INTRODUCTION

The Republic of Panama borders the Caribbean Sea on the north, the Republic of Colombia on the east, the Pacific Ocean on the south, and the Republic of Costa Rica on the west (1). The country has a democratic unitary republic form of government. Historical processes have facilitated, and continue to facilitate, the migration and convergence of people of various nationalities and cultures in Panama, since its location makes Panama a country of transit.

The current political-administrative divisions include 9 provinces, 75 districts or municipalities, 3 indigenous territories (Guna Yala, Emberá, and Ngäbe-Buglé) known as comarcas, which have provincial rank in the system, and 2 territories (Guna de Madungandí and Guna de Wargandi) with the status of corregimientos, or mayoral
jurisdictions (1). The total population in 2010 was 3,405,813 (2).

The indigenous population accounts for approximately 12% of the total population, and includes the following groups: the Guna, Emberá-Wounaan, Ngäbe-Buglé, Bokota, Teribe, and Bri Bri. Blacks or people of African descent constitute 9.2% of the population. The urban population is 64.4% of the total, and is concentrated in the provinces of Panamá and Colón (58.2%).

The country’s overall population density is 45.9 inhabitants per km², but density in the province of Panamá is 151.7 per km². From year to year, the population growth stayed in the range of 1.5% and 1.7% over the 2006–2010 period (1). There was also an aging trend: the under-15 group decreased from 32.0% of the population in 2000 to 29.2% in 2010, while the 65+ group grew from 6.0% to 7.4%. In 2010, 63.4% of the population was between 15 and 64 years old, that is, in the “productive population” age grouping (Figure 1).

Every year, the indigenous Ngäbe-Buglé migrate from the border province of Chiriquí, where they live, to work in the coffee harvest in Costa Rica’s Atlantic area for six months. Protecting this population with national health programs is a challenge and a necessity. Internal migration is predominantly rural-to-urban, and mostly involves people between 15 and 29 years old.

Panama owns the only canal connecting the Atlantic and Pacific Oceans. The canal is a major source of foreign exchange and is currently being expanded. Panama also has extensive port, commercial, and financial services, mostly in the Colón Free Zone (3). These services have an enormous impact on the economy, accounting for 8% of the gross domestic product (GDP). All of this assures the country’s continued economic growth. The distribution of wealth aside, Panama is, in absolute terms, classified as an upper-middle-income country (4).

HEALTH DETERMINANTS AND INEQUALITIES

The 2008 Standard of Living Survey (5) found that 32.7% of the population was poor. The 2003–2008

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1 Under Law 88 of 22 November 2010, the word “Kuna” was replaced by “Guna.”
The period saw reductions in both poverty overall (by 4.1 percentage points) and extreme poverty (by 2.2 percentage points) (Figure 2). Poverty affected 17.7% of the urban population, 50.7% of the rural population, and 96.3% of the indigenous population. Life expectancy at birth was 75.3 years in 2006 and 75.8 in 2009, and was higher for women (78.0 in 2006, 78.5 in 2009) than for men (72.8 in 2006, 73.2 in 2009). Life expectancy in the indigenous comarcas is between 7 and 9 years lower than in the rest of the country: 66.2 years in the comarca of Emberá in 2007 and 66.9 years in 2009, and 68 and 68.6, respectively, in those two years in the comarca of Ngābe-Buglé.

As to educational levels, illiteracy (6) declined from 7.6% in 2000 to 5.4% in 2010. However, more women were illiterate than were men (6.0% versus 4.9%). The provinces with the greatest percentage of illiterates were Darién (15.9%), Bocas del Toro (12.1%), and Veraguas (10.9%). The situation in the indigenous comarcas is much more serious, and with the illiteracy rate again being higher among women than men (2). The level of participation in economic activity is 66.6% for men, as opposed to 37.0% for women.

Social spending on health as a percentage of public spending in 2009 (32.0%) was 3.5 percentage points less than in 2005 (35.5%) (7). Although health has improved notably in recent decades, the national averages hide major inequalities in access to health services and in outcomes, with rural and indigenous populations at a disadvantage. This situation is not due to low health expenditures, but to inefficiencies in the distribution and use of resources.

Panama is a state party to various treaties, conventions, agreements, and binding protocols that specify measures that must be adopted to protect inhabitants’ right to enjoy the highest possible level of health, as well as other human rights. These instruments include the International Covenant on Civil and Political Rights; the International Covenant on Economic, Social and Cultural Rights; the Convention on the Rights of the Child; the Convention on the Elimination of All Forms of Discrimination against Women; the Convention on the Rights of Persons With Disabilities; the American Convention on Human Rights; the Additional Protocol to the American Convention on Human Rights in the Area of Economic, Social and Cultural Rights (Protocol of San Salvador); and the Inter-American Convention on the Prevention, Punishment and Eradication of Violence Against Women.

