CHILE

GENERAL SITUATION AND TRENDS

Socioeconomic, Political, and Demographic Overview

Chile has a surface area of 756,626 km^2. The most recent census, conducted in 1992, showed the population to be 13,348,401, with an intercensus growth rate of 1.64%. The projected population in June 1996 was 14,418,864. The urban population makes up 84.7% of the total. The largest concentrations of population are found in the Santiago metropolitan area (39.8%), followed, in terms of population density, by the Biobío region (12.8%), Valparaíso (10.3%), and the region of Los Lagos (7.1%). The country comprises 13 regions and 341 communes.

Chile's economy has been largely positive in recent years. The gross domestic product (GDP) has grown steadily since 1960, with a significant rise in the past five years and an average annual growth rate of 7.4% in the 1990–1995 period and of 7.2% in 1996. Per capita income, estimated at US$ 2,450 in 1990, increased to US$ 4,987 in 1996. In 1996, Chile ranked 33rd according to the human development index of the United Nations Development Program, up from 38th place in 1994.

The rise in the GDP, together with the improvement in other indicators—including the total investment rate (28.0%), the annual median gross domestic rate (9.8%), exports of goods and services (9.1%), imports of goods and services (11.9%), and prepayment of the foreign debt and a lower inflation rate (6.6% in 1996)—have strengthened the country's economy. The balance of payments was positive throughout the 1991–1996 period, ranging from US$ 577 million in 1993 to US$ 3,194 million in 1994, with an average of US$ 1,294 million. The consumer price index, which is used as a gauge of inflation, fell from 27.3 in December 1990 to 12.2 in December 1993, and then it leveled off at between 8 and 9 in 1994, 1995, and 1996. There was also growth in the construction industry. In 1991 the built-up area totaled 8,633,855 m^2. Of that area, 64.4% consisted of housing units, 29.0% were industrial or commercial buildings, and 6.7% were service sector buildings. In 1995, the total built-up area increased to 13,101,655 m^2, of which housing accounted for 62.7%, industrial or commercial facilities for 31.6%, and the service sector for 5.8%.

In the area of education, according to the 1992 census, the literacy rate in the population over the age of 15 years was 91.2% and it was estimated at 94.5% in 1995. The educational system comprises the primary level (primary school attendance is compulsory) and the secondary and higher levels. In 1995, a total of 3,533,047 students were enrolled at all levels—7.5% in preschools, 62.3% in primary schools, 20.9% in secondary schools, and 9.3% in higher learning institutions. These figures indicate enrollment rates of 95.7% at the primary level and 79.3% at the secondary level. The average amount of schooling in 1995 was 9.57 years. A program of educational reform currently under way will increase the number of required hours of school attendance at the primary and secondary levels.

According to the New National Employment Survey, the economically active population increased from 4,550,000 in 1988 to 5,500,000 during the four-month period from January to April 1996. Female participation in the labor force has increased slightly, from 31.8% in 1990 to 33.7% in 1996 for the country as a whole. The biggest increases were registered in Tarapacá (40.4%) and the Santiago metropolitan area (39.4%) and the smallest were in the regions of Araucanía (22.4%) and Coquimbo (26.0%). A comparison of the figures from the survey conducted in the October–December period each year reveals that the unemployment rate has decreased gradually over the past several years, dropping from 5.69% in 1990 to 4.7% in 1995. The four-month unemployment survey for 1996 shows that the rate rose again to 5.4%. This increase can be attributed to the adjustment measures that were adopted for the purpose of curbing the growth rate and thus forestalling inflationary pressures. These measures caused the job market to decline but also reduced consumption and

helped keep inflation below double-digit rates for several years running. Annual rates (averages of the rates for 12 months) reveal positive changes, with the unemployment rate dropping from 8.2% in 1991 to 6.4% in 1996, the lowest of the decade. The unemployment rate was higher among women (7.9%) than among men (5.6%), with regional variations ranging from a low of 1.6% in Aysén to a high of 7.9% in Biobío.

In April 1996 the hourly wage index reached a nominal value of 153.28 (April 1993 = 100), which represented an increase of 0.8% with respect to the index for March 1996 and 5.3% with respect to December 1995. The cumulative increase over the 12 months from April 1995 to April 1996 was 14.6%. The sectors of economic activity that posted the greatest cumulative increases over 12 months were transportation and communications (18.0%) and public services (16.1%); the smallest increase was in construction (8.1%). By occupational category, the largest increases were reported in the operation and assembly of tools and machinery (20.3%) and professional services (18.2%); the smallest increases occurred among personal service workers (10.9%) and skilled workers (11.6%). Real wages showed an annual positive trend (4.1% increase, on average, for the most recent period). Negotiations among the Government, business owners, and labor organizations have resulted in a slow but steady rise in the monthly minimum wage, which increased from US$ 92 in 1989 to US$ 157 in 1996.

As for the structure of the labor force by sector of economic activity, the service sector employed the largest percentage of workers (25.16%), followed by commerce (18.1%), and industry and manufacturing (16.16%).

With regard to poverty rates, the results of the socioeconomic surveys (CASEN) conducted by the Ministry of Planning indicate that poverty decreased, although the rates varied from region to region. In 1984, it was estimated that 44.6% of the population could be classified as poor; the proportion fell to 32.7% in 1992 and to 25.0% in 1996. According to the 1994 CASEN survey, the regions with the highest levels of poverty were Maule (VI), with 40.5%, and Biobío (VIII), with 40.3%. The regions with the lowest levels of poverty were Magallanes (XII), with 14.8%, and the Santiago metropolitan region, with 20.9%. In rural areas, the highest level of poverty, 43.5%, was found in the Tarapacá region (I). In urban areas, Biobío (VIII) was the poorest region (40.9%). The distribution of poverty by sex shows that females are at a slight disadvantage compared to males (28.9% versus 28.0%, respectively). The proportion of indigence also was higher among females than among males (8.2% versus 7.8%).

The birth rate has shown a marked decline, especially during the 1960s. This trend has been associated with a decrease in the fertility rate, which was only 2.65 in the 1985–1990 period. In 1945 the birth rate was 35.5 per 1,000, and it remained at that level until the 1960s (36.3 per 1,000 in 1965), after which the rate dropped substantially as a result of programs that were implemented to encourage responsible parenthood. In 1975, the birth rate was estimated at 24.2 per 1,000 population; by 1995, it had dropped to 19.7 per 1,000. That same year, the fertility rate was 2.5 children per woman, which represents a large reduction compared with the rate of 3.2 reported in 1975.

Mortality and Morbidity Profile

After a sharp decline, mortality has leveled off in recent years. In 1995, the rate was 5.5 per 1,000 population. Total mortality in 1945 was around 19.1 per 1,000, a figure that fell by two-thirds during the 1970s (7.2 per 1,000 in 1975). In 1995, mortality among children aged 1 to 4 years was 0.6 per 1,000 population, maternal mortality was 0.3 per 10,000 live births, and mortality in the group aged 15 to 44 was 1.3 per 1,000 population. In the group aged 45 to 54, the mortality rate was 7.5 per 1,000 population, and among those aged 65 and over the rate was 51.4 per 1,000 population.

The leading causes of death in 1995 were diseases of the circulatory system, with a specific rate of 149.5 per 100,000 population (27.8% of all deaths that year); followed by malignant neoplasms, with a rate of 115.7 per 100,000 (20.7% of all deaths that year); injuries and poisoning, with a rate of 63.6 per 100,000 (11.8% of all deaths that year); and diseases of the respiratory system, with a rate of 61.2 per 100,000 (11.4% of all deaths that year).

With the changes in the above-mentioned indicators, life expectancy at birth in 1996 increased to 78.3 years for women, 72.3 for men, and 75.21 for both sexes. For the census interval 1920–1992, the change in these indicators represents an increase of 40.47 years in life expectancy at birth for females over the period (0.62 year per year during the interval), and 45.06 years for males (0.55 year per year during the interval).

There were sex differentials in the causes of death, notably the excess male mortality from injuries and poisoning (almost four times greater). Male mortality from diseases of the digestive system also was greater (1.60 times). Excess male mortality of 1.28-fold for conditions originating in the perinatal period and 1.26-fold for diseases of the central nervous system and sense organs is also observed. Excess female mortality exists in the case of diseases of the musculoskeletal system (3.22 times greater) and diseases of the skin and cellular and subcutaneous tissue (1.86 times greater). An analysis of the leading causes of death in 1960 by the National Statistics Institute reveals that, in that year, 26.2% of all deaths were due to enteritis, colitis, and pneumonia (ICD-7, A89, A104, A132). In 1995, these causes accounted for only 9.15% of all deaths (ICD-9, 008, 009, 480). In 1960, the group comprising

arteriosclerosis and other heart diseases (ICD-7, A81 and A82) accounted for 5.69% of all deaths; that percentage rose to 14.43% in 1995 (ICD-9, 410–414, 415, and 416). In 1990 and 1995 no cases of measles were reported, whereas in 1960 measles still accounted for 2.15% of all deaths. Also in 1960, 3.9% of all deaths were caused by pulmonary tuberculosis (ICD-7, A1), whereas in 1995 only 0.5% of deaths were attributed to this cause (ICD-9, 010–012).

Mortality has decreased in all age groups, but the largest reductions have occurred among women and among children under the age of 5 years. In 1980, the latter group accounted for 12.7% of all deaths, and in 1994 it accounted for only 5.4%. The decline in mortality rates in the group aged 55 and older has been comparatively small, which increases the relative importance of older adults in total mortality figures for the country as a whole. Excess male mortality in 1994 was 1.25. For the period 1995–2005, life expectancy at birth was estimated at 75.2 years for both sexes: 78.3 years for females, and 72.3 years for males.

