

UNITED STATES- MEXICO BORDER AREA



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.

The United States–Mexico border extends for 1,952 miles (3,141 kilometers), stretching from the Gulf of Mexico to the Pacific Ocean. The 1983 La Paz Agreement—signed by the federal governments of the United States and Mexico for the protection, improvement, and conservation of the environment along the border—defines the border area as the land within 100 km (62.5 mi) on either side of the international boundary.

GENERAL CONTEXT AND HEALTH DETERMINANTS

Border areas in the two countries share environmental, social, economic, cultural, and epidemiological features with one another, but they operate under different policies, norms, and regulations.

The U.S.-Mexico border is made up of 10 states,¹ 48 United States counties, 80 Mexican municipalities, and 14 pairs of sister cities,² constituting a total population of slightly more than 13 million. As will be seen in the text ahead, in general—although clearly there are exceptions—health determinants on the Mexico side of the border show more positive conditions than in Mexico as a whole. The opposite is seen along the United States side of the border, where health determinants are generally worse than for the United States as a whole.

Social, Political, and Economic Determinants

The United States–Mexico border is the most traveled border in the world. According to the U.S. Immigration and Naturalization Service, in 2002, more than 190 million people entered the United States from Mexico through 24 official ports of entry. According to information published online by *Economic Development America*, in 2004, approximately 60% of the 500 million visitors admitted into the United States entered across the U.S.-Mexico border, as did 90 million cars and 4.3 million trucks; this human and vehicular traffic is a major contributor to the US\$ 638 million in trade conducted along the border each day. Data

from the United States Department of Transportation's Bureau of Transportation Statistics showed that the number of trucks entering the U.S. in 2005 increased to 4.9 million, ranging from 40,042 (0.8% of all truck crossings) in New Mexico to 3,275,563 (66% of all truck crossings) in Texas.

Mexico is the United States' third leading business trading partner; the U.S. is Mexico's main trading partner. In 2003, Mexico's exports to the U.S. amounted to US\$ 146.8 trillion, and its imports from the U.S. for the same period were US\$ 105.7 trillion.

Mexico's *maquiladoras*—plants that import raw materials and components for processing or assembly by Mexican labor and then export the finished products—have become the largest component of U.S.-Mexico trade and are an engine of growth in the border area. Most *maquiladoras* are U.S.-owned and import most of their components from U.S. suppliers.

With the signing of the North American Free Trade Agreement (NAFTA) and the consequent lifting of most trade and investment barriers among Canada, Mexico, and the United States, the rate of industrial development along the border flourished further: in 1990, there were about 1,700 plants operating in Mexico; by 2001 they had more than doubled, to nearly 3,800 *maquiladora* plants, 2,700 of which were in the border states. In 2004, it is estimated that more than one million Mexicans were employed in the more than 3,000 *maquiladoras* located along the border.

Despite the extraordinary degree of cross-border interdependency, economic development along the border is uneven. For example, Mexico's border states have lower unemployment rates and higher wages compared to other regions of the country. Mexico's border states also have the lowest poverty rates and highest literacy rates in the country.

Conditions in the United States are the reverse: four of the seven poorest cities and five of the poorest counties in the United States are located in Texas along the Mexican border. Generally, counties on the U.S. side have experienced an increase in unemployment and a decrease in per capita income over the past 30 years. For example, in the city of El Paso, Texas, poverty is twice the national average and average income is one-third the national figure. The educational level of the population in U.S.

¹On the Mexico side: Baja California, Chihuahua, Coahuila, Nuevo León, Sonora, and Tamaulipas. On the United States side: Arizona, California, New Mexico, and Texas.

²San Diego/Tijuana (California/Baja California), Calexico/Mexicali (California/Baja California), Yuma/San Luis (Arizona/Sonora), Nogales/Nogales (Arizona/Sonora), Naco/Naco (Arizona/Sonora), Douglas/Agua Prieta (Arizona/Sonora), Columbus/Puerto Palomas (New Mexico/Chihuahua), El Paso/Ciudad Juárez (Texas/Chihuahua), Presidio/Ojinaga (Texas/Chihuahua), Del Rio/Ciudad Acuña (Texas/Coahuila), Eagle Pass/Piedras Negras (Texas/Coahuila), Laredo/Nuevo Laredo (Texas/Tamaulipas), McAllen/Reynosa (Texas/Tamaulipas), and Brownsville/Matamoros (Texas/Tamaulipas).

border counties also is lower than elsewhere in the country. Nationwide, the percentage of persons without a middle-school education is 0.5%, compared to 22.1% in Luna, 21% in Presidio County, and 20.1% in Maverick.

The benefits of growing trade between Mexico and the United States notwithstanding, the boom has had its down sides. For example, growing trade between the two nations has brought with it an increase in freight vehicle traffic, potentially exacerbating the risk of environmental pollution and traffic-related injuries. Moreover, in addition to formal trade, there are cross-border networks of informal and even illegal trade. On the one hand there is drug trafficking: according to the United States Drug Enforcement Agency, 65% of the cocaine consumed in the United States enters through the Mexican border, and virtually 100% of the heroin produced in Mexico and South America targets U.S. markets. On the other hand, there is a booming market for used tires that accumulate by the millions in several waste piles in all Mexican border cities.

While economic growth clearly has contributed toward higher employment, the border area's infrastructure has not been able to keep pace. In addition, as millions of new residents from the interior of Mexico and elsewhere in Latin America flock to the border area, lured by the promise of jobs and a better life, already strained resources, including health resources, are further taxed.

Infectious diseases easily pass through the permeable border, as hundreds of thousands of persons trek back and forth across its boundary. And, whereas years back the border area was mainly rural, it is urbanizing rapidly, which brings on all the diseases of big cities caused by contamination, stress, and nutritional habits. Like many emerging nations, the U.S.-Mexico border must cope with the double burden of communicable diseases coupled with chronic illnesses.

Environmental health issues are by far the most pressing problems in the border area, including poor air quality, water scarcity and contamination, lead contamination, and improper waste disposal, to name but a few. Water is the most precious resource in a large portion of the border that is primarily arid. And air pollution ranks among the worst environmental problems: particulate matter levels continue to exceed standards during peak events, and many projects looking at the health effects of air pollution continue to be carried out in the region. Ozone pollution also threatens many communities, even though a relaxation in the standard (from a 1 hour average to an 8 hour average) has reduced the number of instances that exceed set limits.