THE ENVIRONMENT AND HUMAN SECURITY

In 2005, water quality monitoring showed that 15% of Panama’s rivers were highly contaminated with biodegradable organic substances, but the figure in 2008 was only 0.4% (8). In the country overall, 91.8% of dwellings receive water safe for human consumption through water supply systems, and 94.5% have toilet facilities; however, low coverage persists among the indigenous population (9). Panama City alone generates between 900 and 1,200 tons of waste a day (10). In 2010, most of the country’s waste collection sites did not meet minimum requirements for landfills (8). Dry and degraded land covers 27% of the national territory, and is home to half a million people, the majority living in poverty or extreme poverty (11). These areas produce little, and the deforestation is striking. They spread across five provinces and one indigenous...

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2 Using the methodology of the World Bank’s Living Standards Measurement Study (LSMS).
Extending protection from 34.3% of the country’s total area in 2006 to 38.7% in 2009 (12) contributed to forest conservation (13). The number of automobiles has been increasing, and they are now responsible for 90% of the country’s air pollution (8). In 2009, public policies were implemented to prohibit the use of leaded fuels and to set emissions limits for all types of vehicles (14).

International trade in persistent organic pollutants, their disposal, and their transborder movement are regulated through ratification of the Rotterdam, Stockholm, and Basel conventions. Resolution 210 of 2009 (15) banned lindane (gamma benzene hexachloride). In 2008, at least three kilograms of agricultural chemicals per person were used in Panama—six times higher than the amount used in Central America. From 2006 to 2008, the volume of agricultural pesticides used increased from 5.6 to 7.2 million kilograms, mainly the most dangerous organophosphate insecticides (16).

According to the Office of Traffic Operations of the National Police, there were 249 traffic accident deaths in the 2005–2010 period (17). The leading causes of these deaths were speeding, failure to use a seat belt, use of alcoholic beverages, and cell phone use while driving. In 2007, 61,352 crimes were reported (17), and in 2008 there were 64,893, of which 54.4% were in the province of Panamá. In the 2007–2010 period, 1,393 rapes were recorded, with the risk growing by 12% annually (5). According to the Office of the People’s Advocate (18), domestic violence was the second-most-common crime reported, and there were 51 women murdered in 2007 and 72 in 2010. In all, 1,531 men and 306 women died in 2009 as a result of accidents, suicides, homicides, and other external causes. According to the Ministry of Health’s Statistical Bulletin 2009 (19), the homicide rate increased from 19.3 per 100,000 population in 2008 to 23.0 in 2009. Between 2007 and 2010 there were 892 emergency or disaster events (floods 57.8%, fires 15.4%, landslides 10.4%, collapsed buildings 9.7%, and strong winds 6.7%). These incidents directly affected 4.9% of the population. The national emergencies due to floods and landslides in December 2008 (20) and December 2010 (21) entailed deaths, losses of health services infrastructure, and, for the first time, a temporary closing of the Panama Canal (22). Panama has a national policy for comprehensive disaster management (23). In 2007, a National Climate Change Policy was approved (24).

**HEALTH CONDITIONS AND TRENDS**

**HEALTH PROBLEMS OF SPECIFIC POPULATION GROUPS**

**Maternal and Reproductive Health**

Malignant tumors of the breast increased from 109 per 100,000 population in 2002 to 169 per 100,000 in 2009 (2), while malignant cervical and uterine tumors declined from 127 per 100,000 population in 2002 to 112 per 100,000 in 2009 (2). In 2008, the Ministry of Health introduced human papillomavirus vaccine for adolescents 10 years of age, with coverage reaching 42% in 2009 and 67% in 2010.4

According to the 2009 National Sexual and Reproductive Health Survey (25), 48.8% of women who were legally married or in a consensual union were using some modern method of family planning, with feminine sterilization being the most common (16.8%). The corresponding figure for use of a modern method in the indigenous areas was 19.0%. Among all women of childbearing age in 2010, the prevalence of contraceptive use was 11.8%, according to data from the National Institute of Statistics and Census.

In 2009, the country’s overall birth rate was 19.8 per 1,000 population, but the figures were higher in the provinces of Bocas del Toro (31.5), Colón (21.8), and Darién (21.4), as well as in the comarcas of Guna Yala (27.6), Emberá (23.0), and Ngäbe-Buglé (33.4). The total fertility rate was 2.4 children per woman in 2006 and 2.3 in 2010. The localities with fertility rates above the national level included rural areas and indigenous communities.

