El Salvador

INTRODUCTION

El Salvador is located in Central America and has a land area of 21,040 km$^2$. In 2011 the population amounted to 6,216,143 inhabitants (53% women and 47% men). The country is divided into 14 departments and 262 municipalities. Of the total population, 27.3% is in the department containing the capital, San Salvador. El Salvador is the most densely populated country of Central America, with 295 inhabitants per km$^2$, and the population is largely urban (62.7%) (1). The average number of years of schooling is six, and the illiteracy rate for people age 10 and over is 14% (2). The population under age 15 represents 33.9% of the total; those older than 65 make up 6.8%. Over the last decade, there has been a reduction of almost 5% in the number of children under 15 (Figure 1) (1).

El Salvador is in the stage of full demographic transition, as is shown by the dramatic decline of...
the natural population growth rate (that is, the difference between the birth rate and the total death rate), which went from 31.5 per 1,000 population in 1960–1965 to 13.6 per 1,000 population in 2005–2010. An even greater decline was observed in the total growth rate (natural growth rate plus migration), which went from 31.3 per 1,000 population to 4.4 per 1,000 population between those two periods. These changes were the result of both the decline in the natural growth rate and the high rate of international emigration that the country has experienced. The difference between the natural and total growth rates in 1960–1965 was less than 1.0 per 1,000, while for the 2005–2010 period, the difference was 9.1 per 1,000. This population dynamic has had a great impact not only on the sex ratio (which went from 98.4 men per every 100 women in 1971 to 89.9 in 2007), but also on the society and economy, since most emigrants are males of reproductive age (3).

Salvadorian society is experiencing a process of political transition towards democratization that began with the signing of the peace agreements in 1992. However, the country still faces several challenges, including marked social and economic inequality, political polarization, and high levels of violence and lack of security, which are all aggravated by the current economic crisis. From 1960 to 2009, the average annual growth in the country’s per capita gross domestic product (GDP) was only 1.1%, while rates of unemployment and underemployment have remained stagnant at some 50% for the last 50 years. Between 1997 and 2008, the pattern of exports showed notable diversification: conventional products (coffee, cotton, and tobacco) declined from 25% to 7% of total exports, while nontraditional products, such as vegetables, fruits, legumes, and milk, rose from 32% to 50%. Maquila (export) manufacturing declined from 60% in 2003 to 42% in 2008 (4). Before the economic crisis, family remittances represented 18% of GDP. But their share dropped to 9.9% in 2009, after showing sustained growth for 30 years, a reduction in US$ 323 million in absolute terms (3). This set the context for the new government that took office in 2009, which formulated a new health policy through the Ministry of Public Health, promoting major reform in the sector beginning in 2010 (5).
HEALTH DETERMINANTS AND INEQUALITIES

El Salvador has a human development index (HDI) of 0.659, placing the country in the “medium human development” category. However, the nation has substantial inequalities, with the richest 20% of the population receiving 52% of the total income (2). Between 1961 and 2009, the country registered the lowest agricultural production growth in Central America, with an annual average of 1.6%. As a proportion of GDP, agricultural production dropped from 17% in 1990 to 13% in 2009 (6).

In 2007, total spending on education was estimated at 6.7% of GDP; 50.9% came from household and private expenditures, 46.5% from public spending, and the remaining 2.6% from international donations. The Ministry of Education estimates that a 5% increase in public spending is needed to achieve the goals of the National Education Plan. In 2009, the average level of education was 7.2 years of schooling in urban areas and 4.1 years in rural areas, while the illiteracy rate was 22.7% in rural areas and 9.2% in urban areas. The illiteracy rate was 16% for women and 11.6% for men. The departments of Cabañas, La Unión, Morazán, and Usulután had illiteracy rates over 20%, a striking contrast with San Salvador, where the rate was only 6.7%. Young people (17 to 18 years old) in the poorer quintiles have difficulty in completing the third cycle of studies, a problem that is even worse for those somewhat older (23 to 24 years old) (2, 6, 7, 8). As a result, the poorest young people have fewer possibilities to access higher education, and thus lower incomes. A person with less than four years of schooling has an average monthly income of US$ 184, in comparison with US$ 631 for someone with 12 or more years of schooling (2). In 2009, the Educational Social Plan 2009–2014 was launched, which gives priority to girls and boys who have not managed to enter the educational system because of their socioeconomic status.

According to the 2010 Multipurpose Household Survey, the workforce participation rate was 81% for men and 47% for women, while the national unemployment rate was 7.1% overall (8.4% for men and 5.1% for women). Thirty-five percent of households are economically and socially sustained exclusively by women. Women make up 40.6% of the owners of dwellings and only 18.3% of owners of land for agricultural production (6, 8), figures that reveal unequal rights in access to land and natural resources.

El Salvador is very vulnerable to disasters and the effects of climate change, which endanger the food security of the population. In the 2005–2007 period, 9% of the population had some level of malnutrition attributed to a food deficit. According to the 2008 National Family Health Survey (9), the level of chronic malnutrition or growth retardation in children from 3 to 5 years old was 19% (13.5% in urban areas and 24.2% in rural areas). In addition, 31.4% of children in households in the lowest income quintile showed chronic malnutrition, in comparison with 5% of those in households in the highest quintile. Thirty-seven percent of the children of women without formal education and 27% of those of mothers with less than three years of schooling showed chronic malnutrition. These children were largely concentrated in the departments of Sonsonate (27%), Chalatenango (26%), and Morazán (25%).