Rural communities along the border are confronted with a host of environmental problems, including pollution from agricultural activities that threaten surface- and groundwater resources with contamination. Pesticide contamination poses a greater threat to areas with a high concentration of farming, such as the Imperial Valley and the Rio Grande Valley. Programs monitoring human exposure are scattered and not coordinated.

Demographics, Mortality, and Morbidity

The annual net flow of Mexican migration to the United States increased notably during the final three decades of the 20th century, spiking from an annual average of just under 30,000 people between 1961 and 1970 to close to 400,000 between 2001 and 2004. This continuously growing migratory flow has resulted in a large Mexican-origin community living in the United States. Clearly this enormous human movement has implications for family structure, employment, and health care, and it clearly begs for further exploration and study.

According to information for 2004 from the U.S.-Mexico Health Initiative, all four United States border states were among the 13 states in that country with more than 100,000 Mexican immigrants: in ascending order, New Mexico had 111,049 Mexican immigrants, Arizona had 618,105, Texas had 2,356,703, and California had 4,026,219. Together, the four U.S. border states had more than seven million Mexican immigrants living within their borders in 2005.

In 2001–2004, three-quarters of migrants lacked proper documentation to legally cross the border, an increase compared to less than half who lacked such documentation in 1993–1997.

A U.S. Government Accountability Office (GAO) report to the United States Senate on illegal immigration in August 2006 stated that border-crossing deaths have doubled since 1995. Data analysis showed that the annual number of border-crossing deaths increased from 241 deaths in 1999 to 472 in 2005, with most of the increase occurring in the Border Patrol's Tucson Sector, which includes much of the Arizona desert. Data from the National Center for Health Statistics (NCHS) for 1990–2003 show a major shift in the causes of migrant border-crossing deaths—traffic fatalities were the leading cause of migrant border-crossing deaths in the early 1990s, while from the late 1990s onward, heat exposure was the leading cause. The increase in deaths due to heat exposure over the last 15 years was attributed to a shift of migrant traffic from urban areas like San Diego and El Paso to the desert, as a result of the implementation of the Southwest Border Strategy in 1994. Because of their migratory nature, undocumented immigrants have less access to preventive and curative services.

Border communities are predominantly urban, with 83% of the population of San Diego, Pima, El Paso, Hidalgo, and Cameron counties in the United States living in urban settings. Hispanics account for 40% of the border states' population; 48% of the population in border counties is Hispanic.

More than 13 million people live in the border area, 53% of them on the United States side. If rapid population growth trends persist (more than twice that of the overall growth in each country), the total population is expected to reach 20 million by 2020. For the U.S., according to the 2000 census, overall growth was 0.92%, compared with an average 2.87% growth in border counties. In 2005, with annual growth rates ranging from 1.2% to 2.7%, the six Mexican border states (average 1.8%) registered faster growth than the country, which had a growth rate of 1.0%.

Nearly 95% of the border population lives in 14 pairs of sister cities. The Ciudad Juárez–El Paso sister city metropolis has more than two million inhabitants, making it the largest border community. According to the 2000 census, the fastest growing border communities, with population gains of almost 5% per year, were Hidalgo and Reynosa.

The population on both sides of the border is relatively young. In 2005, 29% of persons living on the Mexican side of the border were younger than 15 years of age, slightly less than the overall 30% figure for the nation. On the U.S. side, 23% of the population was younger than 15, compared to 21% for the country as a whole. In 2003, the fertility rate for U.S. border states taken together was 2.4, compared to 2.0 for the nation. The total fertility rate in Mexico's border states in 2005 was 2.1, on a par with the country's overall rate.

Life expectancy at birth for U.S. border states in 2003 ranged from 72.2 years (Arizona) to 77.2 years (Texas). Life expectancy at birth in 2005 for Mexican border states ranged from 75.8 years (Tamaulipas) to 76.6 years (Baja California), all higher than the national figure of 75.4 years. Women outlived men by 4.4 to 5.3 years.

In 2003, the crude mortality rate in the four U.S. border states was lower than the 842 deaths per 100,000 population figure for the United States as a whole—Texas, 700; California, 675; Arizona, 778; and New Mexico, 790. It should be noted that in 1992–1994, crude mortality rates in United States border states were 60% to 70% greater than their corresponding age-standardized rates using a world standard population. Based on a mortality rate evaluation, the population on the Mexican side of the border is younger than that on the U.S. side.

This trend is expected to hold in 2001–2005. In 2003, crude mortality rates per 100,000 population show that three border states on the Mexico side had higher rates than that country's national figure (470)—Coahuila (477), Chihuahua (540), and Sonora (506); the lowest rate was found in Tamaulipas, at 430.

In 1992–1994, age standardized rates among Mexico border states were 25%–37% higher than corresponding crude rates. This same general trend is expected for 2001–2005.

Health problems are similar on each side of the border, and affect similar populations. Six of the 10 leading causes of mortality are the same in both nations: heart disease, malignant neoplasms, cerebrovascular diseases, diabetes mellitus, liver disease and cirrhosis, and land transport accidents. Pulmonary tuberculosis and water- and food-borne diseases also are important infectious diseases along the border.

In 2003, the 10 leading causes of death in the four U.S. border states were all heart diseases (182–195 deaths per 100,000 population), malignant neoplasms (153–173), cerebrovascular diseases (41–50), accidents (30–65), chronic lower respiratory disease (34–50), influenza and pneumonia (16–23), diabetes (20–32), Alzheimer's disease (18–31), suicide (10–18), and chronic liver disease and cirrhosis (10–17). The five leading

causes were the same in 1992–1994. It is noteworthy that HIV/AIDS was not a leading cause in either time period.

In 2003, the leading causes of death for the six Mexican border states were ischemic heart disease (57–82 deaths per 100,000 population), malignant neoplasms (62–72), diabetes mellitus (48–79), cerebrovascular disease (23–29), liver disease and cirrhosis (15–19), chronic lower respiratory infections (11–19), certain diseases originating in the perinatal period (11–21), land transport accidents (8–18), acute respiratory infections (6–13), and diseases of the urinary system (9–13). The lowest mortality rates for six of the 10 leading causes were found in Baja California and four of the highest rates were found in Chihuahua.

A comparison of these disease categories with leading causes in 1992–1994 finds few differences, but the rates in the earlier period, except for heart disease, were about the same or lower— ischemic heart disease (54–67), malignant neoplasms (56–69), diabetes (33–46), cerebrovascular disease (25–28), and chronic liver disease and cirrhosis (12–20). Again, interestingly, AIDS was not one of the leading causes of death in either time period.