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3 National Civil Protection System (SINAPROC), Disaster Inventory System (DesInventar), Geographic Information System.

4 Expanded Program on Immunization (EPI).
(for example, the rate for Bocas del Toro was 3.76, and the rate for Guna Yala 3.79) (2).

For the country overall in 2009, 95.7% of deliveries received institutional care, and the prevalence of births attended by a qualified professional was 96.0% (99.9% in the urban areas, 84.7% in the rural ones). In contrast, in the Ngäbe-Buglé comarca, 61.3% of deliveries received professional care. While the overall maternal mortality rate declined from 83.6 per 100,000 live births in 2006 to 24.9 per 100,000 in 2010, there were much higher rates in two indigenous areas: 90 per 100,000 live births in Ngäbe-Buglé and 246 per 100,000 in Guna Yala. Direct obstetric causes were responsible for 75% of the deaths (hypertensive disorders associated with pregnancy, hemorrhage, miscarriage, and infection) (9).

**Infants and Children (under 5 years old)**

Infant mortality declined from 14.8 per 1,000 live births in 2006 to 11.9 per 1,000 in 2010, but there were areas with infant mortality rates much above the national indicator, such as Bocas del Toro (26.6 per 1,000), Emberá (32.1 per 1,000) and Guna Yala (22.3 per 1,000). Mortality among children under 5 declined from 19.9 deaths per 1,000 live births in 2006 to 17.1 per 1,000 in 2009. In order for mortality among children under 5 to diminish to two-thirds of the 1990 level by 2015 (the Millennium Development Goals call for 8.1 deaths per 1,000 live births at that time), the rate of decline would have to be 1.5 points per year from 2009 to 2015 (26).

**Adolescents (15 to 19 years old)**

Adolescent health problems are associated with risky behavior patterns. For example, 19.8% of women between the ages of 15 and 19 are mothers or are pregnant, with the percentage being even higher in rural and indigenous areas. Violence is also among the primary causes of morbidity in this age group. Of all the homicides in the country, 15.1% of them occurred among individuals aged 10 to 19, and they were often associated with disputes between gangs (27). The following sexually-transmitted diseases appeared among persons 15 to 19 years old: vulvovaginitis and acute vaginitis, human papillomavirus, inflammatory pelvic disease, gonorrhea (with a male/female ratio of 5:1), syphilis (male/female ratio of 0.7:1), and genital herpes (male/female ratio of 0.2:1) (28).

**The Elderly (60 years and older)**

Demographic projections indicate that the 65+ age group will increase in size in the next 50 years, coming to represent 17% of the population and requiring more social assistance and health care. Panama has the highest aging rate in Central America, at 25.9% (29). In 2010, life expectancy at birth was 60.0 years in the indigenous areas, and 75.9 years in the rest of the population (78.6 years for women, 73.4 years for men).

**Ethnic or Racial Groups**

As a proportion of the entire population, indigenous inhabitants increased from 10.7% in 2005 to 12.0% in 2010. The health and social situation in the indigenous comarcas differs greatly from that of the rest of the provinces. In the 2006–2010 period, life expectancy in each of the three indigenous comarcas was less than the national average. Data for 2007–2009 showed that the infant mortality rate in each of the three indigenous comarcas was higher than the national rate, and with it on the increase in two of the three.

In the Ngäbe-Buglé society, women are more marginalized and poorer than the rest of the population, and are particularly vulnerable since they find themselves in a secondary role. Their marital life begins practically at menarche; they have many children (the man decides how many); their access to sexual and reproductive health services is limited (by dissatisfaction with non-indigenous health care providers, and for cultural reasons); and their maternal mortality rates are high (2).

**Other Groups**

**Persons with Disabilities**

The national prevalence of disability is 11.3% (30), and ranges from 2.7% in Emberá to 15.6% in
Veraguas. The provinces and comarcas with a prevalence level above the national average also include Guna Yala, Herrera, Darién, Coclé, Ngäbe-Buglé, Chiriquí, and Los Santos. The national prevalence is higher among women (12.4%) than men (10.4%) and increases with age: 6% in the under-20 group, 7% in the 20–39 bracket, 20% in the 40–64 population, and 42% in those over 65.