Analysis of mortality by cause in 1995 reveals that the four most frequent causes of death were acute myocardial infarction (ICD-9, 410), which accounted for 7.3% of all deaths that year; followed by bronchopneumonia (ICD-9, 485), which accounted for 5.9%; acute cerebrovascular disease (ICD-9, 436), which accounted for 4.4%; and cirrhosis and other chronic liver diseases (ICD-9, 571), which accounted for 4.2%.

Based on a study of the burden of disease conducted by the Ministry of Health, in which disability-adjusted life years (DALYs) were calculated, the five leading causes of death were congenital anomalies (7.53 per 1,000 population), acute lower respiratory infections (5.23 per 1,000 population), ischemic heart disease (4.9 per 1,000 population), hypertensive disease (4.37 per 1,000 population), and cerebrovascular disease (4.19 per 1,000 population).

A total of 1,404,478 hospitalizations were registered in both public and private institutions in 1996; most were for causes related to pregnancy, childbirth, and the puerperium. In 1995, the occupancy rate in public hospitals was 69.7, with an average hospital stay of 7.10 days and 33.7 discharges per bed. In private-sector establishments, a total of 370, 811 discharges were reported, with an average stay of 5.7 days, an occupancy rate of 57.5, and 32.1 discharges per bed.

The leading reason for outpatient consultations is high blood pressure. By groups of causes, diseases of the respiratory system account for the largest proportion of health service visits (24.0%) and are the reason for about 40% of all visits at the primary care level.

The consultation rate per person, which in 1985 was 1.28, decreased to 1.07 in 1996. Of the total number of consultations and routine visits in 1996, almost one-third (30.6%) were children, and of them about 10% were routine well-child visits. Another 10% of the consultations took place in the framework of the Women's Health Program, and 55% were adult medical visits.

The ratio of nurses to doctors attending children at well-child visits has shown a sustained decline since 1981. In that year, nurses were performing 8.8 well-child examinations for every examination performed by a physician; in 1996, the ratio was 6.03, which is a reflection of the shortage of nurses in the country, especially at the primary care level. The ratio for health service visits for reasons other than well-child care was 0.03 in 1996.

SPECIFIC HEALTH PROBLEMS

Analysis by Population Group

Health of Children

Infant mortality has shown a marked decline, which has continued in recent years, as a result of the sharp reduction in birth rates and high rates of prenatal care and professional care at childbirth. In 1995, 99.50% of births were attended by trained birth attendants. Other factors contributing to the reduction in infant mortality include the extensive coverage of child growth and development monitoring programs, vaccination programs, and supplementary feeding programs; rising educational levels, especially among women; improvements in basic sanitation; and use of perinatal treatment technologies. In 1945, the infant mortality rate was estimated at 165 per 1,000 live births, whereas in 1995 it was only 11.1 per 1,000 live births. The neonatal mortality rate was 6.1 per 1,000 live births in 1995, the late infant mortality rate was 5.0 per 1,000, and the early neonatal rate was 4.5 per 1,000. In 1975, infant deaths accounted for more than one-third of total mortality, and in 1995 they accounted for only 3.96%. Neonatal deaths in 1995 accounted for 57.1% of all deaths in the age group under 1 year old.

With regard to the distribution of mortality in the country, regional disparities in infant mortality were noted in 1995, with rates ranging from a low of 9.6 per 1,000 in Magallanes to a high of 14.6 per 1,000 in Antofagasta. The regions with the highest infant mortality rates, after Antofagasta, are Araucanía (14.3 per 1,000 live births) and Biobío (14.1 per 1,000 live births).

With regard to differences in mortality by living conditions, infant mortality in 1994 in the Western Santiago Health Service, which serves the rural and most impoverished population, was 11.4 per 1,000; in the Eastern Metropolitan Health Service, which serves a higher-income population, the rate was 7.6 per 1,000 live births.

Better nationwide coverage of the Expanded Program on Immunization (EPI) and the cold chain resulted in fewer

deaths from vaccine-preventable diseases in the past decade. The coverage of BCG vaccine in 1996 reached 97.99 per 100 newborns. In the same year, the coverage with three doses of DTP (diphtheria, tetanus, and pertussis) was 94.16 per 100 newborns, and coverage with three doses of polio vaccine was 94.26 per 100 newborns. Mortality from diphtheria fell to 0 in 1992. The last death from this cause occurred in 1991. The measles mortality rate decreased from 0.2 in 1989 to 0 in 1990, and since then no deaths from this cause have been reported.

Mortality among children aged 1 to 4 has fallen to 0.6 per 100,000 population in this age group in 1995. This reduction has been associated with the expansion in coverage of primary health care in urban and rural areas and in coverage of EPI, as well as the decrease in morbidity and mortality from vaccine-preventable infectious diseases—in particular, mortality from diarrheal diseases and acute respiratory infections.

Since 1975, the maternal and child health program in Chile has been applying a high-risk approach in obstetric and perinatal care. One of the results of this approach has been a steady decline in the percentage of low-birthweight infants, which fell from 5.7% in 1991 to 5.0% in 1995.

Some improvement also has been noted in nutritional deficiency indicators among children under the age of 6 years participating in regular growth monitoring programs in public health establishments, with slight but sustained decreases in nutritional disorders. At the same time, however, there has been a slight increase in the prevalence of overweight.

In 1996, 60% of hospital discharges of children under the age of 2 years were associated with respiratory causes.

With respect to outpatient consultations, the country has no nationwide tracking system. Data are available only for 1990, when 57% of medical visits by children under the age of 15 were for acute respiratory infections, 18% were for infectious and parasitic diseases, and 9% were for skin diseases.

In studies conducted in 1990 among children enrolled in preschools operated by the National School Assistance and Scholarship Board, 11 episodes of acute illness per child were recorded in children observed over a period of 100 months, 57% of which were due to respiratory infections, 13.9% to skin diseases, and 10.5% to diarrheal diseases. The comprehensive school health system of the Ministry of Health, which covers children aged 6 to 10 who attend municipal and publicly subsidized private schools, reports that 5.8% of all schoolchildren have visual deficiencies, 8.2% have posture problems, and 2.2% have hearing problems. Programs have been implemented to refer schoolchildren with these types of problems to medical specialists in the public and private sectors.

With regard to hospital discharges, the available data indicate that for 1993 the principal cause associated with hospital discharge in the group aged 10 to 14 was injury and poisoning, which was associated with 704.9 discharges per 100,000 population. The next most frequent causes were diseases of the digestive system (569.28 discharges per 100,000 population) and diseases of the respiratory system (404.68 discharges per 100,000 population). As for sex differentials, among males aged 10 to 14, the most frequent causes associated with hospital discharge were injuries (955.99 per 100,000 population) and diseases of the digestive system (625.60 per 100,000 population); among females in the same age group, the most frequent causes were diseases of the digestive system (511.4 per 100,000 population) and injury (445.40 per 100,000 population).

Health of Adolescents

Adolescents in Santiago suffer 2.8 episodes of illness per year, with a medical consultation rate of 1.58 per person in 1995. Based on studies carried out in 1990, ill-defined causes account for the largest proportion of these episodes, followed by acute respiratory infections and digestive disorders. Of the patients referred to the secondary care level, 40% were psychiatric patients, 18% were ophthalmology patients, 11% were dermatology patients, and 5% were trauma patients.

The most frequent cause associated with hospital discharges in the group aged 15 to 19 years is childbirth (2,272 per 100,000 population), followed by injuries and poisoning (823.65 per 100,000 population). In this age group, addiction is a serious problem, to which the Government has assigned high priority. The National Drug Abuse Control Council (CONACE) has implemented a national drug information system. In 1994, CONACE surveyed 8,271 persons age 12 to 64, who represented 80% of the population in the country's urban areas and five geographic regions (Norte Grande, Norte Chico, Santiago metropolitan region, Zona Sur, and Zona Austral). The survey found a lifetime prevalence of drug use (i.e., use of at least one of three illicit drugs—marijuana, cocaine paste, and cocaine hydrochloride—at least once in a lifetime) of 9.43% among those aged 12 to 18 for the country as a whole. By region, the highest lifetime prevalence rates were found in Norte Grande (the Tarapacá and Antofagasta regions), where the rate was 9.7%, and the Santiago metropolitan region, where the rate was 12.4%. Lower rates occurred in Zona Sur (Libertador B. O'Higgins, Maule, and Biobío), where the lifetime prevalence was 6.4%. The lowest rate was found in Zona Austral (Araucanía, Los Lagos, Aysén, and Magallanes), with a prevalence of 5.0%. Norte Chico (Atacama, Coquimbo, Valparaíso) had a prevalence of 7.1%. With regard to the types of drugs used among young people aged 12 to 18, the CONACE study showed that the lifetime prevalence by drug used was 9.03% for marijuana, 1.92% for cocaine paste, and 1.57% for cocaine. For all those surveyed, use of cocaine paste was found to be most frequent among those in the lower socioeconomic strata (lifetime prevalence of 3.16%), and cocaine use was

most frequent among those in the upper-middle and upper income groups (lifetime prevalence of 3.24% and 3.59%, respectively). By region, the lifetime prevalence is 3.9% in Norte Grande, 1.0% in Norte Chico, 2.6% in the Santiago metropolitan region, 1.1% in Zona Sur, and 0% in Zona Austral.

The prevalence of tobacco use in the month immediately preceding the survey was 24.27% among young people aged 12 to 18. In the same age group, the prevalence of alcohol use in the month immediately preceding the survey was 24.04% and that of tranquilizer use was 1.08%.

Health of Adults

In 1994, mortality in the group aged 15 to 59 was 2.21 per 1,000 population; male mortality was double female mortality, with little variation in rates by region. Sex differentials were noted mainly in relation to accidents and violence (118.05 per 100,000 population among males versus 18.80 per 100,000 among females) and in diseases of the circulatory system (43.84 per 100,000 population among males and 25.01 per 100,000 among females).