Indigenous groups make up between 3% and 10% of the total population. They live in rural and marginal areas, especially in the departments of Ahuachapán, La Libertad, La Paz, Morazán, San Salvador, and Sonsonate. They have an agricultural economy of subsistence and personal consumption that is based on corn, beans, and vegetables grown on rented lands; they also devote themselves to producing handicrafts (10). The diet of the indigenous groups is characterized by the consumption of corn tortillas and beans; some rice and wild leaves and greens; and very little milk and meat. Moreover, because of gender roles, women give most of the food to their partners and children. These indigenous groups do not have access to land nor to education adapted to their needs. They also lack basic water and sanitation services (37% practice open defecation). Further, 38% of indigenous families live in extreme poverty (6, 8, 10).
THE ENVIRONMENT AND HUMAN SECURITY

According to the 2010 Multipurpose Household Survey, among the homes in the country with access to basic services, 92% of them have electric power (97% in the urban areas and 82% in the rural areas) (8). The Government plans to continue to increase access to services for the poorest households, subsidizing the cost through the “Solidarity Network” social program (4). Overall, 83% of households have access to piped water (93% in urban areas and 64% in rural areas). In the urban areas, 75% of households have waste collection services, in contrast with only 7% of rural households. There is a large deficit in access to sanitary infrastructure (excreta and wastewater disposal). According to the National Administration of Water Supply and Sewerage Systems, only 81 of the 262 municipalities have adequate sewerage services. Forty-three percent of urban dwellings and 98% of rural dwellings are not connected to the sewerage system. In addition, it is reported that 14% of the rural population do not have any sanitary service at all (1, 3).

Violence in all forms continues to be one of the principal problems affecting El Salvador, a country that, for the region, has very high levels of crime and fear. The 2007 census projected that the homicide rate for 2008 would be 54 per 100,000. This figure is much higher than the 2003 average for Latin America (25.1) and for the world (8.8), according to the World Health Organization (4). In 2006, reported homicides averaged 10.8 a day in El Salvador. After a decline in the 2007–2008 period, in 2009 the rate increased again, to 12 homicides per day. According to the National Civil Police, the departments with the highest homicide indices are La Libertad, Santa Ana, San Miguel, San Salvador, and Sonsonate (11). The distribution by age and sex showed that, in 2008, men from 15 to 38 years old had a rate of 224 homicides per 100,000. Between 2001 and 2009, homicide rates for women went from 6.5 per 100,000 to 17.5 per 100,000, while for men the rates went from 68.9 per 100,000 to 130.8 per 100,000 (3). Although the relative increase over that time period was greater among women, the absolute frequency of homicides among men in 2009 was still more than seven times as high as that for women.

In 2009, 95.4% of the Salvadorian population lived in areas at risk from natural disasters and other hazards (12). This situation is the result of vulnerability associated with disorderly growth of urbanization and with deforestation in recent years (12), added to the combination of preexisting risks such as earthquakes, storms, hurricanes, landslides, and floods. Between 1980 and 2008 the country registered an average of 1.5 disaster events per year. Over that same period, according to a 2009 report from the Economic Commission for Latin America and the Caribbean (ECLAC), the country’s economic losses from disasters had totaled US$ 16 billion (an annual average of US$ 470 million), or 4.2% of GDP. These disasters took approximately 7,000 lives and affected almost 3 million inhabitants, especially those in the most vulnerable sectors of the population (3).

HEALTH CONDITIONS AND TRENDS

HEALTH PROBLEMS OF SPECIFIC POPULATION GROUPS

Maternal and Reproductive Health

The maternal mortality rate changed little between 2007 and 2010, with 53.5 and 55.8 maternal deaths per 100,000 live births, respectively; 61% corresponded to maternal deaths from direct causes (postpartum hemorrhage, hypertensive disease during pregnancy, and sepsis), and 24% occurred among adolescents (13). In 2010, 94% of pregnant women received at least one prenatal checkup, and 78% had four checkups during the pregnancy. Also in 2010, 90% delivered in the hospital, but only 59% received postnatal checkups. Of all childbirths, 25% ended with a cesarean section, and 7.7% of pregnancies ended with an abortion (14). In 2008, the contraception usage rate was 73%; the most frequently used methods were female sterilization (32%), injectable contraceptives (22%), natural methods (7%), and oral contraceptives and condoms (5%) (9).
Children (under 5 years old)

In 2008, mortality in children under 5 years old was 19 per 1,000 live births. Infant mortality declined to 16 per 1,000 live births, perinatal mortality was 19 per 1,000 live births (with 86% occurring in the early neonatal period), and neonatal mortality dropped to 9 per 1,000 live births (9). Neonatal mortality accounted for 56% of infant mortality; 55% of neonates who died were premature. According to the 2008 National Family Health Survey, 97% of children were breastfed, with an average duration of 20.6 months; 31.4% of children from 0 to 5 months received exclusive breastfeeding. Of children under 5, 97% had growth and development check-ups. The principal diseases reported in children under 5, for the last two weeks preceding the interview, were diarrheal diseases (14%), with higher prevalence in rural areas (16%) than in urban areas (12%); 22% of the cases of diarrhea were reported in children older than 1 and only 57.6% of cases had oral rehydration salts administered. The prevalence of respiratory infections was 28% (86% in children under 1) (9).

