
GUATEMALA

OVERVIEW

The Republic of Guatemala is bordered on the north and northeast by Mexico; on the east by Honduras, El Salvador, and Belize; and on the south by the Pacific Ocean. Its land area of 108,889 km² is divided administratively into 22 departments and 331 municipalities, which in turn have a total of 20,485 communities. In 2000, the country had an estimated population of 11,433,694, and the average density was 102 inhabitants per km², with extremes of 1,177 in the department of Guatemala (23% of the total population) and 9 in Petén; 65% of the population lived in rural areas. The nation has a richly varied ethnic, linguistic, and cultural heritage. The indigenous population represents 48% of the total and is made up of the Garifuna, Xinka, and Mayan peoples. In all, there are 24 linguistic groups, and more than 125 languages and autochthonous dialects are spoken.

Signature of the Firm and Lasting Peace Agreement on 29 December 1996 represented the culmination of negotiations formally initiated in 1990. The 12 commitments contained in this accord brought an end to 36 years of civil strife in Guatemala. The timetable for their fulfillment was divided into three phases over the period 1997–2000: (1) the first 90 days of peace, starting 15 January 1997; (2) from conclusion of the first phase up to the end of 1997; and (3) from the beginning of 1998 through 2000. In January 2000, the Guatemalan Republican Front took over the reins of government with nearly 75% of the popular vote in a turnout of 44%, the highest in the country's electoral history. The policies embodied in the national government plan for 2000–2004 are oriented toward fulfilling the goals set forth in the Peace Agreement.

Guatemala begins the 21st century with a human development index of 0.619, or a rank of 120 out of 174 countries. Seventy-five percent of the population lives in poverty, with a higher proportion in rural areas than in cities (75.6% compared with 28.8%). The metropolitan region (department of Guatemala) has the highest human development index (0.70), and the lowest indexes are in regions inhabited mostly by indigenous peoples in the north (0.53) and northwest (0.49).

Agricultural activity accounted for 26% of GDP and generated 60% of employment. Internal migrant workers numbered around 1,438,694 persons. One of the best years for the Guatemalan economy during the last decade of the 20th century was 1998, when it grew 5%, but there was tension and instability, and soon a number of indicators of macroeconomic imbalance began to appear: increased fiscal deficit of the central government (2.3% of GDP), increasing instability of exchange and interest rates because of a worsening balance of trade, and a deficit in the balance-of-payments current account. Thanks to an expansive fiscal policy, government spending increased 32.8% without an equivalent rise in tax revenue. In 1999 and 2000, GDP grew 3.6% and 3.3%, respectively (Figure 1), and per capita GDP at 1995 prices was 0.9% and 0.8%, respectively.

The privatization process got under way in 1997, when usufruct was granted for 50 years to exploit the railroad network and when the majority of shares of Empresa Eléctrica de Guatemala, S.A. (80%), Telecomunicaciones de Guatemala (95%), and Empresa de Energía Eléctrica (80%), the national electrification institute, passed into private hands. The State netted US\$ 584.2 million for these operations and used the funds to build up the national budget to a level equivalent to 2.4% of GDP. In 1998, the net tax burden (not including returned tax credit) came to 8.9% of GDP. The Peace Agreement established a target tax burden of 12% by 2000, but this goal was not met, nor was consensus reached on the Fiscal Pact, which proposed changes in the national taxation system and structure. The internal debt as a proportion of GDP was reduced from 10.6% in 1990 to 5.2% in 1998, and the foreign debt went from 18% in 1990 to 10% in 1998. Twenty percent of the households received 63% of the income in the country, whereas 40% of households received only 8%. In 1998, 91.3% of the indigenous population was living below the poverty line, compared with 55.6% for the rest of the population. Open unemployment rose from 3.7% in 1995 to 5.6% in 1999. According to the 1998–1999 National Survey of Household Income and Expenditure conducted by the National Statistical Institute, 65% of the female population were not working in 1998; among those who had jobs, most worked only five

days a week and 6% received no compensation. The year 1999 saw an increase in open unemployment, which was greater in urban areas and among women. A family had to earn two salaries at the minimum wage in order to cover the cost of the basic food basket. According to the Ministry of Labor, the trade union movement has been growing: in 1998 alone, 78 new unions were registered. Women represented only 10% of organized labor.

Official information comes from the following sources, which are not always in agreement: the National Statistical Institute (vital statistics), the National Civilian Police, the Judicial Agency, and the Office of the Attorney for Human Rights. According to the National Statistical Institute, one-third of the violent deaths in the country occur among young persons aged 20–29 years. The rates of crimes that involved rape, robbery, and kidnapping remained constant, and activities related to drug trafficking increased. In 1995, cocaine seizures were valued at US\$ 13.5 million; by 1998, the volume had increased almost nine-fold. According to the Judicial Agency, between 1995 and 1998, there was a steady increase in the rate of crimes and misdemeanors, especially in the department of Guatemala. Kidnapping, which once affected those in the upper income brackets almost exclusively, has spread to other segments of the population and regions of the country and has become the most serious threat to personal safety. In 1998, this type of crime was concentrated in the departments of Guatemala and Escuintla, with reported rates of 5.4 and 4.5 kidnappings per 100,000 population, respectively, and the amount of underreporting is undoubtedly quite sizable. According to the National Civilian Police, however, kidnappings fell from 97 in 1997 to 30 in 1998, although in the latter year there was an increase in the number of missing persons. The lack of safety in rural areas was aggravated by increases in automobile thefts, contraband, bank robberies, and kidnappings, among other crimes. In 1998, there were 47 attempted lynchings, with 37 victims and persons beaten.

In 1999, the illiteracy rate was 31.7% (39.2% for women and 26.3% for men). In rural areas, the rate was 36.2% for women and 26.7% for men, and in urban areas it was 20.3% and 14.7%, respectively. The areas with the largest indigenous populations had the greatest educational deficits. The department of Guatemala and 10 other nonindigenous departments had the highest proportion of female enrollment at the high school level, especially in vocational programs for secretaries and teachers. However, in institutions of higher learning, the percentage of females continued to be quite low. There are marked inequalities in terms of school attendance: 68% of truants had illiterate mothers, and this rate was 72% in the indigenous population. In 1996, a national program was implemented to promote self-management for educational development, geared specifically to producing bilingual teachers as part of a pilot project conducted at 39 teaching institutions in the capital and the interior of the country. The education budget as a proportion of GDP almost met the target in the Peace Agreement. Data from the National Literacy Commission

for 1998 showed that half the urban population had five years of schooling, whereas half the rural population had only one year. One-third of the nonindigenous Guatemalans in rural areas also did not know how to read.

In 1998, intermediate education continued to be a predominantly urban phenomenon: 65% of the basic programs (first to third year of secondary school) and 86% of the diversified programs with technical curricula were located in the capital. That same year, the departments with 75% to 100% indigenous population had crude enrollment rates of 14.9% in the basic cycle programs and 4.4% in the diversified programs; for the departments with 0% to 24.9% indigenous population, the corresponding rates were 32.4% and 12.4%; in the capital, they were 64.0% and 35.1%, respectively. Starting in 1990, the number of Mayan schools increased and by 1998 there were 100 establishments formally organized into associations and classified according to linguistic groups. The commitment in the Peace Agreement was that all children under 12 years of age would have completed their first three years of primary school by 2000.

Selected demographic indicators and infant mortality rates, by department, are presented in Table 1. In 1999, the birth rate was 34 per 1,000 population, ranging from 46.1 in Quiché to 25.8 in Guatemala City, and the general mortality rate was 4.8 per 1,000 population. Even though the total fertility and infant mortality rates for 1987, 1995, and 1998 showed steady improvement, there continued to be very marked differences between the urban and rural populations. The total fertility rates for the indigenous and nonindigenous populations remained stable, but they were lower in the latter case (Table 2), a reflection of inequalities in health and differences in level of economic development, which underscores the need to identify, measure, and reduce disparities in living conditions and access to health services.

In 2000, the annual population growth rate was 2.9%. In terms of age distribution, 44% of the total population were children and adolescents under 15 years old and 5.3% were 60 or older (Figure 2). In rural areas, 38% of the population were under 15 years old, 37% were between 15 and 44, 8% were between 45 and 49, and 6% were over 60. Life expectancy was 67.2 years (64.7 years for men and 69.8 years for women).

Mortality

A total of 53,486 deaths were registered in 1999, for a mortality rate of 4.8 per 1,000 population, with the highest rates in the departments of Retalhuleu (7.1 per 1,000 population) and Escuintla (6.9 per 1,000). For both sexes, the leading causes of general mortality were pneumonia and diarrhea, which in 1999 represented 22.3% and 6.0% of all deaths, respectively. In males, the rate for pneumonia was 114 per 100,000 population, and for acute diarrheal disease, 51.1 per 100,000, while in females the corresponding rates were 95.8 and 35.4 per 100,000. The third leading cause of death for males was homicide (40.7 per

TABLE 1. Selected demographic indicators and infant mortality rate, by department, Guatemala, 1999.