It is important to note that the range of diabetes mortality rates in 2003 was roughly twice as great in Mexico's border states as in U.S. border states. In 1992–1994, the ratio of diabetes mortality rates for 45–64-year-olds in Mexico's border areas to those in the U.S. border area of sister cities was 6.3 to 1.

Evidence suggests that sedentary lifestyles and poor nutritional habits have contributed to high rates of chronic disease on both sides of the border, though both populations are relatively young.

HEALTH OF POPULATION GROUPS

Children under 5 Years Old

In 2003, all four United States border states had lower infant mortality rates than the national level (6.8 per 1,000 live births): 5.2 in California, 5.8 in New Mexico, 6.5 in Arizona, and 6.6 in Texas. The overall combined infant mortality rate for the four border states on the United States side in 2003 was lower than it was in 1992–1994.

Data published in 2004 in *Salud Pública de México* indicate that in 2003, two Mexican border states (Chihuahua and Baja California) had female infant mortality rates that were higher than the national figure (14.5 female infant deaths per 1,000 live female births), and Baja California, Chihuahua, and Sonora had higher male infant mortality rates than the overall national rate (18.4 male infant deaths per 1,000 live births).

In 1992–1994, infant mortality rates in Mexican border states doubled those of United States border states. The infant mortality rates in Mexican border states ranged from 12.6 infant deaths per 1,000 live births in Tamaulipas to 20.6 in Coahuila; Mexico's national rate was 17.7.

The four leading causes of infant deaths in 2003 in the U.S. border states were congenital anomalies, short gestation, SIDS, and maternal pregnancy complications.

The leading causes of infant mortality in the six Mexican border states in 2003 closely resembled those for Mexico as a whole. The 10 leading causes included certain conditions originating in the perinatal period, congenital malformations of the heart, lower acute respiratory infections, infectious intestinal diseases, protein calorie malnutrition, anencephaly and similar malformations, defects of the abdominal wall, Down's syndrome, lower acute respiratory infections, and spina bifida. The reported perinatal mortality rate was reported as 77.4 per 1,000 live births in 2003.

In 2003, the United States border states accounted for 25% of the 4,965 deaths among children 1–4 years of age in the country, with 557 deaths in California, 524 deaths in Texas, 134 deaths in Arizona, and 46 deaths in New Mexico. In 1992–1994, the United States border states accounted for 23% of the 20,630 deaths of children 1–4 years old in the United States, with 2,600 deaths in California, 1,634 deaths in Texas, 420 deaths in Arizona, and 167 deaths in New Mexico.

The leading four causes of death in children 1–4 years old in three United States border states (Arizona, California, and New Mexico) in 2003 were unintentional injuries, congenital anomalies, malignant neoplasms, and homicide; the pattern was similar in Texas, but there, homicide ranked as the fourth cause. Mortality rates among children 1–4 years old per 1,000 population in 1992–1994 ranged from 0.39 in California to 0.53 in Arizona, compared to the overall rate in the United States of 0.44.

In Mexico's border states in 2003, the leading causes of death in children 1–4 years old closely resembled those of the country as a whole: infectious intestinal diseases, lower acute respiratory infections, congenital malformations of the heart, motor vehicle accidents, accidental drowning and submersion, protein calorie malnutrition, leukemia, homicides, anemia, and epilepsy.

Among Mexico's border states in 1992–1994, rates ranged from 0.67 per 1,000 children 1–4 years old in Nuevo León to 1.1 in Chihuahua, compared to Mexico's overall rate of 1.2.

Adults

Maternal mortality rates for U.S. border states in 2003 showed Texas with the highest (15.9 maternal deaths per 100,000 live births); followed by California (15.0); and then by Arizona and New Mexico, each at 5.0. A review of maternal mortality for 2000–2003 showed that New Mexico has consistently had the lowest maternal mortality rate, while California had the highest rate in 2000, 2002, and 2003. In 2001, Texas had the highest rate at 11.0.

Maternal mortality rates for Mexico's border states in 2003 showed Baja California with the highest rate, at 62.8 per 100,000 live births, followed by Chihuahua (53.7), Tamaulipas (45.2), Coahuila (32.1), Sonora (29.3), and Nuevo León (15.9). With the exception of Baja California, all the other states had lower rates

than Mexico as a whole (62.6). Nuevo León consistently had the lowest rate throughout 2001–2003. Sonora registered the lowest rate in 2000. The national rate was higher than the state rates throughout 2000–2003.

In comparison with rates in 2003, maternal mortality rates for 1992–1994 ranged from 16.1 maternal deaths per 100,000 live births in Baja California and Tamaulipas to 38.3 in Sonora. The maternal mortality rates of Mexico's border states were all lower than rates for the country as a whole (47.7). In 1992–1994 the rates for the United States border states ranged from 3.4 in Arizona to 10.8 maternal deaths per 100,000 live births in New Mexico. The overall United States maternal mortality rate was 7.9 maternal deaths per 1,000 live births.

Data on early prenatal care (percentage of live births with early prenatal care) in the U.S. border states for 2001–2003 showed that California's rate, at 86.4%, is higher than the national rate (83.7%), whereas the other three states had lower rates of 80.6% (Texas), 76.6% (Arizona), and 68.9% (New Mexico). Prenatal care (number of visits for pregnant women) in 2004 for Mexico's border states ranged from 5.5 (Tamaulipas) to 6.2 (Baja California), both of which were higher than the national average (5.0). Visits for each state are 5.9 (Nuevo León) and 6.0 (Coahuila, Chihuahua, and Sonora).

The percentage of deliveries attended by trained personnel in Mexico's border states in 2004 ranged from a low of 63% (Chihuahua) to a high of 96.4% (Coahuila), indicating that coverage in five of the border states was higher than the national figure of 74.2%.

Indigenous Peoples

There are 26 U.S. federally recognized Native American tribes (ranging in size from 9 to 17,000 members) and 7 Mexican indigenous peoples in the border area. Some of these tribes and peoples share extensive family and cultural ties.

In May 2006, Arizona and Sonora created a health council to represent Arizona border communities in the Tohono O'odham Nation, Western Pima County, and the Northwest Sonora border communities of Caborca, Sonoyta, and Puerto Peñasco. The health council will be one of 13 other binational health councils located along the U.S.-Mexico border and the first trilateral health council, encompassing the United States, Mexico, and the Tohono O'odham Nation.