Mortality in the group aged 15 to 44 decreased slightly, dropping from 12.6% in 1984 to 11% in 1995, and the rate in the group aged 45 to 64 decreased to 7.6 per 100,000 persons in this age group. By groups of causes, proportional mortality from infectious diseases decreased for both sexes (from 3.6% of all deaths in 1984 to 2.7% in 1995), as did the rate for external causes (from 12.4% in 1984 to 11.3% in 1995) and that of diseases of the circulatory system (from 28.4% in 1984 to 26.9% in 1995). The proportion of deaths due to malignant neoplasms increased (from 16.6% of all deaths in 1984 to 21.7% in 1995), as did the proportion due to endocrine and metabolic disorders (from 2.3% in 1984 to 3.6% in 1995).

Health of the Elderly

Adults over the age of 60 make up 9.71% of the country's population. Deaths in this age group in 1995 totaled 54,527 (69.4% of all deaths that year), yielding a mortality rate of 39.1 per 1,000. By cause, in 1994 diseases of the circulatory system and malignant neoplasms together accounted for 57.1% of all deaths; the next most frequent groups of causes were respiratory diseases (13.5%) and digestive diseases (6.1%). With regard to hospital discharges, the rate in 1993 was 174.8 discharges per 1,000 population in the over-65 age group. The most frequent causes of hospitalization were diseases of the circulatory system, which generated 35,418 discharges, for a rate of 41.19 discharges per 1,000 population, followed by diseases of the respiratory, digestive, and genitourinary systems; injuries; and malignant neoplasms.

According to data from the only existing study on the needs of the elderly in urban areas, which was conducted in 1984 in a population sample of 1,500 older adults, 71.9% indicated that they suffered from some disease. Of that percentage, 17.7% had a disease of the circulatory system and 14.9% had a disease of the musculoskeletal system (14.9%).

According to the results of the 1992 CASEN, 65.2% of the elderly persons surveyed said they had suffered no episodes of acute illness or accidents during the preceding three months, and most of those who indicated they had been ill (close to 90%) had received medical attention. Around 70% required medication; 57% of them were able to acquire drugs they needed (31.8% purchased them and 18% received them free of charge). The survey also showed that 75% of the population over 65 years of age is covered by the public health care system, 11% go to private physicians, 5% receive care through private health insurance institutions (ISAPREs), and 4% are covered under the Armed Forces health care system.

Health of Women and Families

Maternal mortality, which increased to 30 per 100,000 live births in 1995, has shown a leveling-off trend. In 1960, the rate was estimated at 300 per 100,000 live births, and one-third of the deaths were attributed to abortion. The Responsible Parenthood Program has helped to substantially reduce maternal deaths.

With respect to domestic violence, in 1993 it was estimated that one of every four women, regardless of socioeconomic level, had been the victim of physical or psychological abuse. One-third of women acknowledged having been a victim of psychological abuse. Surveys conducted by UNICEF in 1995 reveal that only 22% of minors interviewed had never suffered any type of abuse, and 34% had suffered severe physical abuse. In response to these high rates, initiatives have been mounted to provide prevention and/or assistance services to victims, and legal changes have been promoted with a view to increasing protection for minors who are victims of violence.

The marriage rate has fallen from 7.5 per 1,000 population in 1990 to 6.1 per 1,000 in 1995. A total of 87,205 marriages took place in the latter year.

Workers' Health

In 1993, an estimated 68% of the employed labor force had some kind of protection against occupational health problems, generally in the form of insurance covering occupational risks (work-related accidents and diseases). This insurance is administered by one of three authorized institutions—the workers' compensation fund, which covers 24% of the em-

ployed labor force; employers' mutual insurance, which covers 74% of the employed labor force; and authorized insurance administration companies, which cover the remaining 2%. Oversight functions are carried out by the health services.

Available data indicate that the accident rate in 1993 for workers covered by mutual insurance was 12.5 per 100 covered workers, with significant variations by region and sector of activity (for example, the accident rate is higher in the construction, industry, mining, and agriculture sectors). The accident rate is inversely correlated with the size of the company, which is explained by the fact that all companies with more than 100 employees are required to have a department of risk prevention.

A large proportion of work-related health problems are not reported to the National Health Services System (SNSS). The most frequent claims are for diseases of the skin, hearing disorders, and musculoskeletal system diseases. Based on available information, in 1992 the most frequent work-related health problems were dermatitis, hearing loss, and tendinitis.

Health of the Disabled

Data from the 1992 census indicate that there were 283,888 persons in Chile with some kind of disability (total blindness, total deafness, muteness, paralysis, or mental impairment), which is 2.12% of the total population. Disability is slightly more common among males (male/female ratio, 1.16). The most frequent disability is paralysis (36.2%), followed by mental impairment (30.4%), deafness (21.1%), blindness (14.5%), and muteness (4.8%). Blindness is the only disability that is more frequent among females.

According to available data, in 1955 the pension administration system paid 4,131 disability pensions; 82% were for total disability. The most frequent reasons are psychiatric disorders, followed by neurological disorders, heart problems, and cancer, with significant variations according to age and sex.

Health of Indigenous People

Available epidemiological information, although incomplete, shows that the communes with the largest concentrations of indigenous populations have lower health indicators than the rest of the country. One recent study yields an epidemiological profile based on information from 39 communes where 20% or more of the population is indigenous. The infant mortality rate in the period 1988–1992 varied among different indigenous groups: among the Aymará the rate was 40 per 1,000 live births; among the Atacameños, 57 per 1,000; among the Rapa Nui, 32 per 1,000; and among the Mapuche, 34 per 1,000. Health conditions among the indigenous population appear to have deteriorated more in urban areas than in rural ones. The conclusions of the aforementioned study constitute a first step toward characterizing the health situation of indigenous communities throughout Chile.

Analysis by Type of Disease

Communicable Diseases

Vector-Borne Diseases. *Triatoma infestans* is present in Chile between the 18°30′ and 38°35′ parallels, an area that encompasses regions I (Tarapacá), II (Antofagasta), III (Atacama), and IV (Coquimbo). The population exposed to Chagas' disease numbers 500,000 persons, distributed among 43 communes. Based on serological studies, 19% of the population is seropositive. In the endemic areas, blood is regularly screened in the blood banks of the 57 hospitals that serve 75.7% of the donors in the country. The most recent data available on the incidence of the disease, which date from 1994, indicate a rate of 3.3 per 100,000 population. It is estimated that in 1996 there were a total of 11,721 infested households in regions I and IV. Control programs applied in these regions in 1995 reduced the percentage of infested households from 51% to 2%.

Mortality from hydatidosis decreased from 0.5 per 100,000 population in 1981 to 0.24 per 100,000 in 1994 (34 cases). In 1994 an incidence rate of 2.4 per 100,000 population was reported (332 cases). The prevalence of hydatidosis in slaughterhouses has remained stable at about 10% of slaughtered animals.

There are no known cases of yellow fever. Eight cases of malaria were reported in 1994. No up-to-date studies exist on *Aedes aegypti* infestation in urban areas.

Vaccine-Preventable Diseases. The incidence of diphtheria in 1995 was 0.01 per 100,000 (two cases). The rate has decreased slowly but steadily, with periodic variations. Between 1991 and 1995, 25, 12, 8, 4, and 3 cases, respectively, were reported. Fewer than five deaths have been reported every year since 1987, and no diphtheria deaths have been reported since 1991 (one case).

The number of cases of whooping cough reported in the past five years has varied, because the disease tends to occur in cyclical outbreaks. In 1990, 59 cases were reported, with two deaths; in 1991, 61 cases and two deaths; in 1992, 264 cases and four deaths; in 1992, 59 cases and two deaths; in 1993, 517 cases; in 1994, 10 cases; and in 1995, 361 cases, with no deaths. Two outbreaks were reported during the period 1992–1997. The first occurred in 1993, when the incidence rate was 4.3 per 100,000 population (517 cases and five

deaths), and the second occurred in 1996, when the rate was 5.0 per 100,000 population (600 cases and two deaths).

Measles also tends to occur in epidemic cycles of approximately four years' duration. The last outbreak was in 1988, when 45,079 cases were reported, with a morbidity rate of 351 per 100,000. In 1989, there were 13,008 cases. In 1990, the number decreased to 1,958, with no deaths. In 1991 the number of cases rose again to 2,098, but in 1992 it dropped to 397 cases, two of which were fatal. Since 1993, no measles deaths have occurred. Morbidity has been successfully controlled thanks to two national vaccination campaigns conducted in 1992 and 1996 and subsequent active epidemiological surveillance. Between 1993 and 1996, the country had only two cases, both imported; the last case occurred in 1993.

No cases of poliomyelitis were reported during the 1976–1996 period.

Tetanus has been controlled in the country. Incidence rates have remained very low: 0.4 per 100,000 population in 1971 (41 cases) and 0.1 per 100,000 population in 1994 (11 cases, no deaths). No cases of neonatal tetanus occurred in 1995, and in 1994 only 1 of the 11 cases reported was neonatal.

The incidence of rubella has shown a downward trend, with noncyclical outbreaks; the last occurred in 1988. The rate fell from 54.9 per 100,000 population in 1990 to 16.5 per 100,000 in 1994.

Cholera and Other Intestinal Infectious Diseases. Since the outbreak of cholera in 1991—in which there were 41 confirmed cases, with a case fatality rate of 4.8%—the disease has been under control. The last reported case was in 1994.