Department	Indigenous population (%)	Rural population (%)	Migrants (no.)	Infant mortality rate (per 1,000 live births)
Guatemala	12.84	29.11	231,300	44.4
Sacatepéquez	42.64	29.47	1,362	47.7
Zacapa	4.46	71.41	26,985	28.0
Izabal	23.27	80.17	47,074	23.2
Jutiapa	5.20	79.67	18,746	33.8
Escuintla	6.59	62.90	200,000	57.0
El Progreso	2.09	73.44	14,009	40.7
Santa Rosa	2.69	75.93	35,173	40.3
Chiquimula	30.12	74.73	20,125	27.9
Jalapa	38.43	72.73	...	34.7
Baja Verapaz	56.49	79.54	22,645	36.6
Suchitepéquez	58.08	69.80	37,963	50.6
Quetzaltenango	60.73	60.16	91,925	53.3
Petén	26.93	73.27	119,283	33.1
Huehuetenango	65.90	85.43	153,832	30.7
San Marcos	43.54	87.00	136,158	33.3
Retalhuleu	34.01	72.28	36,942	44.9
Sololá	95.16	66.75	6,878	48.9
Totonicapán	96.92	89.27	125,628	59.5
Quiché	85.82	84.82	83,230	36.6
Alta Verapaz	90.75	84.21	13,936	33.2
Chimaltenango	79.39	58.43	15,500	53.3

Source: Ministerio de Salud Pública y Asistencia Social. *Indicadores básicos 1999*. Guatemala: MSPAS; 1999.

TABLE 2. Infant mortality rate and total fertility rate, by area and ethnicity, Guatemala, 1987, 1995, and 1998.

	Infant mortality rate (per 1,000 live births)			Total fertility rate (children per woman)		
	1987	1995	1998	1987	1995	1998
Country	73	51	45	5.6	5.1	5.0
Urban	65	45	49	4.1	3.8	4.1
Rural	84	63	49	6.5	6.2	5.8
Indigenous	85	64	56	6.8	6.8	6.2
Nonindigenous	76	53	44	5.0	4.3	4.6

Source: Sistema de Naciones Unidas en Guatemala. *Informe Nacional de Desarrollo Humano 2000*. Guatemala: la fuerza incluyente del desarrollo humano. Guatemala: Sistema de Naciones Unidas; 2000.

100,000), and for women it was undernutrition (16.8 per 100,000). Neoplasms and myocardial infarction were the fourth and fifth leading causes of death for both sexes. According to data from the National Statistical Institute, the distribution of proportional mortality for the six broad groups of causes in 1997 was as follows: communicable diseases, 13%; external causes, 13%; diseases of the circulatory system, 12%; certain conditions originating in the perinatal period, 8%; tumors, 7%; and all other causes, 47%. Of the 53,486 deaths registered in 1999, 33.6% corresponded to the over-60 years age group. Physicians certified 59.8% of all deaths; some other authority certified 31.2% of them; and midwives or other personnel without formal training certified 9%. Analysis of the mortality pattern indicates that underregistration is probably 56% at the national level.

HEALTH PROBLEMS

By Population Group

Children (0–4 years)

Until 1998, infant mortality was on the decline (Figure 3). In 1997, there were 13,949 deaths, for a rate of 37.7 per 1,000 live births; by 1999, the numbers had edged upward to 15,317 deaths and an overall rate of 40.5 per 1,000 live births. The highest rate (59.5 per 1,000) was in the department of Totonicapán, which has one of the largest indigenous populations and ranked fourth in the country in terms of migratory influx. Izabal, on the other hand, with an indigenous population of only 23%, had the lowest infant mortality rate (23.2 per 1,000). The rates for neonatal and postneonatal mortality were 15.4 and 22.3 per 1,000 live births, respectively. The National Maternal and Child Health Survey conducted in 1998–1999 (ENSMI 98–99) estimated infant mortality at 45 per 1,000 live births for the five-year period prior to the survey; neonatal mortality was estimated at 23 per 1,000 live births and postneonatal mortality at 22 per 1,000. No variations were observed with regard to place of residence, but the rate for the nonindigenous population was 44 per 1,000 live births, compared with 56 per 1,000 for indigenous groups. Fifty percent of infant deaths occurred between the perinatal period and the third month of life. In the Social Policy Matrix, a document published in 2000 that sets forth the social commitments assumed by the Government, the goal is to reduce infant mortality 12.5% from its 1999 level of 40.5 per 1,000 live births to 35.0 per 1,000 by the year 2003.

In 1999, acute respiratory infections accounted for 40% of all deaths in children under 1 year, acute diarrheal disease claimed 12%, and perinatal causes, 11%. The highest mortality from acute diarrheal disease was in Santa Rosa (6.8 per 1,000 children under 1 year), and the lowest was in Zacapa (1.1 per 1,000). In this same age group, mortality from pneumonia ranged from 29.7 per 1,000 in Totonicapán to 5.2 in Izabal. The mortality rate

in children 1–4 years old was 14 per 1,000 (18 for girls and 15 for boys): 9 per 1,000 in the cities and 20 per 1,000 in rural areas. In nonindigenous populations, the death rate was 12 per 1,000 compared with 24 per 1,000 in indigenous groups. By educational level of the mother, the rate was 24 per 1,000 for mothers who had never attended school, 12 per 1,000 for those with primary schooling, and 1 per 1,000 for mothers with secondary education or higher. Low birthweight was 9.3% overall, 11.4% in urban areas, and 7.9% in rural areas.

Schoolchildren (5–9 years)

Between 1985 and 1998, the net rate of primary care delivered to children between the ages of 7 and 12 years increased by 8.5%. In 1999, a total of 1,027 deaths were registered in the 5–9 years age group, for a rate of 0.6 per 1,000. Cases of acute diarrheal disease rose from 16,015 in 1997 to 43,119 in 1998 and 50,799 in 1999. Chronic undernutrition affected 47.6% of all children aged 5 and 6 years, while 1.4% suffered from acute malnutrition and 22.9% had global malnutrition (as measured by weight-for-age). In 1999, a total of 95 suspected cases of cholera were reported in children aged 5–9 (40 of them confirmed), for an incidence of 5.8 per 100,000; one of the cases resulted in death, for a case-fatality rate of 1.1%. The following year, there were 31 suspected cases of cholera, of which 10 were confirmed (1.8 per 100,000), and there were no deaths. There were 1,186 reported cases of hepatitis A in schoolchildren, and this age group accounted for 24.5% of all cases. In 1999, there were 28,501 reported cases of pneumonia, for an incidence of 174.5 per 10,000, and 261 deaths, making for a case-fatality rate of 0.9%. Also in this age group, 1,213 cases of dengue were reported in 2000, of which 144 were confirmed, with 18 hemorrhagic cases and 7 deaths in the 10 cases reported at the national level (case-fatality rate: 38.8%). In 2000, there were also 19,573 cases of malaria in schoolchildren; 149 of them were caused by *Plasmodium falciparum*, with 30 associated cases. Between 1984 and 1999, the National AIDS Program under the Ministry of Public Health and Social Welfare reported 9 cases of this disease in school-age children, representing 0.26% of all cases in the country in all age groups.

Adolescents (10–14 years and 15–19 years)

In 2000, Guatemala had a population of 2,752,924 adolescents, who comprised 24% of the national population. Of this number, 51% (1,402,601) lived in rural areas. In terms of education, 11.7% of the females and 1.6% of the males had no schooling. In the group aged 10–14 years, 10.1% of the females and 6.5% of the males were illiterate, while among 15–19-year-olds, the rates were 13.9% for females and 8.8% for males. A 1998 survey revealed widespread lack of political awareness among the country's youth: 67% said they knew nothing about the Peace Agreement. On the other hand, according to a historical memoir of the civilian conflict (*Recuperación Histórica de la Memoria*), about 8.2% of the combat victims were adolescents 14–17 years old.

The National AIDS Program reported that between 1984 and September 2000 there were 23 cases of AIDS in the group aged 10–14 years (0.6%) and 142 cases in those aged 15–19 (3.8%); 77% of those cases occurred in males.

A 1998 survey on the use and abuse of addictive substances in students 12–18 years old revealed that 37.1% had consumed alcohol, 21.1% had used tobacco, 3.8% had taken tranquilizers, 3% had smoked marijuana, 2.4% had taken stimulants, 2.2% had used cocaine, and 1.9% had sniffed inhalants. The average age of the first use of these substances was 13, and use was greater among males for all substances studied. In 1999, it was reported that 28% of adolescent street kids were between 10 and 12 years old, 40% were between 13 and 15, and 24% were between 16 and 18. These young people gave the following reasons for living in the streets: 42% were victims of abuse, 39% were runaways, 25% were from poverty-stricken families, and 19% were from broken homes. The majority of adolescent street kids (86%) were non-indigenous; 60% came from slums in the capital, 32% were illiterate, and most were males. The proliferation of gangs (known in Guatemala as *maras*) is an urban phenomenon, seen particularly in the capital, where about 10,000 youths, averaging 20 years of age, are affiliated with more than 90 such organizations and share the same basic trait: lack of hope for the future.

Among girls 10–19 years old, 8.3% had their first sexual encounter before the age of 15, and approximately 70% of them before the age of 20. The fertility rate in girls aged 15–19 was 123 per 1,000. ENSMI 98–99 determined that teen pregnancies produced 362,372 live births, or 17.1% of the national total. The departments with the largest percentages of live births to adolescent girls (most of them nonindigenous) were Izabal (29%), Petén (24%), and Escuintla (22.3%). In 60% of the cases, the mothers were from the poorest strata of the population. Sixty-nine percent of adolescents 15–19 years of age were familiar with some method of birth control, but only 4% used contraception (3.6% used modern methods and 0.6% resorted to traditional methods).

In 1999, the 10–19 years age group had 32,028 reported cases of acute diarrheal disease, 285 cases of cholera (61 of them confirmed), and 16,109 cases of pneumonia with 286 deaths (case-fatality rate: 1.7). In 1999, there were 2,128 registered deaths in the 10–19 years age group. According to data from the National Statistical Institute, in 1998 the leading cause of death in youths aged 15–19 was gunshot wounds (165 deaths, 147 of them in males), followed by pneumonia and influenza (83) and intestinal infections (66), without differences between the sexes for the latter two causes. General ill-defined symptoms and other causes accounted for 969 deaths.

