convention on Persistent Organic Pollutants and has a National Implementation Plan (NIP) in place, which is executed through the Secretariat for the Environment and Sustainable Development. In 2004, the National Inventory of Dioxins and Furans was published, and emission factors were identified according to activities and sources that generate these toxins. In 2002, Law 25,670, on the Minimum Requirements for the Elimination and Management of Persistent Organic Pollutants, which provides for their total elimination by 2010, was promulgated.

In 2003, the most important clandestine burial site for organochlorate pesticides (mostly hexachlorocyclohexane) known up to then in Argentina was removed in the province of Santiago del Estero. The toxins had been buried in 1990, and 200 metric tons of residues were removed, treated, and disposed of.

There are 21 centers for toxicological information, advice, and assistance in the country, operating under the aegis of the National Program for the Prevention and Control of Poisoning. Since most centers are located in the wealthiest provinces, the least developed provinces must rely on local programs for their poisoning prevention and control activities. The centers provide advisory assistance on pesticide poisoning, as well as on potentially toxic drugs, substances, and chemical products. In 2005, two national multicentric studies were conducted on agrochemicals and domestic pesticides. The Argentine Toxicology Network, which is comprised of scientific associations, governmental entities, and specialized laboratories, operates with the support of the virtual health and environment library.

The National Food Institute authorizes, registers, controls, and oversees food through a food surveillance system. The National Food Safety and Quality Service protects food by monitoring animal and vegetable products produced for internal use and export. In 2005, in coordination with a very active healthy municipalities network, local initiatives focusing on food production and safety began to be developed. These initiatives operate through integrated programs in which the municipalities, the provinces, and the federal Government participate; the private sector and civil society also play an active part. The process has been coupled with a vigorous development of microenterprises.

The National Directorate of Health Emergencies is the agency charged with preventing disasters and mitigating their effect. There are 1,287 health establishments in the provinces that are at highest risk for earthquakes, 8,548 in the flood zones, and 2,220 in the zones most affected by snowfall. There is no single plan for response to natural disasters, because each province develops its own. Approximately 30% of the hospitals have disaster plans. There also are disaster response teams in place at the national and provincial levels, and the National Directorate also has its own stockpiles of essential drugs and supplies for these emergencies. Unpublished data from the survey on disaster prepara-

tion and mitigation by the health sector, which was discussed at the PAHO Regional Meeting of Disaster Coordinators in May 2006, indicate that 42% of the hospitals built in the past five years guarantee that they can continue to operate in case of disasters, and 20% of the hospitals have carried out structural and non-structural vulnerability studies.

In 2002, the Ministry of Health began working on a General Contingency Plan for Influenza and SARS Pandemics. The influenza surveillance and control activities were organized around five points: a) surveillance of avian flu; b) surveillance through the National Epidemiologic Surveillance System, sentinel units for influenza, and the respiratory virus network; c) vaccines and antivirals; d) public health measures; and e) communication.

The approval in 2005 of the International Health Regulations provides the country with a framework for addressing new challenges in the control of communicable diseases.

### Individual Care Services

All the provinces and the autonomous city of Buenos Aires have a wide network of hospital and outpatient services operated by both public and private providers. There are 17,845 health care establishments in the country, and 153,065 hospital beds available at the national level (about evenly split between publicly owned and privately owned). Localized differences notwithstanding, various subsectors and jurisdictions have in recent years been offering new modalities of care: outpatient care, brief hospitalization, day hospital, home care, and others. There are 14,534 outpatient health facilities in the country (28).

In the public sector, the auxiliary diagnostic services and blood banks are integrated into the health service systems that operate mainly in the provinces and, sometimes, in the municipalities. In the private sector, these services are also found in the health care facilities, although in some localities there are autonomous diagnostic support units that contract for services with the social security institutions. In 1983, a National Blood Program was instituted by law. The Ministry of Health and the provincial health authorities promote voluntary donation under the framework of the National Blood Plan. In 2005 there were 578 blood collection centers, 333 public and 245 private. That same year, those centers processed 751,412 blood units. The current trend is toward reduction of and improvement in the quality of those centers (in 1999 there were 781 centers) (29).