Health inequities along the border particularly affect indigenous populations, who are especially vulnerable as a result of poverty and lack of health insurance. Health professionals in the area suggest that the number of indigenous people who leave their home area has increased in recent years, and these groups are the most vulnerable, given the linguistic and cultural barriers they face in order to access health services.

HEALTH CONDITIONS AND PROBLEMS

COMMUNICABLE DISEASES

Vector-borne Diseases

In 2005, 3,000 cases of **West Nile virus** were reported in the United States, and 40% of these were in the four U.S. border states: Arizona (113 cases and 5 deaths), California (880 cases and 19 deaths), New Mexico (33 cases and 2 deaths), and Texas (195 cases and 11 deaths). The 37 deaths represent 31% of the total deaths from West Nile virus reported in the U.S. in 2005.

Although there were no reported cases of West Nile virus in border states on Mexico's side from 2003 to 2005, the many cases reported in the U.S. along the border in 2005 suggest that West Nile virus may well be a health concern along both sides of the border.

Although there were only 61 indigenous cases of **dengue fever** reported in the United States during 1980–1999, dengue is a reemerging threat along the border. In 2005, on the Mexican side of the border, 4,333 dengue cases were reported in Tamaulipas during the first 41 weeks. Subsequently, the Border Infectious Diseases Surveillance (BIDS) program undertook active surveillance at participating clinics in the U.S. and identified 18 cases of dengue. One of these was a case of **dengue hemorrhagic fever**, the first locally acquired classic dengue hemorrhagic fever case in the continental United States.

There were no reported cases of dengue in the six Mexican border states in 2002 and 2003. In 2001, the six border states reported a total of 171 cases led by Tamaulipas (93 cases), followed by Nuevo León (76 cases), Baja California, and Coahuila (1 case each), while there were no cases reported in Chihuahua and Sonora. These six states accounted for 2.8% of the total reported 6,095 cases in Mexico.

Vaccine-preventable Diseases

Childhood immunization programs have been a success in both countries and in the border area. There have been record high vaccination coverage rates and vaccine-preventable diseases are at an all time low. **Measles** is no longer endemic and rubella control has been effective. **Poliomyelitis** had been eradicated in the Americas.

The United States National Infant Immunization Week and Vaccination Week in the Americas have been conducted jointly in the border area since 2004.

According to the United States Centers for Disease Control and Prevention, 2004 immunization coverage with a complete vaccine series (DPT/polio/MCV/Hib/HepB) in the United States overall is 81%. In the border states on the U.S. side, coverage was 71% in Arizona; 81% in California; 84% in New Mexico; and 73% in Texas.

Vaccination coverage in Mexico is very high. Data from Mexico's Instituto Nacional de Salud Pública indicate that in Decem-

ber 2004, immunization coverage of fully immunized children 1–4 years old in Mexico's border states (96%) was higher than the national average of 93%. Tamaulipas had the highest coverage in 2004.

Hepatitis A incidence has decreased substantially from that seen in 1987–1997, when all border states and most border counties reported incidence rates of ≥ 20 cases per 100,000 population each year. By 2004, only two border areas had rates of ≥ 20 per 100,000 population.

Data for Mexico for 2000–2004 indicate that in 2003, there were more than 15,000 cases of hepatitis A (the lowest in the period), increasing to 16,000 in 2004. There were 1,888 reported cases in the six Mexican border states, accounting for 12.3% of the total cases in Mexico in 2003. The highest number of cases occurred in different states each year, with Tamaulipas having the highest number of cases in 2001 (939), Nuevo León in 2002 (836), Baja California in 2003 (489), and Coahuila in 2004 (439).

The four U.S. border states accounted for 1,125 cases of hepatitis B, 20.5% of the 5,497 cases in the United States in 2005; the six Mexican border states accounted for 126 cases, 21.5% of the 587 cases in Mexico that same year.

Intestinal Infectious Diseases

The four U.S. border states accounted for 49 cases of **typhoid fever** in 2005, 80 in 2004, 91 in 2003, and 65 in 2002.

The six Mexican border states accounted for 11,544 cases of typhoid fever in 2005, indicating serious food and water sanitation problems. Reported cases increased between 2002 and 2004, with 2,725, 6,123, and 8,342 reported annual number of cases of typhoid, respectively. Tamaulipas has consistently had the highest number of cases since 2001, with the highest number of typhoid cases—5,837—reported in 2005.

Chronic Communicable Diseases

Tuberculosis (TB) continues to be a concern for border areas in both Mexico and the United States. Both countries report approximately 15,000 cases of all forms of tuberculosis on a yearly basis. In 2005, the tuberculosis incidence rate in Mexico was 15 per 100,000, while the United States reported a rate of 4.7 incident TB cases per 100,000 population. What is more troubling is that the U.S.-Mexico border states reported a tuberculosis incidence rate higher than the national average, with rates of 7.9 in U.S. border states and 26.3 in Mexican border states. Efforts to control tuberculosis in the United States–Mexico border are reflected in the 2005–2010 Strategic Plan of Ten against Tuberculosis, a binational initiative created by the health officers of the 10 U.S.-Mexico border states in June 1995.

In 2005, a total of 11,547 cases of tuberculosis were reported in the U.S. The four border states accounted for 3,560 (31%), broken down as follows: Arizona, 221; California, 2,034; New Mexico, 35; and Texas, 1,270.

In 2005, a total of 14,038 cases of tuberculosis were reported in Mexico, of which the six border states accounted for 4,277 (31%), ranging from 407 cases (Coahuila) to 1,172 (Baja California).

HIV/AIDS and Other Sexually Transmitted Infections

In 2005 Baja California ranked seventh in the nation and first among Mexico's border states in the number of new reported AIDS cases (160), approximately 4.5% of the total AIDS cases reported at the national level; Coahuila had 43 reported new cases (1.2%), the fewest along the border.

Data published in *Salud Pública de México* indicate that the highest male and female mortality from AIDS occurred in Baja California. In 2003, male mortality from AIDS per 100,000 males in Baja California (32.1) was twice the national figure for males (16.7), while female mortality, at 5.3 per 100,000 females, also is higher than the national figure for females (3.1). A review of mortality data due to AIDS during 2000–2003 shows that males had a consistently higher mortality rate due to AIDS than females.