Adults (20–59 years)

In 1999, the population of adults between the ages of 20 and 59 numbered 4,116,147 and corresponded to 39.3% of the total. According to the findings of ENSMI 95, maternal mortality dur-

ing 1990–1995 was estimated at 190 per 100,000 live births (calculated by the sisterhood method). The Ministry's Health Management Information System (SIGSA) gives maternal mortality rates of 98 per 100,000 live births in 1997, 100.2 in 1998, and 94.9 in 1999, with an estimated underregistration of 60%.

With maternal mortality stratified according to income, the averages ranged from 50.1 per 100,000 live births in the upper income brackets to 132.4 in the poorest segment of the population. Based on per capita GDP, about 70% of all maternal deaths occurred in the poorest strata. In 1999, the five leading causes of maternal death were hemorrhage associated with delivery (24%), retained placenta (15%), septicemia (11%), eclampsia (8%), uterine atony (6%), and other causes (36%). In 1995, the percentage of pregnant women attended by trained personnel was 54%, and in 1998 and 1999 the proportion was 59%. In 1999, 47% of all prenatal checkups were attended by physicians, with percentages ranging from 36% in rural areas to 67% in the cities; 12% were attended by nurses; and 27% by midwives, with a range from 36% in rural areas to 11% in urban areas. Nationwide, 40.4% of all deliveries were attended by trained personnel (37% by physicians and 3.4% by nurses). According to ENSMI 98–99, midwives attended 50% of deliveries; the proportion was 61% in rural areas and 31% in urban areas. The percentage of deliveries attended by nurses was similar in urban (3.4%) and rural (3.8%) areas. In the indigenous population, midwives attended 67.6% of deliveries and physicians, 14.5%; in the nonindigenous population, the percentages were 39.5% for midwives and 50.3% for physicians. At least one dose of tetanus toxoid vaccine was administered to 56.9% of all pregnant women (46% of indigenous women and 63% of non-indigenous women). Thirty-four percent of all women of reproductive age used modern family planning methods and 13% used traditional methods; the former included the pill (17%), female sterilization (12%), hormonal injections (11%), condoms (11%), and intrauterine devices (6%). Only 0.7% of women relied on male sterilization. Of all women living in stable unions, 62% were not using any family planning method, whereas 13% of indigenous women and 50% of nonindigenous women were using some form of family planning. The use of family planning has been on the rise, from 31.4% in 1995 to 38.2% in 1998 and 1999.

According to ENSMI 98–99, urban and nonindigenous women were taller on average than those from rural areas and indigenous women. The body mass index of women 15–24 years old was lower than expected. The record of the 10 leading reasons for medical consultations shows that women made more visits than men and that pneumonia and diarrheal disease were the main reasons for consultation for both sexes. Women had more deaths due to hypertension, stroke, and diabetes mellitus, while men had more deaths from pneumonia, diarrhea, and pulmonary tuberculosis.

The Elderly (60 years and older)

In 1999, the proportion of the population aged 60 and older was estimated at 5.3%, with a slight predominance of women (51.8%). Indigenous peoples represented only 40% of this age group. It is estimated that 6% of the elderly live alone and receive no support from their families, and 65% of them live below the poverty line. The leading reasons for consultation at the Ministry's health services were preventable, communicable, and infectious diseases. A total of 7,118 cases of acute diarrheal disease were reported in 1997, 9,041 in 1998, and 10,667 in 1999. In 1999, there were 270 reported cases of cholera in this age group, of which 62 were confirmed and 7 ended in death, for a case-fatality rate of 2.5%, the highest for any age group. In 2000, there were 131 cases of cholera (25 confirmed) and 1 death, for a case-fatality rate of 1.1%, compared with the overall national rate of 0.75%. The 61 reported cases of hepatitis in this age group represented 1.3% of the total for the entire population. In 2000, there were 471 cases of clinical dengue (49 confirmed) and 4,697 cases of malaria in this age group. Of the six cases of human rabies reported in 2000, two of the victims were elderly, one 75 and the other 62 years old, and both were in the interior of the country (departments of Sololá and Quetzaltenango). Between 1984 and June 2001, a total of 106 cases of AIDS were reported in this age group (2.53% of all reported cases). This population's access to health services is limited, and social security coverage is low: only 12.2% receive a pension, and it is usually a small amount.

Family Health

The average household has five members, and this number is larger in rural areas and larger still in the indigenous population. Households headed by women have increased, especially in non-Mayan families, and in the other indigenous groups the number has been rising for the last 15 years and is directly related to the armed conflict. It is estimated that 2.7% of children aged 7–9 years are already in the economically active population. The breakup of families as a result of the armed conflict has left a large number of orphans and traumatized more than 20,000 youths.

Between 1987 and 1998, some 25,000 children and youths were repatriated, representing 62% of the total repatriated population. In 1998, a total of 845 complaints were filed with the Office for the Defense of Children and Youths, 95% for physical abuse and 10% for sexual abuse. It is estimated that for every 10 children who are abused by close family members, 7 of the cases are not reported. The Street Kids Forum was created in 1997 with the interinstitutional participation of governmental and nongovernmental organizations.

In 2000, a total of 10,600 complaints were filed with the Office of the Attorney for the Defense of Human Rights; the Office of the Attorney for the Defense of Women; and the Program for the Prevention and Eradication of Domestic Violence. In addition,

5,583 complaints were received by the Ministry and the Office of the Attorney for the Defense of Women. Eighty-three boys and 65 girls were victims of family violence. The Guatemalan Women's Group and the Association of Women Moving Forward are responsible for case follow-up through 49 safe houses and self-help houses. In 1998, data from the Office of the Attorney General of the Nation showed that approximately 1,029 adoptions had been authorized, and the main receiving countries were the United States (64%), France (12%), and Spain and Canada (each with 5%).

Workers' Health

National Statistical Institute data for the period 1989–1999 indicate that women constitute 24% of the economically active population and represent 43% of unskilled laborers, while only 6.8% hold positions in the upper-income levels. In the group of children and adolescents 7–14 years old, 34.1% were working, the majority (53.9%) as laborers; 38.2% performed unremunerated household tasks; and 7.7% were self-employed. Of adolescents aged 14–18, an estimated 71% of them worked. The Guatemalan Social Security Institute (IGSS) covers only 17% of the national population. In 1998, there were 1,131 cases of pesticide poisoning in six departments in the country, and in 1999 there were 754. Of this latter number, 80% were in males and 15% were in children and adolescents under 15 years of age (fatality rate: 14%); 67% were associated with work-related accidents, 25% with ordinary accidents, and 7% were suicides. The pesticides involved most frequently were organophosphates (48%) and carbamates (15%). In 2000, there were 763 cases of poisoning, 603 of them in males; 482 were work-related accidents (fatality rate: 7.3%), and 211 were ordinary accidents (fatality rate: 6.5%). Three percent of poisonings were in children less than 4 years old.

The Disabled

The principal deficiencies that affect the disabled are musculoskeletal (72%), psychological (31%), visual (31%), and disfigurement (26%). Most of the disabled have two deficiencies. Disability is also a legacy of the armed conflict and has especially affected those who fought in the Army and the demobilized combatants of the Guatemalan National Revolutionary Union as well as civilians from different parts of the country. A 1999 study conducted by the Ministry in the 22 departments reviewed 2,872 cases of disability and verified that 1,841 of them were caused by the armed conflict, following a similar pattern of geographic distribution. The departments with the most registered cases were Quiché, Alta Verapaz, Baja Verapaz, Sololá, Retalhuleu, and Guatemala City. Data for the year 2000 from the National Care Program for Persons with Disability Caused by the Armed Conflict indicate that 70% of the population with disabilities live in dwellings made with inadequate materials, 66% have latrines, more than half have no electricity, and 97% are without telephone service.

Indigenous and Other Special Groups

Guatemala is one of the Latin American countries with a high percentage of indigenous population (48%). The natural growth rate in the departments with a large indigenous presence was estimated at 3.2% a year, while in the departments with an indigenous population of less than 25% the rate was 2.6%. In 1998, illiteracy in the departments with 75% to 100% indigenous population was 52.2%; in departments with 0% to 24.9% indigenous population illiteracy was 29%, and in the country's capital it was 11.2%. According to data from the 1995 National Micronutrient Survey conducted by the Institute of Nutrition of Central America and Panama (INCAP), 67.8% of the indigenous population suffered from chronic malnutrition compared with 36.7% of the nonindigenous population; global malnutrition (as measured by weight-for-age) was 33.6% and 18.6%, respectively. In terms of sanitation, 53.4% of the nonindigenous population had access to an indoor bathroom compared with 21.4% of the indigenous population; only 18.6% of indigenous households had a sewerage connection compared with 43.7% of nonindigenous households. The nonindigenous had access to water for household use through public or private distribution networks, whereas 50% of the indigenous communities obtained water from wells, rivers, or springs. In 1998, the average social exclusion index in Guatemala was 25.9. The highest exclusion level (38.5) was in the indigenous departments of Huehuetenango and Quiché.

