

TRINIDAD AND TOBAGO



Sources: Second Administrative Level Boundaries Dataset (SALB), a dataset that forms part of the United Nations Geographic Database, available at: http://www.who.int/whosis/database/gis/salb/salb_home.htm, and the Digital Chart of the World (DCW) located at: <http://www.maproom.psu.edu/dcw>. The boundaries and names shown here are intended for illustration purposes only, and do not imply official endorsement or acceptance by the Pan American Health Organization.

Trinidad and Tobago is the second-largest and southernmost territory of the West Indies. It has a total area of 5,128 km², of which Trinidad covers 4,828 km² and Tobago 300 km². The climate is tropical with a dry and rainy season. The capital city of Port of Spain is located on the northwestern coast of Trinidad. According to the 2000 national census, the population was 1,267,366, which represented a 4% increase over the previous decade. Of this total, 96% reside in Trinidad and 4% in Tobago. The male-female ratio is 1:1, and there is a population density of 246 persons/km².

GENERAL CONTEXT AND HEALTH DETERMINANTS

The twin-island nation gained independence in 1962 and became a republic within the Commonwealth of Nations in 1976 with a parliamentary democracy and an appointed President. Executive power lies with the elected Prime Minister and designated Cabinet with 23 public ministries. Legislative power rests with the Parliament. The bicameral legislature has an elected House of Representatives and an appointed Senate. The local government system consists of 14 corporations made up of two cities, three boroughs, and nine regional corporations principally responsible for maintenance and hygiene of the general environment and public buildings, including solid waste disposal. Tobago has its own political administrative structure under the executive power of the Tobago House of Assembly Act.

Social, Political, and Economic Determinants

In 2005, the Government of Trinidad and Tobago adopted the Vision 2020 National Strategic Plan to strengthen and support initiatives and increased investment in the social sector. The Plan's development priorities center on promoting effective governance, facilitating competitive economic enterprise, and providing sound infrastructure in an environmentally friendly manner. Vision 2020 focuses on human investment and resources development, as evidenced through a sustained increase in national budgetary allocations to the health (30%) and education (32%) sectors for 2005 (1).

The establishment of the CARICOM Caribbean Single Market and Economy in 2006 poses new social challenges that will affect the health and education sectors, due to the resulting rise in the free movement of people, goods, services, and capital between member countries and the need to secure competitive human

capital for the global market. Such dynamics also increase the potential risk of disease transmission and require innovative, harmonized, and shared health information and epidemiological surveillance systems and improvements in both the quality and coverage of health services from public and private sources, including coordinated social financing mechanisms.

To achieve the Millennium Development Goals (MDGs) within the context of a stable economy, the Government of Trinidad and Tobago developed, enacted, and implemented plans and policy and legislation reforms and established institutional bodies to expedite achievement of the MDGs. The MDG national assessment report for 2004 indicated that the global partnership for development had increased through anti-dumping and fair trade legislation; access to technology and services had increased; the debt service ratio had declined; and coverage of social assistance programs to vulnerable groups, such as older adults and families living below the poverty line, had increased (2, 3).

The economy has shown robust growth (7% in 2005) with a significant increase in energy exports, a low external debt, and increased external reserves. Core inflation rose on a year-to-year basis, reaching 3% by early 2005 due to rising food costs. Headline inflation has been stationary since 2000 and was approximately 4% in 2004. External current account surplus increased to 14% of GDP in 2004, up from 9% in 2003. Gross national income per capita increased over 2000–2004 by 64%. Real GDP at constant 2000 prices reached 6% in 2005. The dependency ratio was 47% in 2000 and decreased to 41% in 2005. Agricultural production steadily declined over the last decade, with the contribution of the agricultural sector to GDP falling from 2% in 1999 to 0.7% by 2005. This decline is attributed to several factors, such as the closure of the main government-owned sugarcane growing and processing company in 2003 due to a revision of World Trade Organization tariff and trade rules and the removal of European Union sugar subsidies, low wages in the agricultural sector, and

the worldwide rise in oil and gas revenues. As a result, the import value of food rose by 31% between 2002 and 2004 (4–7).

The labor force participation rate has remained stable since the 1990s, particularly for males, due to a decrease in the working population group for which qualified laborers and professionals are being imported in the social, productive (such as farm and non-farm enterprises and manufacturing), and construction areas.

Between 1996 and 2000, women's participation in the labor force remained stable at 38%, with a moderate increase in 2002, predominantly in the public services and informal sectors, and at lower clerical and income levels. Women's average income as a percentage of men's in 2000 was lower in all occupational categories, with the smallest disparity being that of clerks (88% for women vs. men) and the largest being that for legislators and senior officer managers (53%). The youth (15–24 years of age) unemployment rate stood at 25.4% in 2001; female unemployment has been consistently higher than male unemployment over the last three decades.

The Ministry of Education's mission statement focuses on a modernization and renewal of the education system with the institutional target of achieving universal primary education by 2015. The objectives of the Ministry's policy are to improve and increase access to educational opportunities at all levels, achieve and sustain quality in schools, provide student support services, and develop well-articulated human resources. Education is compulsory for children up to 12 years of age; the 2004 MDG national assessment report indicated that education coverage goals had been achieved, even though not all segments of the population were fully benefiting from the available opportunities.

In 2000, a policy was established for universal secondary education in Trinidad and Tobago, and during the review period all students completing primary school and taking the Common Entrance Exam for the 221 existing secondary schools were guaranteed placement. Expenditure in public education as a percentage of GDP was 3% in 2003. The annual Education for All (EFA) Global Monitoring Report for 2005 placed Trinidad and Tobago among the countries with a high (97%) EFA development index, a net enrollment rate in primary education of 94%, a gender-specific EFA development index of 96%, and a survival rate to grade 5 of 98%. The national education network has 917 early childhood education centers, 22% of which are public and focus on children ages 3–5. For the 2002–2003 school year, the pupil-teacher ratio was 12:1. There are 483 primary schools for children ages 5–11, yet 50% of students are considered to be at high risk of missing school, due to the schools' geographical location. Following the introduction of universal secondary education, promotion of primary students into secondary level studies increased by 79% for the 2002–2003 school year; female enrollment was 49%, and the pupil-teacher ratio was 19:1. Secondary education focuses on students ages 12–16; among these, those who pass the advanced proficiency examination continue on to an additional final two years of secondary education; in 2003, fe-

male enrollment was 52%, with a pupil-teacher ratio of 20:1. The combined primary, secondary, and tertiary gross enrollment ratio showed a downward trend in the early 1990s due to such socioeconomic factors as structural adjustment, unemployment, and parent migration. The change in the primary and secondary enrollment ratio fluctuated from a negative proportion over 2000–2003 to 28% in primary schools and 1% in secondary schools. With the introduction of universal secondary education in 2000–2001, the declining pattern at the secondary level improved in the advance years of 2002–2003 even though a decline of first entrants was maintained. Females predominated at the secondary and university enrollment levels with a male-female ratio at the latter level of 1:1.5 in 2001.

The estimated literacy rate for 2003 for the population aged 15 and over was 99%, with no significant gender differential. Literacy rates are higher among women of East Indian descent than men of East Indian descent, but lower for women of African descent than men of African descent. Low resource families with children enrolled in public schools receive government subsidies for books, transport, and meals (breakfast and lunch). In 2001, the Government of Trinidad and Tobago initiated the "dollar-to-dollar" program as a way to subsidize tertiary education by matching parents' local tuition fees; the 2005 national budget widened the scope by committing to provide free local first-degree tertiary education for nationals (8–10).

The situation of males poses challenges for achievement of the MDGs due to poor retention in schools and increased mortality from HIV/AIDS, external causes, violence, and crime. The Ministry of Community Development, Culture, and Gender Affairs, in conjunction with an Inter-ministerial Committee and the participation of the National Council of Women in an advisory role, promotes the Government of Trinidad and Tobago policy in support of gender and development. An active movement comprised of nongovernmental and community-based organizations supports the advancement of women in the country together with an ad hoc committee that supports women in the production and trade sectors. The Tobago House of Assembly has also established a Gender Division with a similar advocacy role as that of the various entities working together in Trinidad. The percentage of seats held in Parliament by women increased from 11 to 19 between 2000 and 2004; in 2002, the first female was elected by the Senate to become its President (11).

Key issues related to health are evident in the number of reports on serious criminal and violent events (traffic accidents excluded), ranging from 17,134 in 2000 to 16,387 in 2004 and 11,289 as of August 2005. The National Gender Policy addressing domestic violence is in formulation, together with a central registry for domestic violence data and a national plan of action. A range of nongovernmental organizations (NGOs) is working together to complete these activities, including the National Rape Crisis Society (NRCS), national toll-free hotlines, a network of shelters for women that are largely private, the family court (es-

established in 2004), and 19 community drop-in/information centers, among others. Women and children living with domestic violence and women's intimate partners may access a variety of public services ranging from counseling and alternate job placement to confidential medical services. The NRCS reports rape as the country's principal abuse problem, representing 37% of all cases reported by service users in 2004; those most frequently affected are women of African descent in the 12–17-year-old age group. Females were the group most affected by domestic violence, with a predominance of male perpetrators. Partial data on cases assisted by the NRCS indicate that new cases of child sexual abuse rose from 7% to 10% between 2000 and 2004, while new cases of incest declined from 16% to 8% and crimes and injuries, such as unlawful carnal knowledge (a local term referring to illicit sexual intercourse or contact), narcotic offenses, and attempted suicide, increased. Motor vehicle accidents and fatal collisions increased by 23% and 46%, respectively, over the 2000–2004 period (12–16).