Schoolchildren (6–9 years old)

According to the III National Census of Height and Weight of Schoolchildren, in 2007, the prevalence of chronic malnutrition was 15.5% in children in the first grade of primary education (6 to 9 years old). That was four percentage points below the prevalence of 19.5% reported in the II Census of Height and Weight, in 2000. Analysis by geographical location showed a marked difference between rural areas (19.2%) and urban areas (10.6%) (15).

Adolescents (10–19 years old)

In 2010, according to reports from the Ministry of Public Health, communicable diseases, predominantly upper respiratory and urinary infections, were among the 10 leading causes of morbidity among adolescents. Chronic diseases, such as hypertension and diabetes mellitus, were also reported (14, 16). Twenty-four percent of pregnancies occurred in women from 15 to 19 years old. The specific fertility rate of women from 15 to 19 years old was 89 per 1,000. Seven of 10 adolescents with sexual experience had a pregnancy, and 8.9% of this group had had a previous pregnancy (14).

Adults (20–59 years old)

In 2008, male mortality was higher among both young people and adults (55.6%), largely due to violent injuries (32.9%) and chronic, noncommunicable diseases. Motor vehicle accidents (33.9 per 100,000) affected men more (80% of the accidents in 2008) and were usually associated with alcohol consumption (17).

The Elderly (60 years old and older)

In 2008, 77% of the mortality was in older adults, as compared to 54.7% in 2005. Among women, the majority of deaths (56.4%) occurred at age 60 or older (18). The main causes of mortality registered in hospitals in 2010 were: cerebrovascular disease, ischemic heart disease, pneumonia, chronic renal disease, cardiac failure, and diabetes mellitus type 2 (16). The causes of mortality in men and women were similar.

Other Groups

Persons with Disabilities

Among the Salvadorian population, 6.2% have some type of disability (1). In 2009, the National Personal Registry reported that 4% of people over 18 years old had some type of disability. Of these, 41% were over 65 years of age, mainly men (the male/female ratio was 3:2); 66.3% of these people lived in rural areas.

Mortality

In 2008, there were 31,594 deaths reported (17), which was little changed from the two previous years. Using the estimated population for 2008 as a basis gives a crude death rate of 515.8 per 100,000.
Mortality for men is noticeably greater than for women (men, 629 per 100,000; women, 413 per 100,000). This difference is due to the fact that three of the leading causes of death—violence, road accidents, and chronic renal disease—all occur much more frequently among men than among women. However, population estimates and projections published in May 2010 give a crude death rate of 689 per 100,000 for the 2005–2010 period (18). This difference may be the result of factors such as underreporting of deaths.

Table 1 shows the 15 leading causes of death in 2008. Of the total deaths from those 15 causes, 89% were due to noncommunicable diseases. The five leading causes of death were firearm injuries, acute myocardial infarction, pneumonia, motor- and non-motor-vehicle accidents, and chronic renal failure. Violence of various kinds and chronic renal failure were both more frequent in men and together accounted for more than 90% of their deaths (17). The leading causes of death for women were cerebrovascular diseases (usually associated with hypertension) and diabetes mellitus (14, 17).

Morbidity

Communicable Diseases

Vector-borne Diseases

According to the weekly bulletin on dengue published by the Ministry of Public Health, 77,866 suspected cases of dengue were reported from 2006 to 2010, of which 33,084 were confirmed; 97.9% were categorized as classical dengue and 2.1% as severe dengue. In 2009, 11 deaths from dengue were reported (for a case-fatality rate of 9.7%) and in 2010 there were 3 deaths (case-fatality rate of 1.6%) (19). In the last 10 years, dengue has been endemic with epidemic outbreaks, the last one in 2010. The number of cases of malaria was 49 in 2006 and 24 in 2010; 33% of these cases were imported. The slide positivity rate has been below 0.5% since 2005, and in 2010 reached 0.2%, with an associated incidence of less than one per 1,000 population at risk. This situation was the basis for the Government’s decision, with support from PAHO, to declare the year 2011 as the beginning of the “pre-elimination phase for malaria.” The objective is to make the necessary strategic changes in the National Malaria Program to achieve elimination of the disease in the country in 2014 (20).

With respect to Chagas’ disease, entomological surveys conducted between 2003 and 2009 (21) showed that the Rhodnius prolixus vector had been eliminated, but that Triatoma dimidiata continued to circulate.
Serological surveys in schools in localities with high endemic levels of Chagas’ disease showed differing indices of seropositivity (0.0% to 5.3%) to Trypanosoma cruzi, with an average index of positivity of 1.3% in the children studied. The department of Sonsonate had the highest seropositivity indices and—together with the departments of Santa Ana and Ahuachapán—was where the greatest number of acute cases were reported. Seropositivity in blood donors declined from 2.9% in 2004 to 1.9% in 2009 (21).

Vaccine-preventable Diseases

El Salvador has made progress on the elimination, eradication, and control of vaccine-preventable diseases (22). Since 1987, there have been no confirmed indigenous cases of poliomyelitis from wild poliovirus. Since 1996, there have been no confirmed indigenous cases of measles reported, and in 2006 there were only four isolated cases of rubella reported. Of the 240 cases of febrile eruptive diseases reported during 2009, there were no cases of measles, rubella, or congenital rubella syndrome. In 2010 a national committee was established to confirm the elimination of measles, rubella, and congenital rubella syndrome, by reviewing the information for the 10 years after the last reported case of measles or rubella. Sixty-seven cases of acute flaccid paralysis were identified by surveillance (2.86 cases per 100,000 children under 15), of which none was due to the wild poliomyelitis virus.