According to data from the National Survey of Household Income and Expenditure 1998–1999, migrant workers come from predominantly indigenous areas (Quiché, Huehuetenango, and Baja Verapaz) and contribute 26% to the GDP. It is estimated that about 1,000,000 persons (more than 80% of them indigenous) move within and across the country's borders several times a year for periods of up to three months, often with their wives and children, to work on agricultural export crops, a scenario that deprives them of the benefits of social security. Harvesting lasts six months (from November to April), not counting the time spent tilling and fertilizing the land. Guatemala exports agricultural workers to Mexico and receives agricultural migrants from other Central American countries, especially El Salvador and Honduras. Also, migrants from Central America, South America, and Asia travel through Guatemala on their way to the United States via Mexico. Many of those who are undocumented are unable to cross the border and end up remaining in the country, underemployed and living in marginal conditions. About 540 communities in 17 departments have implemented programs for the resettlement of uprooted persons and the reinsertion of those demobilized after the conflict. The indigenous peoples have been less inclined to migrate than the nonindigenous. Between January and March 1998, the total number of migrants and deported persons at the Mexico-Guatemala border was 20,098. Guatemalan families in California accounted for 60% of all family remittances from the United States, and in 1998

these remittances generated US\$ 423 million in exchange—more than the national tourist industry (US\$ 323 million).

By Type of Health Problem

Natural Disasters

Guatemala lies across three tectonic plates: the North American, Caribbean, and Cocos. The movements of these plates, plus the country's 40 volcanoes (5 of which have been active) and the development of six geological faults, leave the country vulnerable to natural disasters as well as those provoked by humans. In 1999 and 2000, a series of tremors caused damage in 12 departments. In addition, there have been severe droughts, with risk of famine, in some parts of the country. In November 1998, Hurricane Mitch caused heavy damage in 14 of the country's 22 departments, causing 106,000 people to be evacuated and taking the lives of 268. The productive sectors were most affected: 68% suffered direct damage and 83% experienced some form of indirect damage. Heavy rainfall in 2000—double the level in the winter of 1999—caused rivers to rise and leave damage in their wake along the southern coast and in the west. At the same time, 19 of the 22 departments were affected by drought. Heading the list of man-made disasters is deforestation, which occurs at a rate of 120,000 hectares a year and is offset by only 2,000 hectares of reforestation. At this rate, it is estimated that the vegetation cover will disappear completely in 29 years. Every year 300 tons of soil per hectare are lost in the remaining forest areas and up to 1,100 tons per hectare are lost in the deforested regions, a process that could result in a total loss of soil in some areas of the country in 5–10 years. In 2000, 605 surface and forest canopy fires affected a total of 16,582 hectares located in “protected” areas in Petén (22.4%), Quiché (16.4%), Chimaltenango (10%), Guatemala (9.7%), Jalapa (7.3%), and others (34.2%).

Vector-borne Diseases

About 54% of the population is exposed to malaria transmission. In 1999, a total of 101,326 cases were reported (30,977 confirmed and 70,349 clinically diagnosed), and the annual parasite index was 12.2 per 1,000 population. The health areas at greatest risk for malaria morbidity were Ixcán (incidence: 15,846 per 100,000 population) and Southwestern Petén (10,055 per 100,000). Of the confirmed cases, 92% were attributed to *Plasmodium vivax*, 3.2% to *P. falciparum*, and 5.3% to 12 associated cases. Eighty percent of the cases were reported in seven health areas (Ixcán, Quiché, Alta Verapaz, Baja Verapaz, Petén, Izabal, and Escuintla). The main vector was *Anopheles albimanus*, and *A. pseudopunctipennis* was found in some places. Resistance to chloroquine has not been encountered. In 2000, there were 109,874 reported cases (29,302 confirmed and 80,572 clinically diagnosed) of malaria; the confirmed cases were distributed as follows: 95.9%, *P. vivax*; 4%, *P. falciparum*; 0.1%,

mixed. Of the reported cases, 66% occurred in seven health areas. In the areas of Totonicapán and Sacatepéquez, there was no evidence of disease transmission. Incidence peaks during the rainy season (April to November). The largest number of cases was recorded in the population aged 10–59 years, and it is a predominantly rural phenomenon. The Ixcán health area reported nine deaths to SIGSA in children under 1 year of age who had been diagnosed clinically.

Dengue is a serious public health problem in Guatemala, where the inhabitants at risk reside in all 25 health areas and represent 34% of the total population. In 1999, a total of 3,617 cases were reported (incidence: 931.7 per 100,000 population). The health areas most affected were Escuintla (192.7 per 100,000) and Southwestern Petén (137.9 per 100,000). SIGSA recorded two cases of hemorrhagic dengue and one death. In 2000, there were 10,083 reported cases, 9,006 of which were clinically diagnosed as classical dengue (1,035 of them confirmed) and 42 were hemorrhagic dengue, leading to 9 deaths. The incidence ranged from 1.0 per 100,000 population in the department of Sololá to 697.9 per 100,000 in Escuintla, with a case-fatality rate of 21.4%. Unlike 1999, 2000 was an epidemic year, and the departments most affected were Escuintla and Huehuetenango. The National Health Laboratory confirmed that dengue serotype 2 was the virus in circulation (100 cases) in 11 health areas. Of 5,863 samples submitted by 22 health areas, 2,550 were positive, 2,644 were not processed, and 669 were negative. The index of dwellings infested with *Aedes aegypti* larvae, pupae, or both was 11%. Of the cisterns inspected, 5% were positive for *A. aegypti*, for a Breteau index of 23%.

Fifteen of the country's health areas are infested with the Chagas' disease vectors *Triatoma dimidiata* and *Rhodnius prolixus*, and about 34% of the population (556,823 people) are at risk for infection. A Chagas' disease control program was launched in 2000 with emphasis during the first two years on six health areas: Zacapa, Chiquimula, Jutiapa, Santa Rosa, Baja Verapaz, and Alta Verapaz. Of 15,478 dwellings inspected, 1,395 were positive for *Triatoma*. A total of 174 cases were detected in blood banks, with a prevalence rate of 0.97%.

The onchocerciasis endemic area encompasses 7 of the country's 25 health areas (about 7% of the national territory), and 606,547 people are at risk. There are 554 endemic communities in 30 municipalities, with an at-risk population of 160,000. Health coverage for people who live in the endemic areas began to be increased in 1996, and by 2000, coverage had reached 90%. In the latter year, 147,030 cases were treated with ivermectin and 665 of the patients had secondary reactions to the treatment.

According to reports from the health areas, foci of tegumentary leishmaniasis place 295,166 persons at risk for transmission of this disease in rural jungle areas of Huehuetenango, Quiché, Alta Verapaz, and Petén. In 2000, a total of 956 cases were detected with cutaneous lesions, and there were 71 cases with visceral lesions. Several of the latter cases were found in El Progreso.

Diseases Preventable by Immunization

In 1982, the National Immunization Program was launched throughout the country with a basic vaccination scheme for infants under 1 year old. In the five years from 1996 through 2000, the following coverage levels (with differences among the municipalities) were achieved: OPV—76%, 78%, 91%, 86%, and 97%, respectively; BCG—77%, 88%, 89%, 93%, and 97%; DPT3—73%, 83%, 88%, 88%, and 95%; and measles—69%, 74%, 79%, 83%, and 88% (see Figure 4 for coverage levels achieved in 2000). In 1999, the national campaign “*Puesta al Día*” against measles reached 98% of the population 1–14 years of age. Vaccination of pregnant women and women of reproductive age is carried out routinely in municipalities at risk; however, there are no data available on cumulative coverage. In 1996–2000, the annual coverages with tetanus toxoid (TT2) for women of reproductive age were 8%, 8.3%, 10%, 6.6%, and 22% (see Figure 4 for the year 2000). In 2000, the National Immunization Program acquired the MMR vaccine against measles, mumps, and rubella to replace the measles vaccine in the immunization scheme for all children up to 1 year of age starting in 2001.

The last case of poliomyelitis was reported in 1991. Epidemiological surveillance for the occurrence of acute flaccid paralysis continued during 1996–2000, when the system reported 49, 77, 51, 56, and 87 cases in those five years; none of them was confirmed to be polio. Although case reporting by SIGSA was better in 2000 than in 1999, there is still underregistration compared with the National Immunization Program: of the 85 cases with fecal samples recorded by the program, only 57 were reported by SIGSA. The taking of adequate samples is slightly below the required minimum of 80%. In 2000, the overall rate of acute flaccid paralysis was 1.7 per 100,000 in the population under 15 years, with a range of 0–4 in different geographic areas. This rate was higher than the levels achieved in 1998 and 1999 (1.1). The departments with the highest rates were Santa Rosa, Guatemala, Chiquimula, Sololá, and Zacapa. The INCAP virology laboratory processed a total of 87 samples, 4 of which were positive for OPV-derived poliovirus types 1 and 3.

In 1996, there were no reported cases of measles; one isolated case occurred in 1997, but since then there have been no further cases. Epidemiological surveillance is on the alert for suspected cases, and in the five years 1996–2000 there were reports of 128, 303, 171, 291, and 904 cases, respectively, none of which was confirmed. In 2000, the surveillance of suspected cases improved relative to 1997–1999. That same year, the National Health Laboratory received 980 samples from suspected cases, 82 of which were eliminated because they failed to meet the definition of a case. The final count for the National Immunization Program was a total of 902 cases, of which 517 (57%) were reported by the official system, which points up the need to improve reporting systems in the health areas. In 2000, 23 of the 25 health areas (92%) reported at least one suspected case, as did 50% of the municipalities. By comparison, the percentages in 1999 were 76%

and 22%, respectively. Ninety-seven percent of the cases were investigated within 48 hours after they were reported.

The detection of rubella continues to be tied to the surveillance of measles. The number of positive cases increased from 157 in 1999 to 275 in 2000. Establishment of a surveillance system for congenital rubella syndrome was an important goal for 2001 because of the introduction that year of the MMR vaccine.