According to the latest (1997–1998) national household survey, within the nine counties there were five defined poverty areas. At the national level, 21% of households in Trinidad and 26% in Tobago were designated as poor. Population groups characterized as poor were those who were uneducated or undereducated, the unemployed or underemployed, unskilled or semiskilled workers, and female-headed households and single-parent households with an average monthly income ranging from US\$ 95–160 (at the current exchange of TT\$ 6.27 = US\$ 1). The root causes identified for these outcomes included lack of educational attainment and intergenerational entrapment by poverty, among others. While there is no significant gender gap identified among the poor, approximately 60% of this group has no qualifications.

One percent of the population is comprised of squatters, of which 26% are poor. Heads of households with no educational qualifications account for 77% of the total poor population. The national MDG assessment of 2004 focuses on the issues of eradication of extreme poverty and hunger and calls for the need to conduct more frequent living conditions surveys, strengthen institutional capacity, carry out poverty eradication programs, set measurable targets, improve data quality, and ensure sustainability of newly created jobs (3, 17).

Population groups such as minors and young adult males and females are predominantly high-risk groups for mortality and morbidity incidence, particularly among those living under the poverty line and those whose behaviors, lifestyles, and social environments increase their exposure to external injuries, crime, violence, HIV/AIDS, and noncommunicable diseases. In 2003, there were 734 socially displaced persons (street children, ex-prisoners, deportees, older adults, substance abusers, those with mental disorders, and those infected with HIV). Males and those who live in the country's two major urban settings (Port of Spain and San Fernando) make up the majority of this group. Between 1997 and 2002, the number of deportees returning to Trinidad

grew. In general, they had left as minors with their families and were now returning to an environment unfamiliar to them and without a support structure. In addition to being socially displaced, they were unemployed and prone to violence and crime. The 2004 Caribbean Epidemiology Center (CAREC) pilot behavioral risk factor survey showed that women experience illness more frequently than men, but also live longer, and persons with lower educational levels seek medical care less often than those with higher levels of education (18).

A 2001 study on overweight, obesity, and skin fold thickness among children of African and East Indian descent, using international standards for overweight and obesity and British (1990) reference curves for body mass index (BMI), showed that those of African descent were taller for their age, but with lower BMI. Obesity was higher among the older Afro-Trinidadian children, particularly among girls. The study concluded that higher BMI was associated with higher BMI in the child's parents, higher reported birthweight, older age of the child's mother, smaller family size, and higher maternal education attainment. The Food and Agriculture Organization estimated the undernourished population at 11.9% for 2001. Food fortification for flour with iron and B complex is mandated and carried out by law, but fortification with calcium is optional. The establishment of "Baby-friendly" initiatives in all the major hospitals and efforts by the National Breast-feeding Committee to improve breast-feeding practices have contributed to the initiation among 95% of mothers of breast-feeding, with the rates of exclusive breast-feeding ranging from 26%–30% for infants under 4 months of age. The 2000 United Nations Children's Fund (UNICEF) Multiple Indicator Cluster Survey estimated that 6% of children under age 5 were underweight, less than 0.5% were severely underweight, and 4% were stunted or showed wasting. In 2002, the Caribbean Nutrition and Food Institute (CFNI) reported a prevalence of 3% overweight among preschool children. Data on food availability indicate that there is an excessive quantity of foods high in energy, proteins, and fats and that the population's ability to access healthy foods in sufficient quantities is affected by income disparities (19–22).

A country assessment of essential public health functions (EPHF) indicated that the national health system identifies outbreaks as they occur but due to weak monitoring practices its predictive capacity is limited. The EPHF exercise also identified the need for regular quality assessments and improved feedback mechanisms for information input utilized for decision-making and policy formulation. Consequently, the institutional response capacity is weak. No official declaration of disease outbreaks occurred during the 2001–2005 review period. Nevertheless, the risk for epidemics remains and is closely monitored at points of entry based on the level of commercial and population movement in and out of the territory (23).

In 2000, 69% of households received water piped into their homes or yards; on the other hand, only 26% of households had

a continuous 24-hour water supply seven days a week. Storage of water is therefore commonplace, and 57% of the households had their own water storage tanks. Poor access to potable water is attributed to several factors, including a 40%–50% loss of water in the distribution system, deterioration of assets, and weak institutional and human resources programs. The quality of water delivered meets World Health Organization guidelines for drinking water quality, although this status is challenged by environmental degradation, watershed destruction, and pollution. For sewage disposal, the majority of the population (60%) is served by on-lot septic systems, while 10% is served by central sewage treatment plants, and 30% by pit latrines (24).

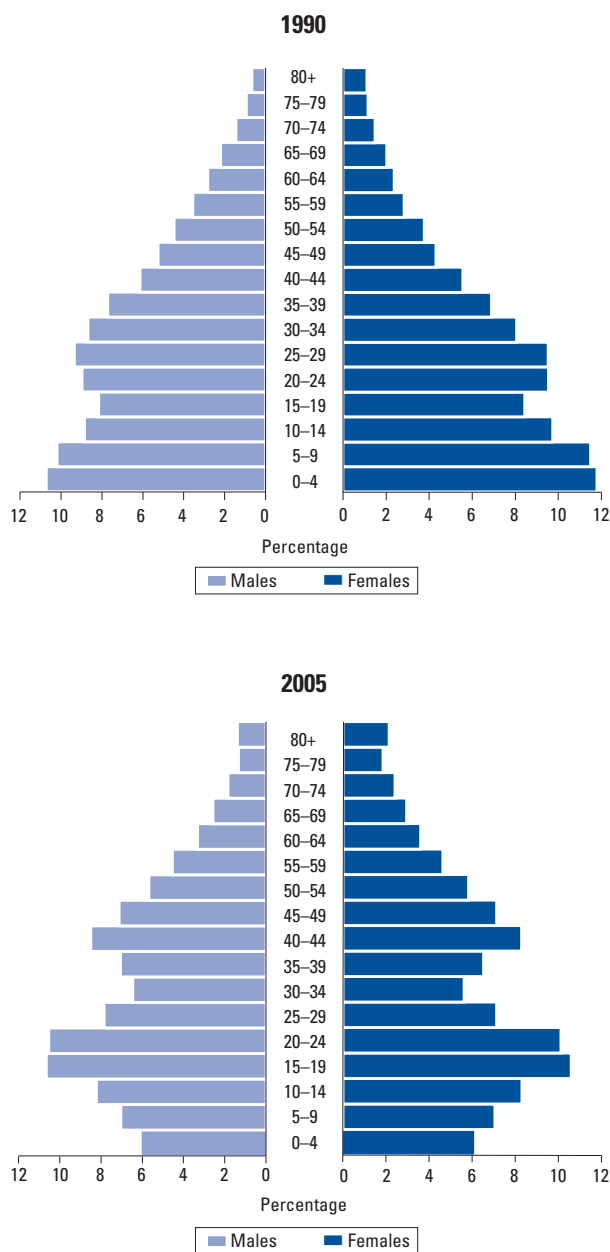
Demographics, Mortality, and Morbidity

The population of Trinidad and Tobago is ethnically diverse, with 41% being of East Indian descent, 40% of African, and 19% of other groups, including Chinese, European, and Middle Eastern. Over the last 20 years, the proportion of the population under age 15 declined, while the portion of those 60 years old and older increased. Twenty-one percent of the population falls within the 0–14-year-old age group, 71% in the 15–64 age group, and 8% is 65 years old and older. The country is in a stage of advanced demographic transition, with a low birth rate and decreased fertility rates, resulting in a low population growth rate. Mid-year population estimates indicate a crude birth rate of 14 per 1,000 population and a population growth of 0.3 per 1,000 population for 2000–2005, with a declining trend expected over the next decade. The population structure, by age and sex, for 1990 and 2005 is shown in Figure 1.

The total fertility rate began to decline in the 1970s, and in 2005 was estimated at 1.75 children born per woman, thus placing the country below population replacement level. The decline is principally due to the external migration of nationals in pursuit of better job markets. The net migration rate was –10.87 migrants per 1,000 population for 2005. The life expectancy estimate at birth in 2005 was 71 years for the total population, with 69 for males and 74 for females. Ninety-four percent of households are located in Trinidad, with an average size of 3.7 and a total fertility rate of 1.4 children per woman. Colonial historical roles influence the geographical distribution of ethnic groups, with those of East Indian descent residing predominantly in rural and agriculturally oriented localities, while those of African descent tend to live in urbanized environments, where they principally are employed in the service industries sector and government-related entities (24–26).

General mortality data is available up to 2001, at which time the crude death rate was 8 per 1,000 population. Maternal mortality was 39 per 100,000 live births and infant mortality 19 per 1,000 live births in 2001 (Figure 2). That same year, total deaths increased by 3% in comparison to 2000, with males accounting for 56%; the 50–74-year-old age group accounted for 40% of all

FIGURE 1. Population structure, by age and sex, Trinidad and Tobago, 1990 and 2005.



deaths. In 2000, heart diseases, diabetes, malignant neoplasms, and cerebrovascular diseases together accounted for 61% of all deaths (25, 26). The 10 leading causes of mortality for 2001 are presented in Table 1.