During 2009 there were no neonatal tetanus cases and 10 non-neonatal tetanus cases (9 males and 1 female) reported. In 2010, there were 2 cases of neonatal tetanus and none of non-neonatal tetanus. The vaccination series for children under 5 includes the BCG vaccine, pentavalent vaccine, rotavirus vaccine, poliomyelitis vaccine, and triple vaccine against measles, mumps, and rubella. In 2009 the rotavirus vaccine and in 2010 the 13-valent pneumococcal vaccine were included for infants (Table 2) (22). In the adult population, especially among pregnant women, the vaccine against diphtheria and tetanus (Td) is administered. In risk groups, vaccines against hepatitis B, measles, and rubella, as well as 23-valent pneumococcal vaccine, are given. In addition to the routine vaccination program, there are campaigns to administer the vaccine against seasonal influenza along with the vaccine for pandemic influenza.

Zoonoses

The last case of human rabies was reported in 2008. Canine vaccination coverage reached 80%. In 2010, there were 21,747 cases reported of bites by animals that transmit rabies.

HIV/AIDS and Other Sexually-transmitted Infections

In 2009, the prevalence of HIV infection reported in the general population was 0.8%, but it was substantially higher for men who have sex with men (10.8%) and for sex workers (5.7%) (23). In the general population, the largest number of cases were in persons from 25 to 29 years old. The male/female ratio was 1.7:1 (24). By August 2010, antiretroviral therapy had been prescribed for 7,000 people with HIV infection; however, the coverage needed for universal access had not been achieved. In 2010 the perinatal transmission of HIV was reduced by 88% in children under 1 year. There are 290 children in antiretroviral therapy (Figure 2) (25). According to the Perinatal Information System of the Ministry of Health, in 2010 there were 33 boys born with congenital syphilis. The prevalence of maternal syphilis was 0.5%. The incidence of congenital syphilis was 5.1 per 1,000 live births in women seen

### Table 2. Vaccination coverage in children under 1 year old, El Salvador, 2010.

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>Coverage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCG</td>
<td>87</td>
</tr>
<tr>
<td>Poliomyelitis 3</td>
<td>91</td>
</tr>
<tr>
<td>DPT1</td>
<td>90</td>
</tr>
<tr>
<td>DPT3 and Hib 3</td>
<td>91</td>
</tr>
<tr>
<td>Hepatitis 3</td>
<td>91</td>
</tr>
<tr>
<td>Rotavirus *</td>
<td>61</td>
</tr>
</tbody>
</table>

**Source:** Reference (22).  
* Introduced in 2009.
during pregnancy in the maternity clinics of the Ministry of Public Health in 2009; 88.4% of those women were under 35 years old (26, 27).

**Tuberculosis**

Both morbidity and mortality from tuberculosis have declined. The incidence estimated by WHO fell from nearly 60 per 100,000 in 1994 to 30 per 100,000 in 2009. Also in 2009, prevalence was estimated at 33 per 100,000 (in persons from 10 to 56 years old). Mortality went from 2.35 per 100,000 in 1997 to 0.76 per 100,000 in 2009. The rate of cases of tuberculosis in all forms decreased from 45.7 per 100,000 in 1990 to 27.6 per 100,000 in 2010 (Figure 3). The treatment success rate has been high. In 2010, it reached 89%, exceeding the goal of 85% established by PAHO/WHO, and with 3.1% treatment failure, 5.2% deaths, and 2.2% discontinuance of treatment. According to data from the National Tuberculosis Program, an estimated 100% of the cases were on the directly observed treatment, short-course regimen (28); also, the last study conducted on multidrug-resistant tuberculosis showed values lower than 0.05%. In 2010 the incidence of leprosy was 0.02 per 100,000, there were five people in treatment, and one new case was reported.

**Emerging Diseases**

In 2009, *Salmonella* species of several serovars were found that were resistant to ampicillin, to amoxicillin in combination with clavulanic acid (12%), and to nitrofurantoin (58%) (29). Antibiograms for *Staphylococcus aureus* that were evaluated showed 100% resistance to penicillin, 28% to oxacillin, 62% to erythromycin, and 23% to sulfa trimethoprim. *Escherichia coli* present in uncomplicated infections in children under 14 years old was resistant to ampicillin (94%), to gentamicin (42%), and to the combination of sulfamethoxazole with trimethoprim (69%).
During the 2009 pandemic, 849 cases of influenza A(H1N1) were reported, mostly between the middle of June and July, and in the central area and the metropolitan (San Salvador) area of the country (Figure 4). A total of 31 cases were lethal. The age group most affected were those from 10 to 29 years old, followed by those less than 10 years old (30). In 2010, there were 18 confirmed cases of influenza A(H1N1), out of a total of 2,301 patient samples with suggestive symptomatology, and there were two deaths associated with this virus (31).

The last cholera epidemic recorded in the country was in 2000. The cholera outbreak in Haiti in 2010, and its spread to the Dominican Republic and the United States, motivated El Salvador’s health authorities to update contingency plans at all levels, with an intersectoral approach based on community participation (32). In 2010 the National Plan for the Prevention and Control of Cholera was reviewed and updated.

