

Nicaragua

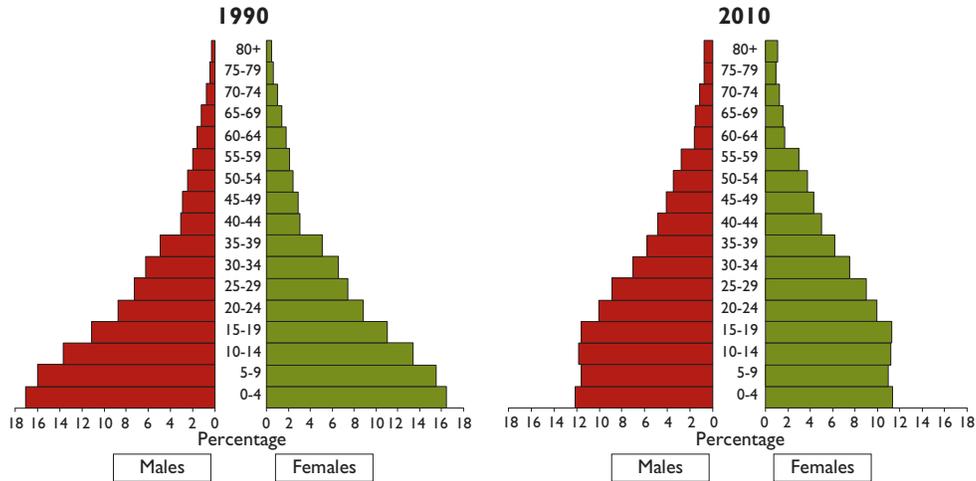


INTRODUCTION

The Republic of Nicaragua covers a total surface area of 130,373 km² (1) within the Central American Isthmus. The country is divided into 15 departments, 2 autonomous regions, and 153 municipalities. Its capital is Managua. The political constitution (2) states that Nicaragua “is a democratic, participatory, and representative republic” with four branches: legislative (unicameral), executive, judicial, and electoral. The municipalities

make up the country’s political-administrative units, each having political, administrative, and financial autonomy.

In 2011, the population rose to an estimated 5,888,945 inhabitants, of whom 8.6% were indigenous peoples; 50.5% were women; 49.5%, men; and 58.3%, urban dwellers (Figure 1) (1, 3, 4). Life expectancy at birth for both sexes was 74.5 years (71.5 for men and 77.6 for women) (5). The annual population growth rate was 1.3%, and net migration was -7.10 per 1,000 inhabitants (1).

FIGURE I. Population structure, by age and sex,^a Nicaragua, 1990 and 2010.

The population increased 40.7% between 1990 and 2010. In 1990, the population's structure displayed a pyramidal shape mainly in age groups younger than 15 years. By 2010, the pyramidal shape shifts toward age groups older than 15 years and shows similarity among age groups younger than 15 years, in line with a decrease in fertility in the intervening years.

Source: Pan American Health Organization, based on data from the United Nations Department of Economic and Social Affairs, Population Division, World Population Prospects, 2010 revision. New York, 2011.

^a Each age group's percentage represents its proportion of the total for each sex.

Between 2009 and 2010, the working population increased by 290,138 (65% of whom were women and 35% were men) (4). Per capita public social spending climbed from US\$ 82 in 2004 to US\$ 141 in 2009 (4); average annual expenditure in that period increased by 7% for higher education, 1.4% for elementary education, and 1.8% for secondary education (4). Public health expenditure as a percentage of the gross domestic product (GDP) increased from 6.4% to 10.5%; the portion allotted to the Ministry of Health rose from 3.0% to 4.1% (4).

From 2005 to 2009, extreme poverty dropped by 2.6%, and overall poverty, by 5.8%. In 2009, 44.7% of all inhabitants were poor, 35% were moderately poor, and 9.7% were extremely poor. Overall poverty in rural areas climbed to 67.8% and affected 45.6% of men and 43.7% of women (6).