Over little more than a decade, mortality rates among infants for conditions originating in the perinatal period more than doubled, from 678 per 100,000 live births for the period 1984–1986 to 1,368

FIGURE 2. Maternal and infant mortality rates, Trinidad and Tobago, 1990–2001.

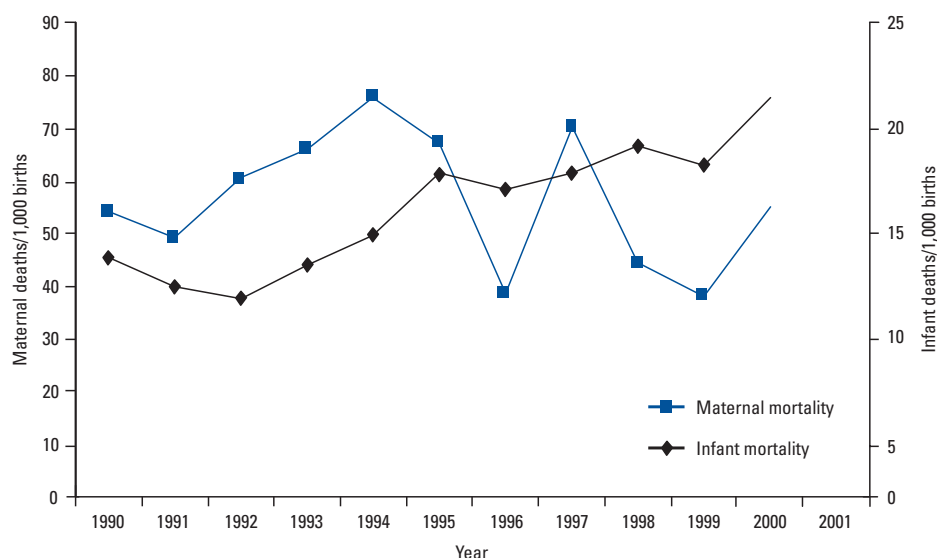


TABLE 1. Leading causes of death, by rank, number of deaths, percentage of total deaths, and cumulative percentage, Trinidad and Tobago, 2001.

Causes of death	Rank	Number	% of total deaths	Cumulative %
Ischemic heart diseases	1	1,631	16.7	16.7
Diabetes mellitus	2	1,340	13.7	30.4
Malignant neoplasms	3	1,211	12.4	42.8
Cerebrovascular diseases	4	972	10.0	52.8
External causes	5	569	5.8	58.6
Human immunodeficiency virus (HIV) disease	6	541	5.5	64.1
Hypertensive diseases	7	406	4.2	68.3
Other heart diseases	8	330	3.4	71.7
Certain conditions originating in the perinatal period	9	224	2.2	73.9
Renal failure	10	173	1.9	75.8

Source: Population and vital statistics report, Central Statistical Office. Ministry of Planning and Development, Government of Trinidad and Tobago.

per 100,000 live births for the 1998–2000 period. This increase is attributed to problems related to the quality of prenatal care and to early detection of high-risk conditions during pregnancy. External injuries accounted for the highest number of deaths in both sexes among the 15–24-year-old age group for the 2000–2005 period. Between 2000 and 2004, mortality rates due to motor vehicle accidents grew from 12 to 19 per 100,000 population. Fatal accidents took place most frequently during weekends and evening hours; in 2004, 87% occurred among the 15–44-year-old age group. Suicide is most prevalent among the population of East Indian descent, with pesticide ingestion being the most frequent mode.

Records from CAREC show that case numbers for some diseases preventable by immunization—chicken pox, meningitis, mumps, rubella, and tetanus (excluding neonatal)—have decreased. Episodes of other diseases or conditions that have also decreased include acute flaccid paralysis, foodborne illnesses, leptospirosis, salmonellosis, scabies, shigellosis, all forms of hepatitis, and viral encephalitis. The diseases that have shown increases are acute hemorrhagic conjunctivitis, dengue in all its forms, gastroenteritis, gonococcal infections, influenza, Hansen’s disease, syphilis, and all forms of tuberculosis. During the 2001–2005 period, there were no reports of cases of cholera, ciguatera

poisoning, pertussis, human rabies, neonatal tetanus, typhoid fever, and yellow fever (27, 28).

HEALTH OF POPULATION GROUPS

Children under 5 Years Old

There were 383 deaths among children under age 1 in 2000, with leading causes attributed to conditions originating in the perinatal period such as respiratory disorders (intrauterine hypoxia and birth asphyxia) and congenital anomalies. These deaths are related to flaws in the quality of prenatal care provided at all levels of the health system and, consequently, to poor early detection of high-risk conditions. The mortality rate for the 1–4 age group was 8 per 1,000 population in 2000.

Six percent of under-5-year-olds are estimated to be underweight, while 4% were estimated to be stunted or with evidence of wasting. In 2002, exclusive breast-feeding practices were 44%, 33%, and 27% at 1, 2, and 3 months of age, respectively. The Ministry of Health is pursuing a “Baby-friendly” hospital initiative nationwide in order to encourage the establishment of enabling environments for breast-feeding in health facilities and among the population. The number of children ages 1–4 seen at primary health care facilities declined from 4,128 in 2000 to 3,783 in 2003. The five leading hospital discharge diagnoses for the 1–4 age group were diseases of the respiratory system; injury, poisoning, and certain other consequences of external causes; symptoms, signs, and abnormal clinical and laboratory findings; certain infectious and parasitic diseases; and diseases of the digestive system, with a higher prevalence among males. During 2003–2004, 9% of infants were born to HIV-infected mothers.

Children 5–9 Years Old

There were 36 deaths among this age group in 2000, with a slight predominance among males; the major causes were external causes, followed by injury, poisoning, and certain other consequences of external causes; diseases of the nervous system; diseases of the circulatory system; and certain infections and parasitic diseases. Although chronic malnutrition is rare among students in this age group, there are nonetheless pockets of nutritional deficiency, based on reports of protein-energy malnutrition and iron deficiency, together with rising levels of obesity. Violence and early sexual initiation, together with cigarette and drug use, are reported among students and represent challenges to be addressed by the school health services. The Ministry of Health reports that sickle cell, chronic conditions (largely asthma), and external causes and injuries are the major causes of morbidity and mortality among students. A 2004 baseline survey of blood lead levels conducted on 1,761 children in the 5–7 age group on both islands showed levels ranging from

< 1 µg/dL to 29 µg/dL. Only three children in Trinidad met the U.S. criteria for lead poisoning (blood lead level \geq 20 µg/dL). There were no significant differences by age, sex, ethnicity, or income group (29, 30).

Since 2005, institutional priority has been placed on early detection and resolution of vision and hearing impairments for 100% of children enrolled in primary schools. Of these, 10% received screening during 2005, and 20% failed the first screening.

Adolescents 10–14 and 15–19 Years Old

Mortality rates in 2000 for the age groups 10–14 and 15–19 were 0.49 and 0.87, respectively, per 1,000 estimated mid-year population and were higher among males in both age groups. A 2005 review of services provided to 112 adolescents aged 10–19 nationwide at the country’s only public child guidance clinic indicated that depression (33%) was the most prevalent disorder for which treatment was sought, followed by behavioral problems (13%), mental retardation (11%), substance abuse (10%), anxiety (9%), and psychosis (5%). Mental disorders were more prevalent among females than males and among 15–19-year-olds with no difference as to their area of residence; nevertheless, a larger number of cases were children coming from socially and/or economically unstable family environments and residing in under-served areas.

The 2000 Global Youth Tobacco Survey, a school-based study supported by the World Health Organization that collected data from adolescents aged 13–15, showed that 19% of adolescents smoked their first cigarette before they were 10 years of age, with no significant difference between genders; of the representative sample from all secondary schools, 40% of students had smoked cigarettes at least once in their life, which is 5% higher than the number found in a similar prevalence study conducted in 1988. Smoking was more prevalent among males than females and increased in frequency among the older age groups. A similar prevalence pattern was observed among current smokers, with an increase of 11% in 1998 to 14% in 2000. Eighty-four percent of those surveyed reported exposure to tobacco advertisements (31).

The Ministry of Education reported a surge in violent behaviors, including discipline problems, among secondary school students for the 2000–2003 period, with a higher proportion of disruptive behaviors occurring among male students. Pregnancies to mothers ages 13–19 accounted for 15% of live births in 2000. That same year, a representative study related to the sexual health needs of secondary school-age adolescents in Tobago identified the priority concerns driving early initiation of sexual practices as unemployment, drug use, and limited access to educational and developmental opportunities. Other factors, such as poverty, unstable home environments, and seeking multiple sexual partners, further increased their vulnerability to risky behaviors (25, 32, 33).

Adults 20–59 Years Old

Mortality rates are available only for 2000 for this age group; rates range from 2.0 per 1,000 estimated mid-year population among those 20–24 years old to 14.0 among those 55–59 years old, with a higher predominance in both cases among males. The major causes of death were diseases of the circulatory system, followed by neoplasms; certain infections and parasitic diseases; and injury, poisoning, and certain other consequences of external causes. Young males are the population group most affected by deaths due to violence and external causes. The 2004 pilot behavioral risk factor survey by CAREC found that females have a more consistent pattern of health-seeking behaviors than do males; women and older adults were the groups which were the most consistent in monitoring their blood pressure and glucose levels; adults, principally those with higher educational levels, more closely monitored cholesterol levels; only 50% of women in the 35–54 age group reported having had a Pap smear; and more males than females reported always using safety seat belts (18).