MORTALITY

The overall mortality rate changed only slightly between 2006 (4.4 deaths per 1,000 population) and 2009 (4.5 per 1,000) (Table 1). It was higher among men (5.3 per 1,000) than women (3.7 per 1,000) (31). Table 2 shows the 10 leading causes of mortality in 2010 for men and women. The leading causes vary among the provinces. Diseases of the circulatory system and malignant neoplasms are the leading causes in Chiriquí, Coclé, Herrera, Los Santos, Panamá, and Veraguas, while infectious and parasitic diseases lead the list in Bocas del Toro, Guna Yala, and Ngäbe-Buglé. Infant mortality declined from 14.8 per 1,000 live births in 2006 to 12.2 per 1,000 in 2009 and 11.9 per 1,000 in 2010. However, when the data are disaggregated by province and type of area, the infant mortality indicator reveals major inequalities. Rural infant mortality in 2009 was 15.8 per 1,000 live births (408 deaths), while the urban rate for the same year was 10.1 per 1,000 live births (429 deaths).

General underreporting of mortality in 2007 and 2009 was estimated to be 13.4% and 12.7%, respectively, but the contrasts among the provinces were enormous, with the values ranging from 3.5% in Panamá to 64.9% in Emberá in 2007, and from 0.7% to 78.0% in the same two places in 2009. Between 2007 and 2009, deaths due to ill-defined causes represented between 3.1% and 3.6% of deaths for the nation overall, but ranged from 0.4% in the province of Colón to 26.3% in the comarca of Guna Yala in 2007, and from 1.1% in Panama City to 37.4% in Guna Yala in 2009.

MORBIDITY

Communicable Diseases

Vector-borne Diseases

Morbidity due to malaria dropped from 50.6 per 100,000 population in 2006 to 11.9 in 2010 (32). There was a similar trend in the annual parasite index (API), which declined from 0.5 in 2006 to 0.1 in 2010, as well as in mortality (three deaths between 2006 and 2008). Two of the country’s health regions, Darién and Panamá Este in indigenous comarcas, accounted for 70% of the cases, which were predominantly due to Plasmodium vivax.

5 Ministry of Health, Department of Vector Control.
From 2006 to 2010, 18,987 cases of dengue were reported, with a case fatality rate of 10.6%. The year of this period with the greatest incidence was 2009, with 7,469 cases (131.0 per 100,000 population). In 2006, there were 4,326 cases (75.89 per 100,000 population). Dengue serotypes 1, 2, and 3 were in circulation.

Vaccine-preventable Diseases

In December 2007, the Vaccination Law was passed. Between 2007 and 2010, vaccination coverage in children under 1 year of age increased from 88.0% to 93.6% for the pentavalent vaccine (DPT-Hib-HepB), from 88% to 95% for the polio vaccine, and from 66% to 88% for the rotavirus vaccine. BCG coverage held at 100%, and coverage of the conjugate pneumococcal vaccine introduced in 2010 reached 47.5%. In children 1 year old, coverage of measles-mumps-rubella vaccination increased from 84% to 100%. Protection has been broadened by introducing new vaccines in the immunization series, such as the hepatitis A vaccine, the tetanus-diphtheria-pertussis (TDP) vaccine, the human papillomavirus vaccine, and the polysaccharide pneumococcal vaccine. In addition, coverage has been increased by conducting an intensive search at the municipal level for dropouts and nonattenders, and by providing vaccination opportunities that target the most vulnerable population.

Indigenous cases of measles have not occurred since 1995, while indigenous cases of congenital rubella syndrome have not been seen since 2000, and indigenous cases of rubella have been absent since 2002. Neonatal tetanus and yellow fever have also not been reported.

Zoonoses

In the 2006–2010 period, no cases of human or canine rabies were reported. In cattle, rabies transmitted by vampire bats is endemic in the health regions of Panamá Este, Darién, and Colón. During the 2006–2010 period, the annual average rate of food-related infections was 43.3 per 100,000 population. Of the cases reported, 7% involved salmonellosis and 4% shigellosis, while the etiology of the remaining 89% of cases is unknown. Cases of