In 1992–1994, mortality from AIDS was 0.9 per 100,000 in Mexico's sister cities, the same rate for Mexico as a whole. In comparing border states with Mexico, only Baja California had a rate (1.3) higher than the national rate; the remaining border states all had rates below 0.5 per 100,000 population. In 1992–1994 on the U.S. side of the border, mortality rates for AIDS in sister cities (1.6) almost doubled those of Mexican sister cities, but were half those for the United States as a whole (4.0).

Zoonoses

The four U.S. border states accounted for 47 reported human brucellosis cases in 2005. California had 26 cases, Texas had 17, New Mexico had 1, and Arizona had 3.

In 2005, the six Mexican border states accounted for 759 reported cases (38.2% of the total reported human cases of brucellosis in Mexico). From 2001 to 2005, the number of reported human cases of brucellosis ranged from 1,083 in 2002 to 1,988 in 2005. Coahuila had the highest number of cases among the six Mexican border states in 2003 (491 cases), in 2004 (618 cases), and in 2005 (311), while Nuevo León reported the highest numbers in 2001 (423 cases) and in 2002 (435 cases).

NONCOMMUNICABLE DISEASES

Metabolic and Nutritional Diseases

Diabetes is on the rise along the U.S.-Mexico border, with the number of persons with diabetes increasing at an alarming rate on both sides. In 2003, diabetes was the third leading cause of death in Mexican border states and the sixth leading cause of death on the U.S. side. Of the 14,513 deaths in U.S. border states that same year, California accounted for 7,093 deaths, or 20 deaths per 100,000 population, and New Mexico for 559, or 32 per

100,000. Arizona had 20.7 deaths per 100,000 population and Texas had 25.6 deaths per 100,000. In comparison, in 1992–1994, crude diabetes mellitus mortality rates for border states were 17.6 deaths per 100,000 in Arizona, 13.2 in California, 24.4 in New Mexico, and 23.1 in Texas.

In Mexican border states, mortality due to diabetes mellitus has been increasing for both males and females. Data published in *Salud Pública de México* indicate that the highest mortality from diabetes in 2003 was in Coahuila, with male mortality at 70.3 per 100,000 and female mortality at 89.2 per 100,000. The second highest was in Tamaulipas, with male and female mortality rates of 56.5 and 68.2, respectively. These rates are substantially higher than those seen a decade ago. In 1992–1994, the average annual male and female mortality rates in Coahuila for diabetes were 40.4 male deaths per 100,000 and 51.9 female deaths per 100,000 each year—about 30 per 100,000 less than in 2003. In Tamaulipas, the male rate was 35.7 and the female rate was 41.9 in 1992–1994—about 20 per 100,000 less than 2003.

In comparison, in 1992–1994 in United States sister cities, the diabetes mellitus crude mortality rate was 17.3 per 100,000 population, while in Mexico's sister cities, the rate was 2.5 times greater, at 43.6. Female rates were slightly higher than male rates on both sides of the border. Among Mexico's sister cities, the diabetes mellitus mortality rate for males was 40.4; for females, 46.6. On the United States side, the male diabetes mellitus mortality rate was 16.1; for females, 18.5.

A diabetes prevalence study was conducted from February 2001 to October 2002 on 4,027 individuals (1,905 on the United States side and 2,122 on Mexico's side) in 45 border communities (38 in Mexico and 16 in the U.S.). Initial results showed that approximately 1.2 million (15.7%) of the 7.5 million adults who live along the U.S.-Mexico border area have diabetes. Of these, roughly 500,000 live on the Mexican side of the border with the remaining 700,000 living on the U.S. side. It is estimated that pre-diabetes affects about 14% (645,000) of the total adult population residing on the United States side of the border.

In response to the diabetes problem, the U.S.-Mexico Border Diabetes Project was established to determine the prevalence of diabetes along the border and to develop and implement binational diabetes prevention and control programs targeted to the needs of the border population.

Obesity, too, is a serious problem affecting the population living along the border. According to the 2001–2002 U.S.-Mexico Border Diabetes Prevention and Control Project study, it is estimated that 5.3 million adults living along the Mexico border are overweight or obese. One million of them live on the Mexican side of the border, and 1.5 million live on the U.S. side. Obese individuals along the U.S. side of the border have 2.8 times greater risk of developing diabetes than individuals with normal weight, and on the Mexican side, the risk is 2.2 times greater. The rate for obese men is slightly higher on the U.S. side (37.7%),

compared to men on the Mexico side (26.7%). The reverse holds true for obese women, whose rates are higher on the Mexico side (31.9%).

Cardiovascular Diseases

Heart disease continues to be the leading cause of death on both sides of the U.S.-Mexico border. In 2003, there were 124,932 deaths from heart disease in the U.S. border states, ranging from 3,402 deaths in New Mexico, for a crude rate of 181.5 deaths per 100,000 population, to 68,864 deaths in California, for a crude mortality rate of 194.1 per 100,000 population. The heart disease mortality rate in Arizona was 195.1 and in Texas it was 188.9.

In 2003, the mortality rate due to heart disease in the Mexican border states (62.6 deaths per 100,000 population) was higher than the national rate (45.4). The mortality rate ranged from 54.8 (Baja California) to 77.7 (Sonora).

For 1992–1994, the mortality rate from heart disease in Mexico's sister cities was about 1.4 times that of Mexico as a whole. Comparisons of rates at the state level with that of the national level showed Baja California's rate to be 1.4 times greater and Sonora 1.8 times greater than the overall rate for Mexico.

The main contribution to heart disease mortality in 2003 was mortality from ischemic heart disease, with crude rates among Mexico's border states that ranged from Baja California (56.8 per 100,000 population) to Nuevo León (102.0). In 1992–1994, ischemic heart disease rates ranged from 49.0 in Coahuila to 67.0 in Sonora.

Malignant Neoplasms

Malignant neoplasms continue to be the second leading cause of death in all four U.S. and all six Mexico border states.

In 2003, there were 100,916 deaths due to malignant neoplasms in the U.S. border states, ranging from 3,103 deaths in New Mexico, for a crude mortality rate of 166 deaths per 100,000 population, to 54,319 deaths in California, for a rate of 153 deaths per 100,000 population. Arizona and Texas had rates of 173 and 153, respectively. All fell under the crude mortality rate for the country as a whole, 192 deaths per 100,000 population.

In 1992–1994, mortality rates for malignant neoplasms were also greater in New Mexico (157 deaths per 100,000 population per year), California (163), Arizona (195), and Texas (171) than in the United States as a whole (205).