HEALTH DETERMINANTS AND INEQUALITIES

During the 2008–2010 period, illiteracy fell to 3.4% (7). The net rate for primary school enrollment climbed from 86.4% in 2006 to 92.8% in 2010, and

the rate of children who started school increased from 55.3% in 2007 to 56.1% in 2010. In 2006–2007, 48.4% of all boys and girls dropped out of school for economic reasons and 27.3% did so due to cultural problems. According to data from the United Nations Educational, Scientific, and Cultural Organization (UNESCO), out of every 100 elementary school-age children, 57 reach fifth grade; 7% of the primary school-age population remained outside the school system.

Indigenous peoples or ethnic communities account for 8.6% of the country's population (8). There are 10 indigenous groups: the Miskito, Mayagna (Sumo), Creole, Ulwa, Rama, and Garifuna live in Nicaragua's Atlantic region and the Naho, Cacaopera, Chorotega, and Xiu in the country's Pacific, Central, and Northern regions. Twenty-five percent of the indigenous population over 10 years of age is illiterate. Poor housing conditions affect 71% of Miskitos and 82% of Mayagnas, as compared to 65% at the national level. Overcrowding affects 62% of Miskitos, compared to 38% of the national population. Lack of electrical service affects 62% of all Miskitos, 90% of all Mayagnas, and 100% of all Ramas—compared to

28% of the population nationwide. During the rainy season, 47% of the Miskitos have no road access at all, compared to 27.3% nationally (9).

THE ENVIRONMENT AND HUMAN SECURITY

ACCESS TO CLEAN WATER AND SANITATION

In 2004, 95.1% of all homes in urban areas and 48.5% of those in rural areas had access to safe drinking water (10); in 2008, coverage rose to 98% in urban areas and 68% in rural areas. The country has 200 urban drinking water systems. Groundwater supplies 136 systems in the Pacific region and surface water supplies 56 systems in the Central-North region and 8 in the Atlantic region (11). The National Assembly enacted Law 722, which has facilitated the formation of some 5,400 community-level water committees.

In 2008, 63% of all homes in urban areas had access to sanitation (11). The country has 27 sewage systems, 24 of which carry out sewage treatment processes; the departmental seats account for 15 of these systems (11). There is a water treatment plant in Managua (11). The Nicaraguan Water Supply and Sewage Systems Company manages 94% of the country's drinking water systems (12).

SOLID WASTE

In 2007, waste collection was available to 66% of all urban households and 35% of rural households. Nationwide, 37% of the population had trash collection services, 35% burned their garbage, and 18% dumped it in public thoroughfares and water sources (13).

DEFORESTATION AND SOIL DEGRADATION

Deforestation is estimated at 70,000 hectares per year. Firewood is used for cooking in 59% of homes,

which represents an annual consumption of 2 million cubic meters of firewood. The country's largest forest and biodiversity reserve, Bosawas, lost 32% of its forest cover between 1987 and 2010 (13) due to the lack of an agrarian policy to fund alternative crop production and limit the migration of subsistence farmers seeking fertile land.

PESTICIDES AND PERSISTENT ORGANIC POLLUTANTS

In 2008, 67 tons of pesticides and persistent organic contaminants and 500 tons of obsolete pesticides were removed. In addition, European companies remediated some 1,500 tons of contaminated soil through incineration (13). According to the Ministry of Health's National Toxicology Center, between 2006 and 2010 a policy was put in place to utilize mercury-free medical equipment; in addition, the country restricts the use of 10 major pesticides. Reports from the same period show an annual average of 753 suicide attempts and 881 deaths due to pesticide use (14).

CLIMATE CHANGE

The country was affected by a rise in temperatures (from 0.2 to 1.6 degrees Celsius), reduced rainfall (by between 6% and 10%), and increased frequency of the El Niño phenomenon as well as hurricanes. The most serious hazards are droughts and floods; some 30% of municipalities are susceptible to flooding.

DISASTERS

Between 1990 and 2009, Nicaragua reported 3.32% of the total economic damage caused by disasters in the region of Mexico and Central America. Reports indicate a total of 61 events, 17,000 deaths, and 3.5 million affected persons during this 20-year period, with economic damages amounting to US\$ 2.746 billion (15).

