low-paying jobs. More than half of all houses occupied by California Indians failed to meet minimum standards for safety and sanitation. Sixty-five percent of the Indians' homes had unsatisfactory sewage disposal facilities, and 45 percent used contaminated water. The majority of diseases attacking the state's Native people were gastrointestinal or respiratory, diseases closely related to deficiences in shelter, sanitation, and diet.

Five years after the appearance of this grim report on the conditions of the California Indians, University of Michigan anthropologist Joseph G. Jorgensen offered the startling observation that the Indians of California "are *much* better off than their counterparts in other states." Drawing upon evidence compiled by the President's Task Force on American Indians, Jorgensen published his own survey of what he called "the endemic poverty of contemporary Indians" in 1971. He found that unemployment rates on almost all reservations were between 40 and 50 percent, and that the average family income of American Indians was $1,500 per year, $2,000 below the federal poverty line. Houses were "grossly dilapidated" on many reservations, with 83 percent having unsatisfactory facilities for the disposal of sewage. Whereas 48 percent of California Indians had to haul their domestic water, the national average for Indians was 81 percent. Gastrointestinal and respiratory diseases among Native Americans were

FIGURE 4.1

NATIVE AMERICAN AMENITIES IN 1990

Native American Communities	Percentage without Complete Plumbing	Percentage without Telephone	Percentage without Motor Vehicle
White Mountain Apache	13.1	64.5	41.1
San Carlos Apache	16.6	83.9	29.5
Pima and Maricopa	15.2	77.8	34.5
Hopi	30.6	49.3	24.0
Navajo	44.3	81.6	27.2
Tohono O'odham	24.8	55.9	47.6
Zuni Pueblo	5.2	32.6	19.4

Source: 1990 United States Census

seven or eight times the national average, while Indian life expectancy was only two-thirds the national average. Educational levels of Indians also fell short of national standards: fully one-third of all adult Indians were illiterate.

Signs of economic progress among Native Americans were evident in the 1970s and 1980s, but severe problems remained. Unemployment among Native people remained at levels considerably higher than those for other ethnic groups, and income levels remained significantly lower. The overall Indian unemployment rate of 40 percent masked the extent of the problem on many reservations where seasonal unemployment was far higher. During the winter months, unemployment averaged 75 percent among the Fort Berthold Mandans in North Dakota, the San Carlos Apaches in Arizona, and the various Pueblos in New Mexico. Winter time unemployment often reached 90 percent among the Choctaws of Mississippi and the Sioux of Pine Ridge, South Dakota. On and off the reservation, a lack of education and training meant that employed Indians were locked into low-skilled and low-paying positions. During the 1980s, almost 40 percent of all Native American workers were employed in unskilled or semiskilled jobs, in contrast to a national average of less than 15 percent. According to the 1990 census, the median income for reservation Indians was $13,700, compared to $19,000 for the general population.

Housing and health conditions remained seriously deficient, with more than one-third of all Native American homes having fewer than three rooms. The 1990 census reported that 20 percent of all reservation households lacked complete plumbing facilities and more than half did not have telephones. Poor sanitation and diet contributed to rates of tuberculosis and dysentery among Indians many times higher than the national average. Native Americans also had the highest alcoholism and suicide rates. Historians James S. Olson and Raymond Wilson concluded their survey of Indian poverty in 1984 with a formulation that was by then all too familiar: "Taken together, Native American employment, education, income, and health problems make them the poorest people in the United States."

HEALTH PROBLEMS

One of the most devastating consequences of poverty for Native Americans in the twentieth century was the persistence of severe health problems. The tragic irony is that in the millennia before Europeans

arrived on this continent, the people of North America enjoyed excellent health. Native physicians maintained individual and communal health through sacred ritual and the knowledge of an extensive pharmacopoeia. Exposure to diseases and ecological changes introduced by European Americans took a heavy toll on the Native people. The Indian population of what is now the United States plummeted from a high of five million (or possibly far more) before white contact to fewer than 250,000 in 1890.