### TABLE 2. Ten leading groups of causes of mortality, Panama, 2010.

<table>
<thead>
<tr>
<th>Grouped causes</th>
<th>Total</th>
<th>Men</th>
<th>Women</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Rate(^a)</td>
<td>Number</td>
</tr>
<tr>
<td>Diseases of the circulatory system</td>
<td>4,607</td>
<td>1.4</td>
<td>2,553</td>
</tr>
<tr>
<td>Tumors (neoplasms)</td>
<td>2,525</td>
<td>0.7</td>
<td>1,364</td>
</tr>
<tr>
<td>External causes</td>
<td>1,959</td>
<td>0.6</td>
<td>1,670</td>
</tr>
<tr>
<td>Diseases of the respiratory system</td>
<td>1,855</td>
<td>0.5</td>
<td>1,008</td>
</tr>
<tr>
<td>Certain infectious and parasitic diseases</td>
<td>1,281</td>
<td>0.4</td>
<td>836</td>
</tr>
<tr>
<td>Endocrine, nutritional, and metabolic disorders</td>
<td>1,092</td>
<td>0.3</td>
<td>496</td>
</tr>
<tr>
<td>Diseases of the digestive system</td>
<td>705</td>
<td>0.2</td>
<td>404</td>
</tr>
<tr>
<td>Diseases of the genitourinary system</td>
<td>570</td>
<td>0.2</td>
<td>373</td>
</tr>
<tr>
<td>Diseases of the nervous system</td>
<td>462</td>
<td>0.1</td>
<td>238</td>
</tr>
<tr>
<td>Certain disorders originating in the perinatal period</td>
<td>285</td>
<td>0.1</td>
<td>162</td>
</tr>
<tr>
<td>Remaining causes</td>
<td>1,201</td>
<td>0.4</td>
<td>636</td>
</tr>
<tr>
<td>Total</td>
<td>16,542</td>
<td>4.9</td>
<td>9,740</td>
</tr>
</tbody>
</table>

Source: Reference (2).

\(^a\) Rate per 1,000 population.

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\(^6\) Database of the National Department of Epidemiology, Surveillance Statistics Division.

\(^7\) Idem.
leptospirosis numbered 79 in the 2006–2010 period. The majority of the serious cases were diagnosed in hospitals, since this disease is little recognized by primary care services. Despite the underreporting, cases have been reported in all the country’s health regions, though most frequently in the Metropolitan Panama City, San Miguelito, and Colón regions.

Between May and July 2010, there was an outbreak of equine encephalitis on the border between Darién and Panamá, affecting people and horses. Suspected human cases numbered 179, 7 of which were confirmed in the laboratory. They included four cases of eastern equine encephalitis, two cases of combined Venezuelan equine encephalitis and eastern equine encephalitis, and one case of Venezuelan equine encephalitis. All the hospitalized cases involved children under 15 years old.

Neglected Diseases and Other Infections Related to Poverty

Four cases of leprosy were reported in 2006, and four more in 2008. Of these cases, 60% were lepromatous leprosy and 20% tuberculoid leprosy. Cutaneous leishmaniasis is endemic in the health regions of Bocas del Toro, Coclé, Colón, and Panamá Oeste, which account for 73% of the 13,169 cases reported between 2006 and 2010. From 2006 to 2009, incidence declined markedly (from 114.9 per 100,000 in 2006 to 54.1 per 100,000 in 2009). In 2010, the incidence was 98.06 per 100,000 population. The incidence of Chagas’ disease was 0.9 per 100,000 in 2006 and 1.4 per 100,000 in 2009. The health regions at greatest risk are Metropolitan Panama City, Panamá Oeste, and Panamá Este.

HIV/AIDS and Other Sexually-transmitted Infections

Between 2005 and 2010, 4,985 cases of AIDS were reported, along with 4,379 cases of HIV infection (32, 33), with a national HIV/AIDS prevalence of 0.9% in the 15–49 age bracket. In 2010, the male/female AIDS ratio was 3:1, while the male/female ratio for HIV was 1.8:1 (34). In 2009, the national prevalence of HIV/AIDS in pregnant women was 0.3% (32). Coverage of antiretroviral therapy for people with advanced infection was 56% (28). The coverage of testing of pregnant women increased from 8.0% in 2003 to 74.9% in 2009 (35).

In 2010, if only the 11 confirmed cases of syphilis in newborns are considered, the rate of national congenital syphilis was 0.16 per 1,000 live births. Suspected cases totaled 39 (36).

Tuberculosis

The incidence of tuberculosis fell from 52.7 per 100,000 population in 2006 to 40.5 per 100,000 in 2010 (37). The Ngäbe-Buglé and Guna Yala comarcas and the Bocas del Toro region presented the greatest incidence. This disease affects all age groups, and incidence is higher in men. More than 90% of health facilities employ the directly observed treatment, short-course strategy. The success rate for treatment remained at 79%, with the dropout rate above 10% (higher in the indigenous comarcas). The index of HIV positivity was 14.9% in new tuberculosis cases, and 12.3% of these cases had positive sputum-smear microscopy.