HEALTH CONDITIONS AND TRENDS

HEALTH PROBLEMS OF SPECIFIC POPULATION GROUPS

Maternal and Reproductive Health

From 2000 to 2009, 996 deaths related to pregnancy, childbirth, and the postpartum period were reported; of these, 520 (52%) occurred at the institutional level (in hospitals, clinics, health centers, and alternative treatment centers), 397 (40%) at home, and 79 (8%) on public thoroughfares and in other places. Broken down by age group, 58.5% of these deaths occurred in women ages 20–34 years old, 22.4% in women ages 35–54, and 20% in adolescents. The main causes of maternal mortality were hemorrhage (in 395 women, or 39%), pregnancy-induced hypertension (in 195 women, or 20%), puerperal sepsis (in 86 women, or 19%), and abortion (in 39 women, or 4%). There were 89 maternal deaths reported for 2010; the maternal mortality rate per 100,000 live births fell from 90 in 2006 to 64.7 in 2010 (14).

Between 2006 and 2010, early detection of pregnancy increased from 38.4% to 49.1%, prenatal check-up coverage rose from 80.6% to 91.6%, and the percentage of pregnant women having four prenatal check-ups grew from 43.2% to 60.4%. During the same period, institutional deliveries increased from 51.5% to 70.8%; family planning coverage underwent a slight increase, from 12.9% to 13.0% (14).

The proportion of women ages 15–49—either married or with a partner—who used contraceptives was 72.4%. The proportion of women whose family planning needs were unmet was 10.7% (16).

Children (under 5 years old)

Between 1998 and 2006, mortality in children under 5 fell from 72 to 35 per 1,000 live births, while the infant mortality rate fell from 58 to 29 per 1,000 live births. There was a reported 8% reduction in deaths among children under 5 between 2007 and 2009 (from 2,249 to 2,068), and deaths among infants under 1 year old dropped by 9.13% (from 1,947 to 1,759) (14).

During the 2006–2009 period, neonatal deaths fell from 1,352 to 1,228, early neonatal deaths fell from 1,067 to 974, and late neonatal deaths, from 285 to 205 (14).

In 2006, neonatal mortality accounted for 71% of infant mortality and 50% of child mortality, and in 2010, for 66% of infant mortality and 59% of child mortality. The leading causes of death in infants under age 1 were perinatal respiratory and cardiac disorders, bacterial sepsis of the newborn, diarrhea, pneumonia, and congenital malformations (14).

Children (5 years old and older)

During the 2004–2010 period, there were 42,243 reported cases of diseases of compulsory notification (50.0% in girls and 49.9% in boys) (14). Reports from 2008–2010 indicate 44,397 hospital discharges among schoolchildren: 57.1% for boys and 42.9% for girls. Reports from 2000–2010 show 1,760 deaths (57% of which corresponded to boys and 43% to girls); 76.8% of these deaths occurred in urban areas (14).

Adolescents (15–19 years old)

In the 1992–2007 period, the adolescent fertility rate (ages 15–19) dropped from 158 to 106 per 1,000 women (1).

Regarding sexual activity, 39% of adolescents had had sex, and of these, 13% had started before age 15. Of the adolescents with a partner, 46% already had one child and 30.7% had used a contraceptive method at some point. In 2010, there were 122,396 reported births and 27% were to teenage mothers.

In the 2004–2010 period, reports show 57,915 cases of diseases of compulsory notification among adolescents: 52.2% in females and 47.7% in males. Reports from 2008–2010 show that adolescents accounted for 187,322 hospital discharges or 17.2% of all discharges (14).

Of the 6,493 adolescent deaths occurring in 2000–2010, 63% occurred among males and 77.5% occurred in urban areas. Of the maternal deaths reported in 2010, 20% were adolescents (14).

Adults (20–59 years old)

Between 2004 and 2010, reports show 78,271 cases of diseases of compulsory notification in adults: 55.1% in women and 44.8% in men (14).

In 2008–2010, there were 511,761 registered hospital discharges of adults (46.9% of the total), with 80% corresponding to women for causes related to pregnancy, childbirth, and the postpartum period (14).