The number of cases of typhoid and paratyphoid fever decreased by more than 50% between 1980 and 1990. In 1990 the incidence rate was 39.3 per 100,000 (5,172 cases). The reported death rate for that same period was 0.22 per 100,000. However, two distinct phases can be identified in the trend of the disease during the period: between 1980 and 1983, the rate rose from 97.6 to 119.8 per 100,000 and then began to fall again until 1990. The cholera outbreak in 1991 led to the application of a series of control measures, which also brought about a spectacular reduction in typhoid fever as well as hepatitis. In 1994, the morbidity rate for the latter disease was the lowest in Chile's history: 11.2 per 100,000 population (1,565 cases).

Hepatitis A is the most frequently reported sanitation-related enteric disease in the country. The incidence rate between 1980 and 1984 increased from 36.7 to 107.6 per 100,000, subsequently falling to 66.5 per 100,000 in 1990 (11,400 cases). Since the start of the cholera epidemic, the incidence of hepatitis A has declined dramatically from 66.6 in 1991 (8,909 cases) to 38.9 per 100,000 in 1992 (5,291 cases). However, after that year, the rate began to climb again, and in 1994 it reached 90.8 per 100,000 population (12,732 cases). The rates in these years were higher in regions outside the Santiago metropolitan area. As for hepatitis B, 125 cases were reported in 1994, for a rate of 0.9 per 100,000 population. That same year, three deaths were attributed to the disease (0.02 per 100,000 population). With regard to hepatitis C, it is estimated that <1% of the Chilean population is infected. Studies of blood banks in the country indicate antibody prevalence rates of between 0.15% and 0.35%.

Chronic Communicable Diseases. Mortality from tuberculosis in 1994 was 2.84 per 100,000 population. The rate has been reduced by one-third compared with the rate observed 10 years ago (12.2 in 1980). The prevalence has also decreased from 55.0 per 100,000 in 1985 to 41.1 in 1991 and to 29.5 in 1994 (4,138 cases). In 1994, 6,636 persons were hospitalized for tuberculosis; 81% had the pulmonary form. The median age of the patients was 42.5 years. The incidence rates currently being reported by health services show significant changes, and cases are being reported in children under the age of 15. During the 1989–1996 period, 40,000 cases and 3,800 deaths were reported. In 1994, new cases of tuberculosis totaled 3,646 (60% in males), and 4% of these new cases were in children under the age of 15. Of all the cases reported in 1994, 75% were pulmonary tuberculosis; of these, 62% were smear-positive.

Leprosy cases exist only in Region V, Easter Island. No new cases were reported during the 10-year period between 1984 and 1993, and six new cases were reported between 1994 and 1996.

Acute Respiratory Infections. Acute respiratory infections were the third leading cause of death in the general population in 1990 and the second leading cause in 1994 (5.2% of the total number of deaths). Among children under 1 year of age, acute respiratory infections accounted for 9.3% of all deaths in 1994. The infant mortality rate from pneumonia (ICD-9, 480–486) decreased from 3.04 per 1,000 live births in 1985 to 1.27 in 1994 as a result of the application of specific intervention strategies during the periods of highest incidence. According to hospital discharges associated with this cause, bronchopneumonia accounted for 60% of hospitalizations among children under 1 and for 46% among children aged 1 to 4. This cause is associated with 9.4% of all discharges in all age groups. Respiratory infections are also an important cause of pediatric medical visits in primary care centers and pediatric emergency services (generally, they are responsible for between 40% and 50% of all such visits). Among children under 2, respiratory infections are associated with 60% of all hospital discharges. Hospital discharge rates associated with this cause are very high among children under the age of 15 (2,000 per 100,000 discharges) and among adults over the age of 60 (4,000 per 100,000 discharges).

Rabies and Other Zoonoses. One case of human rabies was diagnosed in Chile in 1972. In 1996, one case occurred in a child in Region VI, following a bite by a vampire bat.

AIDS and Other STDs. The first AIDS cases were detected among males in Chile in 1984; the first female cases were detected the following year. As of March 1996, a total of 1,456 cases (92% in males and 8% in females), 909 deaths, and 2,203 carriers of the human immunodeficiency virus (HIV) had been reported. The male/female ratio was 10:1 for the 1992–1996 period, down from the ratio of 15:1 reported in 1984–1991. As of 31 December 1994, Chile had a cumulative rate of 8.8 cases per 100,000 population, which places it among the South American countries with moderate incidence of the disease. Sexual contact is the most common route of transmission (91%), especially in males. An increase in the incidence rate among the youngest members of the population has been observed over time. The most affected regions are the Santiago metropolitan region, Region V, and Region II. Sixty percent of the cases acquired through contact with infected blood are associated with intravenous drug use. AIDS surveillance in the country is carried out by sentinel centers that monitor specific population groups: blood donors, pregnant women, and patients in STD clinics. The results of this surveillance indicate that in the case of STD patients, who began to be monitored in 1992, the prevalence of HIV-positive individuals has remained stable (1% in 1992, 1% in 1993, and 0.66% in 1994 for all sentinel centers). With regard to the prevalence of HIV infection among pregnant women, an increase has been observed for all sentinel centers, with the rate rising from 0% in 1992 to 0.05% in 1993 and 0.1% in 1994. For blood donors, systematic screening was begun in 1987, and a slow but steady increase in prevalence has been noted (from 0.12 per 1,000 donations in 1988 to 0.31 per 1,000 donations in 1994).

In 1994 the most frequently reported STDs in Chile were syphilis (33.5 per 100,000 population), gonorrhea (26.1 per 100,000), and nongonococcal urethritis (5.9 per 100,000). Rates of syphilis have changed little in recent years, following a period of decline that ended in 1989. In 1994 a total of 4,705 cases were reported, with an incidence of 33.5 per 100,000 population. The incidence of gonorrhea has decreased in recent years, from a rate of 114 cases per 100,000 population in 1981 to 26.1 in 1994. It is known that the disease is underreported, although the number of cases that go unreported has not been determined. The majority of case reports come from public health establishments, and even in these establishments, it is believed that some cases are not reported.

Emerging and Re-emerging Diseases. The incidence of meningitis caused by *Neisseria meningitidis* has increased slightly in recent years, especially in the country's northern region. The rate increased from 0.6 per 100,000 population in 1971 to 3.38 per 100,000 in 1995. The disease affects mainly children under the age of 5 (55% of all cases), and there has been a relative increase in the number of cases in the group aged 5 to 9 years. Children between the ages of 0 and 9 years account for 70% of all cases.

The vaccine against *Haemophilus influenzae* type B was incorporated into the EPI in 1996 and is being administered to all children born after 1 May 1996. It is expected that 973,000 doses will be given in 1997.

In 1995 and 1996, two and three cases, respectively, of laboratory-confirmed Hantavirus infection were reported in Region X, in southern Chile. Three of these cases proved fatal. In 1995, two cases of hemolytic-uremic syndrome were reported after consumption of meat contaminated with enterohemorrhagic *Escherichia coli.*

Noncommunicable Diseases and Other Health-Related Problems

Nutritional Diseases and Diseases of Metabolism. The incidence of child malnutrition, as measured by weight-for-age, was 15% in 1975 and 5% in 1993. In June 1996 the Ministry of Health reported that only 0.6% of children under the age of 6 fell more than 2 standard deviations below the reference values established by the United States National Center for Health Statistics (NCHS). Integrated nutritional assessments, measured at similar points in time, show that 74.4% of children under 6 are classified as normal. Among pregnant women, the prevalence of underweight decreased from 26% in 1987 to 17% in 1996, and the proportion of overweight increased to 46% in 1994. The most recent available study of nutritional status in the child population whose growth was regularly monitored in public health establishments shows that, based on the aforementioned integrated nutritional assessment, 3.1% of children are at risk of malnutrition and 0.7% are malnourished. The majority of children (73.7%) have normal nutritional status, and 22% are overweight or obese. The reduction in child malnutrition is associated with the activities of the National Supplementary Feeding Program, increased coverage of child services, and improvements in the educational levels of mothers.

With regard to micronutrient deficiencies, a national study conducted in 1975 concluded that vitamin A deficiency does not exist in Chile. The incidence of anemia, according to studies by the Food Technology and Nutrition Institute (INTA), is 20% among children aged 6 to 24 months and 20% among pregnant women. Mandatory iodization of salt (in Chile 97% of salt is iodized) has contributed to the control of goiter. Nevertheless, studies of localized school populations in 1995 found a 9% prevalence of goiter.

Studies by the National Breast-Feeding Commission, created by the Ministry of Health to promote breast-feeding, reveal that 87% of children are breast-fed during the first month of life. By the fourth month, the percentage drops to 59%, and by the sixth month, to 25%. Other studies conducted in pediatric care services found that 57.1% of the population surveyed was exclusively breast-fed at 120 days of age.

Based on various studies, obesity is more prevalent among females (between 22.7% and 25.0%) than males (between 13.0% and 17.6%). Differences occur between men and women in different socioeconomic strata; for example, obesity is more frequent among females in lower socioeconomic strata and among males at higher socioeconomic levels.

The prevalence of diabetes ranges from 3.0% to 5.6%, according to various studies of the general population. Diabetes is the primary cause in a rising number of hospital admissions and is also frequently an associated cause. In 1990, 11,650 patients were hospitalized for diabetes mellitus, making the hospitalization rate 8.84 per 10,000 population and 35.8 per 10,000 population in the group aged 45 and over. Diabetes was associated with 70% of hospital discharges for endocrine causes. The increased prevalence of diabetes could be attributable to unhealthy lifestyles as well as to lower mortality from the disease because of better therapeutic management. At the primary care level, this diagnosis accounts for an estimated 2.9% of all visits.