Emerging Diseases

Illnesses due to hantavirus have been reported in the central provinces of the country: Los Santos, Coclé, and Veraguas. Between 1999 and 2009, 135 cases of hantavirus pulmonary syndrome were registered, with a cumulative incidence rate of 4.3 cases per 100,000 population and a case-fatality rate of 18.5%. Men have been the most affected, representing 60.2% of the cases (14). As to influenza, the first case of influenza A(H1N1), with pandemic potential, was confirmed in May 2009. During the pandemic, 2,268 suspected cases were reported, and 812 (36%) were confirmed, with an incidence of 23.5 per 100,000 population and with 12 deaths (0.3 per

8 Database of the National Department of Epidemiology, Surveillance Statistics Division.
9 Idem.

100,000 population) (34). Cases of cholera have not been reported since 1997.

**Chronic, Noncommunicable Diseases**

**Cardiovascular Diseases**

Diseases of the circulatory system are the leading cause of death in most of the provinces. In 2007, mortality from diseases of the circulatory system was 4,172 per 100,000 population, and the 2009 figure was 4,551 per 100,000.

**Malignant Neoplasms**

The rate of death from malignant neoplasms varied little: it was 2,464 per 100,000 population in 2007 and 2,433 per 100,000 in 2009. The principal sites were prostate; stomach; trachea, bronchia, and lungs; colon, rectum, and anus; and breast (38).

**Diabetes Mellitus**

The incidence of diabetes mellitus was 180.3 per 100,000 population in 2006 and 157.5 per 100,000 in 2009 (39). From 2006 to 2008, total deaths were above 800, and the 2009 figure was 744. In 2010, mortality was reported at 19.3 per 100,000 population. Of the main causes of mortality in Panama, diabetes mellitus is the only one that affects more women than men.

**Nutritional Diseases**

Malnutrition levels have diminished overall (40), but in the indigenous areas, with extreme poverty, they are increasing. In those indigenous areas, weight-for-age deficiency affects 12.4% of children under 5, and weight-for-height 62.0% of them; these percentages are triple the national levels. Growth in this age group is inadequate, but the problem is even worse in those 12 to 24 months old. Under WHO measurement standards, 5-year-old indigenous children are 9.2 cm shorter than their urban peers and 6.9 cm shorter than their rural counterparts.

Important progress was made in the vitamin A supplement program (41) in the indigenous areas, where the problem of micronutrient deficiency is concentrated. In 2010, the salt iodization program (42) found that 0.5% of schoolchildren had a urinary iodine level below 50 μg/L, and that 1.7% of salt samples had less than 20 mg of iodine per kg (42).

Under WHO criteria, child obesity declined from 11.8% in 2003 to 9.8% in 2008. However, 33.1% of preschool children were found to have overweight risk factors (40).

**Mental Disorders**

In the 2007 National Survey of Health and Quality of Life, 5.3% of the respondents had had a diagnosis of depression, placing it among the country’s 10 principal chronic diseases. In 2010, the Ministry of Health reported that 39,943 outpatient visits at its facilities were for depression, and that 54.3% of these were by women. The National Mental Health Institute, formerly the National Psychiatric Hospital, reduced its number of beds from 200 in 2006 to 165 in 2010. The three leading diagnoses at discharge in 2010 were bipolar disorder, substance use disorder, and schizophrenia. In 2007, the suicide rate was 5.09 per 100,000 population. In 2006, an evaluation of mental health care in Panama was conducted (43).

**Risk and Protection Factors**

In 2008, with the approval of Law 13, measures to control tobacco and its harmful effects on health were introduced (44). According to the 2010 National Survey on Health and Quality of Life, 22.8% of interviewees smoked, 70.5% of whom were men. In 2010, three clinics began stop-smoking programs. As regards drug consumption, 97.1% of the survey’s respondents denied ever having consumed any other type of substance. However, disorders due to use of psychoactive substances ranked second among discharge diagnoses at the National Mental Health Institute in 2006 as well as in 2010. Per capita consumption of alcohol by persons over 15 years of age was 6.9 liters of pure alcohol per year in the same period.
HEALTH POLICIES, THE HEALTH SYSTEM, AND SOCIAL PROTECTION

The Health System’s Stewardship Role

The Ministry of Health is responsible for making and implementing the Government’s health policy, according to Cabinet Decree No. 1 of January 1969 and the Organic Health Statute.