Men, youth, and young adults of lower educational levels were the groups that most frequently engaged in physical activities. Males and females were considered slightly obese with an average BMI of 27 for those aged 33–44 and with a normal BMI for those 18–24 years old; the latter younger group consumed fewer fruits and vegetables, with no gender difference observed. Men smoked more than women, particularly those aged 45–54, as well as those of lower education levels; women, however, made more attempts and experienced greater success in their smoking cessation efforts. Marijuana use was not affected by educational levels, with women reporting more frequent use; use of cocaine was insignificant (18, 26).

Older Adults 60 Years Old and Older

By 2000, the size of the population aged 60 and over had increased by 345% over 1985 figures. This age group represented 10% of the total population in 2000, of which 53% were males; among the age group 80 years old and older, females represented 58%, a lesser predominance when compared to the 1985 figure of 63%, thus indicating a gain in life expectancy among older males. This trend in population aging highlights the need for social programs; it is estimated that for 2025, the size of the population 60 years old and older will be larger than that of those under age 18. According to the 2000 census, there were 38 persons over 60 years of age for every 100 children, a situation that will cause a consistent rise in dependency ratios over the next decade. More than two-thirds of older adults receive pension benefits provided by the government; it is estimated that the majority of the population aged 60 and older are inadequately prepared financially for retirement and depend on other sources of income, principally from family members. Older females have lower income levels and fewer employment opportunities than males. Of the total noninstitutional population 65 years old and older, only 9% were represented

in the 2001 labor force. The 2000 population census showed that the highest educational attainment for 67% of persons aged 60 or older was at the primary level. In 2001, the mortality rate for the population aged 50 or older was 32 per 1,000 population. Males predominated in the number of deaths, but females 80 years old or older had a higher percentage (79%) of total female deaths registered. The main cause of mortality was heart diseases, followed by diabetes mellitus, malignant neoplasms, cerebrovascular diseases, and diseases of the respiratory system. Public hospital discharge records show no differences by gender but identify the most frequent discharge diagnoses as those related to heart diseases and diseases of the digestive system, followed by injury, poisoning, and cerebrovascular diseases, with the last cause occurring slightly more frequently among females. Based on the 2000 population census data, 40% of persons aged 60–69 years reported having a disability or chronic illness, with a predominance among males; while among those 70–79 years old, the figure was 36%, with males again predominating; and for those aged 80 and older, it was 24%, with a predominance of females (34–37).

The Family

According to the 2000 population census, the average number of persons living in 94% of the households in the country was 2.64 persons, a situation that does not portray households with high occupancy located in marginalized areas. For the same period, the number of marriages decreased by 7% and divorces by 62% when compared with the previous two decades. Sixty-nine percent of households are headed by males; of the 31% of female-headed households, 19% were single mothers. In 2000, 96% of institutional births were assisted by skilled attendants; in 2002, there were 36 births per 1,000 women aged 15–19, a situation that highlights the need to address sexual and reproductive health-related issues in the family environment. The prevalence of contraceptive use, regardless of method, was an estimated 38% in 2000. Domestic violence is a growing public health concern; in 2000, 87% of the victims were females and males were principally the perpetrators. Women and children subjected to abuse of any nature may access a nationwide network of 13 shelters; no similar services currently exist for males. Counseling is offered to the affected women and their intimate partners through NGOs and various public mental health services, or as mandated by the family court system (15, 24). During 2001–2002, there were 17 deaths among adults and 4 among minors associated with domestic violence.

Workers

Over the 2001–2005 period, the National Insurance Board, which provides insurance coverage for more than 50% of the labor force, reported 13,092 workplace-related injury claims, and 2,496 disablement claims. There were 22 deaths due to

occupational incidents in 2004 and 57 in 2005. More than 80% of all injuries and disablements recorded occurred to males, while less than 20% occurred to females, although females comprised 39% of the employed for the period under review. Since males predominate in the country's construction and heavy industry labor force, they are more at risk of facing injury or death due to unsafe and/or unhealthy working conditions. For the same period, of the 239 occupational-related registered deaths, only 3% were female. It is estimated that 2%–4% of children aged 5–14 perform some type of labor, with an estimated 1% receiving remuneration in 2000. An International Labor Organization Rapid Assessment Survey conducted in 2002 in Trinidad identified the following areas as those in which children and young workers are engaged: scavenging and agricultural, domestic, and commercial sexual activities (22, 38, 39).

HEALTH CONDITIONS AND PROBLEMS

COMMUNICABLE DISEASES

Vector-borne Diseases

In 2000, 2001, and 2003, the Ministry of Health reported more than 2,000 annual cases of classical **dengue**. In 2002, however, there were 6,000 cases coinciding with the reentry of dengue serotype III. During 2004 and 2005, 400 and 519 cases of classical dengue were reported, respectively. In 2002, there were 218 cases of dengue hemorrhagic fever (DHF) and no cases in 2005. This reduction does not necessarily reflect a trend since all four serotypes of dengue and the *Aedes* mosquito are endemic. There were 45 registered deaths due to DHF during 2000–2002, with a predominance of male deaths in all years. No deaths were registered in 2003–2005 for DHF in the public health system. **Malaria** was declared eradicated in 1965; however, annual reports of imported cases and of a small number of indigenous cases of *P. malariae* in southern Trinidad persist. For the 2001–2005 period, 29 imported cases and 13 indigenous cases were recorded, with no fatalities.

There have been no cases of **yellow fever** since 1979 nor any **lymphatic filariasis** (LF) cases during the 2001–2005 review period. The former is largely due to widespread immunization and the latter to mass chemotherapy in previously affected locations. Ongoing surveillance suggests that there has been successful interruption in transmission of LF, and the country is now pursuing LF-free certification (27, 40).

Vaccine-preventable Diseases

In 2000, hepatitis B and *Haemophilus influenzae* type b (Hib) vaccines were introduced into the national immunization schedule as a part of the pentavalent combination vaccine DPT/HepB/Hib. To extend coverage, vaccines included in the Expanded Pro-

gram on Immunization are administered at public health centers and by private doctors free of charge. National coverage rose from 90% in 2000 to 94% in 2004, and all health personnel, including medical interns, involved in the Program are trained on an annual basis. There have been no outbreaks of vaccine-preventable diseases in the pediatric age group, although one isolated case of **diphtheria** was reported in 2002 (41).

There were no cases of **polio**, **rubella**, or **measles** reported in the country between 2000 and 2005.

Intestinal Infectious Diseases

Gastroenteritis, age unspecified, was the most frequently reported disease to the National Surveillance Unit over the 2000–2005 period. Since 2004, age-specific incidence has shown a discrete drop for the 0–5-year-old age group even though there was no national intervention targeting preschoolers. Changes are attributed to improvements in household safe water sources and health promotion and prevention initiatives, including the “Baby-friendly” hospitals initiative. There are no national-level **helminthes infestation** deworming programs, nor are detailed data by age or sex available, but the National Surveillance Unit registry shows a decrease in the case frequency from 315 in 2000 to 285 in 2005 (42).

Chronic Communicable Diseases

Tuberculosis (TB) shows a higher prevalence of cases among males of African descent and the 25–44-year-old age group, with incidence rates fluctuating over the 2000–2004 period from 16 in 2001 to 18 in 2002 per 100,000 population. In 2004, the annual notification rate was 12 per 100,000 population. TB/HIV comorbidity was 26% in 2004, with an increasing trend when compared to 12% in 1990; other major comorbidities identified with TB are substance abuse (35%) and diabetes (13%). The National Tuberculosis Program reported a 70% cure rate with 15% defaulters and 10% mortality in 2004. **Hansen's disease** (leprosy) prevalence was 0.44 per 100,000 population with a new case detection of 0.24 in 2003. Cases were more prevalent among males than females and showed no ethnic or age group differentiation pattern (28, 43–45).

Acute Respiratory Infections

According to CAREC surveillance reports, over the 2000–2005 period there was an epidemic of acute respiratory infections among the 5-years-and-under age group, with 15 confirmed cases in 2000 and 12,064 cases in 2005. At the same time, suspected **influenza** cases decreased from 41,125 in 2000 to 23,511 in 2005. Surveillance for respiratory diseases increased over the period and continues due to the threat of **SARS** and **avian influenza** outbreaks. Ministry of Health reports for the 2000–2003 period place diseases of the respiratory system among the leading five to 12 hospital discharge diagnoses. The main causes are **asthma**, other acute upper respiratory infections, **pneumonia**,

other diseases of the respiratory system, and bronchitis, emphysema, and others.

HIV/AIDS and Other Sexually Transmitted Infections

Over the period 2000–2004, the cumulative number of HIV infections reported in public health facilities since the beginning of the epidemic in 1983 increased by 37%, while the number of new AIDS cases decreased by 34%. Sexual transmission remained the predominant mode of transmission among newly identified cases. The male-to-female ratio for new infections decreased from 1.6:1 in 2000 to 1.2:1 in 2004, with the majority of new infections occurring among females, especially in the 15–49-year age group, which showed an increase over the period of 67% in 2000 and 70% in 2004. AIDS deaths per annum in public facilities declined over the 2000–2004 period, a phenomenon which may be attributed to the provision of antiretroviral therapy free of cost in all public HIV treatment centers. Data from the year 2000 show a slight increase in the number of deaths from 519 in 1999 to 535 in 2000. Sixty-five percent of these deaths occurred among males in the 30–39-year-old age group and predominantly in urban areas (26, 46).