Cardiovascular Diseases. For the past several years, this group of diseases has accounted for the largest proportion of mortality among Chileans, especially adults. More than one-fourth of all deaths are caused by cardiovascular diseases (20,922 in 1994, or 27.7% of all deaths that year, with a specific rate of 149.5 per 100,000 population). Within this group, ischemic heart disease, hypertensive disease, and cerebrovascular disease occur most frequently. According to information on hospitalized patients, cardiovascular diseases generated a hospitalization rate of 5.2 per 1,000 population in the general population in 1991, a 35% increase with respect to 1975. Ischemic heart disease (ICD-9, 410–414) accounts for the largest percentage of deaths. Myocardial infarction (ICD-9, 410) alone accounts for 25.9% of all deaths attributed to this group of causes.

Malignant Tumors. The trend of general mortality from this cause has been upward over the past decade. In 1980 mortality from malignant neoplasms was 101.6 per 100,000. The rate increased to 104.3 per 100,000 in 1987 and to 115.7 in 1994. In 1995, malignant neoplasms were the second leading cause of death in the country, accounting for 16,429 deaths (20.7%). The five most frequent cancer sites are the stomach (16.7%); trachea, bronchus, and lung (10.4%); gallbladder and bile ducts (10%); prostate (6.4%); breast (5.7%); and uterine cervix (4.5%).

In 1994 a total of 10,293 cases of cancer were reported (73.4 per 100,000 population). The most frequent types in females are cancer of the cervix (25.6% of all female cancer cases), breast (15.8%), and skin (8.7%). Among males, the most frequent types are cancer of the stomach (20.5% of all male cancer cases), prostate (12.2%), and lung (10.1%). The male/female case ratio is 0.68.

Accidents and Violence. In 1991 the mortality rate from injuries, poisoning, and violence was 69.1 per 100,000 population, and in 1994 it was 63.6 per 100,000. Accidents and violence have become increasingly prominent as causes of both mortality and morbidity. Persons under the age of 65 account for 84.8% of all deaths from this group of causes (compared with 44.5% for other causes) and persons under the age of 15 account for 16.5%. The latter group's share of mortality from violent causes has ranged between 11% and 12% over the past decade (11.8% in 1994). Thirty-eight percent of the deaths from this group of causes are due to accidents of all types; of these, almost one-fourth are motor vehicle accidents.

According to police records, the number of persons injured or killed annually in traffic accidents increased between 1980 and 1995 from 25,176 to 41,582, an average rise of 9.4% per year. The number of deaths went up from 1,191 to 1,747 over the same period, a 7.4% yearly increase. In 1996, police statistics show 1,925 traffic accident fatalities and a total of 60,093 accidents. In economic terms, private expenditures due to vehicle accidents totaled an estimated US$ 274 million in 1993, including the cost of injury to persons and damage to vehicles. The social cost of these accidents in 1993 is estimated at US$ 321 million, taking into account damage to vehicles, injuries, and deaths. A study of motor vehicle accidents in 1989 conducted by the Ministry of Health and the World Bank in 1993 revealed that about 5.8% of the vehicles in the country had been involved in some kind of accident, with figures ranging from 2.0% of the vehicle fleet in the regions of Coquimbo and O'Higgins up to 12.2% in the Aysén region. The percentage of public transportation vehicles involved in accidents, according to the aforementioned study, was 44.8%—almost half of all the vehicles were involved in some type of accident in 1989. When the information was classified by commune, it was found that this percentage was 63% in the case of public transportation vehicles in the Valparaíso region. This situation prompted the Government to create an interministerial commission on transportation safety, which has established the basic framework for public policy on this issue.

Behavioral Disorders. The prevalence of mental health problems has increased significantly in recent years. Several studies—most of them of small groups, specific groups, or both—provide indirect indicators. Of the medical leave certificates issued by the National Health Fund, 5.6% were for

neuroses. In the case of certificates issued to ISAPRE beneficiaries, this percentage was 7.48% in 1994.

With regard to alcoholism, it is estimated that at present 20% of persons can be classified as problem drinkers; 15% of them are not dependent on alcohol, and 5% are dependent on alcohol. Alcoholism is more frequent among males and among persons who are unemployed or irregularly employed. It is the eighth leading cause of disability adjusted life years (DALY: 53,498, with 3.02%). Alcoholism is associated with 38% of hospital discharges. It is the primary cause reported in 4.5% of hospital discharges and in 7% of deaths, and it is an associated cause in 25% of deaths. Alcohol use is a factor in 48.6% of homicides, 38.6% of suicides, and 50% of traffic accidents.

According to information obtained from the CONACE survey, the prevalence of alcohol consumption during the month before the survey, without regard to the amount consumed, was 39.97% (50.23% among males and 31.03% among females). No major differences by age group were found; the lowest values were observed in the group aged 12 to 18 (24.04%), and the highest values were reported in the group aged 19 to 25 (49.74%). By socioeconomic level, higher prevalence was found in the upper and upper-middle strata (56.95% and 47.18%, respectively) than in the lower-middle (35.25%) and low-income (38.52%) groups. The study design included administration of the "Short Survey of Drinking Habits" to determine the percentage of alcohol drinkers who can be classified as problem drinkers. The results showed that 24% of the persons who said they had consumed alcohol in the past year fall into the category of problem drinkers (35.6% of the males and 11.1% of the females surveyed), with higher percentages in the lower socioeconomic groups: 41% in the low-income group and 32% in the lower-middle group, compared with 13.1% in the upper-income group and 11.5% in the upper-middle group. Most of those surveyed had started drinking before the age of 18 (71.35% of the males and 57.07% of the females). Drinking at an early age (before age 12) was more common in the lower socioeconomic strata (11.41%).

Specific mortality from cirrhosis of the liver was 20.8 per 100,000 population in 1994, one of the highest rates in the Region. Liver disease remains an important cause of death, especially cirrhosis, which is responsible for a significant proportion of alcohol- and tobacco-related mortality. The death rates from cirrhosis were 27.4 per 100,000 population in 1989, 28.5 in 1990, and 20.8 in 1994.

According to the CONACE drug addiction survey, among all the individuals aged 12 to 64 surveyed, the lifetime prevalence of illicit drug use (i.e., use of at least one of three illicit drugs: marijuana, cocaine paste, and cocaine) was 13.42%. The rate was 20.63% for males and 7.14% for females. This means that one of every eight Chileans between the ages of 12 and 64 has used one of these substances at some time. The lifetime prevalence is greater for all three drugs considered in the survey in the groups aged 19 to 25 years (22.23%) and 26 to 34 years (20.84%). The lifetime prevalence is also higher in the upper and upper-middle socioeconomic strata (21.11% and 15.35%, respectively) and lower in the lower socioeconomic stratum (11.73%). The most frequently used drug is marijuana (12.85%), followed by cocaine (2.35%) and cocaine paste (1.97%). The only major sex difference occurs in the case of cocaine use, which is six times more frequent among males (4.4%) than females (0.7%).

According to data from the 1994 CASEN, the prevalence of tobacco use is 38% in the male population and 25% in the female population. A slight decrease in prevalence has been noted among males (from 47% to 44%), and the prevalence among females has increased (from 36% to 41%). These data are similar to those generated by the 1995 CONACE, which found a prevalence of 45.43% among males and 36.25% among females. Tobacco use begins before the age of 12 in 8.15% of males and 4.21% of females. The prevalence of tobacco use in the month prior to the survey ranged from a high of 50.82% in the group aged 19 to 25 to a low of 24.27% in the group aged 12 to 18. The prevalence is higher in the upper socioeconomic stratum (42.31%) than in lower socioeconomic levels (31.78%).

The prevalence of use of legal drugs such as tranquilizers (especially benzodiazepines) in the month preceding the survey was 6.2% and was higher among females (8.37%) than males (3.71%). The differences by age range from a low of 1.08% in the group aged 12 to 18 to a high of 11.28% in the group aged 45 to 64. Use of this type of drug is much more frequent in the upper socioeconomic strata (10.77%) than in low-income groups (3.67%).

Oral Health. The estimated prevalence of dental caries in the population exceeds 90% and the average number of damaged teeth is 12 per person. Thirty-four percent of preschool children have dental caries. In the Santiago metropolitan region, the DMFT index (decayed, missing, filled teeth) in children with permanent dentition seen in outpatient services (6 to 18 years of age) was 6.27. Nevertheless, a slight improvement has been observed in these indexes, thanks to the large-scale application of various preventive interventions (education, fluoride rinses, and application of sealants), although the prevalence remains high in the adult and adolescent populations. Another problem is gingivitis, the prevalence of which is estimated at 37.7% in the population aged 6 to 12, and the rate increases with age. Studies conducted to date indicate a correlation between oral health problems and low educational and socioeconomic levels, which are considered risk factors for poor oral health. With regard to coverage of oral health services within the SNSS, it was estimated that in 1995 only 1.97% of the population had received such services. The population aged 0 to 9 had a coverage of 3.91%; the population aged 10 to 19, 2.46%; pregnant women, 0.85%; and the population over the age of 20 had a coverage rate of only 0.85%.

Natural Disasters and Industrial Accidents. Because of its geography, Chile is exposed to various types of natural phenomena that may endanger the population's health. These include earthquakes, landslides, and floods, which in the past decade have affected the population. In 1996, a drought in at least four regions of the country, including the metropolitan region, affected the agricultural sector and also reduced the water reservoirs used to generate electricity. At the same time, water supplies were insufficient for distribution of drinking water in certain sectors of the metropolitan region, which led to the implementation of various strategies aimed at reducing unnecessary consumption. Once this problem had been partially overcome, a new problem emerged due to the opposite climatic phenomenon—excessive rainfall, which produced a state of emergency, especially in the northern part of the country in the regions of Atacama and Coquimbo, both of which normally have a desert climate and so lack the necessary road and drainage infrastructure to deal with such a situation. Many families with limited resources lost their homes or possessions, and several deaths occurred in connection with the rescue operations mounted by social organizations in the most heavily damaged sectors.