There were 15,916 public sector psychiatric beds in 2002. There are mental health reform initiatives in varying states of implementation in some provinces and in the capital. Law 448/00 (Law on Mental Health for the city of Buenos Aires), which calls for shifting mental health services from the hospital-based system currently in place to a system incorporated into the overall health system, has not yet been implemented, primarily due to corporate reasons. There is an overall trend toward acceptance of psychiatric reforms, and national legislators from various parties

are working on draft mental health laws. Clearly, persons with severe mental illness still lack adequate coverage. Recently, several initiatives to promote and defend the human rights of the mentally ill have been initiated, because of their minimal observance in the hospital system, which is mainly institutional.

The work-risk system provides coverage to 5.3 million employed workers (Law 24,557 on Work Risks, 1995). Work-risk insurers are responsible for providing health coverage to workers. To address on-the-job accidents and deaths, the Work-risk Authority launched the Program for the Prevention of On-the-job Accidents and Occupational Illness for workers in small and mid-sized enterprises (SRT Resolution 1/05). This resolution supplemented the 2000 Work Insurance for All Program, which applied to companies with more than 50 employees and has a Center for Information and Advice on Occupational Toxicology that answers questions from all sectors of the community.

Work hygiene and safety conditions were established by Law 19,587 (1972) and its regulatory decree 531/79 and amending decree 1,338/96. This law's comprehensive regulations seek to protect the worker, affording him or her extensive occupational safety conditions. Construction activity, which was regulated by Decree 911/96, was dealt with separately. Law 19,587 is supplemented with the aforementioned Law on Work Risks and its regulatory decree 1,278/00.

### Health Promotion

Various initiatives are being implemented in the country (such as "Free Adults with A Healthy Attitude" and "Heart Attack Prevention in Argentina") in association with university and scientific societies that work in the community to prevention risk factors for noncommunicable diseases. One initiative, the Health Surveillance and Disease Control Program, is charged with providing information needed for making decisions related to the structure and operation of the services and the risks that affect the various population groups. Normative and infrastructure elements for improving the surveillance, prevention, and control of the diseases covered by the program were provided to all agents in the health system, and the National Epidemiologic Surveillance System and the Health Analysis and Monitoring Units were developed and implemented. In addition, a national strategy for the control of tobacco use was designed and implemented and a national baseline for the surveillance of risk factors for noncommunicable diseases was established.

The federal Government, the Argentine Society of Pediatrics, the Argentine Toxicology Network, the Government of the autonomous city of Buenos Aires, and the Argentine Association of Physicians for the Environment are among those lobbying for efforts in environmental health, especially since 2003. Within the Ministry of Health's National Directorate for Maternal and Child Health, a coordinating unit for children's environmental health was established, comprised of representatives of the Directorate

for Health Promotion and Protection and the Secretariat for the Environment. These two entities drew up the profile of childhood environmental health and formulated the guidelines for the National Program on Children's Environmental Health. An objective of the Children's Health in Argentina Project is to protect children's health by identifying environmental threats to which children are exposed. The leading results of the project's assessment are expected to be used to develop an ongoing system for the collection, analysis, and dissemination of information on this subject; carrying out of field research; and implementing interventions in the community.