In 2000, five of the six Mexican border states had mortality rates for malignant neoplasms that were higher than Mexico's national figure (65.3 malignant neoplasm deaths per 100,000 population).

Malignant neoplasm of the cervix uteri is the most frequent type of cancer among women of reproductive age and the leading cause of death among women 25 years and older in the border states.

In Mexico in 2003, the mortality rate for malignant neoplasms of the cervix uteri was 16.2 deaths per 100,000 females. Two bor-

der states had similar, although slightly higher rates: Coahuila with 16.7 deaths per 100,000 females and Chihuahua, with 16.3.

Mortality rates for malignant neoplasm of the cervix uteri ranged from 6.7 per 100,000 females in Nuevo León to 10.9 in Coahuila in 2003. During 1992–1994, average annual malignant neoplasm death rates from cervix uteri ranged from 8.4 in Nuevo León to 12.8 in Tamaulipas; the rate for Mexico overall was 11.2. Only Nuevo León had a lower rate than the national rate among Mexico's border states.

Mortality rates for malignant neoplasm of the breast for 2001–2003 were consistently higher in Mexican border states than in the country overall, with a crude mortality rate of 8.0 per 100,000 females. In 2003, Baja California had the same rate for deaths from malignant neoplasm of the breast as did Mexico as a whole, 15.7 breast cancer deaths per 100,000 females.

Mortality rates for malignant neoplasm of the breast ranged from 8.3 deaths per 100,000 females in Baja California to 11.0 in Chihuahua in 2003. In 1992–1994, the rate ranged from 6.7 in Baja California to 10.7 in Nuevo León; the national rate was 11.2 deaths from malignant neoplasm of the breast per 100,000 women.

Mortality rates for malignant neoplasm of the prostate ranged from 7.3 deaths per 100,000 males in Tamaulipas to 10.5 in Sonora. In 1992–1994, the rate ranged from 5.7 in Baja California to 8.0 in Sonora; the national rate was 6.2 deaths due to prostate cancer per 100,000 males.

OTHER HEALTH CONDITIONS AND PROBLEMS

Disasters

In the past five years, the border area suffered natural disasters, including hurricanes, forest fires, and floods. In 2005, hurricanes Rita and Katrina hit East Texas and Tamaulipas. Forest fires also caused damage to all four United States border states. In 2006, floods resulting from sudden and severe rainfall occurring within a short period damaged El Paso, Las Cruces, and Ciudad Juárez. None of these cities were prepared for severe rainfall events nor had they adequate storm drainage systems. This led to many displaced persons and damages to houses and infrastructure. There were no fatalities reported as a direct result of the floods in either country.

Violence and Other External Causes

In 2003, violence ranked high among crude mortality rates in the border states, with Chihuahua having the highest rate at 16.9 violent deaths per 100,000 population and Nuevo León the lowest, at 3.3; similar patterns with slightly higher rates were found in 1992–1994. In 2003, males were 6.7 times more likely to die a violent death than females in Mexico's border states. In Baja California, 3.5% of total deaths in 2003 were due to homicides. On the U.S. side, border state homicide rates ranged from 7 to 9

homicides per 100,000 population in 2003, lower than the 10 to 13 per 100,000 population in 1992–1994.

Traffic along the border is huge, with an estimated 800,000 to 1 million border crossings each day. According to the United States National Center for Health Statistics (part of the Centers for Disease Control and Prevention), motor vehicle accidents were the eighth leading cause of death in 44 border counties on the U.S. side in 2000, resulting in about 1,000 deaths. For Hispanics, motor vehicle crashes were the fifth leading cause of death, compared to a rank of ninth for non-Hispanic whites. Using the years of potential life lost (YPLL) measure, motor vehicle crashes were the third leading cause of death for Hispanics living on the border (the fifth leading cause for white non-Hispanics living there). When broken down by age group, data showed that motor vehicle crashes are the leading cause of death for age groups 1–4, 5–14, 15–24, and 25–34 at the national, border state, and border county levels.

Data from Mexico for 2003 showed that observed mortality rates due to traffic accidents (deaths per 100,000 population) for males ranged from a high of 25.1 in Chihuahua, to 24.9 in Tamaulipas, 22.3 in Sonora, 18.4 in Nuevo León, 16.7 in Coahuila, and a low of 11.3 in Baja California. Female mortality rates were highest in Chihuahua (7.9), followed by Sonora (6.7); the pattern followed the same trend as for males in 2003.

Mental Health and Addictions

Addiction, tobacco consumption, and mental health are public health problems of concern along the border. Adolescents are the most vulnerable population group, at high risk for addiction, including tobacco consumption; suicide; traffic-related injuries; and unwanted pregnancy.

In 2003, suicide was the ninth leading cause of death in U.S. border states, with a rate of 15.1 suicides per 100,000 population in Arizona and 18.3 per 100,000 in New Mexico. The suicide rate for the United States overall in 2003 was 10.8 suicides per 100,000 population. Suicide was the tenth leading cause of death in California (7.0 suicides per 100,000 population) and Texas (6.9). In 1992–1994, the average annual suicide rate in the United States was 12.0 per 100,000 population. Average annual suicide rates during 1992–1994 were higher than the 2003 rates in the U.S. border states, with Arizona at 18.1 per 100,000 population, California at 12.1, New Mexico at 18.4, and Texas at 12.7.

In 2003, suicide was the second leading cause of death for 10–14-year-olds in Arizona and New Mexico, and the second leading cause for 25–34-year-olds in Arizona, New Mexico, and Texas. Homicide was the second leading cause of death among 15–24-year-olds throughout the U.S. border area, as well as for 25–34-year-olds in Texas.

According to information from Mexico's National Statistics, Geography, and Informatics Institute (Instituto Nacional de Estadística, Geografía e Informática, INEGI), the State of Baja California registered the highest frequency of suicide in youths

18–25 years old on a per capita basis nationwide. Among men of all ages, Baja California Sur ranked sixth in the nation in suicides in 2003. In response, the State launched a telephone “hotline” campaign in 2004 to provide suicide, drug, and domestic violence counseling. In Coahuila there were 120 recorded suicides in 2003. The male to female suicide ratio approached 3 to 1.

The suicide rates in the six Mexico border states in 1992–1994 were Baja California at 3.0 per 100,000 population, Sonora at 4.2, Chihuahua at 4.0, Coahuila at 2.7, Nuevo León at 2.9, and Tamaulipas at 4.7. In the same period, Mexico's national suicide rate was 2.7 per 100,000 population.