In 1992, the city of Antofagasta was flooded by rainfall that saturated the ground around drinking water storage reservoirs, which affected a large segment of the city. In 1993, a similar phenomenon affected the area known as the Macul gorge in the Santiago metropolitan region as a result of rainfall in the mountains, which created a mass of mud and rock that buried a vast sector of the city, claiming more than 100 victims, who either died or disappeared.

Because the country is naturally prone to seismic activity, especially the area extending from the metropolitan region to the North, the population is subjected to earthquakes fairly often. The last one, which was of medium intensity, occurred in 1996 and affected Chile's central area.

Industrial accidents are a recent phenomenon. Their occurrence has led to the formation of teams responsible for prevention and for planning disaster response activities.

RESPONSE OF THE HEALTH SYSTEM

National Health Plans and Policies

Under the Constitution of 1980, health is considered a basic human right and it is the State's duty to ensure that all citizens are able to exercise their right to protect their health and to live in an unpolluted environment. The Constitution recognizes a dual system of health care, in that it guarantees each person's right to choose whether to receive care in the public or the private health care system. The function of the Ministry of Health is to ensure free and equal access to services for the promotion, protection, and recovery of health as well as rehabilitation services following illness. The Ministry also is responsible for coordinating, overseeing, and, where appropriate, executing activities in these areas.

The policies of the country's second democratically elected government are aimed, in broad terms, at bringing about reform of the State and eliminating extreme poverty. In the area of health, the Government is committed to improving the quality of life for all Chileans. In 1996, the Government undertook the modernization of the social sectors through greater efficiency in the use of resources and in the sector's organization, which is considered as fundamental for socioeconomic development and for improving the quality of life. Health planning in Chile is essentially decentralized. The Ministry formulates strategic lines of action and national goals, and the regional health services develop detailed plans and programs. The principal issues confronting the sector are the lack of equity among various regions and communes in the country and between the public and private sectors with respect to the distribution of resources and activities; limitations in the availability of resources and in the organization and management of the public subsector; and the need to ensure that health service users are treated with dignity and are viewed as the primary focus of health sector activities.

The Plan for Strengthening and Modernizing the Public Health Sector, which was carried out in 1994 and 1995, sought to improve efficiency and quality of care, particularly the care provided to the poorest segments of the population. The strategic lines of action under the plan were to transfer to the population the benefits of the modernization process that had been the focus of the government's attention during the first few years and to develop an integrated Social Security system to cover the entire population through a set of individual and collective benefits with mutual financing.

Health reform efforts in Chile are aimed mainly at reducing waiting lists, helping to overcome extreme poverty, humanizing health care and improving the treatment of users, strengthening and modernizing the public health care system, increasing social control and involvement in the health sector, improving coverage and quality of care for the elderly, enhancing health care for adolescents, and strengthening oversight of the ISAPREs.

Organization of the Health Sector

Institutional Organization

The unified public health care system that Chile adopted in 1952, which provided coverage for the entire population, has undergone significant change since 1980, particularly in establishing the ISAPREs and in transferring responsibility for management of primary health care establishments to the municipal level. These changes have been accompanied by

decentralization of the management of the regional health services (of which there were 28 as of early 1997).

The public subsector comprises the agencies that make up SNSS: the Ministry of Health, the 28 regional health services distributed throughout the country, the National Health Fund (FONASA), the Public Health Institute, the Central Supply Clearinghouse, and the ISAPRE Authority. All of them have been decentralized. The sector also includes governmental institutions and enterprises that provide health care for their personnel.

In each region, the Ministry of Health is represented by a regional secretariat. The 28 health services and one specialized service (the Metropolitan Environmental Health Service) provide medical attention and health care services for the population in a specific geographic area through their health care establishments and units. Public sector health care personnel include 68,400 SNSS employees and 16,500 primary health care providers at the municipal level.

FONASA is the agency responsible for collecting, administering, and distributing state funds for health. Its main functions relate to financing health activities and to the capital investments required by the system. The agency has a central office and 13 regional offices for managing the free-choice modality, a health care scheme similar to the ISAPRE model in the private sector.

The Public Health Institute serves as the national reference laboratory and is responsible for regulating and supervising the public health laboratories designated by the Ministry of Health in the fields of microbiology, immunology, food science, pharmacology, clinical laboratory, environmental pollution, and occupational health.

The Central Supply Clearinghouse is responsible for centralized procurement and supply of drugs, laboratory and pharmaceutical products, surgical equipment, instruments, and other supplies needed by all agencies, entities, and individuals employed in or affiliated with the system.

The health services system comprises three levels of care (primary, secondary, tertiary), and each service carries out health promotion and protection functions, curative care, and rehabilitation in accordance with its respective level of complexity.

Decree N 1/3063, enacted in 1980, permits the transfer of responsibility for administration of primary health care establishments to the municipal level. The process, which was initiated in 1981, was intended to achieve greater administrative decentralization of the establishments and, at the same time, extend coverage, tailoring it to the needs of each community. It culminated in 1988, by which time responsibility for most primary health care facilities in urban and rural areas, as well as rural health posts and stations, had been transferred to the *municipios.*

The ISAPREs are private entities that withhold 7% of the salaries of workers who voluntarily and individually decide to become members of their health plans. Depending on the plan selected, the worker may be required to pay an additional premium. Generally, a copayment is also required when services are received; the amount varies depending on the plan selected and the time and point of service. When workers do not voluntarily join an ISAPRE, their 7% contribution goes to FONASA, which becomes responsible for their health insurance coverage. This institution also receives tax funds to finance care for the indigent and for the uninsured (self-employed workers, for example).

Health Legislation

Health sector reforms have required that existing legislation be modified extensively. The principal legal reforms currently under consideration are the draft law on professional remuneration and incentives, which reflects an agreement between the Ministry and health professionals; a series of proposed laws aimed at advancing the legislative effort at decentralization; a new law regulating the working conditions and compensation of physicians, dentists, and pharmacists; and draft legislation on bioethical issues such as transplants (this legislation has already been approved), artificial life support, assisted fertilization, and genetic manipulation. The major legislative matters remaining to be addressed include environmental legislation that would clearly define the role of the health sector in environmental issues and expansion of the scope of the law governing production and marketing of drugs.

In the framework of regional integration processes—specifically the Hipólito Unanue agreement (Andean Pact) and MERCOSUR and the Southern Cone Initiative—the country also is engaged in a process of harmonizing national health legislation in the subregion. To date, however, no viable proposals have been advanced for health legislation that would respond to present and future needs associated with regional integration.

The Chilean Congress is bicameral and each legislative chamber has a health commission. These commissions have become forums for debating health sector reform and other sectoral issues, especially the conflicts between the Government and associations of health professionals.

Management of the Health Sector

The legal framework for the process of health service decentralization is provided by the reforms of 1980. The population is covered by 28 regional health services, which enjoy autonomy of action, financing, and budgeting. These services

form the core of the Chilean health system. Responsibility for primary health care is delegated to the *municipios*, which coordinate their activities with those of the regional services. The regional as well as municipal health services have financial autonomy and they are financed by either FONASA or ISAPRE, to whom they sell services. One of the fundamental aspects of health reform is separation of institutional functions. The Ministry of Health, historically the provider of basic health services in the country, has progressively adopted a governing and regulatory role; FONASA performs insurance and financial functions; and the regional health entities are responsible for providing service.

In the private sector, health insurance is provided by the 21 open ISAPREs and 15 restricted ISAPREs operating around the country. The open ISAPREs recruit their members from among the working population in general, while the restricted institutions cover workers only in certain companies, generally large businesses, such as mining, petroleum, and railroad companies. Services are provided to members in private clinics and public hospitals (about 10% of beds in public hospitals are available to ISAPRE members). Some ISAPREs have their own outpatient primary care services, but they generally do not provide hospital care.

From a financing standpoint, private participation in the Chilean health care system takes place through the ISAPREs and, in terms of service delivery, through outpatient care facilities and the 11,549 hospital beds available to this subsector, which represent 26.78% of all the hospital beds in the country, with an occupancy index of 57.5. For many years, the number of beds available in SNSS was around 33,000, but it began to decline in 1980, dropping to 31,579 in 1995. There are currently 3.5 beds per 1,000 beneficiaries in the public subsector and 3.0 beds per 1,000 population in the public and private subsectors combined.

Of the 35.3% of the population that receives care in the private sector, 23.7% are covered by ISAPREs, 2.7% by the Armed Forces health care system, 0.9% by other systems, and 8.0% cover their own health care expenses.

Beneficiaries of the public system (FONASA) make up 64.47% of the total population, while beneficiaries of ISAPREs constitute 27%, including the 1.3% who are members of restricted ISAPREs. The rest of the population (9.05%) receives health care from the Armed Forces and police systems or from private or alternative health care providers.

Insurance and Coverage

In 1995 SNSS provided 2.53 consultations per beneficiary; open ISAPREs, 2.9; and restricted ISAPREs, 4.9. In the case of SNSS, if services provided by nonphysicians (nurses, midwives, and auxiliary personnel) are taken into account, the proportion rises to 4.04 visits per beneficiary.

In 1995 a total of 1.4 million patients were discharged from all inpatient care facilities in the country. SNSS registered 1,064,000 discharges, with a yield of 33.7 discharges per bed. In the private sector, the proportion was 32.1 discharges per bed. In 1996, the SNSS had 116.2 discharges per 1,000 beneficiaries; the open ISAPREs, 86.4; and the restricted ISAPREs, 139.8. The hospitalization rate (the discharge/consultation ratio) was 4.58% in the SNSS, 2.50% in the restricted ISAPREs, and 2.76% in the open ISAPREs. In the public sector, if consultations provided by nonphysician personnel are considered, the rate is 2.86%.