The regulation, management, and performance of essential public health functions are exclusive responsibilities of the Ministry of Health, but harmonizing the provision of health services, dealing with the financing of the system, and conducting insurance oversight are responsibilities that it shares with the Social Security Fund (CSS) and the Ministry of Economy and Finance. It also shares some management functions with other institutions: the Instituto Conmemorativo Gorgas de Estudios de la Salud (Gorgas Commemorative Institute for Health Studies), the Technical Health Council (which is responsible for licensing medical practice), and the National Environmental Authority (responsible for environmental regulation).

The Health System’s Performance

Panama has a classic social security system. It is administered by the CSS, and is based on two legal frameworks: the National Constitution, article 109 of which firmly establishes the citizens’ right to social security, and the Organic Law of the CSS, which seeks to ensure the financial sustainability of insurance for disability, old age, and death, and which mandates the CSS to provide preventive services and to coordinate activities and services with the Ministry of Health. The programs of the CSS are oriented to providing protection when illness hits. According to the CSS Department of Planning, 2,651,510 beneficiaries, or 75.6% of the population, were registered with the CSS in 2010.

Health Expenditures and Financing

A substantial, and rising, percentage of Panama’s GDP is spent on health: 8.4% in 2006, 8.6% in 2008, and 10.5% in 2010. Although out-of-pocket expenditure declined between 2006 and 2010, it continues to be high, at 30.7% in 2010. From 2006 to 2009, public expenditure on health remained stable at 5%, or 14% of total public spending. In 2010, 77.8% of the public spending on health went toward social security. The State’s per capita investment in health was US$ 962 (45).

The Ministry of Health has a Free Services Law, which is designed to provide maternal and child care. However, some of the specialized services designed for this population group are charged for, increasing out-of-pocket expenditure and limiting access for the poorest. The level-three hospitals and the specialized national institutes are organized as “patronatos,” with governing boards headed by the Ministry of Health. In this model, public funding is complemented by cost-recovery or copayments. These two payments represent no more than 1% of the actual cost of the services provided, and no more than 5% of the available resources. This mechanism is neither streamlined nor very efficient, since the public network cannot identify members to the CSS, and the recovery process is very slow. However, this process does provide for resources that are administered directly by the region or by the patronatos.

The Health Services

The health system has a public and a private sector. The public sector includes the Ministry of Health and the CSS, and covers 90% of the population. The CSS is the largest provider of health services. The system is organized into 14 health regions (including two recently created ones, the Arraiján and Northern Panama health regions). The network consists of 909 facilities of varying complexity (2) and is characterized by an inequitable distribution of facilities and human resources, which are concentrated in the major urban centers, and by a segmented service portfolio. The different
components of the system generate cross-subsidies and overlapping offerings, competing with each other and suffering from the lack of a clear separation of functions. The result is inequity, weak leadership, and higher costs.

In the indigenous comarcas, the only provider is the Ministry of Health, which offers outpatient services and has a basic package of services that provides an incipient degree of cultural adaptation. The indigenous population and those living in remote areas lack access to services due to economic and geographical barriers, but above all due to lack of infrastructure and available technical personnel.

The fragmentation of the system is also evident in the fact that the national referral hospitals funded by the State are legally autonomous and are based on private management models (patronatos), which limits and weakens leadership.

In 2010, the Ministry of Health developed the country’s model for individual, family, community, and environmental primary care (46), which reflects the Strategic Plan of Government and Executive Decree 531 of July 2009. Decree 531 seeks to create innovative primary health care facilities within the framework of the revised and renewed primary health care strategy. Under this mandate, the Ministry launched the construction and equipping of seven hospitals and 35 fairly complete primary care facilities.

More efforts are needed for quality control in care. The Ministry and CSS make agreements with other countries for hiring foreign physicians, and with the universities for the rapid training of technical staff, professional personnel, and specialists.

**Drugs and Other Health Products**

The country has a national drug policy designed to ensure access to quality drugs under criteria of bioequivalence and interchangeability, as a cost-reducing mechanism (47). Within this framework, a Sectoral National Drug Surveillance Commission was formed (48).

**KNOWLEDGE, TECHNOLOGY, INFORMATION, AND HUMAN RESOURCE MANAGEMENT**

**Scientific Production in Health**

Scientific and technical research is directed by the National Research System (49), which is responsible for promoting research through actions that increase the number and quality of researchers working in areas of scientific and technological development, as well as the number of public and private research establishments. The National Research System includes the National Secretariat of Science, Technology, and Innovation; the National Authority for Governmental Innovation; and the Instituto Conmemorativo Gorgas de Estudios de la Salud (Gorgas Commemorative Institute for Health Studies).