### Health Supplies

Argentina's drug industry includes some 250 laboratories funded by domestic and foreign capital. The Ministry of Health's Strategic Health Research Unit indicated that, as of until July 2006, there were approximately 2,057 active principals (and their combinations), with some 20,000 formulations in the market. According to the same source, in 2001 domestic laboratories had more than a 50% share in local sales, and approximately 22% of the country's demand for drugs was being covered with an external drug supply. In 2003, pharmaceutical imports totaled US\$ 475,249,000, 6% of which corresponded to immunological and blood products, and 1.7% to vaccines. In 2001, drug exports totaled US\$ 266 million. In 2005, the pharmaceutical industry's invoices totaled more than US\$ 2,000 million, including taxes. According to INDEC, total per capita expenditures for drugs in 2006 were approximately US\$ 63. According to data from the 1997 household survey and the 2003 National Commission for Health Research Programs, drugs account for 46%–52% of average family expenditures on health, with marked differences among the highest (25%–35%) and lowest (65%–73%) income sectors.

Generic drug use (Law 25,649/02), selection of products to be financed with collective resources, and the free provision of essential drugs to outpatients through the Remediar Program were implemented in 2002. This program extended drug coverage to some 15 million people who were totally or partially excluded from the health system. The distribution of kits with 47 different drugs to more than 5,300 primary care centers was put in place. A survey conducted in these centers in 2003 showed that 82% of Remediar Program beneficiaries were below the poverty line and 84% had no health insurance coverage. That same year, more than 70% of prescriptions were for generics.

In addition to its regular control functions, the National Food, Drug, and Health Technology Administration analyzes drugs already on the market through the so-called Horizontal Sampling Plan, which covers 248 medicinal specialties. Beyond the National Drug Surveillance System, which remains in effect, the regulatory agency has launched a technology surveillance program designed to collect, evaluate, oversee, and organize information on medical product defects. Implementation of this program by

the companies is required by the “good manufacturing practices” regulations. The regulatory agency also implemented a program to investigate illegitimate drugs to combat the marketing of these drugs. In 1997, illegally marketed products were found in 76.5% of inspected establishments, and in 24.5% of local establishments investigated in 2003.

### Human Resources

The number of health and social service workers was estimated at half a million in 2004; 40% worked in the public sector, and most of them (70%) were women. In the city of Buenos Aires, 54% of doctors 30–39 years old were women. The country’s population is growing at the rate of 1.6% per year, while the population of physicians is growing at the rate of 3.5% per year. The distribution of human resources in health is irregular, with a high concentration of physicians in large urban centers. The national average is 3.2 physicians per 1,000 inhabitants. Approximately 65% to 70% are specialists, and there is a shortage of general practitioners or family doctors.

There is a shortage of nursing personnel (some 80,000 professionals, including university trained nurses, nursing auxiliaries, and practical nurses). The doctor/nurse ratio, considering only university trained nurses, is 9.5 doctors for each nurse; if we add the auxiliaries and practical nurses, the ratio is still weighted in favor of doctors: 1.5 doctors for each nurse.

Argentina has 25 medical schools, 10 public and 15 private. Public universities are reasonably distributed throughout the country, but private universities are concentrated in the autonomous city of Buenos Aires and in the Greater Buenos Aires Metropolitan Area (Table 7).

A recent study (30) highlighted many issues that surrounded the training and distribution of human resources for health in the country in 2004, such as: a) a decrease in the rate of growth

of the availability of health programs of study; b) the greater participation by private institutions in offering programs of study, especially those that require a low investment; c) a slower rate of growth in the demand for medical studies and expansion of other programs of study, notably nutrition and kinesiology; d) a lack of policies that promote and encouragement certain programs of study with the objective of reversing the marked deficit of some professional categories (e.g., nursing); e) the distortion of ratios within the health team, especially the doctor/nurse ratio; f) a need to establish regulatory mechanisms for nurse training and other technical programs, given the dispersion of institutions; g) the marked inequalities in the geographic distribution of all professional categories; and h) the lack of permanent information systems with key variables for the field of human resources in health.

In 2005, a Community Doctors Program was implemented to guide and strengthen training in primary health care and social and community health among human resources working at the primary level of care. The program seeks to expand the coverage and quality of care at the health care centers by strengthening health promotion, disease prevention, and social participation. In September 2006, 7,500 health professionals in the country’s 24 territorial jurisdictions were studying at the postgraduate level in social and community health (60% were doctors and the rest were social workers, psychologists, obstetricians, nursing personnel, and others). There are 17 universities in the country that participate in this in-service training program, using similar curricula, methodologies, and instructional materials.