In 2000–2010, 53,895 adult deaths were reported; 65% were men and 78% were urban dwellers (14).

The Elderly (60 years old and older)

In 2006–2010, older adults represented 6.1% of the population, with a ratio of 18 older adults to every 100 children under age 15. The number of medical consultations carried out at the primary-care level for this population group increased from 847,171 in 2008 to 1,076,710 in 2010. Between 2000 and 2010, there were 83,219 deaths reported among older adults; 51% were men and 79% were urban dwellers (14).

The Family

The birth rate fell from 4.9 children per woman in 1995 to 2.9 in 2005 (1). Children live in 80.4% of the country's 988,622 households. The proportion of households headed by men is 68.6% nationwide; this figure is 60.7% in urban areas and 79.6% in rural areas (8).

The country has promoted a policy of universal access to sexual and reproductive health services. This includes expanded HIV prevention services and the promotion of sexual and reproductive health based on human rights and gender equity, with an emphasis on adolescents.

Workers

Between 2007 and 2010 there were 123 reported deaths and 85 cases of disability among fishermen from the North Atlantic Autonomous Region due to decompression sickness (14). Between 2000 and

2010, annual deaths from kidney failure increased from 529 to 1,199, with the corresponding mortality rate per 100,000 inhabitants rising from 10.4 in 2000 to 20.6 in 2010 (14). Although there is still no evidence, the populations from the country's agroindustrial areas are showing an observable increase in chronic renal failure (14).

Ethnic or Racial Groups

In 2011, the country enacted Law 759, which addresses traditional and ancestral medicine. Coordination was reestablished with the indigenous peoples of the Pacific, Central, and Northern regions and a project to build an alternative medicine center was updated. In addition, staff from the Ministry of Health exchanged experiences with midwives regarding the cultural appropriateness of humanized childbirth. The Ministry of Health, in coordination with the regional governments, worked to incorporate intercultural concepts into health care models in the Atlantic Autonomous Regions.

MORTALITY

Malignant neoplasms, ischemic heart disease, cerebrovascular diseases, diabetes mellitus, and chronic renal insufficiency are diseases with a high mortality burden that constitute the five leading causes of death. Between 2007 and 2010, these conditions were responsible for 44% of the 72,862 deaths reported (51% of which occurred among men) (14).

Reports for the same period show 9,042 deaths from cancer (53% in women, 57% in adults age 60 and over, 38% in adults 20–59 years old, and 71% among urban dwellers) (14). Mortality from stomach cancer accounted for 12% of all neoplasms. Of the 1,105 reported deaths from this cause, 56% occurred in men, 65% in adults age 60 and over, and 62% in urban dwellers (14). Between 2007 and 2010, there were 983 reported deaths from cervical cancer and 524 from breast cancer. Mortality from breast cancer and cervical cancer increased by 18% and 9%, respectively, during this period. In women ages 20–59, 62% of all deaths were due to cervical cancer and

55% due to breast cancer. There were 692 deaths reported from prostate cancer (8% of all neoplasms): 95% in men age 60 and over and 68% in urban dwellers (14).

Between 2007 and 2010, there were 18,090 reported deaths from cardiovascular diseases: 51% in men, 82% in adults 60 years old and older, and 67% among urban dwellers. Over this period, mortality increased 11% due to ischemic heart disease, 15% due to cerebrovascular disease, 13% due to hypertensive disease, and 3% due to heart failure (14). During the same period, there were 5,673 reported deaths from diabetes: 69% in adults age 60 and over, 57% in women, and 79% in urban dwellers (14). Chronic respiratory diseases caused 2,655 deaths: 91% in adults age 60 and over, 52% in men, and 70% in urban dwellers (14).

MORBIDITY

Communicable Diseases

Vector-borne Diseases

Malaria in Nicaragua is in the pre-elimination phase and certification is under way for malaria-free municipalities. The annual parasite index per 10,000 inhabitants dropped from 0.56 (3,114 cases) in 2006 to 0.10 (692 cases) in 2010. That same year, the North Atlantic Autonomous Region reported 87% of all the country's cases, with 96% of them caused by *Plasmodium falciparum*. At the national level, 78% of all cases were caused by *P. vivax* and 22% by *P. falciparum*. Mixed infections accounted for less than 1%. The principal vector is *Anopheles albimanus*.