In an effort to raise the population's awareness regarding the importance of knowing individual HIV status, the public health sector scaled up voluntary counseling and testing (VCT) services through the introduction of a National Prevention of Mother-to-Child Transmission (PMTCT) Program for HIV testing of all pregnant women attending public antenatal care clinics; the provision of HIV testing at national clinics for the treatment of sexually transmitted infections (STIs); and the establishment of VCT clinics within selected health centers. As a result, during the 2000–2004 period, samples submitted for HIV testing by public facilities increased by 35%. The improved availability and access to HIV testing by pregnant mothers provided by the PMTCT Program led to an increase in testing from 78% in 2000 to 96% in 2003. The prevalence rate in this group ranged from 19.3 per 1,000 in 2000 to 10.9 per 1,000 in 2003. Access to antiretroviral therapy for HIV-positive mothers is provided free of charge. Follow-up care for all HIV-positive mothers and their infants includes testing of HIV-exposed infants, post-delivery counseling on the importance of breast-feeding avoidance, and the provision of nutritional replacement therapy (baby formula) free of charge for the first six months following birth (47).

Seven HIV treatment centers provide antiretroviral treatment and care for adults, including pregnant women and children; two of the centers are located in Tobago. All HIV-positive individuals have access to diagnostic tests, including CD4 and viral load, and a ready supply of antiretroviral medications. HIV drug resistance testing is not conducted nationally, but there is evidence of resistance to first-line medications at some treatment centers. In 2004, 40% of the newly reported cases of HIV-positive adults and children were receiving treatment and care in public health facilities

and 23% were receiving antiretroviral therapy. Ninety-five percent of those receiving treatment and care resided in Trinidad. A 2005 assessment of one of the country's public care and treatment centers highlighted various obstacles to coverage extension. These included a shortage of trained personnel and multidisciplinary teams for in- and outpatient clinics, along with confidentiality issues related to service provision and stigma and discrimination (48–52).

The Queens Park Counseling Center and Clinic is the national health facility for the treatment and care of all conventional STIs through a national network of seven satellite facilities. Over the 2000–2004 period, there was a reduction in the case numbers of **syphilis** (42%), **acute gonorrhoea** (42%), **genital warts** (41%), **trichomoniasis** (76%), and **bacterial vaginosis** (53%), while case numbers of **herpes genitalis** increased by 25%. For the same period, there was a higher incidence among females of syphilis, trichomoniasis, and bacterial vaginosis, while males were predominantly affected by acute gonorrhoea and genital warts. STI data for Tobago for the 2003–2004 period show a reduction in case numbers for acute gonorrhoea (17%) and syphilis (14%), together with an increase in the number of blood specimens testing positive for HIV (88%) (53, 54).

The HIV/AIDS National Strategic Plan for 2004–2008 has targeted various vulnerable and/or high-risk groups for the promotion of healthy sexual attitudes, behaviors, and practices. Specifically, this HIV prevention strategy will focus on young women, youths in or out of school, men who have sex with men, commercial sex workers, the prison population, and substance users (48).

Over the period 2000–2004, the reported cases of HIV show young people in the productive age group to be increasingly affected by the epidemic, with the 25–34-year-old age group recording the highest numbers of new HIV infections per year followed by the 15–24-year-old age group (46). Females continue to be increasingly infected with HIV owing to biological factors as well as social factors, including domestic and sexual abuse, economic dependency on men, commercial sex work, and reduced power to negotiate safe sex. Females had the highest incidence of HIV in the 15–24-year-old age group over the 2000–2002 period while males dominated the 24–34 age group. This gender division quickly changed for the period 2003 and 2004 when females in both age groups represented the highest number of new infections of HIV (46).

At the same time that men who have sex with men are being highlighted internationally for their increasing vulnerability to HIV/AIDS, this group continues to face high levels of stigma and discrimination. Drawing from national statistics on sexual exposure among HIV-positive cases, 3%–5% in this group classified themselves as men who have sex with men and 1%–3% identified themselves as men who have sex with both men and women (46).

The current environment of stigma and discrimination inhibits individuals from identifying themselves as men who have sex with

men or bisexual, and, as a result, presents obstacles for securing an accurate and reliable assessment of the extent of risky sexual behaviors associated with these groups. Nationally, prevention efforts among men who have sex with men have been minimal.

Since commercial sex work is illegal in Trinidad and Tobago, the activities related to its practice usually are of an underground or covert nature and occur within the context of massage parlors, modeling agencies, tour groups, and night clubs. A study of commercial sex work in the country revealed the range of sex work targeting predominantly young women to include high school and university students and involve street solicitation, escort services, work in locally produced pornographic films, sex tourism involving entertainers and local and foreign female club and casino employees, and commercial sex work among men who have sex with men (49).

Not only do these activities increase the vulnerability of young commercial sex workers to HIV infection, but their human rights are not promoted or protected due to the concealed and unlawful nature of their work.

The prison population in Trinidad and Tobago, as in other countries, continues to face the risk of increased exposure to HIV infection. The Ministry of Health and other national stakeholders have developed a comprehensive health plan to mitigate the spread of various communicable and noncommunicable diseases, including HIV/AIDS, STIs, and TB in national prisons.

According to an NGO Needs Assessment conducted by the National AIDS Coordinating Committee, nongovernmental organizations have been involved in a host of prevention activities at the local and national levels. These activities include school and workplace sensitization on HIV/AIDS prevention and control, condom distribution, and the dissemination of information on STIs and sexual and reproductive health issues. Some of the challenges facing NGOs, however, include lack of training in NGO governance and in human resources, financial, and project management. Monitoring and evaluation skills among NGOs working in HIV/AIDS-related issues are also limited, resulting in difficulty assessing the impact of civil society initiatives (55).

Zoonoses

For 2000–2005, annual reported cases of **leptospirosis** ranged from a high of 161 in 2002 to a low of 102 in 2005. In 2000, there were 29 fatalities, 83% of which occurred in persons over 40 years of age with no deaths reported for the under-15 age group; 76% were males and 24% were females. Similarly, during 2001 there were 16 deaths (9 males and 7 females), with 69% of the fatalities occurring among the over-40 population age group. Since the 1960s, leptospirosis has transitioned from being a disease concentrated in agricultural areas to one that is now common in urban settings. There were no reported cases of rabies for the 2001–2005 period. In 2004, several horses and birds were found to be seropositive for the **West Nile virus**. Since then, all dengue and unspecified fever blood samples are being screened

for West Nile virus, with no human cases reported up to the end of 2005 (28).

NONCOMMUNICABLE DISEASES

Metabolic and Nutritional Diseases

Endocrine, nutritional, and metabolic disorders occupy places ranging from 1st to 12th among the most frequent diagnoses at discharge from 80% of hospitals nationwide, with **diabetes** being the first cause during the 2000–2003 period. Mortality data available for 2000 shows rates for endocrine, nutritional, and metabolic diseases at 112 per 100,000 population with higher rates (118) among females than males (108). In 2000, diabetes accounted for 14% of total deaths (26, 56).

Cardiovascular Diseases

The mortality rate in 2000 for diseases of the circulatory system was 279 per 100,000 population, with a higher rate among males (293) than females (264). **Cerebrovascular diseases, hypertension**, and other heart diseases follow ischemic heart diseases, with males accounting for a higher frequency than females in all causes. Despite this, the 2004 CAREC behavioral risk factor study profile showed that both sexes shared various risk factors, such as smoking, sedentary lifestyles, and improper diet (18, 26, 56).

In 2000, hypertension accounted for 4% of total deaths (26, 56). That same year, ischemic heart diseases were the leading hospital discharge diagnosis at 80% of hospitals nationwide; this cause also accounted for the highest proportion of total deaths (17%).

Malignant Neoplasms

The mortality rate of malignant neoplasms per 100,000 population was 99 in 2000, with males accounting for a rate of 104 and females with a rate of 94. According to the National Cancer Registry 2000–2004, at the national level the leading sites of neoplasms overall were prostate, followed by breast, colon and rectum, cervix uteri, and bronchus and lung, while for females they were the breast, followed by cervix uteri, colon and rectum, corpus uteri, and ovary. Over the period 2000–2003, the leading cancers responsible for mortality were those of the prostate (28%), followed by breast (14%), colon and rectum (13%), bronchus and lung (11%), and leukemia (7%). The same site distribution is seen for males and females excepting the breast and with the stomach being the fifth-leading site; 90% of neoplasms of the prostate occurred among the age group 65–85 or older. Among females in the 25–85 and older age group, more than half of all deaths were due to neoplasms of the breast (23%), cervix uteri (11%), colon and rectum (11%), and corpus uteri and ovary (8%) (26, 56, 57).

OTHER HEALTH PROBLEMS OR ISSUES

Disasters

For the period 2000–2005, the Office of Disaster Preparedness and Management reported that localized and island-wide flooding was the main emergency problem, causing disruptions in transportation, agricultural losses, and property damage. In September 2004, landslides related to Hurricane Ivan claimed the lives of three persons in Tobago (12, 16).

Mental Health

There is no community-based national mental health program, but three Regional Health Authorities (RHAs) offer some community-based services through outpatient clinics and primary health care centers where substance abuse services are included. Data on the country's mental health profile is limited, but overall estimates indicate that depression, schizophrenia, suicides, and substance abuse are the most prevalent issues.