In 2003, injuries (intentional and unintentional) were the second leading cause of death in Mexico's border states.

Environmental Pollution

The most persistent and pervasive pollutants found in the sister cities are ozone and particulate matter (PM₁₀, or particulate matter 10 μ in diameter or less). From 2001 to 2005, concentrations of ozone were higher than the binational standard of 0.08 ppm in Mexicali/Imperial Valley and Tijuana/San Diego. Ozone concentrations in Ciudad Juárez/El Paso improved during the past five years, staying below established standards in 2004 and 2005. Ozone concentrations in the Lower Rio Grande Valley also were below established standards. Annual mean concentrations of PM₁₀ (mean for year of interest with the two prior years) from 2001 to 2005 in the Lower Rio Grande Valley were lower than the binational annual standard of 50 μ g/m³. Concentrations in the other four border monitoring areas exceeded the set limit, with the highest concentrations observed in Mexicali/Imperial Valley.

RESPONSE OF THE HEALTH SECTOR

Health Policies and Plans

The United States-Mexico Border Health Commission (BHC), which was created in 2000, is charged with providing international leadership to optimize health and quality of life along the border. The binational Commission has 26 members, comprising federal secretaries of health, chief health officers of the 10 border states, and prominent community health professionals from both nations; it is headed by the secretaries of health of both countries. The BHC operates on an independent budget, defines the binational health agenda, and presides over the administration of health services along the border.

In response to the terrorist attacks of September 11, 2001, the United States and Mexico signed the U.S.-Mexico Border Alliance, reiterating their commitment to cooperate towards achieving a safe, orderly border through specific actions designed to strengthen their common interests in matters of security, economic development, and tourism during the coming years. Preparedness against bioterrorism attacks has been given a higher

Opening a Window to Health

Next to solving environmental problems, ensuring that people have adequate access to health services is the leading challenge for the U.S.–Mexico border. More than 13 million souls live along the border, and between 250 million to 400 million persons crisscross the border each year. Communicable diseases take a particularly heavy toll along the border. Of the West Nile virus cases seen in the United States in 2005, 40% occurred in the four U.S. Border States. The border also experienced a dengue epidemic and there was at least one case of dengue hemorrhagic fever reported on the United States. The “Ventana a la Salud” program attempts to bring access to health care to difficult to reach populations. Through the program, Mexico’s consular system, in partnership with local health advocacy and health service organizations, and sometimes with U.S. Government co-financing, has set up “health windows” in several Consulate Offices. Bilingual and bicultural staff provide health assessments, referrals, information on patient rights, and linkages to available services.

priority in border states through various initiatives, including the establishment of the Early Warning Infectious Disease Surveillance (EWIDS) program by the U.S.–Mexico Border Health Commission in 2004.

In addition to having epidemiological and laboratory functions, the program aims to strengthen cross-border activities in early detection, identification, and reporting of infectious diseases associated with potential bioterrorism agents.

After the signing of the North American Free Trade Agreement, Canada, Mexico, and the United States created the Commission for Environmental Cooperation (CEC) of North America to address regional environmental concerns, help prevent potential trade and environmental conflicts, and promote the effective enforcement of environmental law. In addition, Mexico and the United States created the Border Environment Cooperation Commission (BECC) and the North American Development Bank (NADB). BECC identifies, evaluates, and certifies environmental infrastructure projects; the Bank, a binational financial institution capitalized equally by both countries, finances environmental projects certified by the BECC. Both institutions work together with communities and project sponsors in both countries to develop and finance infrastructure necessary for a clean and healthy environment for border residents.

Since 2002, the Border Legislative Conference has met several times each year to find shared solutions to problems along the border. The Conference consists of state legislators of Mexico and United States border states, who gather to consider common problems, exchange information, and develop joint programs wherever appropriate.

Health Strategies and Programs

Working through the Border Health Commission, the United States and Mexico governments define health priorities for the border area. To this end, during the Commission’s second meet-

ing in 2001, they issued the Healthy Border 2010 Program, which sets a binational agenda of health promotion and disease prevention. The Program’s two central objectives are: 1) to improve the quality of life and increase years of healthy life, and 2) to eliminate health disparities. The goals of the Healthy Border 2010 Program are channeled along 11 areas, each with its own specific aims. The areas and their respective goals are: 1) access to health care, by ensuring access to primary health care services; 2) cancer, by reducing breast and cervical cancer deaths; 3) diabetes, by reducing mortality and hospitalization due to the disease; 4) environmental health, by improving household access to sewage and drainage and reducing hospitalizations from acute pesticide poisoning; 5) HIV/AIDS, by reducing the incidence of HIV/AIDS; 6) immunization and communicable diseases, by broadening the scope of vaccinations for children and lessening the incidence of hepatitis and tuberculosis; 7) injury prevention, by reducing mortality from motor vehicle accidents as well as mortality from unintended injuries among children; 8) maternal and child health, by reducing infant mortality from birth defects, improving prenatal care, and bringing down pregnancy rates among adolescents; 9) mental health, by reducing suicide mortality; 10) oral health, by improving access to oral health services; and 11) respiratory diseases, by reducing the rate of hospitalization from asthma. Health problems or conditions such as cardiovascular diseases, tobacco use, substance abuse, gastrointestinal diseases, nutrition and obesity, lack of physical activity, and bioterrorism preparedness will be incorporated into the Program in the future.

As a way to address the border area’s most pressing environmental and environmentally related problems, in 2003 representatives from the U.S.–Mexico border gathered to launch the Border 2012 Program, a 10-year working plan whose mission is to protect the environment and public health along the border, consistent with principles of sustainable development. This latest incarnation of a multi-year, binational environmental initiative

represents a collaborative effort among federal, state, and local governments and agencies from both nations, as well as the active participation of U.S. tribal governments. The Border 2012 Program's six goals are: to reduce water contamination; to reduce air pollution; to reduce land contamination; to improve environmental health; to reduce exposure to chemicals as a result of accidental chemical releases or acts of terrorism; and to improve environmental performance through compliance, enforcement, pollution prevention, and promotion of environmental stewardship. To measure the Program's results, implementation reports will be prepared every two years to review progress, a five-year progress report will be issued in 2007, and a final report will be released in 2012. The Program is working on a strategy to control the used-tire piles in the future and clean up existing ones.

Organization of the Health System

In the United States, the health care system is characterized by a demand model, and health care is delivered on a fee-for-service system. Health services are provided by nonprofit institutions or by private entities. In 2000, 65% of the population of the U.S. border states was covered by private insurance and 25.6% by government insurance.