In 2006, reported morbidity from dengue per 10,000 inhabitants showed 2.32 positive cases from classical dengue and 0.12 from severe dengue. The dengue morbidity rate nearly quadrupled in 2010, to 8.87 per 10,000 inhabitants, but dropped to 0.06 for severe dengue. Serotype 2 predominated in 2006 and 2007 and serotype 3, between 2008 and 2010. The dengue mortality rate per 100,000 inhabitants was 0.15 in 2010 and the case fatality rate from severe dengue was 26%.

In 2009–2010, the country conducted entomological investigations on the principal vectors for Chagas' disease in five departments where the disease is endemic; results showed an absence of *Rhodnius prolixus*. In 2010, negative serological results were obtained in children from areas with a history of infestation by this vector.

Vaccine-preventable Diseases

Between 2006 and 2010, there were no reported cases of poliomyelitis, diphtheria, measles, or rubella, but there were 13 reported cases of non-neonatal tetanus (the majority in adults) and 107 cases of whooping cough. In 2008, the follow-up campaign to eliminate measles, rubella, and congenital rubella syndrome in children between 1 and 4 years old achieved 100% coverage. In 2010, immunization with all vaccines in children under 1 year old and from 12 to 23 months achieved 100% coverage (except for the rotavirus vaccine, which reached 97%). That same year, 60% of all municipalities had achieved over 95% coverage for DPT3 vaccination. In 2006, the rotavirus vaccine was introduced into the national vaccination series and the following year the influenza vaccine was introduced for children 6–23 months old and for adults over 50 with underlying chronic diseases. In 2010, the 23-valent pneumococcal vaccine was introduced for high-risk groups.

Zoonoses

The population at risk of contracting leptospirosis rose to approximately 1,206,720 inhabitants. In 2006, 64 cases were reported, and in 2010 there were 653 cases and 20 deaths. Between 1995 and 2007, more than 50 known strains of different leptospiral serotypes and 3 new strains were isolated in humans.

Every year, reports show an average of 12,000 people injured by animals capable of transmitting rabies. Between 2006 and 2010, there were 13 cases of animal rabies. Yearly rabies vaccination campaigns for dogs contribute to the absence of canine cases. No cases of human rabies have occurred since 1999.

HIV/AIDS and Other Sexually-transmitted Infections

The national incidence rate per 100,000 inhabitants for HIV infection increased from 7.6 in 2006 to 16.2 in 2010 (17).

In 2008, the number of people with HIV rose to 7,300 and the prevalence rate for HIV in adults ages 15–49 rose to 0.2% (18). The male to female ratio was 3.1:1 in 2001 and 1.7:1 in 2009. Sexual transmission of HIV predominates (at 94%), with 78% of all transmission occurring among heterosexuals (18). According to the Ministry of Health's HIV Component, adolescents represented 6.8% of all new HIV infections in 2006 and 9% in 2009, and of all new adolescent cases, 60% occurred in females. The same source also reported that HIV prevalence in pregnant women was 0.11% in 2008–2009, similar to that of the 2004–2005 period. From 2005 to 2009, the number of HIV tests administered rose from 59,995 to 123,547. The proportion of HIV-positive children and adults undergoing antiretroviral therapy increased from 44% in 2007 to 65% in 2009.

The prevalence of TB and HIV coinfection was 2.2% in 2002 and 3.2% in 2007. In 2009, 26% of all new tuberculosis cases in patients living with HIV were treated. Sixty-one percent of adults and children living with HIV received isoniazid preventive therapy (IPT) for latent tuberculosis infection, but the 39% who did not receive IPT facilitated coinfection (19).