### Research and Technological Development in Health

The National Council for Scientific and Technical Research was established by Executive Order No. 1,291 in 1958, in response to an overall sense that there was a need to establish an academic institution that would promote scientific and technological research in the country. The Council includes 116 research institutes, the national research and services laboratories, and 8 regional centers; 3,896 professional researchers, 2,392 research support technicians, and 3,023 grant recipients participate, and there also is an administrative center.

In 2002, Ministerial Resolution No. 170 established, within the Ministry of Health’s Office of the Under-secretary for Health Relations and Research, the National Commission for Health Research Programs as a way to provide ongoing advisory assistance for health, clinical, applied, and basic research in the health sciences; give priority to research programs for health surveillance, prevention, and control of prevalent diseases; and promote research on health problems in the country.

The National Administration of Health Laboratories and Institutes cut back its research budget by 600% in six years (using the dollar as the value), and by 30% in 2002–2004. Argentina suffers from a notable fragmentation of the institutions performing sci-

**TABLE 7. Professionals by selected categories, Argentina, 2001.**

Career	Number	%
Biochemistry	19,774	6.5
Nursing	12,614	4.2
Pharmacology	21,177	7.0
Speech therapy	7,924	2.6
Kinesiology	11,908	3.9
Medicine	121,076	39.9
Nutrition	4,654	1.5
Obstetrics	3,931	1.3
Dentistry	35,944	11.9
Psychology	46,931	15.4
Veterinary medicine	17,103	5.6
<b>Total</b>	<b>303,091</b>	<b>100.0</b>

*Source:* Developed by Mónica C. Abramzón (PAHO/WHO), based on data from INDEC, Encuesta Permanente de Hogares, 2001.

entific and technology activities. Moreover, institutions created with an eminently technological profile, such as the National Agriculture and Livestock Technology Institute, the National Institute of Industrial Technology, the National Atomic Energy Commission, and the National Institute of Space Activities, fall under different ministries or secretariats. Although in practice these institutions also carry out basic research, this compartmentalization reflects the original concept that separated the function of knowledge creation from that of technological development.

In 2003, 15.2% of the research and development projects were in the field of medical sciences (2,552). In 2002 there were 1,976 Argentine publications on MEDLINE, 20% more than in 2000; 43% were in the field of clinical medicine; 29% were in the basic sciences; and 9% dealt with public health and health systems. According to the Network on Science and Technology Indicators, between 1996 and 2003 the percentage of expenditures on research and development in human health remained stable at 13.7%–15.6%, although in absolute terms, since the end of peso-dollar convertibility, expenditures in this field dropped to one-third (from US \$165.4 million in 2001 to US\$ 55.9 in 2002).

### Health Sector Expenditures and Financing

In the 1990s, although resources intended for health sector financing in Argentina were vast, they were being used inefficiently and the amount of spending in the various subsectors was inequitable. Health expenditures as a percentage of GDP were 7.7% in 1997 and 7.3% in 2003. In late 2001, prior to the devaluation of the peso, per capita health expenditures were deemed acceptable in comparison with those of other countries that had nearly universal coverage. In 2000, those expenditures were approximately 651 dollars/inhabitant/year. However, if private spending is left out, the figure is reduced to US\$ 383 a year (31). In 2003, this expenditure was reduced to US\$ 263 per capita, as a result of the significant devaluation of the currency and the consequent change in the relative-price structure. However, health expenditures by household represented 44%. Argentina lost its position as the country with the highest per capita health expenditure in the Region.