Addictions

The Government of Trinidad and Tobago signed and ratified the WHO Framework Convention for Tobacco Control in 2003 and 2004, respectively. Within this context, the Ministry of Health informs all prospective job applicants of its no-smoking policy, has made all publicly funded health organizations and their motor vehicles smoke-free, discourages sponsorship by the tobacco industry of health-related events, and regulates tobacco advertising, including the placement of health warnings on tobacco products. Due to its geographical location and accessible topography, its links to global markets provided through the tourism and maritime industries, and increased local production of cannabis, Trinidad and Tobago is widely viewed as a transshipment point for the international drug trade. The groups most vulnerable to drug use and involvement in narcotics trafficking are out-of-school and unemployed youth, those living below the poverty line, sex workers, and individuals living in unstable family environments. Higher use is reported among males (92%) (32, 58–61).

Environmental Pollution

A five-year study on poisonings (2001–2005) conducted by the Ministry of Health's Occupational Health Unit and based on admission data from five major hospitals shows a total of 2,222 poison-related cases. Of these, 78% were suicide attempts and 21% accidental poisonings, while only 1% were documented as workplace-related events. Four percent of all the reported incidents resulted in deaths. Females accounted for 54% of the poisoning cases. The main poisoning agents were agro-chemical (35%), pharmaceutical (34%), household (21%), and industrial (4%). There is no specific official information available on the status of environmental pollutants, but with the closure of secondary lead-smelting facilities and the removal of lead in gaso-

line in 2004, it is expected that lead exposure levels will decline significantly (62).

Oral Health

A national oral health survey conducted in 2004 with school-children in the 6–8-, 12-, and 15-year-old age groups in 18 primary schools and 19 secondary schools showed significant improvement in the oral health of 12-year-olds when compared to the previous survey conducted 15 years earlier. With the current decayed, missing, and filled teeth (DMFT) index being 0.6, the country surpassed the WHO goal of 3.0 by the year 2000. The oral health of 15-year-olds was good, with a DMFT score of 1.0. However, for the 6–8-year-old age group, it was poor compared to secondary students (DMFT = 2.54). The presence of caries was detected in 62% of the 6–8-year-old age group, 38% of 12-year-olds, and 43% of 15-year-olds. Ongoing research at the University of the West Indies (UWI) School of Dentistry suggests there may be low awareness among parents of the importance of primary teeth and appropriate preventive dental care for young children. Primary school students had higher treatment needs than those in secondary, reflecting a low caries experience among older age groups. Overall, 72% of students aged 6–8 years had some treatment needs, compared with 59% of 12-year-olds and 65% of 15-year-olds. Almost half of the overall sample required fillings, 38% required fissure sealants, and 12% required extractions (63).

RESPONSE OF THE HEALTH SECTOR

Health Policies and Plans

The National Health Services Plan of 1994 remains in force. In the context of the Vision 2020 National Strategic Plan developed for the health sector and discussed earlier, the core principles of affordability, equity, and accessibility will guide ongoing health sector reform activities and help define the future role of health care services. The Health Sector Reform Program (HSRP) has pursued fundamental changes through the strengthening of leadership in the Ministry of Health, development of health systems, and implementation of the Regional Health Authorities Act of 1994. There are currently five RHAs. In order to improve the performance of the essential public health functions, the Ministry of Health is working to strengthen its leadership role and transform itself into an effective policy, planning, and regulatory organization.

Vision 2020 seeks to improve the health status of the population by unifying and enhancing the performance and quality of the health care delivery system and services; strengthening health research systems for evidence-based decision-making, policy formulation, new learning, and development; and creating a client-focused health care environment. Achievement of these goals will depend upon the ability of national authorities to optimize and

sustain intersectoral collaboration, which in turn will harmonize the HSRP (64).

In this regard, a pivotal element will be the development of a comprehensive network of new or upgraded primary health care facilities that focus on the promotion of equity, accessibility, community involvement, self-reliance, sustainability, and relevance of services delivery. The HSRP envisaged that a shift would occur from a reliance on secondary level services to primary level and community services, outpatient surgery and care programs, and home care initiatives, with particular emphasis on the primary level management of chronic diseases. However, there is a difference between the building and refurbishment of the primary health care infrastructure and the development of health systems and of skilled human resources to achieve the desired improvements in outcomes of care. Referral protocols require strengthening among the network of providers and with other sectors, such as education and social services.

Trinidad and Tobago's existing legal framework discourages all known forms of discrimination against women, and many provisions are in place based on the Convention on the Elimination of All Forms of Discrimination against Women. These include policies for gender and domestic violence now being implemented, the Married Persons Act, the Status of Children Act, and the Family Law, among others. Women enjoy the same rights as men to enter the labor force, perform public functions at all levels of government, hold political office, and initiate legal action when they feel their rights have been violated. Workplace legislation also is in place to protect women's rights.

The 2004 national plan of action for children addresses maternal and child health, family planning, basic education and literacy, children in special circumstances, and supporting educational goals based on the United Nations' 1990 World Declaration on the Survival, Protection, and Development of Children. All international and regional conventions and accords related to child health have been ratified. To enhance the quality and timeliness of data, the government is taking steps to improve monitoring and response to the priority needs of children. At the same time, the Ministry of Health is finalizing the national school health policy and modernizing the school health program so that clinical and teaching staff will be better able to address hearing, vision, dental, immunization, and psychological needs of all students entering and leaving the educational system. A network of student support services initiated by the Ministry of Education in 2004 seeks to address the concerns identified by guidance officers based on high numbers of events related to attitudinal problems, peer conflicts, learning difficulties, physical and sexual abuse, pregnancy, and substance abuse.

The Mental Health Act of 1975 is currently under review, and the 2000 Mental Health Plan developed by the Ministry of Health was implemented in the national psychiatric hospital and several primary health care centers in three RHAs during the 2001–2005 period.

A research study undertaken in 2002 by the National Drug Council on the impact of drug trafficking on Trinidad and Tobago society underscored the potential capacity of this problem to undermine the political stability of the country and damage the country's international image. The assessment addresses the diversion of national resources to mitigate the negative impact of the drug trade, ongoing practices of bribery and money laundering, and the emergence of a parallel economy outside policymakers' control. The drug trade also contributes to a rise in serious crimes nationwide and aggravates racial tensions and poverty-related issues, thereby introducing a negative dimension into the sociocultural fabric of Trinidad and Tobago society. Stringent controls and intervention measures are being implemented to undermine and discourage the local production of marijuana and all other illicit practices associated with the drug trade.

Organization of the Health System

The health sector is comprised of public and private entities. The foundation of the health sector is the public health system, which includes a network of three tertiary level hospitals, three district hospitals, three specialized long-stay hospitals, and a series of primary health care facilities—3 district health facilities, 67 health centers, and 36 outreach centers—with the district health facility serving as the hub. Persons from other CARICOM islands also come to Trinidad and Tobago seeking tertiary medical care, particularly in the areas of oncology and cardiac surgery. Currently, some publicly funded health institutions outsource some of their health and ancillary services to private providers as a short-term measure to reduce the time spent on waiting lists to receive care in public facilities. The private sector includes private practitioners, hospitals, clinics, pharmacies, biomedical laboratories, and radiological-image diagnostic services; it remains highly unregulated. Several private companies provide health services benefits, with the most common form being that of group medical insurance coverage provided by employers to their employees. In late 2004, a National Health Insurance Steering Committee was established, and a model was prepared and presented to the Cabinet for approval in 2005.

The Regional Health Authorities Act of 1994 defines the Ministry of Health's role as being that of a "purchaser" of health care services and the RHAs being the providers. The Private Hospitals Act, which was amended in 1989, regulates the licensing and oversight of private hospitals. Regulation of health care providers in both the public and private sectors is governed by various health professional acts, including those for the Pharmacy Board, the Medical Board, registration of nurses and midwives, and the dental profession. Dual work practices, which allow many senior public service physicians to work in both the private and public spheres, have resulted in the limitation of their public sector work hours to the detriment of those population segments unable to pay for private sector services. The Ministry of Health has em-

Health Is Critical in the Push to Achieve Developed-nation Status

Trinidad and Tobago's Vision 2020 ushers in comprehensive improvements for the country and its citizens. In preparation for the Plan, Trinidad and Tobago passed fair-trade and anti-dumping legislation, focused on increasing access to technology and services, reduced the debt-service ratio, and boosted social assistance programs for the elderly and the poor. The Plan's health sector goals include improving the performance and quality of health systems and services and promoting patient-centered health care.

barked on a comprehensive Quality Improvement Program as a key strategy for its health sector reform agenda to enhance the country's performance of the essential public health functions. The concepts of total quality management and continuous quality improvement were adopted as strategic management tools to foster effective teamwork, the reengineering of systems and processes, and the improvement of outcomes and efficiency. Accreditation of health institutions is a key element in the Ministry of Health's quality improvement strategy. In July 2002, the Ministry of Health formally issued an accreditation standards manual for the health sector to the heads of health institutions. In order to implement a successful national health insurance system as projected during 2007, all elements in the design and implementation phases, including accreditation of health institutions, will need to be carefully planned. Internal surveys are used to redesign systems and processes to assess and improve services quality, with the intent of achieving a state of readiness for external audits of health facilities in 2007. Infection prevention and control for all health care facilities is a focus of the accreditation standards, and in 2006 the Ministry of Health produced a Manual of Infection Prevention and Control Policies and Guidelines.