Tuberculosis

From 2006 to 2010, 52% of all reported tuberculosis cases were in the departments of Chinandega and Managua. Some 1,400 new cases were diagnosed annually with positive sputum smear microscopy. Between 2007 and 2010, the detection rate increased from 78% to 93% and the reported incidence increased from 41 to 42 per 10,000 inhabitants. The Ministry of Health's Tuberculosis Component reported that the incidence for positive sputum smear tests dropped from 26 to 25 per 10,000 population; the therapeutic success rate was 85% and the annual dropout rate was 6%.

Emerging Diseases

During the 2007–2010 period, there were 1,310,653 reported cases of acute diarrheal disease for which the morbidity rate per 10,000 inhabitants climbed from 386.82 to 479.86; mortality per 100,000 inhabitants dropped from 2.61 to 2.08 (or 120 deaths per year). There were 8,923,714 reported cases of acute respiratory infections with a morbidity rate per 10,000 inhabitants that climbed from 2,423.67 in 2007 to 3,557.85 in 2010. There were 1,380,196 reported cases of pneumonia; the morbidity rate for pneumonia dropped from 445.88 per 10,000 inhabitants to 387.99 between 2007 and 2010, and the mortality rate per 100,000 inhabitants fell from 9.07 to 9.01.

During the 2009 influenza A(H1N1) pandemic, there were 2,175 confirmed cases, with 11 deaths. The country activated a national response plan to deal with the risk of both pandemic influenza and avian influenza, forming an intersectoral commission to monitor and implement the plan. Measures were taken to strengthen epidemiological surveillance in ports of entry and to make available the necessary technology for molecular diagnosis, drugs, standards, and protocols for response activities. Vaccinations were given to 23,261 public health workers, or 88% of the public health workforce; 8,114 workers from the private health sector (94%); 58,435 pregnant women (88%); and 526,473 children between the ages of 6 months and 4 years.

Nutritional Diseases

Chronic malnutrition in children under age 5 dropped from 25.8% in 2001 to 21.7% in 2006. Nevertheless, inequalities persist, such as the existence of twice as many chronically malnourished children in rural areas compared to urban areas, and a risk of malnutrition that is 3.4 times higher for children born to mothers who have three years of schooling or less. The risk of malnutrition is six times higher in the poorest quintile compared to the richest quintile (16). The prevalence of chronic malnutrition in schoolchildren 6–9 years old is 27.2% (20).

In 2006–2007, 94% of all infants were breastfed by their mothers, with 54% receiving breast milk within the first hour of birth and 81% during the first day (16). The duration of exclusive breastfeeding in infants under 2–3 months old fell from 34% to 28% between 2001 and 2007, while exclusive breastfeeding of infants up to 6 months old remained at 31% (16).

The prevalence of anemia (hemoglobin lower than 11 g/dl) in children between 5 and 59 months old dropped from 45.5% in 2007 to 10.9% in 2009 (14).

Accidents and Violence

In 2006–2010, there were 107,587 reported traffic accidents, with 2,680 deaths and 24,678 injuries. During this period, traffic accidents increased by 55%, injuries by 56%, and deaths by 21%. Of all traffic accidents, 17% involved drunk drivers (21).

Reports from the 2006–2010 period show 2,587 homicides, 1,172 murders, 80,228 injuries from assault, and 9,010 rapes, with 43% of the victims between 14 and 35 years old. Of the perpetrators, 12.2% were adolescents, and of the male offenders, 40% were unemployed (21). Between 2007 and 2010, suicide cases dropped from 353 to 320, for a decline in the suicide rate from 6.3 to 5.5 per 100,000 inhabitants (14).

Between 2007 and 2010, there were 14,705 reported cases of violence against women—40% of which corresponded to physical violence and 12% to sexual violence (14). In 2009, there were 31,759 allegations of violence against individuals and in 2010, there were 34,763. Of the complaints filed in 2010, 11.4% were classified as domestic violence and 10.8% as sexual offenses. Of the latter, 47% were rapes and 25% were cases of sexual abuse (21). Of 4,964 forensic evaluations carried out in 2009, 90% were due to sexual abuse (88.6% in females and 55.2% in 11–17-year-olds) (22). Between 2006 and 2010, the number of women murdered by their partners and ex-partners rose from 16 to 39. The country has formed a community network to prevent violence against women. In addition, the country's penal code has recognized femicide as a criminal act punishable by law.