The government of the United States was slow to acknowledge its responsibility for protecting the health of Native Americans. In dozens of treaties negotiated in the nineteenth century, the federal government promised to provide health services to tribes as partial payment for rights and property ceded to the United States. Unfortunately, few services were provided. Following the transfer of the Bureau of Indian Affairs (BIA) from the War Department to the Department of the Interior in 1849, civilian physicians were assigned to reservations and Indian agencies. But by 1880 a total of just four hospitals and seventy-five physicians were serving the nation's entire Indian population.

Only in the early twentieth century did the federal government begin to provide meaningful health services to Native Americans. The Public Health Service conducted the first comprehensive survey of the health of American Indians in 1909. The resulting Trachoma Survey confirmed widespread reports of an unusually high number of cases of blindness among Indians and also found high levels of other infectious diseases such as tuberculosis. Two years later, in 1911, Congress made the first (and one-time-only) appropriation of federal funds specifically earmarked for Indian health services. The Snyder Act, passed by Congress in 1921, authorized regular appropriation of funds for "the relief of distress and conservation of health" of American Indians. To provide such "relief and conservation," the act created an Indian Health Division within the BIA and established district medical directors throughout the country.

Native Americans serving in the armed forces during World War II received extensive medical care from military physicians. This wartime experience raised expectations for the level of care available when they returned to civilian life. A major step toward fulfilling those expectations was taken on August 5, 1954, when Congress removed the Health Division from the Bureau of Indian Affairs and made it part of the Public Health Service within the Department of Health, Education, and Welfare (later known as the Department of Health and Human Services). This so-called Transfer Act created the Indian Health Service (IHS), under the supervision of the Surgeon General of the United States, charging it with providing all services "relating to the maintenance and operation of hospital and health facilities for Indians, and the conservation of Indian health." The quality of services available to Indians was significantly improved because young physicians could now fulfill their military obligation as commissioned public health officers serving in the IHS.

The creation of the Indian Health Service was motivated not only by a desire to improve health care for Native Americans, it also was related to the termination policy of the 1950s. As Bureau of Indian Affairs official Raymond Butler (Blackfeet) observed, the removal of health services from the BIA was part of the larger plan "to dismantle the bureau" by transferring its separate functions to other executive departments. Congressional proponents of termination hoped that such transfers would result in greater efficiency and lower costs. Expenditures for Indian health dramatically increased, however, following the creation of the IHS. During its first year of operations, the IHS had a budget of $34 million and a staff of 2,900 employees; twenty years later, its budget had grown to more than $200 million and its staff had increased to 7,400.

The Indian Health Service wisely concentrated its attention, at first, on preventive measures. Only by attacking the underlying conditions of poverty among Native Americans could the incidence of infectious diseases such as tuberculosis and trachoma be reduced. Teams of IHS civil engineers, sanitarians, medical social workers, and health educators were sent out to reservations to improve existing conditions. Congress initially authorized the IHS to provide water and waste disposal systems for existing Indian homes; subsequent legislation expanded that authority through cooperative programs with the Bureau of Indian Affairs and the Department of Housing and Urban Development for the construction of new homes as well.

The Indian Health Service initiated more than 4,000 projects, beginning in 1959, to upgrade Native American homes and communities. Over the next thirty years, more than 182,000 individual Indian homes (new and existing) were provided with sanitation facilities funded by the IHS. These facilities included running water, sewage disposal, and solid waste disposal systems. By the early 1990s, approximately 85 percent of all American Indian and Alaska Native homes had been provided with improved sanitation through various IHS

programs. Nevertheless, the IHS estimated in 1993 that "sanitation deficiencies" totaling nearly $600 million still needed to be alleviated before all Indian homes would have adequate facilities.