In public and private establishments, a rate of 2.18 laboratory exams per person was reported in 1996. In the case of imaging studies, the rate was 0.21 per person, and for pathological anatomy studies it was 0.05. The ratio of clinical laboratory exams to consultations was 2.04. The ratio of imaging studies to consultations was 0.20, and that of pathological anatomy studies to consultations was 0.05.

The rate of major surgeries per 100 population in 1996 was 2.67, and the rate of minor surgical procedures per 100 population was 4.82, for a total of 7.49 surgical procedures of all types per 100 population.

Organization of Health Regulatory Activities

The construction of new private health care facilities is regulated by the General Construction and Building Ordinance, which contains a specific chapter on hospital buildings and health care establishments. The regional health services are responsible for authorizing the construction of such establishments.

In 1981 the military government modified the 1948 law on professional associations—which made the College of Physicians responsible for ethical oversight of the profession—and eliminated mandatory physician membership in the College. This has had serious ethical ramifications, as well as consequences for the control over the practice of medicine, because an estimated 20% to 30% of practicing physicians are not members of the College. Currently there are four proposed laws before the National Congress that seek to correct this situation.

The Chilean drug market generates close to US$ 400 million annually. About half the drugs sold are produced in national laboratories and the other half are imported. Under recently updated legislation (March 1997), drug registration falls under the responsibility of the Public Health Institute. Inspections are carried out by the regional health services, and the necessary tests and analyses are conducted by the Public Health Institute.

Health Services and Resources

Organization of Services for Care of the Population

Environmental Protection. The environmental regulatory system was strengthened through the enactment in 1994 of the Basic Law on the Environment and the adoption in April 1997 of regulations for environmental impact assessment in development projects. The implementation of this system has made it possible to disseminate information on levels of pollution in the capital on a daily basis and to declare environmental alerts and emergencies when pollution levels exceed 300 mg/m^3, in which case strict restrictions are imposed on motor vehicle traffic and a large number of industries that are fixed sources of pollution are temporarily shut down.

In the Santiago metropolitan region, the Metropolitan Health Service is responsible for monitoring air quality and levels of pollution emitted by fixed sources. The Metropolitan Transport Service monitors mobile sources of pollution.

Monitoring of water quality is done by the General Water Division of the Ministry of Public Works. Marine waters are monitored by Directemar, an agency of the Ministry of the Navy. The regulations on water use are being updated by the National Commission on the Environment (CONAMA).

Food Safety. The Public Health Institute is responsible for controlling the quality of foods, but actual food quality control activities are carried out by the Ministry of Health through the regional health services, which monitor food quality through sampling, authorize the marketing of foods, monitor food-handling practices, and inspect the sanitary conditions in food establishments. The network of public health laboratories carries out analysis of food samples. The country's food legislation is currently being updated to bring it into line with international codes and standards.

Health Promotion. Chile is engaged in a major effort to increase health promotion activities. One of the principal activities is the organization of development councils (community participation councils) at the level of primary care services and establishments and in hospitals. In 1995, 40 development councils were operating, and by late 1996 the number had increased to 111.

Disease Prevention and Control Programs. Disease prevention and control activities are carried out by the municipally administered primary care services and the regional health services. The result of these activities can be seen in the figures: more than 95% immunization coverage, 99.5% attended births, and infant mortality of 12.0 per 1,000.

Epidemiological Surveillance Systems and Public Health Laboratories. The regional health services carry out epidemiological surveillance of communicable diseases through various intervention strategies that involve epidemiologists to control and monitor outbreaks. Traditional epidemiological surveillance models are being enhanced through the incorporation of data processing and transfer technology. One of the best experiences in this process is being carried out within the Atacama health service, which is using the Epivigil system and has adapted the NETSS surveillance model of the United States of America Centers for Disease Control and Prevention to the characteristics of the country's health services.

The national network of public health laboratories is coordinated and controlled by the Public Health Institute through the Program for External Evaluation of Clinical Laboratory Quality (PEEC), which includes eight clinical laboratory sections (clinical chemistry, hematology, parasitology, syphilis serology, bacteriology, immunology, virology, and mycobacteria). All the sections have subprograms for the specialties they evaluate. The organization and administration of PEEC, which is the responsibility of the Public Health Institute, calls for a minimum of two and a maximum of four evaluations per year by each subprogram for each of the establishments affiliated with the program. In March 1997 a total of 886 clinical laboratories were affiliated: 201 public; 77 municipal; 56 within the health systems of the Armed Forces, universities, or religious entities; and 552 private laboratories. In addition to these laboratories, there are 128 blood banks, 75 public and 53 private. All blood banks are required to screen for HIV, hepatitis B, syphilis, and, in endemic zones, Chagas' disease. The PEEC makes it possible to monitor compliance with established quality standards. During 1996, a total of 883 laboratories and 57 blood banks took part in the program, a participation level of 88%.

Drinking Water and Sewerage Services. Ninety-eight percent of the urban population and 67.3% of the rural population has access to safe drinking water. The coverage of sewerage systems is 84.7% in urban areas, although 97% of wastewater is disposed of in waterways without prior treatment.

Water use is 184 liters per person per day in urban areas and 50 liters per person per day in rural areas. One hundred percent of the population that has drinking water service receives chlorinated water.

Solid Waste Disposal. Solid waste collection coverage is 98% in urban areas; 74.2% of the waste collected is disposed of in sanitary landfills. Of the industrial waste generated in 1995 in the metropolitan region, 3.0% was classified as hazardous.

Food Aid Programs. Since the 1920s, Chile has been carrying out supplementary feeding activities. In 1952 these activities were consolidated under the National Supplementary Feeding Program (PNAC). This program, which has demonstrated remarkable stability over the years, largely explains the improvement in the country's infant mortality and immunization indicators (vaccination is carried out in conjunction with supplementary feeding). In 1994, PNAC accounted for 9.12% of total public spending on health.

Organization and Operation of Personal Health Care Services

Outpatient, Hospital, and Emergency Services. The health care establishments affiliated with the regional health services are organized in a network. The municipally administered primary care services also are linked to the regional services and are coordinated by the services through their primary care division, program division, or integrated care divisions.

In 1995, the public health system included 187 hospitals, 15 urban outpatient clinics administered by the SNSS, 215 municipally administered urban outpatient clinics, 146 rural outpatient clinics, and 1,102 rural health posts (without a permanent staff physician). Of the hospitals, 20 (11,855 beds) are high-complexity institutions; 30 are type-2 hospitals, or hospitals with several specialized departments (8,019 beds); 23 are type-3 hospitals, or hospitals that provide care in several basic specialties (4,114 beds); and 105 are operated by general practitioners (5,332 beds).

A network of emergency and prehospital care units operates within several health services in the Santiago metropolitan region, Valparaíso, and Viña del Mar. The prehospital care services are staffed by auxiliary personnel in some cases and by a physician (French SAMU model) in others, which has improved the quality of care in these units.

Auxiliary Diagnostic Services and Blood Banks. With a view to improving the quality of care at the secondary level, since 1994 autonomous diagnostic units (laboratory services and imaging) have been established, especially in the metropolitan region, as well as diagnostic and treatment centers annexed to hospitals and referral centers.

Of the 160 blood banks that existed in the country in 1993, 118 (73.7%) were public, 31 (19.3%) were private, and the rest were associated with the Armed Forces health services (4.4%), universities (1.3%), and independent private establishments (1.3%). In 1996, the Public Health Institute reported that the country had 128 blood banks (58.5% public and 41.4% private).

Specialized Services. In 1994, SNSS had 37 psychiatric establishments with 1,334 beds. The National Mental Health Plan, a comprehensive normative effort, is currently being implemented with the support of multidisciplinary units in the 28 regional health services. The plan seeks to integrate mental health patients into the community through group homes, sheltered workshops, and night hospital services, in addition to delegating responsibility for the care of these patients to primary health care services. The mental health units in the 28 regional health services are concerned mainly with promotion and prevention activities and with the identification of problems that require urgent attention, such as health and violence, alcohol and drug use, child and adolescent mental health, emotional disability, and rehabilitation.

Since 1990 the country has had an oral health program oriented toward health promotion and prevention of oral health problems. Thirty-eight percent of the population receives fluoridated water, and in the regions where this does not occur schoolchildren receive fluoride rinses through programs that currently cover 900,000 of the almost 2 million schoolchildren in the country. In addition, an oral health education program is carried out jointly by the Ministry of Education and the *municipios,* and the decayed, missing, filled teeth (DMFT) index and fluorosis problems are monitored. With regard to oral health care, there is an active effort to introduce new technology, with intensive use of auxiliary personnel. The number of required hours of study has been increased (from 350 to 1,200 hours) in training programs for dental assistants, and practical training is being incorporated into the education programs for oral health professionals. In 1992 one school of dentistry (Temuco) introduced a curriculum that emphasizes the use of new technology.

Inputs for Health

Drugs. Under recently updated legislation (March 1997), the Public Health Institute is responsible for registration and quality control of drugs, foods for medicinal use, cosmetics, and pesticides used for health and domestic purposes. The Public Health Institute also is responsible for the control, authorization, and inspection of establishments that manufacture pharmaceutical products, cosmetics, and pesticides throughout the country. Inspection of warehouses, drugstores, and distributors of these products is carried out by the regional health services; testing and analysis is done by the Public Health Institute.