**Intestinal Diseases**

In 2010, diarrheal diseases and gastroenteritis were the sixth most frequent reason for medical consultation (14). Some studies associate these illnesses with the condition of the sanitation system and the prevalence of helminths in the general population; in 2006 the varieties detected included *Ascaris lumbricoides* (8.0%), *Trichuris trichiura* (20.9%), and *Ancylostoma* (22.3%) (33).

**Chronic, Noncommunicable Diseases**

In 2008, there were 9,018 deaths from chronic, noncommunicable diseases recorded, representing 50% of deaths from all causes (17).

**Cardiovascular Diseases**

In 2010, cerebrovascular diseases were the second most frequent cause of death, with mortality of 9.3 per 100,000. Ischemic heart disease ranked 6th (6.76), cardiac failure 10th (5.76), and hypertensive disease 19th (2.38). In 2007, the urban area of the city of Santa Tecla had a hypertension prevalence of 21.5%, according to a study done by the Central America Diabetes Initiative (CAMDI) (34). Hospital mortality from these diseases was greater in the age group 60 and over, in which mortality from ischemic heart disease was 53.3 per 100,000 (61.7 for women and 49.6 for men).

**Malignant Neoplasms**

In 2010, the hospital mortality rates from malignant neoplasms per 100,000 were reported as follows: 15 from cervical cancer; 8 from leukemia; 12 from stomach cancer; 8 from lung cancer; 8 from malignant neoplasms of the central nervous system; 8 from colon cancer; and 7 from breast cancer (16).

**Diabetes**

In 2010, diabetes mellitus was the fourth most frequent cause of hospital deaths, with mortality of
7.1 per 100,000; the male/female ratio was almost 1:2 (16). In the CAMDI study done in Santa Tecla in 2007, the prevalence for the disease was 7.4%, while the prevalence of changes in fasting blood glucose was 24.9% (34). In 2010 in Bajo Lempa, the prevalence of diabetes mellitus was reported as 10.3%, with slightly more than half the cases among females (35).

**Chronic Respiratory Diseases**

In 2010, hospital mortality from chronic obstructive pulmonary disease was 2.2 per 100,000, with a male/female ratio of 1:2 (16).

**Chronic Kidney Disease**

In 2010, chronic kidney disease (CKD) was the leading cause of death in hospitals among those from 25 to 59 years old, with a rate of 6.3 per 100,000 and a case-fatality rate of 2.3 (14, 16). Mortality was 2.7 per 100,000 for women and 11.1 for men. The most recent population-based epidemiological study (35), in agricultural communities of the Lower Lempa area of the municipality of Jiquilisco, in Usulután, showed a high prevalence (17.9%) of CKD in the adult population. The male/female ratio was 2:1 (with a prevalence of 25.7% and of 11.8%, respectively). Of the patients classified with CKD, 54.7% of them showed no association with either diabetes or hypertension. However, the presence of a double burden of causal and progression risk factors was identified, such as for metabolic syndrome (28.8%), diabetes mellitus (10.3%), obesity (22.4%), dyslipidemia (63.1%), hypertension (16.9%), smoking (13.8%), and alcohol consumption (20.5%) (35). Furthermore, there are nontraditional factors associated with environmental and occupational risk, such as exposure to agricultural chemicals (50.3%), including bipyridyl herbicides (54.1%) and phenoxyacetic herbicides (48.4%). The male/female ratio was 4:1 (35).

**Accidents and Violence**

The homicide rate in 2010 was 69.9 per 100,000, 6.9 points lower than the rate in 2009. In 67% of the cases, the victims were from 15 to 34 years old. Men were homicide victims in a greater proportion (88%) than were women. However, the number of women killed increased to 19.2 per 100,000 in 2009. Firearms were used in 77% of the homicides, while 80% of all homicides took place in public spaces and thoroughfares (11). Between January 2006 and July 2010, there were 5,275 traffic accident deaths recorded, of which 79.7% were among men and 20.3% among women. The estimated rate of mortality from motor vehicle accidents reached 16.9 per 100,000 in 2010. Men and women 15 to 49 years old accounted for 56.5% of deaths from traffic accidents in the country (36).

**Disasters**

More than 85% of the Salvadorian territory is considered to be at risk for natural disasters. In addition, 95% of the population live in these areas, and 96.4% of total GDP is also under threat. Between 1980 and 2010, 49 natural disasters in El Salvador caused 4,324 deaths (an average of 144 per year), affected 3,279,323 people (an average of 109,311 per year), and produced economic losses of US$ 5.53 billion (an average of US$ 114.4 million per year). In 2010, the Ministry of Public Health reported 15 health centers were damaged and 2 others were made unusable because of the storms Ida and Agatha. An additional 80 health structures are located in risk areas, and 189 units have infrastructure problems (37).

**Mental Disorders**

In 2010, hospital mortality from mental and behavioral disorders was 2.2 per 100,000 population, with a male/female ratio of 15:1. The leading causes were disorders related to alcohol consumption and dependence (16).
Risk and Protection Factors

In 2009, the prevalence of smoking in the adult population was 21.6% for men and 3.4% for women (38), while the prevalence of smoking in adolescents was 27% (32.6% for males and 21.3% for females). Among adolescents, 15% of them smoked their first cigarette before they were 10 years old, 58% wanted to quit smoking, and 74% had received support to quit smoking (39). El Salvador has not ratified the WHO Framework Convention on Tobacco Control. However, the country recently passed a tobacco control law, which regulates marketing, smoke-free spaces, publicity, promotion, and sponsorship, as well as issues related to contraband.