The numbers of reported cases of neonatal tetanus in the four years 1996–1999 were 17, 7, 5, and 2, respectively. In 2000, there were 6 cases and 3 deaths (case fatality: 50%). The figures may be larger if it is kept in mind that, according to SIGSA, only about 20% of all deliveries are attended in institutions.

Cases of pertussis increased during the period 1996–1999: 40 in 1996, 131 in 1997, 441 in 1998, and 268 in 1999, and the age group most affected is now 6–9-year-olds. The 194 reported cases in 2000 represented 28% fewer than the year before, and the outbreaks were in Chimaltenango (2), Quiché (2), and Huehuetenango (1). Infants under 1 year were most affected, with 104 cases (53%). Fourteen deaths were registered in infants 28 days to 11 months old (fatality rate: 7%): 7 from the department of Guatemala, 3 from Retalhuleu, 2 from Escuintla, and 1 from Suchitepéquez. In 72% of the cases, there was no prior record of vaccination. The highest incidence rates per 100,000 population were found in Ixcán and Quiché (5.0), Chimaltenango (4.0), and the department of Guatemala (3.0).

All the deaths from diseases preventable by immunization occurred in areas where vaccination coverage was regarded as adequate (95% or greater administration of all the biologicals in the basic vaccination scheme to the population under 1 year of age in all the municipalities of the country). The largest number of cases came from state hospitals. There continue to be problems in obtaining nasopharyngeal swabs for the isolation of *Bordetella pertussis* because often there is no transportation available to take the samples immediately to a microbiology laboratory.

The last case of diphtheria was recorded in 1997. In 2000, there were five reported cases of tuberculous meningitis, one more than in 1999, with four deaths (fatality rate: 80%). Two of the cases were in infants under 1 year old, one was in a 5-year-old child, and two were in adults over 19 years old; they came from the areas of Quetzaltenango, Retalhuleu, Izabal, Guatemala, and Alta Verapaz (all of which had over 90% BCG coverage).

Intestinal Infectious Diseases

Cholera cases doubled from 1,008 in 1997 to 2,077 (1,556 suspected and 521 confirmed) in 1999, but in 2000 the number dropped to 790 (612 suspected and 178 confirmed). The departments at highest risk in 1999 were Retalhuleu and Escuintla. The case-fatality rate has been declining: in 1999 there were 18 reported deaths, and in 2000 there were 6, with corresponding fatality rates of 0.9 and 0.8.

In 1999, there were a total of 385,633 cases of acute diarrheal disease (incidence: 3,470 per 100,000 population) and 3,244

deaths from this cause (29.2 per 100,000). In 2000, morbidity was up 21.6% from that in 1999, with 468,981 reported cases (4,220 per 100,000). However, the fatality rate fell from 8% in 1995 to 3.5% in 1997 and 0.8% in 1999. No national data are available that make it possible to identify the origin of acute diarrheal disease, nor is the information broken down by sex. In 1999, children under 5 years old were most affected, with 238,434 cases, or 61.8% of the total. Mortality was higher in this group, with rates of 695 per 100,000 infants under 1 year old and 302 per 100,000 children aged 1–4 years. Children under 5 years old were the most affected group again in 2000, with 294,588 cases (62%). The departments with the highest fatality rates from acute diarrheal disease in infants under 1 year old were El Progreso (271 per 10,000 population under 1 year), Quiché (117), Santa Rosa (113), and Chiquimula (109).

In 2000, foodborne disease was the second most important cause of morbidity in the country, with 469,705 cases; that year also saw a 115% increase in reported cases of food poisoning (1,061) relative to 1999 (492). There were seven outbreaks: one in Totonicapán (182 cases from food contaminated with *Bacillus cereus*); three at the Police Academy in Guatemala City (131 cases total, no causal agent identified); one at San Juan de Dios Hospital (113 cases among hospital personnel, no causal agent identified); one in Villa Nueva (156 cases at a processing plant); and one in Chimaltenango (12 cases caused by dairy products contaminated with *Staphylococcus aureus*). The foods most frequently involved were meats, dairy products, and raw vegetables. The principal agents identified were *Staphylococcus aureus*, *Salmonella*, *Shigella*, *Vibrio cholerae*, and *Escherichia coli*. The Ministry has a specialized laboratory for identifying the agents responsible for cases of food poisoning. In 1999, 17 health areas reported 212 cases of typhoid, with six of these areas accounting for 80% of the cases: Santa Rosa (21.4%), Suchitepéquez (20.4%), Sacatepéquez (11.7%), Quetzaltenango (9.2%), and Escuintla (9.2%).

Chronic Communicable Diseases

Guatemala has a high incidence of tuberculosis. The directly observed treatment, short course (DOTS) strategy has been applied in Guatemala at the national level since 1991, with actual coverage around 70%. The department with the highest incidence is Escuintla (60.6 per 100,000 population), and the lowest incidence is found in Chimaltenango (5.1 per 100,000). In 1999, a total of 2,820 cases were reported, 2,597 (87.1%) of them pulmonary; of the latter number 2,264 were diagnosed by positive sputum smear. Adults 25–34 years old (52% males) were the group most affected, representing 21% of all cases in 1999. In 2000, there were 2,274 registered cases of tuberculosis, 46.6% in women, and 324 of them in children under 10 years of age. Pulmonary forms represented 92.7% of the total, and, of these, 79.8% were diagnosed by microscopic sputum examination. In recent years, the finding of respiratory symptomatic cases has fallen short of the annual target, with rates of 2.8% (1997), 4.2%

(1998), and 3.9% (1999). For each respiratory symptomatic case identified, an average of one sputum smear examination has been performed. In 1999, the treatment success rate was 79%, with extremes between the health areas ranging from 95% in Ixcán to 53.6% in Quiché, and the overall rate of patients abandoning treatment was 9%, with a high of 37.1% in Quiché and a low of 1.7% in Zacapa. In 1999, quality control of microscopic sputum examinations performed by the National Health Laboratory produced 97.9% concurrence in the results for 833 samples examined. Since 1992, the Ministry's National Tuberculosis Program has been conducting seroprevalence studies to determine the presence of HIV in tuberculosis patients who agree to participate; in 1998, of 38.1% of patients who consented to testing, 4.6% tested positive for HIV. According to the National AIDS Program, the seroprevalence of HIV in tuberculosis patients at the Rodolfo Robles Hospital was 5% in 1997 and 9.3% in 1998. In 1999, of 804 samples taken, 41 (5%) were positive for HIV. No studies have been done of resistance to tuberculosis drugs, but about 30 patients are being treated for multidrug resistance in a centralized unit at Rodolfo Robles Hospital in the capital.

As of early 2001, only 27 cases of leprosy were registered at the national level, and the patients were undergoing treatment. There are reporting problems because the hospital that takes care of patients at the national level does not share information with SIGSA.

Acute Respiratory Infections

Acute respiratory infections (ARIs) are the leading cause of morbidity and mortality in the country. In 1999, a total of 1,019,247 cases of ARI and 228,762 cases of pneumonia were reported, with 11,082 deaths. Pneumonia was the leading cause of mortality in infants under 1 year (10.6 per 1,000 population), while 63% of the cases and 50% of the deaths were in children under 5 years old. Southeastern Petén reported the highest incidence (211.2 cases per 100,000 population) and Quetzaltenango the lowest (28.3 per 100,000). In 2000, there were 1,341,873 cases of ARIs and 234,328 cases of pneumonia.

Zoonoses

Rabies is enzootic throughout Guatemala. Two cases of human rabies were reported in 1999 and six in 2000. The latter occurred in the departments of Sololá (one case), Quetzaltenango (four cases), and Jutiapa (one case); all the victims were males, ranging in age from 3 to 25 years. The average period elapsed between the attack by the rabid animal and death was 37 days. Three of the six cases were treated prophylactically with suckling mouse brain vaccine and later with antirabies serum; the remaining three patients came in for consultation after the symptoms of the disease had already appeared. A total of 13,207 persons were bitten by suspicious animals in 1999, and in 2000 the number was 15,053; rabies cases reported in animals in those two years came to 141

and 143, respectively. In 1999, the brains of 272 animals were examined, and 52% tested positive for the rabies virus; in 2000, the number studied was 414, and 35% tested positive. In 2000, laboratory surveillance increased 52% over the year before. Twenty-one of the 25 health areas (84%) documented the presence of rabies virus for three consecutive years (1998–2000), except that in 2000 there was no laboratory surveillance in three of them (Baja Verapaz, Southwestern Petén, and Ixcán). In 19 departments, there were 118 cases of rabies in animals in 2000. Along the Belize border, cases were identified by the examination of brains from cattle, a vampire bat, and a Baja California Sur spotted skunk. In 2000, studies revealed the presence of the common vampire bat (*Desmodus rotundus*) throughout almost the entire national territory. Ten departments reported cases of humans bitten by bats. Canine vaccination against rabies had a coverage level of 66% in 2000.

In 1999, the prevalence of bovine tuberculosis was 3.5% and that of brucellosis, 3.0%. Cases of equine encephalitis were said to have occurred in the southern coastal area during the rainy season. Data indicate that the prevalence of teniasis may be as high as 30% in some localities, but this problem needs further study. In consultations at the IGSS, neurocysticercosis was the primary cause of seizure in the school population under 14 years of age in 1998. Most of the Guatemalan population buys and cooks pork that comes from swine clandestinely slaughtered in abattoirs where there is no veterinary control. Bovine vesicular stomatitis is endemic, and the New Jersey serotype is identified most often. The country has remained free of foot-and-mouth disease, but surveillance by the Ministry of Agriculture has been reduced.