Public Health Services

The population-based health services and programs under the responsibility of the Ministry of Health include the Public Health Laboratory, Hansen's Disease Control Program, National Tuberculosis Program, Expanded Program on Immunization, National Surveillance Program, National Population Program, Veterinary Public Health Program, National AIDS Program, National Oncology Program, and School Health Program, among others.

Epidemiology is a weak area in the public health system. The National Surveillance Unit, a centralized service of the Ministry of Health, captures data from the country's primary health care services and hospitals but maintains a passive surveillance system. The National Surveillance Unit depends on the Trinidad Public Health Laboratory and other institutional laboratory facilities for confirmation of outbreak events, but the RHAs and their network of health services are directly responsible for implementing immediate outbreak control measures as needed, with

support from the Ministry of Health. A limited number of trained surveillance nurses and epidemiologists, the latter with both medical and nonmedical specializations, perform these functions and produce monthly reports on the case frequency of specific communicable diseases for which notification is mandatory and surveillance and outbreak control measures are deemed necessary at the RHA level. The system is cumbersome and challenged with partial, untimely reporting, resulting in a passive and poorly informed response capacity. The HSRP envisions decentralizing the system and organizing surveillance units at the RHA level in order to improve quality, data audits, needs assessment, monitoring, and evaluation, as well as to enhance response capacity for surveillance, improve analysis, and ensure the adequate application of strategic information to policy development and planning in the sector.

The Vision 2020 National Strategic Plan articulates environmental policy as "the sustainable use and conservation of the environment for the promotion of social and economic development in order to improve the quality of life of all citizens" (64). Demand on the country's natural resources is increasing at an exponential rate, with increasing exports of natural gas and oil. Increased revenues are fueling the construction of new public buildings, industrial estates, and housing. There is a standing debate between environmentalists and the Government of Trinidad and Tobago over various conservation, pollution, and land use issues. Environmental health services within the Ministry of Health traditionally focus on inspections, registrations, and licensing for food safety, public sanitation, and vector control, with the municipalities sharing responsibilities with the Ministry of Health in the major cities and boroughs. The Pesticide and Toxic Chemicals Board and laboratory are situated within the Ministry of Health. The establishment of the Environmental Management Authority (EMA) in 2000, the passage of legislation protecting the environment, and the implementation of environmental impact assessments have facilitated increased participation by the citizenry in decision-making regarding major new developments that impact not only on the natural environment, but also on human health. Enacted noise pollution rules are in place and enforced under EMA legislation, while water pollution rules are in the introduction phase. The Government of Trinidad and Tobago

ratified the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal and the Stockholm Convention on Persistent Organic Pollutants, and it is currently in the process of ratifying the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade. The country's Public Health Ordinance and the Municipal Corporations Act are under review and will be updated in keeping with modern environmental health practices. The Government of Trinidad and Tobago has made a commitment to invest TT\$ 1.2 billion over the 2006–2009 period for the purpose of upgrading the quality of water services.

In the absence of a national policy on waste management, the Ministry of Public Utilities and the Environment has overall responsibility for the management of solid and hazardous wastes. Independent contractors employed by local governments collect municipal solid waste, but industrial and hazardous waste treatment and disposal are not adequately supervised. The major landfill sites are operated by the government, and they all would require extensive upgrading in order to be classified as sanitary landfills. A Code of Practice for Biomedical Waste Management was adopted by the Ministry of Health in 2005 and is being implemented in the public health institutions. However, this Code still lacks the necessary supportive legislation to ensure its complete implementation.

The country's energy-based economy benefited from an increase in industrial investments and construction activities beginning in 2003. Between 2001 and 2005, unemployment figures decreased while occupational injuries and deaths increased. There is limited laboratory and testing equipment to monitor occupational health conditions. The Occupational Safety and Health Act (2004) mandates the establishment of an Occupational Safety and Health Authority and an agency responsible for policy development and legislation implementation, to be supported by the Ministries of Labor and Health.

Trinidad, and, to a lesser extent, Tobago, were spared the ravages of hurricanes during the active 2004–2005 seasons. In recognition of the need to strengthen the country's preparedness and emergency response capacity to natural disasters, in 2005 the government replaced the National Emergency Management Agency with an Office of Disaster Preparedness and Management. This office is expected to prepare and introduce new national emergency legislation.

During 2000–2005, the Ministry of Health strengthened its outbreak response capacity with the incorporation of preparedness plans for the West Nile virus, severe acute respiratory syndrome (SARS), and avian influenza A (H5N1). The Ministry of Health adheres to the International Health Regulations and is taking the necessary steps to adequately face the challenges posed by global trade and development—particularly the increased risk of disease transmission—by strengthening institutional response and human resources competencies.

Individual Care Services

Efforts are under way at the RHA level to increase access to and utilization by males of health services in response to the growing prevalence of chronic noncommunicable diseases, as well as to raise awareness among this group regarding common risk factors for these diseases and STI/HIV/AIDS. In 2004, the Ministry of Health approved a new sexual and reproductive health policy that will foster a more comprehensive and gender-based approach to the needs of families and individuals of all ages.

The Ministry of Social Development, Youth, and Sports (MSDYS) holds responsibility for implementing overall policy regarding youth health education and has appointed a national youth council to drive this process. The Ministry of Education provides student support services and counseling in schools nationwide, with individual care being provided on a needs basis; NGOs such as the Family Planning Association of Trinidad and Tobago (FPATT) provide peer counseling services, and a network of youth programs is available through the MSDYS at the community level. To address growing concerns regarding HIV/AIDS stigma and discrimination, the Ministry of Education is implementing the Health and Family Life Education curricula at the primary school level. Sex education and abstinence, values, and morals programs are currently being developed, even though only 7% of schools nationwide have teachers trained in life skills-based HIV education; the Ministry of Health, together with UWI, are training and integrating school health nurses into the system to develop the national program.

A 2004 rapid assessment of the national drug supply system highlighted the need to ensure a constant flow of antiretroviral medications through timely distribution mechanisms which would allow drug delivery directly from suppliers to pharmacies, especially in Tobago. At the same time, there is a need for training of pharmacists to facilitate their increased involvement in the response to HIV/AIDS, particularly as regards encouraging treatment adherence and the provision of first-line counseling to clients. An assessment of STI services identified issues affecting services quality, including the lack of standardized treatment protocols; health, safety, and quality control guidelines; and other quality assurance mechanisms. Clinic services also need to include laboratory facilities for herpes, chlamydia, and HIV testing, to provide continuous training for staff, and to transition from being a strictly vertical STI program into a more holistic, integrated sexual and reproductive health service that facilitates such services as cervical cancer screening and enhances contact-tracing and follow-up of clients (48).

The Ministry of Health is currently implementing a Directly Observed Treatment, Short-course (DOTS) program in two pilot sites, with plans to scale up the program nationwide and thus improve institutional response to tuberculosis.

The Ministry of Health provides institutional care free of cost for all those affected by Hansen's disease.

The National Blood Transfusion Service, with satellite sites at major hospitals, is responsible for screening all blood and blood products and for setting standards for their collection and distribution. All blood donations are obtained on a voluntary basis; screening for HIV is conducted in 100% of all donations.

Intensive care units, including neonatal, are available in the public sector only at the three major hospitals. Individual services include emergency, outpatient, and institutional care for mental health, surgery, oncology, tuberculosis, and substance abuse, together with primary health care preventive and outreach services. General dental services by dental surgeons and dental nurses are provided countrywide free at the point of delivery in primary health care facilities. In 2000, the Emergency Health Service transport system was established and made available free of cost at the point of delivery to persons seeking emergency transfer to a public hospital under the supervision of trained staff. A private emergency health transport system also exists to transfer individuals to private hospitals; however, individuals using these services must pay all expenses out of pocket. Plans are under way to consolidate the Public Health Laboratory; the Chemistry, Food and Drug, Vector Control, and Nutrition and Metabolism Laboratories; and the Queens Park Counseling Center and Clinic into one organization, since the physical infrastructure of these laboratories has deteriorated over time, compromising their ability to render adequate service despite high ongoing maintenance costs. Currently, these facilities operate independently of one another, although some consultants are shared among them. In 2005, the Ministry of Health established a National Laboratory Advisory Committee to oversee the operations of the country's medical laboratory network.

Primary and secondary health care facilities provide health promotion interventions and preventive care and treatment for metabolic diseases, with particular focus on diabetes, hypertension, and cancer. Screening for chronic noncommunicable diseases is available free of cost. The Ministry of Health is currently reformulating its national noncommunicable diseases policy and designing an integrated approach-based program to address common risk factors for the country's major morbidity and mortality causes. Primary health care facilities are now furnished with exercise equipment to encourage increased physical activity, and the RHAs are actively pursuing the implementation of prevention screening in community fairs. The Trinidad and Tobago Diabetes Association has also supported health promotion and education interventions by providing voluntary services at primary health care facilities.

The needs of persons with disabilities are addressed through the Disability Assistance Grant Program, which operates under the purview of the MSDYS. Financial assistance is provided to individuals with medically certified permanent disabilities who are unable to earn an independent livelihood. The Disability Assistance Fund was established in December 2003 to meet the needs of persons with disabilities and/or organizations associated with

those who do not qualify for assistance in the existing schemes offered by the Ministry. The main objectives of this program are to support and empower civil society groups that focus on the needs of persons with disabilities and to create the institutional and organizational environment necessary for the easy integration of persons with disabilities into society. Program participants receive assistance to purchase therapeutic aids, devices, and equipment.