According to the National Strategic Plan for Science, Technology, and Innovation 2010–2014 (50), Panama has very substantial weaknesses in terms of the availability of highly skilled human resources, as well as in infrastructure for scientific and technological activities and for innovation. The country invests 0.26% of GDP in research, development, and innovation, and has only 476 full-time researchers. These are low numbers, even for Latin America, where average investment in research, development, and innovation is 0.7% of GDP, and the average number of researchers is 1.0 per 1,000 members of the economically active population.

**Information Management**

The country has progressively incorporated health care information management tools. A system of technical information on human health products is in place and can be consulted. There are also systems for the management of humanitarian supplies, for audits of files, for registering suppliers and making their catalogues available, for health records, and for personnel registries (making it possible to have the CVs of physicians and technical personnel online).
Technology

The Ministry of Health has implemented a Virtual Hospital, which provides teleradiology services that allow several hospitals to keep interconnected via the Web for consultation and diagnostic imaging.

Human Resources

According to the National Institute of Statistics and Census, the country’s health care facilities had 4,404 physicians (one per 742 inhabitants) in 2006, and 4,904 (one per 704 inhabitants) in 2009. In 2006, there was one nurse per 869 inhabitants; as of 2009, this had risen to one per 780. Physicians are concentrated in Panama City, where there are 2,561. Thus, slightly over half of all the country’s physicians serve one third of its population. In 2008, Panama City had 32.3 physicians per 10,000 population, while the province of Darién had only 5.7 per 10,000 population.

Despite high levels of attendance in primary and secondary schools, deficiencies persist elsewhere in the educational system. The public and private universities have ample undergraduate offerings, but graduate and doctoral programs are at an incipient stage. There is a notable lack of the infrastructure (equipment, laboratories, access to specialized literature) needed for research and development.

Health and International Cooperation

Panama is a member of the Central American Integration System (SICA) and participates in various coordinating entities that deal with health: the Meeting of the Health Sector of Central America and the Dominican Republic, the Council of Ministers of Health of Central America, the Council of Ministers for Women of Central America, the Central American Council of Social Security Institutions, and the Dominican Republic and Central American Forum for Drinking Water and Sanitation.

Through the PAHO/WHO strategy of technical cooperation between countries, 10 joint projects involving Central American and Caribbean countries have been carried out in Panama, in areas that include mental health, rehabilitation, urban violence, and issues related to the International Health Regulations. In addition, 31 health sector projects, with a value of some US$ 12 million, have been performed in collaboration with the Inter-American Development Bank, the United Nations Children’s Fund, the MDG Achievement Fund, the International Atomic Energy Agency, the United Nations Environment Program, the Japanese International Cooperation Agency, the World Bank, the United Nations Development Program and PAHO/WHO, as well as Mexico and Argentina’s South-South and Triangular Cooperation Fund (51). Work is also under way on a cleanup project in the Bay of Panama that is estimated to cost US$ 321 million (52).

Synthesis and Prospects

Panama is classified as an upper-middle-income country. Slightly over half of its population is concentrated in the two largest cities, and its population structure has begun to resemble that of the developed countries, with a larger proportion of adults and elderly, and a smaller young population. As to mortality patterns, chronic diseases predominate, except in the indigenous comarcas of Guna Yala and Ngäbe-Buglé, where infectious and parasitic diseases continue to be the leading causes of death.

The country spends a substantial and rising percentage of its GDP on health. However, out-of-pocket expenditure continues to be a hefty proportion of total health care spending (30.7% in 2010), and social spending on health as a percentage of all public social spending has declined in comparison with 2005. The public health sector serves 90% of the population, but the concentration of facilities, services, and human resources in the urban areas makes their distribution inequitable, and indigenous groups and remote populations have limited access to health care. Economic factors and lack of infrastructure and trained human resources also adversely
affect the health of the most disadvantaged population. Thus, overall mortality and morbidity rates are higher in the indigenous population, and maternal, perinatal, and infant mortality rates in this population are the highest in the country. In the Ngäbe-Buglé comarca, infant mortality is two times higher than the national rate, and maternal mortality is much higher than the national average, realities that present a great challenge for achieving the Millennium Development Goals.

In the future, if the Strategic Plan of Government 2010–2014 were fully realized, a major step toward reducing health inequalities in Panama could be taken. The Strategic Plan has two key priorities: formation of human capital for development, and social inclusion. The social inclusion component encompasses reducing malnutrition, expanding drinking water supply systems, increasing the coverage and quality of basic health services, ensuring access to decent housing, establishing a safe and efficient public transportation system in Panama City, instituting preventive measures for citizen safety, and strengthening the social protection system.

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