HIV/AIDS

In 1984, the Ministry of Public Health and Social Welfare reported the first case of AIDS in Guatemala. Since then, the epidemic has been concentrated in urban populations and groups traditionally regarded as being at high risk. As of 30 June 2001, a total of 4,197 cases had been reported officially (35.9 per 100,000 population), and underregistration is believed to be as high as 50%. Seventy-four percent of the affected individuals are males; the 15–49 years age group is most vulnerable, accounting for 87% of the cases, followed by those over 50, with 8%. In 1986, the male-female ratio was 6.5:1, but by 2000 the ratio had declined to 2.1:1. As of 1999, there were 141 known cases of mother-to-child transmission. A total of 266 cases of AIDS were reported in 1999 and 316 in 2000. About 50% of the cases occurred in the two poorest strata of the population (Figure 5). As of June 2001, the department of Guatemala had reported 51% of all cases in the country (80.1 per 100,000 population); Quetzaltenango, with 8%, was in second place (49.3 per 100,000); Escuintla and Suchitupéquez followed with 6% each (47.4 and 63.7 per 100,000 population, respectively); and Izabal was in fifth place with 5% (66.4 per 100,000). The most frequent routes of transmission

from 1984 until 1999 were sexual (93.5%), vertical (4.1%), and via blood (2%).

In 1998, the seroprevalence of HIV reported by the Army health service was 0.3 per 100,000, a figure similar to that found in the rest of the population. The last study conducted in recruits, carried out in 1994, showed a seroprevalence of 0.5%. In 1998, the results of seroprevalence studies in sex workers were as follows: 4.7% in Guatemala City (based on 470 samples); 11.1% in Puerto Barrios (117 samples) and 8.7% in Morales (46 samples) in the department of Izabal; and 2.4% in Escuintla (204 samples). In 1996, 33.8% of 3,422 tuberculosis patients undergoing treatment (1,149 individuals) agreed to submit to HIV testing, and 5.5% (63 cases) turned out to be seropositive. In 1998, the seroprevalence of HIV in tuberculosis patients in Quetzaltenango was 9.8%. There is no information about HIV/AIDS infection in ethnic groups, although cases of AIDS have been reported in the Mayan people. According to 1998 data from the National AIDS Program, the seroprevalence levels at blood banks in five health care centers have been lower than 0.5%.

Sexually Transmitted Infections

There were 513 reported cases of syphilis in 1999 and 355 in 2000. A total of 10,681 cases of urethritis/vaginal secretion were reported in 1999, and the year 2000 saw a slight increase, to 11,487 cases.

Nutritional and Metabolic Diseases

The availability of food is limited, because total absolute increases in food production are not large enough to keep pace with the growth of the population. Indeed, per capita output has remained static, which translates into an average deficit per capita of 200 kcal/day. Forty-six percent of children under 5 years old have some degree of chronic protein-energy malnutrition (height-for-age indicator), and among those under 3 years old, 50.3% suffer from chronic nutritional deficiency. The prevalence of global malnutrition (as measured by weight-for-age) is 24% in children under 5 years of age and 26% in those under 3 years. With chronic malnutrition, or stunting (low height-for-age) in children under 5, a comparison of prevalence rates for 1987, 1995, and 1999 indicates a downward trend. However, the urban-rural gap did not show any improvement: the rates in 1987 were 47% for urban areas and 62% for rural areas; in 1995, the respective figures were 35% and 57%; and in 1999, they were 32% and 54%. In those same years, the gap in terms of ethnicity actually widened: in 1987, the rates were 71.7% among indigenous groups and 48.2% in the rest of the population; in 1995, they were 67.8% and 36.7%; and in 1998 and 1999, they were 67.3% and 34.1%. The situation remained unchanged for indigenous groups between 1995 and 1998–1999. Vitamin A deficiency (serum retinol ≤ 20 μ g/dL) affected 15% of preschool children. Measures were taken to provide supplements and fortify sugar with vitamin A. Iron deficiency (Hb ≤ 12 g/dL) affected

35.4% of women of reproductive age, 39.1% of pregnant women, and 34.9% of non-pregnant women. At the extreme ages of the reproductive cycle, the anemia problem is greater, and it is especially acute in adolescent girls between ages 15 and 19 (43.2%). The prevalence of anemia (Hb ≤ 11 g/dL) in children 1–5 years old was 26%.

Malignant Neoplasms

Cancers of the reproductive system account for 42% of all neoplasms in both sexes. According to SIGSA data, in 1999 there were 452 cases of cervical cancer and 240 deaths. Of 214,832 exfoliative cytology examinations, 2,571 (1.2%) were positive. Fifty-five percent of these examinations were performed by the non-governmental organization APROFAM, 17% by IGSS, 17% by the Ministry of Public Health, and 11% by the National Cancer Institute. Breast cancer is the third leading cancer and the second most frequent site for women.

Accidents and Violence

In 1999, a total of 2,741 deaths were caused by accidents (5.1% of all deaths), with a mortality rate of 16 per 100,000 population. There were 384 suicides (0.7% of all deaths) and 1,774 homicides (3.3%). With the current registration system, it is not possible to know the type of accident or its cause.

Mental and Behavioral Disorders

Studies of morbidity based on mental health care provided in the health areas show that the most important reasons for consultation were depression (29%), psychosis (16.4%), somatotropic dysfunction (14.5%), anxiety disorders (12.3%), and epilepsy (11.4%). Qualitative studies examined the effects of the political violence that the country experienced for more than three decades and demonstrated that there was a corresponding increase in psychological disorders and other psychosocial problems.

Emerging and Re-emerging Diseases

Five cases of leptospirosis were documented in 2000, representing a reduction of 29% relative to 1999, when there were seven cases. Positive laboratory samples were submitted from the Guatemala, Escuintla, Izabal, and Zacapa health areas (16% of the total). It was not possible to determine the serovar of the leptospira. The cases diagnosed in 2000 were detected not through regular laboratory surveillance but rather through an outbreak of hemorrhagic dengue, when samples negative for dengue were tested for leptospirosis.

In 2000, 126 cases of meningitis, 4 of them meningococcal, were reported from 14 health areas. Children under 5 years old accounted for 68% of the cases. A meningitis outbreak occurred in a nursery of newborns at one of the hospitals, and the agent *Serratia marcescens* was isolated. During 1998–2000, an average of 140 cases were reported each year in the country as a whole.

RESPONSE OF THE HEALTH SYSTEM

National Health Policies and Plans

The Constitution of the Republic recognizes health as a fundamental right and a public good to be safeguarded by all persons and institutions in the country. Health is defined as consisting of the following components: services to individuals; environmental protection; community participation; production and distribution of food, medicines, and chemical products; and interinstitutional coordination. In addition, it dictates that social security is a public function, which is national in scope, unitary, and compulsory. The Peace Agreement constitutes another public policy instrument that supports health sector reform and extended coverage.

The Health Code approved in November 1997 stipulates that the Ministry of Public Health and Social Welfare is formally responsible for leadership of the health sector. As defined in the Code, leadership includes the guidance, regulation, surveillance, coordination, and evaluation of health actions and institutions at the national level. This definition constitutes the legal basis for a sectoral reform that has the capacity to transcend the public institutions. The Code also obligates the Ministry to provide free health care to persons without means and requires nongovernmental organizations to participate in delivering publicly financed services within the legal framework of coverage extended to neglected communities.

The Ministry's policy to broaden its coverage entails implementation of the Integrated Health Care System. The instrument Health Policies 2000–2004 calls for development of the following: (a) integrated health care for families; (b) health care for the Mayan, Garifuna, and Xinka peoples, with emphasis on women; (c) health care for the migrant population and strengthening of integrated health care for other groups; (d) broader basic health service coverage with quality and sustainability; (e) basic and environmental sanitation; (f) access to essential drugs and traditional medicine; (g) strategic distribution of human resources; (h) institutional development, deconcentration, and decentralization; (i) intra- and intersectoral coordination; (j) improvement and optimization of external cooperation; and (k) expansion of health sector financing.

Health Sector Reform Strategies and Programs

The National Health Plan 2000–2004 stipulates that the overall objective of health sector reform is comprehensive transformation of the social health production model, including improvement of the efficiency and equity of service delivery. In addition, it has the following specific objectives: (a) extension of basic health service coverage with emphasis on the poorest segments of the population; (b) increased public expenditure on health and mobilization of financial resources to ensure sustainability of the sector; (c) redirection of resource allocation; (d) in-

creased efficiency of the public sector in the performance of its functions and the production of services; and (e) generation of an organized social response, with a broad base of social and community participation. Emphasis is placed on the organization of publicly financed services to extend coverage to the rural population that currently has no access to health care. In 1996, the population without health service coverage was estimated at 46%; between 1997 and 2000, coverage was increased to include an additional 35% of the total population. The strategy used was based on a partnership between the Government, represented by the Ministry, and nongovernmental organizations: the former set the standards and allocated the funds, and the latter contributed the trained personnel and infrastructure. This initiative required the definition of a basic package of services. Two operational profiles were involved, and in both cases activities were executed with public funds made available for the purpose: health service providers, which used the monies to directly deliver health care services, and health service administrators, which received budgetary allocations to expand coverage in public health establishments. During 1996–1999, the reform led to the creation of new windows of opportunity and new relationships between the State and civil society, thus strengthening the integration of communities into the social health production process. Decentralization of the Ministry's budget was initiated in 1997, and the head offices in the health areas were authorized to handle their own financial resources. The Ministry and IGSS signed an agreement in 1997 to collaborate on expanding health services coverage and improving the quality of care.