The estimated prevalence of heavy drinkers in 2010 was 8.9% (40). In 2008, it was reported that at least 32.5% of adolescents in schools had consumed alcohol at some point in life. However, only 11.5% were considered to be current drinkers. The average age for starting to drink alcoholic beverages was 13 years old (41).

Marijuana is the illegal drug most used by students (42). In 2008, 5.5% of students reported that they had used it at some point in life (8.3% of males and 3.1% of females). In addition, 2% of students had consumed marijuana in the 30 days before the study was conducted, and 2% had consumed cocaine at some time in life.

HEALTH POLICIES, THE HEALTH SYSTEM, AND SOCIAL PROTECTION

The national health policy (5) includes: 1) strengthening the leadership of the Ministry of Public Health, with particular attention to capacity for policy-making and sectoral regulation; 2) developing human resources and the capacity for data analysis and health research; 3) constructing integrated health service delivery networks (IHSDNs), to counter the effects of the health system’s fragmentation, both in delivery of services and in management of parallel health programs; and 4) developing mechanisms for intersectoral action and citizen participation and the defining of new roles and mechanisms for sectoral and intersectoral coordination.

THE HEALTH SYSTEM’S PERFORMANCE

Strategies and Health Programs

The Ministry of Public Health has reactivated the National Health Council as a strategic policy body to promote health policies and programs. The Interinstitutional Health Commission is another strategic setting for developing intersectoral work. Led by the Ministry of Public Health, the Interinstitutional Health Commission brings together 38 governmental, independent, and professional institutions, as well as private and civil society associations. The National Institute of Health promotes public health research and also works to improve the competence of persons working in the health sector (5, 14). Based on primary care, the IHSDNs incorporate community health teams in order to subsequently integrate them with other institutions of the national health system. This is the strategy adopted by the Ministry of Public Health to reverse the effects of the fragmentation of health care and to improve its efficiency and quality (5, 14, 43).

HEALTH LEGISLATION

The Vice-Ministry of Health Services is responsible for delivery of services and programs through the IHSDNs, for the implementation of the family and community model by the community health teams, and for the management of quality. The Vice-Ministry of Sectoral Policies has responsibility for health policy-making, regulation, information system management, and planning (14).

HEALTH EXPENDITURES AND FINANCING

Public and private health expenditures grew from US$ 990 million in 1998 to US$ 1.401 billion in 2009, an average growth rate of 3.7% per year (14,
For their part, public health expenditures rose steadily, from US$ 490.9 million in 2001 to US$ 912.8 million in 2010, an average growth rate of 7.3% per year (14, 44) (Table 3). Particularly notable are the relative contributions to public expenditures by two institutions: the Ministry of Public Health and the Salvadoran Social Security Institute. Together, their proportion of public spending stayed at 90% or above over that entire time period (94% in 2001 and 91% in 2010). Between 2004 and 2010, total public health expenditure continued growing as a percentage of GDP, going from 3.6% to 4.3%, while expenditure by the Ministry of Public Health increased from 1.7% of GDP in 2004 to 2.3% in 2010.

**The Health Services**

The Ministry of Public Health is in a transition, with traditional management and administration processes coexisting with the incorporation of new methodology and management models in the context of sector reform. Within this framework, the starting point has been results-based budgeting. There are training processes under way to improve the competence and capacity of service managers, along with the updating of clinical guides, regulations, and treatment protocols. Among the noteworthy activities are the categorization of hospitals, guidelines for the IHSDNs, technical standards to assure quality, guidelines and treatment protocols for the services network, and the methodology for monitoring the IHSDNs (14, 43).

**Organization and Operation of the Health Services**

The delivery of health services through the IHSDNs is organized on the basis of connecting three different levels of care complexity. The first level includes community family health teams and specialized community health teams that integrate community units in basic, intermediate, and specialized family health, together with rural nutrition and health centers, birthing homes, and convalescent homes. The second level of care encompasses hospitals at the municipality level (that is, basic hospitals) and hospitals at the department level (general hospitals). The third level consists of regional and specialized hospitals (43).

**Intersectoral Approach**

The Ministry of Public Health addresses the social determinants of health through intersectoral action and social participation. In relation to this, the Interinstitutional Health Commission was established to provide dialogue and build consensus on intersectoral health strategies. In addition, forums were established for citizen participation at the national, regional, and local levels, for consensus-building on health policies, rights, and accountability.

**Essential Drugs and Supplies**

The cost of drugs in El Salvador is one of the highest in the Region.
The regulation of drugs and pharmaceutical supplies is weak and is the responsibility of the Higher Council for Public Health and the Ministry of Public Health. A national drugs policy has been formulated and agreed upon. Also, since 2010, proposed legislation on drugs has been under discussion, with the aim of redirecting the regulatory function, concentrating it under the leadership of the Ministry of Public Health (14).