To provide comprehensive medical care for Native Americans, the Indian Health Service had to overcome several major difficulties. Although its budget was steadily increasing, the IHS continued to suffer from inadequate funding and chronic shortages of qualified medical personnel. Also, its "service population" included peoples of many distinct languages and cultures scattered in remote and isolated locations across the country. To meet these challenges the IHS developed several innovative programs, the most successful of which was the training and supervision of paraprofessionals. The program began on an experimental basis in 1955 with the creation of the Navajo-Cornell Field Health Project. Teams of Indian "health visitors" were trained to provide first-contact health care, health education, and disease prevention services. The visitors extended the reach of the IHS professional staff and helped overcome cultural and linguistic differences between physicians and patients.

One of the many dedicated IHS health visitors was Annie Wauneka, a member of the Navajo Nation tribal council who had been involved in local health care programs since the late 1940s. As head of the council Health Committee, she conducted an active campaign to convince Navajos suffering from tuberculosis to undergo treatment. She also inspected Navajo labor camps and, with council support, persuaded local employers to improve sanitary conditions for their workers. As part of the health visitor program, Wauneka assisted in the introduction of antituberculosis drug therapy and regularly visited tubercular patients to encourage them to stay under medical care.

The paraprofessional program became a permanent part of the Indian Health Service in 1968 with the establishment of a national training and research center in Tucson, Arizona. Known as Desert Willow, the center trained Community Health Representatives (CHRs) in basic health skills, home nursing, nutrition, and environmental health services. The CHRs were all Native Americans, trained by the IHS but employed and supervised by their own tribes. Because they were familiar with local cultures and customs, the CHRs served as specialists in "cross-cultural health delivery." They advised IHS physicians on ways to accommodate their medical practice to meet the cultural expectations of Native people, and they explained to patients the importance of modern medical procedures. By 1993, more than 1,400 CHRs were serving 250 tribes in 400 rural communities.

The Indian Health Service also developed innovative technologies to improve its delivery of medical services. Using the most advanced telemetry, the IHS in the mid-1970s inaugurated its STARPAHC program (Space Technology Applied to Rural Papago Advanced Health Care). This remarkable program allowed physicians in a central location to communicate by radio and television with paraprofessionals in mobile health centers. Physicians thus could assess medical problems and make recommendations for further care of patients in remote locations. The IHS also developed a high-tech information retrieval system in the 1980s called the Resource and Patient Management System (RPMS). Computers at 200 IHS and tribal health offices facilitated the confidential collection and output of a broad range of health data on individual patients, including such items as immunization records, dental charts, and allergies. This centralized health database was an important resource as Native Americans became increasingly mobile and sought medical care at IHS facilities across the country.

Native Americans living in urban areas benefited not only from improved medical care from the Indian Health Service, but also from a growing number of Indian outpatient and social service programs in the cities. The IHS sanitation program, originally conceived as an on-reservation service, was later extended to serve off-reservation communities as well. Indian clinics in cities such as Chicago, Minneapolis, Seattle, San Francisco, and Los Angeles provided a wide array of medical and health services. Many of the clinics started out as volunteer programs, but were later taken over by state or federal agencies. The staffs of many such urban clinics were predominantly Native American, often attracting from the reservations the few highly skilled professionals.

The most chronic health problem affecting urban and rural Native Americans in the twentieth century was alcohol abuse. The IHS Task Force on Alcoholism reported in 1972 that alcohol abuse was a contributing factor to four of the top ten causes of Indian deaths: accidents, cirrhosis of the liver, homicide, and suicide. Alcohol-related accidents were an especially severe problem for Native Americans. Indians were twice as likely to die from accidents as were non-Indians, and 75 percent of all fatal accidents involving Indians were alcohol related. In addition, alcohol was a factor in 80 percent of all Indian suicides and 90 percent of all homicides committed by Indians. The arrest rate of Indians for alcohol-related offenses was ten times higher

than for whites and three or four times the rate for other ethnic groups.