Disability

In 2010, there were 179,138 home visits made to 126,316 persons with disabilities. The disability rate was 2.5 per 100 inhabitants. Intellectual disability affected 32,728 people, with a rate of 0.63 per 100 inhabitants (25.9% of all disabled); 4,471 were cases involving profound disability.

HEALTH POLICIES, THE HEALTH SYSTEM, AND SOCIAL PROTECTION

HEALTH POLICIES

The National Human Development Plan (2008–2012) and the National Health Policy (2007–2011) provide both for expanding coverage and improving the quality of health services by implementing the Family and Community Health Model. The purpose of the National Health Plan (2004–2015) is to guarantee the right to health by providing equitable, universal, and free access to public health services.

The health system includes both the public and private sectors. The public sector is made up of the Ministry of Health, the medical services of the Army of Nicaragua and the National Police Force, and the Nicaraguan Social Security Institute (INSS). The system makes use of a public–private mix to fund and deliver its services; the public and private sectors have limited integration and coordination. The Ministry of Health is responsible for health leadership and is the main health service provider, accounting for 65% of coverage. This is followed by the INSS, which provides 18% of institutional coverage for its members and their families; Government and Army medical services that account for 6% of coverage; and private facilities, which provide 11%. In 2010, the INSS had 534,881 members.

In 2008, the country began implementing the International Health Regulations (IHR) and evaluated surveillance and response capacity to deal with possible public health events of international importance. It updated legislation in accordance with the 2005 IHR revision, and created the National Liaison

Center. The National Diagnostics and Reference Center was designated as the National Influenza Center. In addition, the country formed the National Intersectoral Commission for IHR Implementation.

THE HEALTH SYSTEM'S PERFORMANCE

The Family and Community Health Model ensures access to essential medicines for hypertension, diabetes mellitus, epilepsy, arthritis, and asthma. The 2010–2015 National Micronutrients Plan, the Essential Micronutrients Guide, and the Nicaraguan Food Composition Table all provide guidance for preventing childhood obesity. The Community Health and Nutrition Program promotes changes in attitudes and behavior concerning health care and nutrition, particularly for children under age 5. In 2010, the National Assembly approved compulsory technical standards to regulate food being served in schools.

In the 2007–2010 period, the country set up 19 clinics for cervical cancer prevention that use visual inspection with acetic acid (VIA) as a diagnostic technique. During the same period, technical guidelines, handbooks, and protocols for treating chronic diseases were published and guidelines for treatment of diabetes mellitus were updated.

HEALTH LEGISLATION

The General Health Act, in addition to Act 324 and its regulatory provisions, constitute the basis of the legal framework for health—together with 21 specific statutory provisions relating to the Ministry of Health. In 2011, the legislature enacted laws on health careers as well as on traditional and ancestral medicine. Since 2007, the Ministry of Health has participated in research sessions dealing with social, occupational, and youth issues, and has formulated and designed comprehensive policies, strategies, and interventions for priority population groups.

HEALTH EXPENDITURES AND FINANCING

According to the Ministry of Health's 2010 Management Report, in 2010, health budget allocations amounted to C\$ 5,334,776,795,¹ which represented a 33.5% increase over the 2006 budget (US\$ 186.8 million). For the 2010 budget, investments in current expenditures amounted to 94% and capital expenditures were 6%. Income sources were: 64.2% from treasury revenues, 11.8% from donations, 9.2% from the World Bank, 7.8% from the Paris Club, 2.9% in loans, and 2.2% from the Inter-American Development Bank; 1.8% was income allocated for specific purposes.

HUMAN RESOURCE DEVELOPMENT POLICIES

Human resource development is part of both the National Health Policy and the Human Development Plan. It appears among the top 10 priorities of the Ministry of Health, whose Human Resource Development Plan is based on seven management handbooks.

THE HEALTH SERVICES

In 2010, the Ministry of Health had 1,160 outpatient units and 64 hospitals; of the latter, 31 provided primary care. Of the 33 hospitals providing secondary care, 12 were in Managua. There are 2 national blood banks and 18 public facilities for transfusion medicine.