Immunobiologicals. Chile's Public Health Institute is the official producer of biologicals for the country. The Institute manufactures rabies vaccine from suckling mouse brain for human and canine use. The volume of production is sufficient to fully meet domestic demand; it is also exported to seven countries in the Region. The quality of the manufacturing

process for this product has helped to reduce the incidence of rabies and has enabled the Public Health Institute to collaborate in quality control of rabies vaccine produced by other centers in the region. The Institute is also the sole producer in the country of the triple (DTP) and mixed (DT) vaccines, which are prepared with standard strains and by established procedures in sufficient quantities to meet domestic demand with a product of acceptable potency and efficacy. Another product made by the Public Health Institute is the whole-cell typhoid vaccine, which is administered mainly to food-handlers and military personnel. The Public Health Institute also produces purified protein derivative (PPD) for detection of tuberculosis, Rotagel for diagnosis of rotavirus, and standard antigen for diagnosis of rabies. The other vaccines are imported and the Public Health Institute is responsible for quality control.

Reagents. A recently modified law, which introduced changes in the Health Code, regulates quality control activities for a series of products with a view to ensuring their safety and efficacy. The Public Health Institute is currently drafting regulations that will define its inspection functions. Among the products subject to inspection are instruments, equipment, diagnostic reagents, and articles or elements used in the prevention, diagnosis, and treatment of human diseases, as well as prostheses used for anatomical replacement or modification.

Quality control will be carried out in establishments expressly authorized by the Public Health Institute in accordance with technical specifications established by the Ministry of Health based on proposals by the Public Health Institute. No product will be marketed unless it has been subjected to quality control procedures or received a quality certificate issued by an authorized entity.

Human Resources

Of the 13,857 physicians practicing in the country in 1966, 66.2% worked in the public sector and 7,831 were affiliated with SNSS; 11.7% of them practiced at the municipal level. Of the 5,817 dentists, 26.1% worked in the public sector and 8.75% at the municipal level. Of the 6,738 nurses, 59.0% worked in the public sector and 14.5% at the municipal level. As for midwives (5,369), 54.6% worked in the public sector, 17.1% at the municipal level. Of the 1,830 chemists and pharmacists in the country, 15.9% worked in the public sector and 1.5% at the municipal level. With regard to paramedical personnel, 26,972 practiced in the public sector, 19.5% of them at the municipal level. In 1996 the country had 0.54 physicians, 0.07 dentists, 0.22 nurses, 0.14 midwives, and 1.54 auxiliary personnel per 1,000 population.

Training. Undergraduate training programs for health personnel are offered by public and private universities throughout the country. Specialized training became available in 1954 with the creation of the Graduate School within the College of Medicine of the University of Chile. A national certification board (CONACEM) certifies medical specialists on the basis of validation of their credentials or competency exams. The certification board has been operating since 1985 and is composed of representatives from the College of Physicians of Chile, schools of medicine, the Academy of Medicine of the Institute of Chile, and several scientific societies. Its objective is to certify the qualifications of medical specialists and help regulate the practice of medicine. As of December 1995, CONACEM had certified 5,127 medical specialists; the majority were in the fields of pediatrics (735), internal medicine (683), general surgery (561), and obstetrics and gynecology (506). The University of Chile and the Catholic University train about 94% of the specialists who graduate from university programs.

As of December 1995, 8,654 graduates had completed university specialization programs in 1975, 1980, 1985, 1990, and 1995, the majority in internal medicine (1,199). Information provided in November 1995 by the College of Physicians of Chile indicates that 10,988 physicians were members of that association. Of that number, only 10.47% were registered as general practitioners working in urban or rural areas.

Continuing Education for Health Personnel. The legal provisions relating to primary care are innovative in the sense that they explicitly recognize the need for continuing education for health personnel. Continuing education is also a requirement for those employed by the municipal government. The health services are responsible for approving and supervising the annual training programs developed by each municipal government.

In a study of continuing education in a sample of health services in 1996, officials at all levels of the system indicated that since 1994 there has been a marked change in the intensity of training and in the training model, which is now more comprehensive and encompasses a wider range of professionals and auxiliary personnel. This process has responded to the organizational development initiatives of the services.

Job Markets for Health Professionals. In 1996 the Ministry of Health commissioned a study on the job market for health professionals that looked at supply, demand, structure, compensation, motivational factors, and trends. The study revealed that the country has sufficient numbers of medical professionals, except in some specialties such as anesthesiology, procedure-related specialties, oncology, and child neuropsychiatry, by order of relative shortage. In the Santiago metropolitan region there is a relative surplus (of approximately 1,300 professionals, according to the study), and there

are shortages of professionals in regions VIII, X, IX, and IV (between 570 and 340). The country has an insufficient supply of nurses, and most of these professionals are concentrated in the metropolitan region. Only one of every four nurses worked at the least complex levels of the system. Of the 5,817 practicing dentists, about 65% work in the metropolitan region, 30% in the SNSS; of these, 45% are specialists.

Research and Technology

Research and development in Chile increased ninefold in real terms between 1965 and 1993, although this sector of activity continues to account for only a small proportion (0.75%) of the GDP. Of the resources distributed by the National Board for the Development of Science and Technology (FONDECYT), the principal official source of funding in the area of technology, 13.4% went to the health sciences.

The main source of financing for research is FONDECYT. In the area of health, two national institutions receive a large share of this funding, which is awarded on a competitive basis: the University of Chile (Santiago), which accounted for close to 50% of all projects in the period 1988–1995, and the Catholic University of Chile (Santiago), which accounted for about 30% in the same period.

Of the 1,796 projects financed through various sources in the country during the period 1985–1994, 12% involved specialized training in medicine. Unfortunately, the other health professions were included under basic and applied sciences (15%), with no breakdown of the figures.

Technical and Scientific Documentation. In 1997, 75 regular publications were identified in the area of health, of which 55 are listed in the LILACS database. In Chile there is an extensive network of entities devoted to consulting and research in the health field, some affiliated with the university system; this network produces many publications. The Ministry of Health/PAHO Documentation Center registers close to 800 titles of this type each year.

Expenditures and Sectoral Financing

Total spending on health in 1997 was estimated at US$ 3,600 million, of which the public subsector accounted for some US$ 2,020 million. Total spending as a proportion of GDP for that year was estimated at 5.02%, of which 2.13% was private spending. Of the public spending, 10.2% was direct expenditures by municipal governments. In the past five years the proportion of the GDP devoted to health grew by 15.1% (from 4.36% in 1993). The public component increased 5.7% during the period (from 2.96% in 1993) and the private component, by 36.5% (from 1.56% in 1993). In 1994, 46.8% of public spending on health was financed by tax revenues and the remainder was financed by the 7% withholding on workers' earnings.

Analysts believe that the growth in private participation in the sector will slow in coming years because of saturation of the ISAPRE market. Moreover, the Government clearly has shown a clear willingness to continue increasing social spending on health and education.

With respect to public and private spending on preventive services, in 1995 SNSS spent a total of US$ 183.17 per beneficiary. In the private sector, the amount spent was US$ 212.69 in the case of the open ISAPREs and US$ 431.88 in the case of the restricted ISAPREs. Of the total institutional spending in the public subsector, 11.99% was for primary care.

With regard to public and private spending on outpatient and hospital care, FONASA spent 33.6% of its resources on inpatient care, 19.3% on diagnostic examinations, 17.1% on outpatient care, 13.9% on surgical procedures, 5.03% on gynecology and obstetrics procedures, 4.8% on oral health care, 1.3% hemodialysis and other benefits, 0.82% on specific protection activities, and 2.31% on environmental activities. In the ISAPRE subsystem, 46.15% of the resources were spent on outpatient care and related diagnostic services, 48.3% for medical programs, including hospital care, 2.18% on dental care (not covered by all health plans), and 0.35% on preventive activities. Of the FONASA expenditures, 13.9% occurred under the free-choice modality, a health care scheme that is similar to the ISAPRE model in the private sector. Beneficiaries may opt for this modality at the time they receive services.

As for the regional distribution of public resources among the 28 regional health services, in 1994 per capita revenues for health ranged from a low of US$ 78.55 (Biobío) to US$ 249.17 (Iquique). The median was US$ 114.67 (Antofagasta); the upper quartile was US$ 162.50 (Valparaíso-San Antonio) and the lower was US$ 94.14 (Viña del Mar-Quillota and the South-East metropolitan region); the semi-interquartile range/median quotient (nonparametric coefficient of variation) was 29.81%.

The public budget for health in 1997 was funded by worker contributions (33%), fiscal revenues (48%), operating income (8%), other income (9%), and borrowing (2%). Of the public resources for health, 10.2% came from municipal fiscal revenues. In 1996 investment in the sector totaled US$ 112 million, which represented 6.3% of total public spending in the sector. Investment increased 651% over the five years prior to 1995.

External Technical and Financial Cooperation

The health development situation in Chile is such that financial cooperation is less important than the joint activities

made possible by cooperative projects. Chile participates in a significant amount of cooperation among countries, especially with countries of Central America and the Caribbean, as is the case with Nicaragua and Haiti.

During the 1994–1995 period, Chile received extrasectoral resources in the form of loans from the World Bank for US$ 3.3 million for hospital rehabilitation and upgrading projects; US$ 23.9 million for emergency units in the metropolitan region; US$ 3.5 million for institutional development projects; and US$ 86.5 million for investment in eight regional health services. The Inter-American Development Bank (IDB) extended a loan of US$ 70 million for a project to improve the physical and functional efficiency of the regional services. The Government of Germany granted a loan of US$ 31.75 million for hospital restoration.

As for bilateral cooperation, during the same period Chile received US$ 894,000 from Germany for a project in the field of rehabilitation; US$ 10.8 million from the United States for primary care in needy communities; US$ 348,000 from the Kingdom of the Netherlands for AIDS prevention; US$ 10.34 million from Italy for health care in socially high-risk areas; US$ 42,000 from France for AIDS control efforts; US$ 700,000 from Japan for the development of health care units at the secondary level; and US$ 416,000 from Sweden, also for AIDS control. With regard to multilateral cooperation, the European Union provided US$ 986,440 for the prevention of drug addiction.