Perhaps the most heart-rending problem of all was the high incidence of fetal alcohol syndrome (FAS) among Native Americans. Rates of FAS varied widely for different tribes and regions, but generally were high on reservations and in urban enclaves across America. The condition is caused by mothers who consume large amounts of alcohol during their pregnancy, and its symptoms include varying degrees of physical deformity and mental retardation. With prevention the only "cure" for FAS, tribal leaders were eager to warn their people of its dangers. The Navajo Nation tribal council in 1982 conducted a workshop on FAS during which one participant observed, "Some Navajo elders used to say years back that if a woman about to bear a child drinks crazy water, the newborn will be crazy in the body and the mind." Roberta Ferron (Rosebud Sioux) put the matter more forcefully: "I am convinced that we [must] . . . halt Fetal Alcohol Syndrome among our Indian people or we will cease to exist as Indians." Public understanding of the tragic effects of FAS increased in 1989 following the publication of *The Broken Cord* by Native writer Michael Dorris (Modoc). This moving firsthand account told the story of one family's ongoing struggle to care for an adopted child afflicted with FAS. "Here is a book so powerful it will not only break your heart," wrote one critic, "it will restore your faith."

No one has ever been able to determine, for certain, why Native Americans were unusually susceptible to alcohol abuse. By the late twentieth century, most scholars had abandoned the theory that Indians were genetically or physiologically inclined to alcoholism; the more favored explanations were those that emphasized cultural or social factors. Professor Theodore D. Graves of the University of California, Los Angeles, concluded that the status of Indians as "marginal men," ill-equipped to handle the stresses of modern life, caused them to "seek release from frustration and failure in drunken stupor."

For many Native American alcoholics, the origins of their problem seemed clear enough. Alcohol abuse was already so prevalent among their family and peers that they began drinking without giving it a second thought. "It seems now almost as though I was taught to drink, like children are taught anything by the example of the grown-ups around them," observed one forty-three-year-old Indian alcoholic in Chicago, who further remarked:

> I can remember sitting around the kitchen on weekends, and everyone would come in Friday after work, with beer and sometimes liquor, and they'd start drinking. Me and my little brother, we'd just sit and watch them. I never thought about it, but I guess it always seemed to me the thing to do. Start drinking on weekends. And then, I guess, I just drank other times, too, until it was just out of my control.

The Indian Health Service devoted a great deal of its attention to the reduction of alcohol abuse among Native people, not only because it was such a serious health problem but also because it drained needed resources from the treatment of other diseases. By the early 1990s, 70 percent of all treatment services provided by the IHS were alcohol related. The IHS funded more than 200 alcoholism programs serving urban areas and reservations, often with the full cooperation of tribal officials. One of the most promising new programs, initiated by the Indian Alcohol and Substance Abuse Prevention and Treatment Act of 1986, authorized the establishment of youth treatment centers within each of the IHS service areas. In 1994 fifteen Native American alcohol-treatment programs joined forces, in a project called Healthy Nations, to develop culturally relevant prevention programs for Native people.

Native Americans also took the lead in developing innovative programs to combat the spread of the human immunodeficiency virus (HIV) and the acquired immunodeficiency syndrome (AIDS). Between 1987 and 1991 the number of AIDS cases among American Indians increased nearly sixfold, but remained relatively low compared with other ethnic groups. One noteworthy example of local initiative was the San Diego American Indian Health Center's HIV education and prevention program. The center provided comprehensive services for Indians infected with HIV and published an illustrated AIDS prevention booklet, *Coyote's Penis* (1990), by Native writer Clifford E. Trafzer (Wyandot). In 1994 a Navajo elder, Daniel Freeland, blessed seventeen HIV-infected Native people at a conference in Albuquerque. "You are warriors," said Freeland, lighting a bundle of sage. "Go that way. Don't let anyone else tell you otherwise."

The health care available to Native Americans during the late twentieth century was powerfully affected by the movement in federal policy toward self-determination. Two complementary pieces of federal legislation, passed in the mid-1970s, permitted tribal governments to take greater responsibility for providing health-care services for their people. The Indian Self-Determination and Education Assistance Act

of 1975 established the means by which tribes could contract with the federal government for the staffing and managing of health care programs. The following year Congress passed the Indian Health Care Improvement Act, identifying the specific services that tribes could operate under contract. These included health-care facilities, training programs, waste disposal systems, and urban clinics. The inclusion of the latter was significant, as public health educator Patricia Mail observed, because for the first time the federal government formally recognized the health needs of Indians living off the reservation.