### Technical Cooperation and External Financing

In terms of international cooperation associated with Official Development Assistance, Argentina is considered an intermediate developing country. In terms of technical cooperation, the country plays a dual role: on the one hand, it still receives cooperation; on the other, it offers technical cooperation to other countries since 1992. Despite the growth experienced in certain sectors of the country in the 1990s, Argentina still requires international cooperation, especially for poverty reduction, job production and creation, health, education, and research and development, as well as for political and judicial reform. In June

2002 the country again began to receive technical assistance from the United Nations Development Program (UNDP). International cooperation was aligned with the country's priorities, and loans were reallocated to purchase supplies and drugs and to direct care toward vulnerable populations, cooperation modalities that were, in many cases, unprecedented. Even in this context, there were donations in the face of catastrophes, such as the flood that hit Santa Fe in April 2003, when the province received support from various international donors, including the European Union.

International cooperation funds and technical assistance received by Argentina fall into the following categories: multilateral cooperation; bilateral cooperation; cooperation from non-governmental and international organizations; and decentralized cooperation. Cooperation may be classified by type: financial, which includes loans and donations, with or without national matching funds, and technical assistance, which includes the provision of technicians and consultants by international organizations, as well as other contributions, such as financing for seminars or participation in international meetings. Programs that have emerged from the Iberoamerican Summits, which embody the commitments issued at the meetings of Chiefs of State and Heads of Government, to bolster Iberoamerican cooperation, also should be taken into consideration.

### References

1. World Bank. Available at: <http://devdata.worldbank.org/external/>. Accessed on 28 July 2006.
2. United Nations Development Program. Human Development Report 2005.
3. Universidad Nacional de La Plata, Centro de Estudios Distributivos, Laborales y Sociales. Available at: [www.depeco.econo.unlp.edu.ar/cedlas/arg.htm](http://www.depeco.econo.unlp.edu.ar/cedlas/arg.htm). Accessed on 28 July 2006.
4. Argentina, Presidencia de la Nación. Objetivos de Desarrollo del Milenio. Informe de País 2005.
5. Argentina, Ministerio de Salud, Secretaría de Ambiente y Desarrollo Sustentable; Programa de Naciones Unidas para el Medio Ambiente. Argentina 2006: Indicadores ambientales. Iniciativa latinoamericana y caribeña para el desarrollo sostenible. Indicadores de seguimiento. Buenos Aires; 2006.
6. Argentina, Ministerio de Salud, Secretaría de Ambiente y Desarrollo Sustentable, Unidad de Investigación y Desarrollo Ambiental. Estudio multicéntrico CONAPRIS. Epidemiología del hidroarsenicismo crónico regional endémico (HACRE) en la República Argentina. Asociación Toxicológica Argentina. In press.
7. Argentina, Ministerio de Salud. Atlas de mortalidad de la República Argentina. Buenos Aires: OPS; Universidad Nacional de Lanús; 2005.