There are 9.47 hospital beds per 10,000 population, with only a 0.55 bed ratio in general hospitals; human resources for these services are scarce, with 1 psychiatrist, 0.3 psychologists, 11.4 psychiatric nurses, and 1.64 social workers per 100,000 population. There is only one child guidance clinic unit in the country. The health system offers therapeutic services in psychopharmacology, group and individual psychotherapy, occupational therapy, psychosocial rehabilitation, and behavioral therapy. Current services include training for nurses and mental health assistants and the development of research, even though the information system is inadequate and epidemiological surveillance in mental health is limited. There are several NGOs addressing the consequences of Alzheimer's disease and child autism; there is one center for children with mental retardation and one national mental health association.

The Human Tissue Transplant Act was enacted in 2000, with approval of the accompanying regulations occurring in 2004. A National Unit is being established for the procurement, storage, and distribution of tissues for corneal and kidney transplants; these will be provided free of charge at the point of service together with immunosuppressive drugs for the transplant recipient; during the current phase, kidney transplantation will come from living donors only. Between 1993 and 2003, 17 patients had kidney transplants, and the number of kidney recipients who traveled abroad for transplant operations rose. All public health facilities provide cancer screening services for reproductive organs, but unresolved issues remain regarding response efficiency and quality of care. NGOs such as the FPATT and the Cancer Society of Trinidad and Tobago also provide services. The government is currently planning the construction of a National Oncology Center and establishing a national cancer program, with funding and technical support from the Government of Canada.

Health Promotion

The Ministry of Health, within the framework of the 1993 Caribbean Charter for Health Promotion and the HSRP, adopted health promotion as the principal strategy to improve quality of life and well-being among the population. The strategy addresses individual, social, and environmental risk factors in order to modify individual and collective behaviors that in turn will positively influence health determinants. The process encourages a participatory approach by all stakeholders and the development of policies and strategic plans in the areas of sexual

and reproductive health, school health, noncommunicable diseases prevention and control, and HIV/AIDS/STIs, among others. Health promotion programs and efforts to enhance human resources competencies and institutional strengthening are being decentralized to the RHA level, with the purpose of stimulating the creation of healthy settings supported by the basic primary health care principles of accessibility, quality, and equity. The Directorate of Health Promotion and Public Health guides these activities nationwide. A multisectoral National Health Promotion Council was also appointed by the Cabinet in 2001; nevertheless, establishing effective and sustainable mechanisms for intersectoral collaboration between the public and private sectors remains a challenge. In 2000, the Ministry of Health institutionalized the annual observance of Health Promotion Month in April to encourage the participation of community organizations and NGOs and actively advocate for personal responsibility in health by the population, including the adoption of healthy lifestyle practices and a reduction in behavioral risk factors that negatively impact health determinants. The primary health care network is slowly being reoriented, in part through improvements in physical infrastructure that are more conducive to the development of promotional activities and the availability of physical exercise equipment for use by staff and clients. Community health fairs are organized periodically with community organizations, NGOs, and corporate partners that focus on health education activities, voluntary counseling and testing for HIV/AIDS, monitoring common risk factors for noncommunicable diseases, healthy lifestyle counseling, and walks for health. Health promotion activities are reinforced at all levels by sustained, aggressive public awareness campaigns led by the Ministry of Health. A healthy community movement (HCM) initiative is being implemented in three RHA pilot sites with active community participation in the identification of priorities and partnerships with governmental and nongovernmental organizations, including international cooperation agencies. HCM components include local resource mobilization, improving social services' access and quality, developing life skills among vulnerable groups, and strengthening local competencies to enhance intervention planning, implementation, monitoring, and evaluation. The HCM initiative encompasses the development of health-promoting schools; the first phase consists of scaling up school health screening programs and building synergy with similar ongoing programs already existing in the Ministry of Education, as well as through partnerships with NGOs, corporate bodies, civil organizations, and cooperation agencies (65).

Human Resources

While neither the private nor public health sector undertake systematic workforce planning, this activity is conducted to some extent at the unit or departmental levels. Such planning usually occurs in response to the need to fill the requirements of a newly

created component within an existing program and does not necessarily form part of a long-term strategy to identify and respond to future health needs. The HSRP, however, has attempted to correct this situation by developing a detailed plan to move human resources from hospitals and health institutions into community services (district health facilities and health centers). This shift supports the Ministry of Health's policy of greater adherence to primary and preventive health care and of encouraging the population at large to assume greater responsibility for individual health by adopting healthy lifestyle practices. There is the need to strengthen the dialogue in strategic human resources planning between the Ministry of Health and other health stakeholders, such as UWI; the National Institute of Higher Education, Research and Technology; and other professional bodies. The public health sector has experienced a chronic shortage of personnel—nurses in particular—since 1996 resulting in the need to contract professionals from abroad. During the review period, nurses and pharmacists were recruited from the Philippines, as were health personnel from Cuba.

Health Supplies

There is only limited medicines production capability. The National Drug Policy, which covers both the public and private sectors, has evolved into an open formulary that is a valuable drug information resource. However, health professionals do not uniformly apply the formulary protocols and guidelines in their daily practice due to infrequent revisions of the formulary and a lack of formal incentives that would encourage better compliance. In addition, there is a Vital, Essential, and Necessary (VEN) list currently purchased by the government on a needs basis when ordered by a public health facility. Purchasing of drugs is through a tendering process based on best value in therapeutic class. Since 1993, the National Insurance Property and Development Company (NIPDEC) has been contracted by the Ministry of Health to procure, store, and distribute pharmaceutical and non-pharmaceutical items on a monthly basis to public health institutions. A Comprehensive Audit Report of the Central RHA in 2000 identified several concerns, including the lack of tracking of drugs once they are dispensed to units outside the pharmacy department (excepting narcotics and other controlled substances) and the over-inflation of orders to NIPDEC in order to receive quantities as close as possible to the required amount by health facilities (66–68).

The Ministry of Health's Chronic Disease Assistance Plan provides prescription drugs free at the point of delivery to patients with specific chronic diseases, using a range of pharmaceuticals that are listed on the drug formulary. Since fiscal year 2005, the program allows universal coverage of the population eligible for benefits once they are diagnosed at a health care institution with any of the following diseases: diabetes, asthma, hypertension, arthritis, glaucoma, cancer of the prostate, mental depression,

some cardiac-related diseases, and benign prostatic hyperplasia. The Ministry of Health is upgrading the information system to manage and monitor the program.

Vaccines are acquired through the PAHO Revolving Fund for Vaccine Procurement. In 2003, the Government of Trinidad and Tobago signed a memorandum of understanding with PAHO enabling the country's participation in the Regional Revolving Fund for Strategic Public Health Supplies.

Research and Technological Development in Health

The HSRP includes a plan to develop technology assessment and management capacities and systems, including the accreditation of health care facilities as a way to strengthen health information technology infrastructure and integrated information systems for improved evidence-based planning, policy development, and managerial decision-making. Specialized technology is available in both the public and private sectors. Computerized axial tomography and hemodialysis are available in both sectors, while magnetic resonance imaging is available only in the latter.

The virtual health library was launched in December 2005 as a network of health information sources universally accessible on the Internet and compatible with international databases. The library's goal is to promote universal and equitable access to health, scientific, and technical information and to facilitate the management of essential technologies for achieving equitable access to health information. Developing and strengthening the health research system to facilitate evidence-based decision-making, policy formulation, and new learning and development is one of the seven goals identified by the Vision 2020 Sub-Committee on Health, as well as an essential public health function needed to improve the performance of the public health system. The Ministry of Health plays a major governance role in health research and works in partnership with the Essential National Health Research Council. Established in 1995, the Council holds responsibility for directly developing, or stimulating the development through others, of health research policies and instruments, with special emphasis on research to support equity in health and improve health systems.

Health Sector Expenditures and Financing

There is a need to scale up coverage and increase expenditure; generate and maximize revenue; and improve quality in spending, in terms of efficiency and equity. The source of government health expenditure is general taxation revenues; a health surcharge is deducted from the monthly salaries of all wage earners; however, it is not directed to a fund for health care but to a government consolidated fund.

Total health expenditure as a percentage of GDP was 4% for the 2000–2003 period. General government expenditure on health as a percentage of total expenditure on health decreased

over the 2000–2003 period from 40% to 38%, while in the private health sector expenditures increased from 60% in 2000 to 62% in 2003. General government expenditure on health as a percentage of total government expenditure was 6% over this same period. The total per capita expenditure on health at an average US\$ exchange rate increased over the 2000–2003 period from US\$ 235 to US\$ 316; during this same period, governmental per capita expenditure on health at an average US\$ exchange rate also increased from US\$ 157 in 2000 to US\$ 201 in 2003 (69).

Technical Cooperation and External Financing

A variety of United Nations agencies, bilateral agencies, financial institutions, and NGOs partner with the Government of Trinidad and Tobago utilizing a diversity of technical and economic mechanisms to further the development agenda set by the Vision 2020 National Strategic Plan. Two prominent international financial institutions working in the health sector are the Inter-American Development Bank and the World Bank; the first provided a loan for the development of the HSRP until 2006 and the latter for the HIV/AIDS Prevention and Control Program for the period 2004–2008. The European Union provides a grant in support of HIV/AIDS prevention activities and to ensure a well-coordinated implementation of the HIV/AIDS National Strategic Plan for the 2005–2010 period. The International Labor Organization contributes to health with its project on HIV/AIDS in the workplace (55).

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