Following the passage of these two key pieces of federal legislation, the Indian Health Service dedicated itself to achieving "maximum tribal involvement in developing and managing programs to meet health needs." As a result, increasing numbers of tribal governments contracted with the IHS for the management of hospitals, outpatient clinics, and other health-care programs. By the early 1990s, tribes were operating more than 300 hospitals, health centers, and health stations; twice as many as were managed by the IHS. Existing IHS programs also expanded to include greater Indian participation. Amendments to the Indian Health Care Improvement Act in 1988 acknowledged the Community Health Representative (CHR) program as an essential part of the overall IHS approach. The CHR program was cited as "a prime example of Indian self-determination, embodying all the precepts and managerial goals of the self-determination principle." By 1993, under the policy of preferential hiring, more than 60 percent of the 14,500 employees of the IHS were Native Americans.

The combined efforts of Native Americans and professionals within the Indian Health Service achieved dramatic improvements in several leading indicators of Indian health. Infectious diseases that once had decimated the Indian population were brought under control and their incidence approached that of the general population. The mortality rate among Indians with tuberculosis, for instance, decreased by 96 percent from 1955 to 1990. Likewise, the maternal mortality rate decreased by more than 90 percent. Especially heartening was the reduction in infant mortality during the same period, from a rate of more than 60 per thousand live births to only eleven, a decrease of 85 percent.

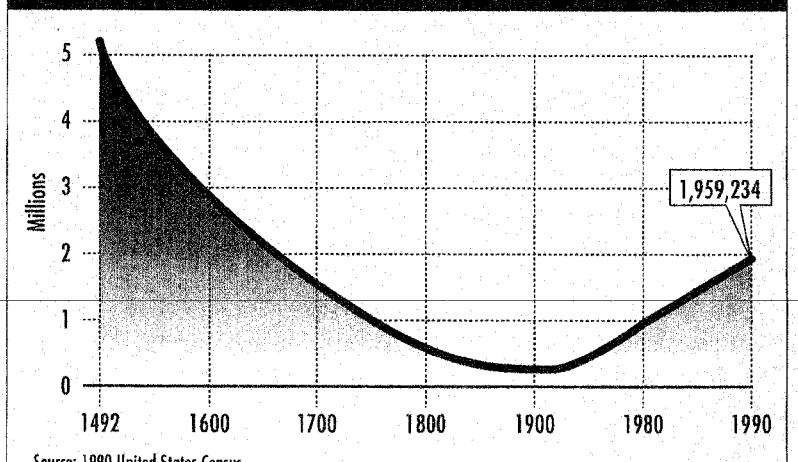
As a consequence of improved health conditions, Native Americans enjoyed higher birth rates and greater longevity. According to the 1990 census, the median age of American Indians was just over 22 years, compared to 30 years for the general population. This relatively

young population was growing rapidly; in the late 1980s, the Indian birth rate was 78 percent higher than the overall birth rate in the United States. By 1990 the number of Indians had climbed to almost two million, a dramatic increase from the nadir of fewer than 250,000 ninety years earlier. Equally as encouraging was the increase in Indian life expectancy, nearly on par with the general population by 1990. As Native scholar Russell Thornton (Cherokee), author of *American Indian Holocaust and Survival* (1987), concluded, this remarkable population recovery was a tribute to "human survival instincts, perseverance, and hope."