8. Argentina, Ministerio de Salud; Pan American Health Organization. Basic indicators. Argentina 2006.
9. Vega AL, Torcida S, Velázquez GA. Análisis de la evolución de la tasa de mortalidad infantil en los departamentos de Argentina. 1994–2003. *Revista Salud Colectiva*. 2006; 2(3). Available at: <http://www.unla.edu.ar/public/saludColectivaNuevo/publicacion6/index.php>.
10. Argentina, Secretaría de Programación para la Prevención de la Drogadicción y la Lucha contra el Narcotráfico; Instituto Nacional de Estadística y Censos. Segundo estudio nacional sobre consumo de sustancias psicoactivas. SEDRONAR; INDEC; 2004.
11. Argentina, Ministerio de Salud, Programa Nacional de Lucha contra los Retrovirus del Humano, SIDA y ETS. Estudio sobre comportamiento e información en relación con el VIH/SIDA e ITS en la población adolescente. 2005.
12. Argentina, Ministerio de Salud. Encuesta Nacional de Factores de Riesgo de Enfermedades No Transmisibles, 2005. MSAL; 2006.
13. Argentina, Superintendencia de Riesgos del Trabajo. Informe estadístico accidentabilidad 2004 y evolución 2000–2004. Publicaciones anuario 2004.
14. Gutiérrez AP, Koehs J, Schamber P, Suárez F. Informe sobre trabajo infantil en la recuperación y reciclaje de residuos. Organización Internacional de Migraciones; UNICEF; 2005.
15. Argentina, Ministerio de Salud, Programa Nacional de Lucha contra los Retrovirus del Humano, SIDA y ETS. Estudio sobre comportamiento e información en relación con el VIH/SIDA e ITS en trabajadoras/es sexuales de Argentina. 2005.
16. Argentina, Instituto Nacional de Estadística y Censos. Encuesta Nacional de Personas con Discapacidad, 2002–2003. Encuesta Complementaria del Censo 2001. INDEC; 2004.
17. Argentina, Ministerio de Economía y Producción, Secretaría de Política Económica; Instituto Nacional de Estadística y Censos. Encuesta Complementaria de Pueblos Indígenas (ECPI). Primeros resultados. 2005.
18. Argentina, Ministerio de Salud, Programa Nacional de Lucha contra los Retrovirus del Humano, SIDA y ETS. Estudio sobre comportamiento e información en relación con el VIH/SIDA e ITS en población aborigen. 2005.
19. Boletín sobre VIH/SIDA en la Argentina. Año X, N° 24; 2005.
20. Gómez JA., Sordo ME, Gentile A. Epidemiologic patterns of diarrheal disease in Argentina: estimation of rotavirus disease burden. *Pediatr Infect Dis Journal* 2002;21(9).
21. Giordiano MO, Ferreyra LJ, Isa MB, Martínez LC, Yudowsky SI, Nates SV. The epidemiology of acute viral gastroenteritis in hospitalized children in Córdoba City, Argentina: an insight of disease burden. *Rev Inst Med Trop S Paulo* 2001; 43(4):193–197.
22. Stupka J, Gómez J. Revisión sistemática de los estudios sobre frecuencia de patógenos asociados a diarrea en Argentina. Not published.
23. Lurá MC, Beltramino D, Carrera EF. Prevalencia de helmintosis intestinales en escolares de la ciudad de Santa Fe. *Medicina* 2002;62(1):29–36.
24. de Sereday MS, Gonzalez C, Giorgini D, De Loredo L, Braquinsky J, Cobenas C, et al. Prevalence of diabetes, obesity, hypertension and hyperlipidemia in the central area of Argentina. *Diabetes Metab* 2004 Sep;30(4):335–339.
25. Nigro D, Vergottini JC, Kuschnir E, Bendersky M, Campo I, De Roiter HG, et al. Epidemiología de la hipertensión arterial en la ciudad de Córdoba, Argentina. *Rev Fed Arg Cardiol* 1999; 28:69–75.
26. Herzer H, Celis A, Bartolomé M, Rodríguez C, Caputo G. El manejo de cuenca y su impacto en áreas urbanas: el caso de la llanura pampeana. Argentina. Documentos presentados en el III Congreso Latinoamericano de Manejo de Cuencas Hidrográficas. Arequipa (Perú): INRENA; FAO; 2003.
27. Argentina, Ministerio de Salud, Secretaría de Ambiente y Desarrollo Sustentable; Banco Mundial. Plan de Monitoreo del Aire para el Área del Polo Petroquímico Dock Sud. Estudio o línea de base de concentración de gases contaminantes en atmósfera en el área de Dock Sud. Informe final. 2002.
28. Argentina, Ministerio de Salud; Pan American Health Organization. Basic Indicators. Argentina 2005.
29. Argentina, Ministerio de Salud; Organización Panamericana de la Salud. Informe anual 2005 del Plan Nacional de Sangre.
30. Abramzón MC. Argentina: recursos humanos en salud en 2004. Buenos Aires: Organización Panamericana de la Salud; 2005.
31. González GG, Tobar F. Salud para los argentinos. Buenos Aires: Ediciones ISALUD; 2004.