An agreement to create national councils for the management of liquid and solid waste provided the legal bases for strengthening interventions in environmental sanitation. Specifically, it spelled out the scope of authority and responsibilities for basic rural sanitation to be assumed by the National Institute of Municipal Development, which also took on the Ministry's commitments to externally funded projects in this area. The main problems that confront this sector are: (a) an inadequate institutional framework and a confusing array of policies and planning mechanisms; (b) limited technical and administrative capacity on the part of service providers, along with deficient project execution; (c) lack of sustainability of the services because of inadequate fee-for-service rates; and (d) limited participation on the part of users, which affects their willingness to pay for services.

The Health System

Institutional Organization

The health system is composed of three large sectors: private for-profit, private nonprofit, and public. The framework of health sector reform has set the stage for these sectors, which in the past have functioned independently, to cooperate in new ways. Heading up the public sector is the Ministry of Public Health and

Social Welfare, which, as pointed out earlier, is responsible for leadership of the sector and is also one of the main direct providers of services to the open population. Other public providers take care of specific groups that serve the State, including the health services of the armed forces and the national police. IGSS has its own service network, which covers workers affiliated with its regime, especially in the capital and the country's southern coast. It is an autonomous institution, financed with compulsory contributions from workers and their employers. The private nonprofit sector consists of some 1,100 nongovernmental organizations, 82% of them national; of those, 18% carry out preventive health activities (80%) and provide clinical services (20%). The departments with the largest presence of nongovernmental organizations in the health area are Sololá, Chimaltenango, Alta Verapaz, Quiché, Totonicapán, San Marcos, and Chimaltenango, all of which have a high concentration of indigenous and rural population. The private for-profit sector provides services through insurance programs, prepaid medical services, medical or hospital centers, clinics, and private establishments, located in the capital and other major centers in the interior. Most of the services are concentrated in the capital, and they are financed mainly by direct payments from the users. Public services have been deconcentrated and are offered through departmental directorates in direct line of authority, which are responsible for budgetary management under a system of revolving funds. The present Government (2000–2004) is promoting decentralization of public administration through the transfer of authority to municipal governments, but as yet there is no legal, methodological, or instrumental framework in place to support this process.

Developments in Health Legislation

The purpose of Guatemala's health legislation is to ensure the viability and implementation of health sector reform. The National Health Council advises the Government and the Ministry on health matters and regulates the operations of the health services and their infrastructure—specifically, the development and utilization of human resources and the health care networks, with high priority given to health promotion and protection. Some of the significant legal measures enacted so far include: a law to prevent, punish, and eradicate domestic violence; antismoking provisions in reforms to the Health Code (the Ministry is currently working on the enabling legislation); establishment in 1997 of the Program for Access to Drugs (PROAM), which provides for state and municipal pharmacies and other points of sale for drugs (the Ministry has agreed to provide drugs to rural dispensaries run by health promoters); a law on the accessibility of drugs; and a general law to combat HIV, which seeks, *inter alia*, to strengthen aspects related to the human rights of HIV-positive individuals and patients with AIDS.

Domestic violence is the subject of commitments assumed by the State, which have been translated into the following concrete

measures: (a) a law and corresponding enabling regulations aimed at preventing, punishing, and eradicating family violence; (b) creation of the National Women's Forum and Office for the Protection of Indigenous Women; (c) establishment of the Women's Secretariat under the Presidency; (d) creation of the National Coordination for the Prevention of Domestic Violence; (e) development of a basic information sheet on domestic violence (Ministry of Public Health and Social Welfare), which all institutions are required by law to follow; (f) starting in 1999, establishment of a separate heading in the monthly information received from the SIGSA services for reported cases of family violence, categorized by age and sex; and (g) Critical Path studies of the care given to women who are victims of domestic violence.

Organization of Regulatory Actions

The regulatory role of the Ministry in the private sector is especially important in ensuring the quality control, efficacy, and safety of drugs and related products. The Department for the Regulation and Control of Drugs and Related Products was created within the Ministry to enable it to exercise control in this area, and the Department is supported, in turn, by the National Health Laboratory, where physical, chemical, and microbiological analyses are performed. A technical audit of the pharmaceutical industry in 2000 revealed that only 30% of the laboratories were in compliance with Good Manufacturing Practices. In 1999, the Ministries of Health and Agriculture jointly approved a regulation to guarantee food safety.

The College of Physicians and Surgeons certifies the qualifications of medical professionals at the time they graduate, but they must be further certified as members of the College in order to practice. There is no recertification process that evaluates the technical competence of professionals.

Organization of Public Health Care Services

Health Promotion and Disease Prevention

The services under this heading are health promotion, which includes healthy environments (municipalities, schools, and others) and social communication; disease prevention and control programs; and health systems analysis, epidemiological surveillance, and public health laboratory systems.

Potable Water, Excreta Disposal, and Sewerage Services

The information available on potable water and sewerage services as of 1995 showed that water supply coverage reached 92% of the population in urban areas and 54% in rural areas, while sanitation coverage was 72% and 52%, respectively. The metropolitan area has 16 residual water treatment plants, but only 4 of them are actually in operation. Of the remaining 329 municipalities, 286 have sewerage systems, but only 15 have

water treatment plants; the rest release untreated wastewater into bodies of water, which means that about 4 million inhabitants are without access to potable water and approximately 4.2 million do not have the benefit of any form of wastewater treatment.

Solid Waste Services and Pollution Prevention and Control

In urban areas, 47% of the population dispose of solid waste through collection services, 29% burn or bury it, and 25% have no way to dispose of their refuse. In rural areas, only 4% of the people have access to collection service, 50% burn or bury their waste, and 46% have no means of disposing of it. The refuse collected in both urban and rural areas is deposited in landfills and receives no further treatment.

Standards have been set for imported lead-free gasoline (maximum 0.13 g of lead/L).

Organization of Individual Health Care Services

Ambulatory, Emergency, and Inpatient Services

In 1999, the Ministry of Public Health and Social Welfare had 1,352 health establishments, 43 of which were hospitals (17 at the department level, 10 at the district level, 7 regional, 6 specialized, and 3 general hospitals that receive referrals). There were 29 type A health centers, 234 type B health centers, 973 health posts, 48 peripheral emergency centers, and 15 maternity centers at the canton level. There is a heavy concentration of resources in the metropolitan area, with a bed-population ratio of 2.1 per 1,000 inhabitants, compared with a national average of 1.0. In some departments of the western highlands, this rate is 0.04 per 1,000 population. The Ministry has 5,094 beds throughout the country, distributed as follows: 1,704 for general medicine, 897 for pediatrics, 1,115 for surgery, 898 for maternity, and 480 for medical specialties. In seven of the health areas, more than one-third of the users have to travel an average of 12 km or for more than two hours to reach the nearest service. It is estimated that 30% of the primary-level establishments need reconstruction and replacement of their equipment.

IGSS has 24 hospitals, 30 consultation offices, 18 primary care posts, and 5 services attached to national hospitals; 6 of the hospitals and 11 of the consultation offices are located in the department of Guatemala. There are 2,447 available beds, for a ratio of 1.4 per 1,000 beneficiaries.

Specialized Services

The Ministry does not offer many health services that specifically target the elderly, but steps have been taken to organize the Integrated Health Care Program for Older Adults. So far, the response of the State and society on behalf of this age group has been weak. A law on the subject was passed in 1996, but it could not be implemented, and work is now under way on revised legislation and preparation of the enabling regulations. IGSS pro-

vides care for its retirees nationwide through the Integrated Medical Care Center for this population.

The basic objectives of the National Mental Health Program call for mental health services to be decentralized and incorporated into primary health care. As of 2000, services were being provided in 10 of the country's departments and 14 health centers in the capital, whereas before almost all of them were concentrated in the capital and at the hospital level. That year, the Ministry provided 72,559 outpatient psychiatric and psychological consultations. Of this total, 28% of the consultations were provided at primary health care centers. There is a 360-bed Public Psychiatric Hospital in Guatemala City, and six other national hospitals have mental health units. IGSS has a 30-bed psychiatric unit and is working on creating a mental health program. At the end of 2000, there were 60 psychiatrists working at the national level in the public sector (Ministry and IGSS).

Health Supplies

Drugs are sold through a network of public and private pharmacies: in the public sector, there are 32 state pharmacies, 50 municipal dispensaries, 423 social dispensaries, and 761 rural dispensaries; in the private sector, there are 2,039 pharmacies and 382 dispensaries. The country has 1,200 pharmacists and 1,400 pharmacy technicians. There are 85 national and 2 foreign laboratories that manufacture drugs, plus 4 quality-control laboratories, 1 official and 3 private. In 1999, the Ministry spent US\$ 17,073,649 on drugs, IGSS spent US\$ 24,000,000, and the private sector spent US\$ 129,803,326. In 1997, a system was established for the joint negotiation of drug purchase prices with participation by the Ministry, IGSS, and the Military Medical Center. These price agreements enabled the Ministry to reduce its budgetary allocation for drugs by 65%, and IGSS was able to cut back by 23%. There is some overlap in terms of population coverage. The non-governmental organizations and the Ministry serve the open population with no exclusions. Exclusions apply in the case of private providers (those who can pay receive the service) and IGSS (its subscribers and their qualifying dependents receive the service). In a 1998 survey of 84 services, at the time of the visit 34 of them (42.5%) had in stock more than 80% of the drugs on the list being tracked, while the stocks in the remaining 50 services ranged between 70% and 79%.