In spite of such significant improvements in Indian health, serious problems remained at the end of the twentieth century. Despite the reduction in tuberculosis among Native Americans, Indians in the 1990s were still twice as likely to contract the disease and five times more likely to die from it than other Americans. The mortality rate for Indians with diabetes was two and one-half times greater than the rest of the nation, and the Pimas and Maricopas of Arizona continued to have the highest rate of diabetes in the world. Alcohol abuse remained the greatest unsolved health problem for Native

FIGURE 4.2

AMERICAN INDIAN POPULATION IN THE AREA OF THE UNITED STATES, 1492–1990



Source: 1990 United States Census

Americans. Alcoholism in the 1990s killed Native people at more than five times the rate that it killed other Americans and killed young Indians, age 25 to 34, at *ten* times the rate of other young adults. Native people also continued to have the highest suicide rate in the nation. Young Indians, age 15 to 24, were committing suicide in the early 1990s at a rate nearly twice that of non-Indians. The highest suicide rate in the nation was among the White Mountain Apaches of Arizona; fifteen tribal members committed suicide in 1992, thirteen of them under age 23.

Surveying the accomplishments of the past few decades, and noting as well the many challenges that still remained, the Indian Health Service offered this balanced appraisal in the 1990s: "Although significant gains have been made, the health status of American Indians and Alaska Natives still lags behind the general United States population."

EDUCATION

Important progress also was made in improving the education of Native Americans, but here, too, major problems persisted. The federal government largely neglected Indian education until the late nineteenth century, even though many earlier treaties had contained provisions for the establishment of schools. The few institutions of learning available to Indian children were provided by missionaries or by the tribes themselves, most notably the Cherokees, Choctaws, and Chickasaws. The federal government in the 1870s began establishing schools for the express purpose of "civilizing" Indians, that is, of eradicating from them all vestiges of Native American culture and transforming them in the mold of European American culture.

The premier institution to achieve this rapid and thoroughgoing assimilation was the off-reservation boarding school, the first of which was established at Carlisle, Pennsylvania, in 1879 by Richard Henry Pratt. Indian students at the Carlisle Indian Industrial School were subjected to enormous pressure to change not only their material culture but also their cultural attitudes and values. "The end to be gained," Pratt explained, "is the complete civilization of the Indian . . . [and] the sooner all tribal relations are broken up; the sooner the Indian loses all his Indian ways, even his language, the better it will be." A similar philosophy imbued the other Indian schools established by the federal government in the late nineteenth century. By 1900, the Bureau of Indian Affairs was operating more than 100 boarding schools,

on and off the reservation, as well as nearly 150 reservation day schools.

The inadequacy of Indian education was one of the major concerns of the Meriam Report of 1928. This wide-ranging critique of federal Indian policy focused especially on conditions in the boarding schools, charging that students there suffered from insufficient food, overcrowding, harsh discipline, and poor medical care. The Meriam Report called for sweeping changes in the federal government's approach to Indian education, including an upgrading of conditions at the boarding schools, the revision of the schools' curriculum to include elements of Indian culture, and the transformation of reservation day schools into community centers. Many of these recommendations were implemented during the years John Collier headed the Bureau of Indian Affairs in the 1930s. Under Collier's direction, the unrelenting pressure for assimilation was relaxed and the curriculum began to acknowledge the diversity and importance of Native cultures. Courses in tribal history, pottery making, and rug weaving replaced subjects such as algebra and ancient European history. Collier's director of Indian education, Willard Beatty, developed bilingual texts in the Sioux and Navajo languages and instituted one of the nation's first bilingual teacher training programs. One hundred new community day schools were constructed between 1933 and 1941, and enrollment nearly tripled. As Margaret Connell Szasz, author of *Education and the American Indian* (1974), concluded, the era of educational reform during the Collier years resulted in "the most dynamic program of Indian education in the history of the Indian Service."

During the Collier era the federal government also recognized the growing importance of local public schools in the education of Native Americans. By 1970 more than half of all Indian children attending school were enrolled in public schools. Federal authorities had begun contracting with local school districts to provide educational services for Indians in the 1890s, but the process was cumbersome and inefficient. In 1934 Congress passed the Johnson-O'Malley Act, streamlining the funding process by authorizing the federal government to contract with the states, rather than with individual districts. Unfortunately, the act failed to provide adequate supervision of the states' use of Johnson-O'Malley funds; as a consequence, states often used the funds for their general education budgets rather than for special programs to meet the needs of Indian students.

The coming of World War II had both positive and negative effects on the education of Native Americans. Many of the innovative programs