Model of Care and Organization of Integrated Health Service Delivery Networks

As part of developing integrated health service delivery networks (IHSDNs), in the 2010–2011 period, the Ministry of Public Health set up 380 community family health teams and 28 specialized teams, with a coverage of 1,234,000 people in 141 low-income municipalities (54% of all municipalities, and accounting for 20% of the population). Public investment for that effort came to almost US$ 69 million (14). In addition, 68 micronetworks were set up: 4 in La Libertad, 6 in Chalatenango, 5 in Santa Ana, 4 in Ahuachapán, 5 in Sonsonate, 3 in San Miguel, 5 in Morazán, 4 in La Unión, 5 in Usulután, 4 in Cuscatlán, 2 in Cabañas, 4 in La Paz, 3 in San Vicente, and 14 in San Salvador. Also established were 13 department-level networks and 3 networks in the department of San Salvador, 5 regional networks, and a national network. Progress

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<tr>
<td>Public entities</td>
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<td>---------------------------------------------------------------</td>
</tr>
<tr>
<td>Millions of current US$</td>
</tr>
<tr>
<td>MINSAL</td>
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<tr>
<td>ISSS</td>
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<tr>
<td>Teachers’ welfare</td>
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<td>Military health</td>
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<tr>
<td>National Public Health Council</td>
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<tr>
<td>Other public entities</td>
</tr>
<tr>
<td>Local governments</td>
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<tr>
<td>State enterprises</td>
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<tr>
<td>Percentages</td>
</tr>
<tr>
<td>MINSAL</td>
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<td>ISSS</td>
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<tr>
<td>Teachers’ welfare</td>
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<td>Military health</td>
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<td>Other public entities</td>
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<tr>
<td>Local governments</td>
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<tr>
<td>State enterprises</td>
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</tbody>
</table>

Source: References (14, 44).
Note on abbreviations: MINSAL, Ministry of Health (Ministerio de Salud); ISSS, Salvadorian Social Security Institute (Instituto de Seguridad Social de El Salvador).
in the hospital system has included the classification of hospitals, their functional incorporation into the network, and the formulation of standards, especially new hospital regulations, guidelines, and treatment protocols within the framework of the IHSDNs, and new guidelines for quality management (14).

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

**Health Information**

A number of separate information systems have been established, including ones for epidemiological surveillance, HIV/AIDS, disaster alert and response, health and child malnutrition, hospital morbidity and mortality, perinatal surveillance, injuries due to external causes, drugs, and clinical laboratories. The health authorities are trying to create a single information system on a single open-access platform. That platform would incorporate all of the above systems as well as include public and private health care providers, in one Integrated Health Information System, which could provide greater integration and comparability of data (14, 16). A related issue for defining demographic indicators and determining the population’s epidemiological profile is the coverage and quality of vital statistics.

**Human Resources**

In 2010, the National Health System had 30,271 workers, counting both professional and technical personnel (45). The Ministry of Public Health had 19,076 workers (63% of the total): 26% of them were doctors, 3% dentists, 31% nursing personnel, 14% health promoters, and 25% technical and administrative personnel. The Salvadorean Social Security Institute had 8,562 workers (29% of the total): 40% doctors, 2% dentists, 34% nursing personnel, and 24% technical personnel. The remaining 8% of workers worked at the Health Solidarity Fund, the Salvadorean Institute for the Rehabilitation of the Disabled, and the Salvadorean Institute for Teacher Welfare.

In 2010, the density of human resources for health—counting physicians and nursing personnel—was 22 per 10,000 population (46). Among the country’s departments, San Salvador had the largest share—53%—of all those professionals as well as the highest density (Figure 6) (1).

In 141 of the 262 municipalities of the country, community health teams have been established, with a total of 1,322 workers. Based on primary care, the nation’s new health attention model has a conspicuous shortage of specialists, estimated at 8,062 workers. In hospitals, there is a deficit of approximately 4,200 professionals (46).

In 2010, 133 professionals graduated from the Medical School of the National University, which was 50% fewer than in 2008 and 2009. For the nursing degree an average of 95 graduates a year was maintained for the 2008–2010 period. A 2009 study by the National Science and Technology Board showed that 8% of the budget devoted to education is allocated to research. Only 35% of researchers have

![FIGURE 6. Density of human resources for health, per 10,000 population and by department, El Salvador, 2010.](Image)
a master’s degree or a doctorate (47). Between 2000 and 2009, 76% of the research funding came from the universities or the students themselves. The Ministry of Public Health, in collaboration with the National University and PAHO, has a health knowledge management unit that has a complete database of research, with up-to-date information. The health authorities created the National Institute of Health in order to promote scientific research in health policies, systems, and services, and to foster the operation of a Government school (5, 14).

HEALTH AND INTERNATIONAL COOPERATION

El Salvador gives great importance to international health cooperation because of the vulnerability of the country, the context and impact of the global crisis on the economy and the society, and the enormous needs that the country has to sustain the social and political changes that the Government has proposed. The nation became a party to the 2005 Paris Declaration in May 2009, recognizing the necessity to strengthen its institutional ability to face the challenges coming from that declaration and the subsequent Accra Agenda for Action (Accra, Ghana, 4 September 2008). At the same time, El Salvador intends to develop a cooperation model that is adapted to its needs and that makes it possible for the country to establish equitable relationships with the rest of the world, with the aim of obtaining resources and opportunities that improve the life of the nation’s people. The Ministry of Public Health initiated a process of reorienting international cooperation based on the principle of sovereignty and on construction of a solid institutional capacity for the performance of its leadership role (14).

This includes adequate capacity in managing projects that are strategic for transforming the health system. The Ministry of Public Health has designed a strategy to mobilize international cooperation resources for the purpose of strengthening health sector reform and meeting the most urgent needs (14). Table 4 presents the financial resources received between June 2009 and May 2011 through international health cooperation (14).