National drug policy promotes access to essential drugs at no charge as well as the use of generics, in accordance with the National Strategic Plan for Rational Drug Use. In 2010, there were 1,563 pharmacies.

¹ The exchange rate on 31 December 2010 was US\$ 1 = NIO 21.36.

KNOWLEDGE, TECHNOLOGY, INFORMATION, AND HUMAN RESOURCE MANAGEMENT

SCIENTIFIC PRODUCTION IN HEALTH

The pilot connectivity project includes the interconnection of 45 sites (departmental headquarters, hospitals, and municipal health centers) from the South Atlantic Autonomous Region, Río San Juan, Boaco, Chontales, and 9 municipalities in Managua. In 2010, the country set up and equipped 6 primary care hospitals and acquired equipment for 14 departmental and national reference hospitals. In 2007–2008, a high-tech center began operations.

The National Health Library is the main source of information. The country has made progress in consolidating its Virtual Health Library.

HUMAN RESOURCES

In 2010, the Ministry of Health employed 27,294 workers (22,049 of whom were on its payroll roster). Per 10,000 inhabitants, there were 5.6 physicians, 4.4 nurses, and 6.4 nursing assistants. The enrollment quota for training medical specialists increased from 50 in 2006 to 300 in 2010, and the Ministry of Health granted fellowships to all professionals. Between 2005 and 2010, 974 health practitioners migrated abroad, including 873 doctors (319 women and 554 men) and 101 nurses (86 women and 15 men).

HEALTH AND INTERNATIONAL COOPERATION

During the first half of 2010, disbursements to Nicaragua from official foreign resources amounted to US\$ 582.9 million—15.4% more than in the first half of 2009 (accounting for 19% of the GDP). Multilateral sources (14 agencies) donated some US\$ 40.9 million. PAHO/WHO allocated US\$ 3,400,000 for investment in human resources, US\$ 900,000 for the National Health Development Plan, US\$ 800,000 for family and community health, and

US\$ 500,000 for health systems and services and health technology. Loans from various international sources allocated to the health sector amounted to US\$ 18,149,307 in 2009, US\$ 7,152,436 in 2010, and US\$ 3,397,407 in 2011.

SYNTHESIS AND PROSPECTS

The country is currently going through processes of peacebuilding, strengthening democracy, exercising civil liberties, and stabilizing the economy. The democracy is young and currently expresses itself through institutional and organizational development, in both the public and private sectors.

In the space of 18 years, Nicaragua's largest forestry and biodiversity reserve lost 20% of its land area, equivalent to 550,000 hectares. Of the entire national territory, 36% is now in a process of desertification, which has serious negative impacts both on culture and food production. The risk of natural disasters affects sustainable development; limited access to drinking water and sanitation, together with severe deficiencies in solid waste management, lead to greater environmental degradation and to recurrent communicable disease outbreaks. The reduction in foreign assistance for development will have repercussions on national development, since the economic production model still requires external assistance for its consolidation.

In the health sector, there are high levels of fragmentation not only in organization but also in operations. The network of health facilities faces major limitations related to both structure and processes; underregistration is a constant problem in the health sector's information system. For the Ministry of Health, all these factors affect its overall capacity and limit its exercise of leadership.

Morbidity and mortality from causes associated with pregnancy, childbirth, and the post-partum period—as well as neonatal and infant mortality—should be a priority. Causes related to violence, suicides, and traffic accidents all merit special attention. It is clear that the country has a highly complex epidemiological profile which demands effective, multisectoral interventions.

The main challenge that the country is now facing consists of consolidating and strengthening the kind of participatory democracy that is conducive to the current economic production model. This in turn will make it possible to maintain political and financial backing for activities aimed at social sectors that up to now have been neglected—especially with regard to education and health.

The country offers a national health policy that promotes the multisectoral approach to dealing with risks and health problems. This policy also provides for expanding coverage at no cost to health service recipients and for improving service quality through implementation of both the Family and Community Health Model and the Citizen Participation Model.

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