Human Resources

Availability by Type of Resource

The ratio of physicians to total population is 9 per 10,000, and in the year 2000, no more than 200 new professionals graduated from state and private universities. For every 3 physicians there is only 1 professional nurse; for each professional nurse there are 14 nursing auxiliaries. Of the 21,996 persons employed by the

Ministry, 92% hold budgeted positions, 5% are temporary personnel without regular posts, and 3% are contracted on a short-term basis. In 1996, the Integrated Health Care System launched a campaign to enlist community personnel, including more than 11,500 health guardians, 1,972 traditional birth attendants, and 604 community facilitators. Health human resources tend to be concentrated in urban areas: the ratio of urban to rural physicians is 4:1, and for professional nurses it is 3:2. Of the 1,225 physicians who work for the Ministry, 46% are located in the metropolitan area and 54% are in the remaining 21 departments. This distribution is at odds with the distribution of the population, 65% of which is located in rural areas, where the people are attended at the primary level by traveling physicians, rural health technicians, nursing auxiliaries, midwives, community facilitators, and health guardians. Most health professionals work in hospitals (71%).

Of the 10,700 persons employed by IGSS, 15% are physicians; 37% belong to other health professional and technical categories and have a primarily curative orientation; and the remaining 48% are administrative staff. The distribution of nurses is similar to that of physicians. All the health areas in the country have a professional who performs the duties of epidemiologist, with varying degrees of preparation or training.

Training

Guatemala has 80 specialists in public health with a master's degree—a small number compared with the need. This situation is expected to improve now that there are two new master's degree programs in public health: one has been offered by San Carlos University since 1995, and one started at Rafael Landívar University in 1999, which specializes in epidemiology and management. There are 450 young Guatemalans studying family medicine in Cuba. Under the regulatory guidance of the National Office of Nursing Auxiliary Resources and Methods, 5 national schools train nursing auxiliaries for public service and 25 private schools also prepare nursing auxiliaries, turning out 800 graduates a year. Technical personnel in the fields of diagnostic radiology, clinical laboratory, environmental health, rural health, exfoliative cytology, and physical therapy have been trained in schools under the aegis of the Ministry, but their numbers remain insufficient.

Health Sector Expenditure and Financing

In 1999, health expenditure represented 2.8% of GDP. Households were the most important source of health financing (42.9%), followed by the Government (27.3%), businesses (22%), and external cooperation (7.8%). The role of private nongovernmental entities is increasing slightly. The National Survey of Household Income and Expenditure 1998–1999 showed that spending on health came to a monthly total of US\$ 45 million and represented an average of 6.4% of monthly in-

come. The annual amount spent on health came to US\$ 630 million. ENIGFAM found that 31.7% of household spending on health went for the purchase of drugs, 16% for outpatient medical services, and 10% for hospital services. The single largest expenditure corresponded to contributions to IGSS from 25% of the economically active population, which accounted for 38% of all household spending on health. Private insurance amounted to only 0.4% of the total. Households with incomes in the top 10% accounted for 30% of all household expenditure on health, and this group was responsible for almost all the expenditure on private insurance, 42% of spending on medical devices, 39% of the amount that went for hospital services, and 38% of the monies spent on outpatient care. There were differences between the highest- and lowest-income populations in terms of spending patterns: the latter mainly resorted to self-medication, as reflected in the fact that 40% of their expenditure went for medical and pharmaceutical products. Of the expenditure corresponding to IGSS, 40% of the lowest-income households contributed only 6%, whereas the highest-income decile accounted for 30% of the monies paid to IGSS and 90% of the spending on private insurance.

External Technical Cooperation and Financing

In the last five years, Guatemala's technical and financial cooperation amounted to US\$ 2,386.6 million. Of this total, 37.3% corresponded to nonreimbursable cooperation and 62.7% of it was reimbursable; 75.2% was intended to support the peace process, 21.7% was for other programs, and 3.1% was allocated for the Hurricane Mitch Reconstruction and Transformation Program. The total amount disbursed during the five years came to more than US\$ 1,600 million, of which 55.3% corresponded to reimbursable and 44.7% to nonreimbursable cooperation. More than 59% of these disbursements went for the peace process. Disbursements showed a rising trend during the five-year period, with corresponding improvements in project execution. In its National Plan 2000–2004, the Ministry of Public Health and Social Welfare called for the improvement and optimization of external cooperation, establishing 12 coordinating committees representing actors from the political, technical, and operational areas of the health field in as many departments. At the international level, the country has helped to promote the process of Central American integration in health.

During the five-year period, the Government gave priority to Technical Cooperation among Countries (TCC), with special emphasis on cooperation with Cuba, which sent 488 health professionals, mainly physicians, to provide primary care in some of the most remote communities of Guatemala. TCC projects are being carried out in a variety of areas, including transfusional medicine and blood banks (with El Salvador); water supply and sanitation in indigenous communities (with El Salvador and Panama); water-quality monitoring (with Ecuador); and 10 joint projects

with El Salvador, Honduras, Belize, Panama, Costa Rica, and Cuba on measles eradication, food safety, rabies prevention and control in municipalities near the Belize–Guatemala border, a water supply and sanitation information system, nutritional food security, sharing of experiences in HIV prevention and control, strengthening of epidemiological surveillance, approaches to combating emerging and reemerging diseases, and domestic violence. In ad-

dition, projects funded by DFID, SIDA, USAID, and other international agencies are in progress. Guatemala has promoted meetings of the Central American Northern Triangle countries and subscribes to the Declaration of Esquipulas, “Integration for the 21st Century.” Guatemala has adopted the Mesoamerican Cooperation Program 2000–2001, and this commitment will be renewed every two years.

FIGURE 1. Gross domestic product, annual growth (%), Guatemala, 1991–2000.

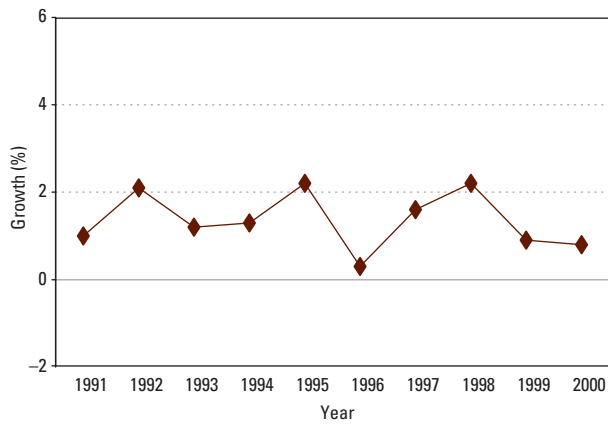


FIGURE 4. Vaccination coverage among the population under 1 year of age, by vaccine, and tetanus toxoid coverage for women of childbearing age, Guatemala, 2000.

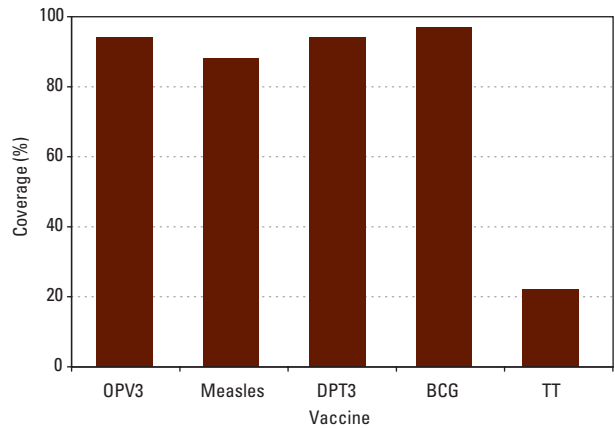


FIGURE 2. Population structure, by age and sex, Guatemala, 2000.

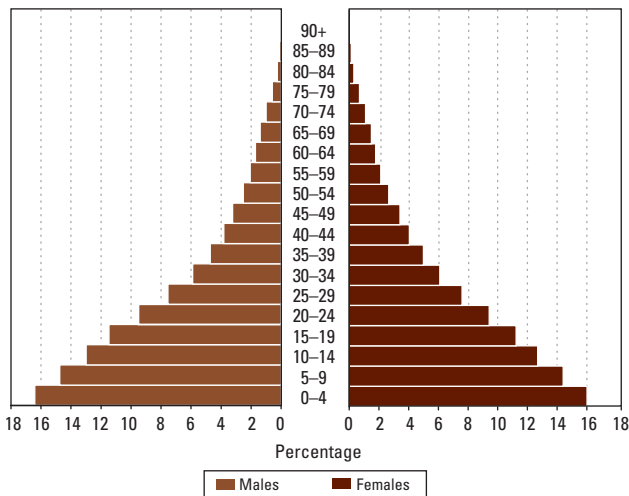


FIGURE 5. AIDS incidence by sex, with male-female ratio, Guatemala, 1994–2000.

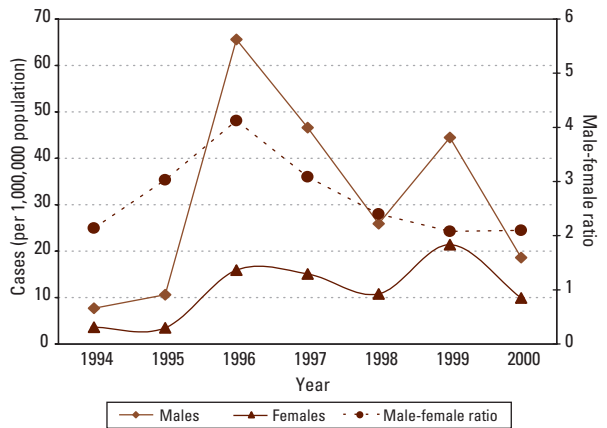


FIGURE 3. Infant mortality trend, Guatemala, 1986–2000.