SYNTHESIS AND PROSPECTS

The principal challenges in reaching and maintaining the goals of health sector reform include the consolidation of the family and community care model, which involves expanding its coverage throughout the country’s territory; the functional development of the integrated health service delivery networks, with the incorporation and progressive participation of the institutions making up the National Health System; and the identification of mechanisms and continuing sources of financing to ensure its sustainability. Another major task is strengthening the management capacity of the Ministry of Public Health as the national health authority for the adequate exercise of its leadership role, along with gaining approval of the drug law, in order to fully guarantee access to quality drugs. It is necessary to assure funding for vaccinations, whose cost went from US$ 4.6 million in 2008 to US$ 18 million in 2010, in order to reach and maintain vaccination coverage of over 95% and to achieve universal access to vaccines.

Another major issue for the Government is the prevention of violence. The task presents the following challenges: (1) improving the monitoring of all forms of violence over the life course; (2) implementing a strategy to understand violence in terms of its determinants; (3) strengthening human resources capacity for prevention of gender violence and promoting services for prevention and for care of victims; and (4) building strategic partnerships and collaborations with other sectors in violence prevention.

In the area of maternal and child health, it is necessary to expand the program for sex education and prevention of pregnancy in adolescents; to assure the gender perspective in policies; to expand health promotion, universal access to treatment, and interventions at the community level; to give quality and sensitive care to women, boys, and girls; and to strengthen information systems and the surveillance of maternal and child morbidity and mortality.
El Salvador is recognized as one of the countries that have made notable progress in controlling communicable diseases, including rabies, malaria, tuberculosis, and Chagas’ disease. Important tasks still to be accomplished include the delineation of the neglected infectious diseases; the control of vector-borne diseases; and, within the context of health sector reform, the attainment of sustainability for the National Tuberculosis Program, and with its integration into the community health teams. With chronic diseases, the principal challenge is to develop a national policy and program for an integrated approach to their prevention and control, along with reliable information systems. Special attention will need to go to chronic renal failure, mental and behavioral disorders, auditory and visual deficiencies, and unhealthy lifestyles.

El Salvador is one of the few countries in the Region of the Americas that, by presidential decree, has condemned stigma and discrimination against people living with HIV. Even so, among the still-pending tasks are reviewing the HIV policy in this regard, implementing strategies such as decentralization and integration of services, ensuring the

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<tr>
<th>Country/entity</th>
<th>Investment</th>
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<tr>
<td>Bilateral cooperation</td>
<td></td>
<td></td>
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<tr>
<td>USAID*a</td>
<td>3,279,610</td>
<td>4,560,201</td>
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<tr>
<td>Spain</td>
<td>2,533,450</td>
<td>3,090,523</td>
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<tr>
<td>Japan</td>
<td>1,091,000</td>
<td>2,929,000</td>
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<tr>
<td>Grand Duchy of Luxembourg</td>
<td>3,239,240</td>
<td>35,000</td>
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<tr>
<td>Korea</td>
<td>2,000,000</td>
<td>40,000</td>
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<td>Italy</td>
<td></td>
<td>543,828</td>
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<td>Chile</td>
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<td>Finland</td>
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<td>25,000</td>
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<td>Multilateral cooperation</td>
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<tr>
<td>Global Fund</td>
<td>964,356</td>
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<td>260,000</td>
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<td>IDB</td>
<td>100,000</td>
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<tr>
<td>Cuban medical brigades; organizations from the United States, Taiwan, and Italy (includes donations)</td>
<td>2,632,000</td>
<td>2,408,000</td>
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<tr>
<td>Donations from Germany, the United States, and Spain (drugs, supplies, materials, and medical equipment)</td>
<td>2,026,375</td>
<td>1,559,074</td>
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<tr>
<td>Donation from WHO of 1,600,000 doses of vaccine against influenza A(H1N1)</td>
<td>13,820,800</td>
<td></td>
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<tr>
<td>Total</td>
<td>18,320,688</td>
<td>31,768,049</td>
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</table>

**Source:** Reference (14).

Note: Most funds are administered directly by the international agencies and project coordinating offices; only some funds are administered in conjunction with the Ministry of Public Health.


*a This USAID cooperation includes US$ 994,192 for the donation of 676,000 doses of vaccine against influenza A(H1N1).
availability of tests to detect HIV at all levels of care, and providing greater treatment coverage. In recent years, prevention activities have been intensified in the country. However, the challenge remains to make sure that these efforts reach the population that is at greatest risk and is most vulnerable.

With regard to the environment and human security, the principal problems are the inequalities that urban and rural populations have in access to safe water and the lack of an institutional mechanism for monitoring water supply systems in the rural areas. It is necessary to strengthen institutional capacity for monitoring and surveillance of wastewater, recreational water, chemical substances, and biological wastes; for systematically implementing strategies to eliminate, reuse, and recycle wastes at the municipal level; and for reviewing and updating regulations and laws on emission and uptake of contaminants from fixed and mobile sources. In the area of occupational health, it is necessary to improve information on work accidents and illnesses.

Another challenge is to construct hospitals that are more secure in the event of disasters, as part of a national policy of risk reduction. An additional task is to promote actions that mitigate risks for existing health facilities, especially those that provide primary care.

With respect to road safety, there is a need to create a National Road Safety Board and to develop a comprehensive response system for accident victims and their family members.

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