According to data from statehealthfacts.org (a website that is part of The Henry J. Kaiser Family Foundation), in 2004–2005, 51% of the population of the border states on the U.S. side was covered by private insurance (individual employer and Medicaid individual), 27% was covered by government insurance (Medicare, Medicaid, and other public Medicare), and 22% had no insurance. In general, the percentage of persons without private or public health insurance in U.S. border communities was higher than the national figure (22% versus 17%).

In Mexico, health care is considered a constitutional right. Various institutions provide health care services. The social security subsystem provides coverage to employed persons and their dependents, and is complemented by services provided by the government to unemployed persons, known as the “open population.” There also are private health care services available, either through payment for medical insurance or through direct payment to providers. Beginning in 2002, an additional avenue of access to health care became available as part of the national health plan, known as *seguro popular* (people's insurance), which now covers approximately one million families.

In 2000, Mexico's border communities generally enjoyed greater social security coverage (59%) than the national average (43%). The greatest social security coverage occurred in the most industrialized border communities. Data for 2005 from the National Institute of Statistics, Geography, and Informatics (INEGI) showed that the percentage of border-state population covered by insurance (Social Security Institute insurance [IMSS], state employees insurance [ISSSTE], government provided insurance for government and state oil industry [ISSSTE/PEMEX], Armed

Forces insurance [SDN], the *seguro popular* created in 2001, and other insurance venues) was higher than the national figure. In 2005, Nuevo León had the highest health insurance coverage (69.2%), and Baja California and Tamaulipas had the lowest (56.2%). Coverage for other states in the same year was 58.4% in Chihuahua, 64.7% in Tamaulipas, 66% in Sonora, and 69% in Coahuila.

Public Health Services

The United States' and Mexico's health care systems have various programs and projects in place to promote health along the border. On the Mexican side, the Department of Health has health promotion offices in each of the 13 largest border cities, each of which has state-level support. On the U.S. side, some local health departments have health promotion sections that address specific needs. In late 2003, a Binational Border Health Promotion Plan began to be created.

The Binational Health Week that began in California in 2001 is one of the largest combined mobilization efforts (federal and state government agencies, community based organizations, and volunteers) designed to improve the health and well-being of the underserved Latino population living in Canada, Mexico, and the United States. Health-promotion and health-education activities are held throughout the border during this week.

The launching of a health station (*Ventanilla de Salud*) at the Mexican Consulate in El Paso in April 2006 marks the fourth such station in an initiative operating throughout the United States–Mexico border, along with those in San Diego (California), McAllen (Texas), and Tucson (Arizona). The *Ventanilla de Salud* program is a partnership among local health advocacy and health services organizations and the Mexican consular network designed to incorporate bilingual, bicultural, and highly trained health educators and advocates as part of Mexican consular services in the United States to counsel clients on eligibility for government-funded health insurance, other primary care services, and, when appropriate, various legal issues.

Based on the 2000 census, access to piped water within the house is 90% or higher in U.S. border communities. In Mexico's border communities, access is lower, ranging from a low of 66% in Acuña to a high of 85% in Ciudad Juárez and Piedras Negras.

Human Resources

According to data published online in statehealthfacts.org (a website that is part of The Henry J. Kaiser Family Foundation), in 2004 all four U.S. border states had fewer than the overall United States average of non-federal physicians (28.1 per 10,000 population). There were fewer physicians per 10,000 population in each of the four border states than in the U.S. as a whole, by as much as 22% in Texas and as little as 7% in California. The same is true for registered nurses: the ratio of registered nurses per

10,000 population in the four U.S. border states is approximately 20% lower than the national rate of 28 per 10,000 population. Border counties in Arizona and California have the same number of physicians, nurses, and dentists per 10,000 population as the United States as a whole, while border counties in New Mexico and Texas have lower health worker ratios than the national or state average.

In 2004, the distribution of human resources in Mexico's border states was comparable to the national figures of 11 physicians per 10,000 population and 19 nurses per 10,000 population. According to information from the secretaries of health in Mexican border states, the ratio of physicians per 10,000 population in Baja California was 8 and in Tamaulipas, 15; the figures for social security ranged from 9 in Baja California and Chihuahua to 14 in Tamaulipas. The number of nurses per 10,000 population ranged from 17 in Baja California and Chihuahua to 24 in Coahuila.

Research and Technology

At the border health research agenda council meeting in February 2002, four research areas of interest were identified—disease control and prevention; health and the environment; health care systems, services, and human resource development; and health, society, and development.

PAHO's United States–Mexico Border Field Office began to engage in activities designed to facilitate the use of appropriate technology, including providing training to border institutions on the use of the geographic information system software, SIGEPI, and on the use of other communications software.

The information and knowledge management center at the El Paso Field Office houses online databases of periodicals and/or journals and provides access to courses as a way to develop competence in information search. It also distributes bibliographic material and produces various technical documents on public health issues in various formats.

Health Sector Expenditures and Financing

The United States and Mexico finance health in vastly different ways. The percentages presented in this section are intended for in-country comparisons only.

In the United States border states in 2004, total health expenditures as a percentage of the gross state product (GSP) ranged from 11% in California, to 12% in Arizona and Texas, to 13% in New Mexico. At the national level, total health expenditures as a percentage of the gross domestic product were 13%.

In Mexico's border states, public expenditure in health as a percentage of GDP (public expenditure) in 2004 ranged from 2.1% in Nuevo León to 3.3% in Sonora, compared to the national level of 3%. Public expenditure in health as a percentage of the total public expenditure ranged from 16.5% in Tamaulipas to 26.9% in Nuevo León, compared to the national level of 17.4%.

Technical Cooperation and External Financing

The United States Agency for International Development (USAID) provides funds and technical assistance to strengthen epidemiological surveillance systems and deal with chronic diseases, tuberculosis, and disaster mitigation on the border.

The Pan American Health Organization (PAHO) has had a field office on the U.S.–Mexico border since 1942. The field office currently contributes to meeting the objectives of Healthy Border 2010, Border 2012, and other border health initiatives, within the framework of the Strategic Plan of the Pan American Sanitary Bureau, 2003–2007, and the Millennium Development Goals. The Organization will continue to provide technical cooperation and services.

Other local, national, and international institutions also work along the border. There are also coalitions, agencies, associations, foundations, academic institutions, and government and non-governmental organizations that provide funding for health-related activities on both sides of the border.

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