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# MONOGRAPH SERIES

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## AMERICAN INDIANS IN CALIFORNIA

HEALTH  
STATUS  
&  
ACCESS  
TO  
HEALTH  
CARE



DEPARTMENT OF HEALTH AND HUMAN SERVICES  
Public Health Service • Indian Health Service





# American Indians in California

## Health Status & Access to Health Care

The collaboration and contributions of many persons were essential in the preparation of this Indian Health Service (IHS) report. Major assistance was provided by the Office of Planning, Evaluation, and Legislation and the IHS California Area Office; by the California Tribal Health Programs and the California Rural Indian Health Board; by the State of California Department of Health Services from the Indian Health Program, Health Data and Statistics Branch, and Medical Care Statistics Section; by the State of California Office of Statewide Health Planning and Development; by the Bureau of Indian Affairs; by numerous other federal agencies and programs of the State of California; by the Institute for Health Policy Studies and the Department of Family and Community Medicine at the School of Medicine, University of California, San Francisco; and by the School of Public Health, University of California, Berkeley. The primary author of this report was Trude Bennett, Dr.P.H., University of North Carolina at Chapel Hill, School of Public Health, Department of Maternal and Child Health (formerly at the University of California, San Francisco, School of Medicine, Department of Family and Community Medicine and Institute for Health Policy Studies). IHS staff who provided important support were Leo Nolan, Steve Helgersen, C. Allan Beckwith, Chris Watson, Jennifer Mayfield, John Yao, and numerous program personnel in the California Area Office. The efforts of Sandra Willburn, Jim Crouch, Carol Ervin, Gwendolyn Doebeert, Anthony Oreglia, Charles Chan, John Keith, Arthur Ellis, Ernest Nathan, and Pedro Hernandez were critical to the report. The primary consultant from the University of California, San Francisco, School of Medicine, was Paula A. Braveman, M.D., M.P.H., of the Institute for Health Policy Studies and the Department of Family and Community Medicine. Expert consultation was also provided by Arthur Reingold, Felicia Hodge, and Susan Lobo. Mark Spitalny assisted with computer programming and Deborah Peltzman provided technical assistance. Juana Rodriguez-Nieto made an invaluable contribution as Project Assistant, and Roy Rodriguez provided additional support. Data tapes were provided by the State of California Office of Statewide Health Planning and Development and by the State of California Department of Health Services, Health Data and Statistics Branch.

The full report was prepared for Congress in accordance with Section 709 of Public Law 100-713.

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To receive a copy of this monograph or the full report, *Health Status and Health Care Needs of American Indians in California*, please contact C. Allan Beckwith, MPS, FACHE, Special Assistant to the Area Director, California Area Indian Health Service, 1825 Bell Street, Suite 200, Sacramento, CA 95825-1097, Tel: 916-978-4202.



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# *Abstract*

**A** 1991 report to the U.S. Congress on the health status and health care needs of non-federally recognized California Indians revealed serious problems for the State's total Indian population, whether or not they were members of federally recognized tribes. Preventable causes of death result in premature mortality for California Indians, with a pattern similar to American Indians and Alaska Natives in the 32 other Reservation States that have federally recognized tribes. Tobacco and alcohol use are having a devastating and disproportionate impact on the health of California Indians. The maternal and child risk profile presents a troubling picture that demands public health action. Furthermore, there appear to be substantial limitations on access to health care services. Based on a variety of measures, it appears that the health status of non-federally recognized California Indians is no better, and is in some ways more compromised, than that of federally recognized California Indians. Continued access to California tribal health programs and clinics is essential for non-federally recognized California Indians, many of whom have restricted access to other sources of health care. ■



# Background

## PURPOSE OF THE REPORT

A data-based understanding of health issues for American Indians in California has long been lacking. The Indian Health Service (IHS) does not provide direct services in California, but funds 21 tribally operated rural clinics on a contract basis. Since these programs do not have inpatient facilities and have only recently begun to participate in the IHS contract care and ambulatory care reporting systems, patient care information pertaining to California Indians through the Indian Health Service is limited. Although the majority of Indian people use health services other than the available Indian facilities (seven Indian Urban Health Programs and 13 freestanding Indian Alcoholism Programs, in addition to the 21 tribally operated rural clinics), many non-Indian health care delivery systems fail to identify Indian patients in their information systems.

A major step was taken to address this serious data deficiency after Federal legislation mandated the preparation of a report on the health status and availability of health care to members of non-federally recognized American Indian tribes in California. This monograph highlights some key health status and health care utilization measures from that report, which was submitted by the Indian Health Service to the U.S. Congress in November 1991. Recommendations for action are discussed regarding the problems observed.

Eligibility for services provided by the Indian Health Service traditionally has been targeted, though not entirely restricted, to members of federally recognized tribes. Federal recognition is the standard criterion for receipt of most

government benefits; due to the arbitrary and changing nature of Federal recognition, health benefits have sometimes been extended more broadly out of equity considerations. As of January 1992, 45 California tribes were actively seeking Federal recognition or "untermination."

The Indian Health Care Amendments of 1988 (Public Law 100-713) codified the existing practice of providing IHS services to non-federally recognized California Indians who might otherwise be ineligible for such services. This population was defined as any descendant of an Indian who was residing in California on June 1, 1852, but only if such descendant is: (a) living in California, (b) a member of the Indian community served by a local program of the Indian Health Service, and (c) regarded as an Indian by the community in which such descendant lives. The same legislation mandated a report documenting the number, location, tribal membership, health status, and health care needs of such persons and assessing the alternate health care resources that would be available to them if their IHS coverage were discontinued.

Little is known about the health effects of tribal status or eligibility for Indian Health Service benefits. One study suggests adverse consequences resulting from the dual loss of Federal recognition and health services.<sup>1</sup> In 1954, the Klamath Tribe in Oregon lost their federally recognized status and associated health, education, and welfare benefits. In 1985, more than 30 years later, approximately 200 tribal members age 40 and over were surveyed about their health status, health care needs, and health care utilization. The Klamath findings were compared with a national sample of Indian elderly and a sample of non-Indian elderly. As



## The Indian Health Service (IHS)

Federal health care for American Indians and Alaska Natives derives from a unique "trust responsibility" relationship between Indian tribes and the U.S. Government based on laws passed by Congress and by treaties signed by the United States and Indian tribes between 1784 and the late 1800's.

The Department of Health and Human Services, primarily through the Indian Health Service of the U.S. Public Health Service, is responsible for providing federal health services to American Indians and Alaska Natives. The Indian Health Service's goal is to raise the health level of American Indians and Alaska Natives to the highest possible level.

The Indian Health Service operates a comprehensive health service delivery system on behalf of approximately 1.2 million of the nation's 2 million American Indians and Alaska Natives with an annual appropriation of approximately \$1.7 billion. To the extent that resources are available, American Indians and Alaska Natives served by the Indian Health Service receive a wide range of preventive, curative, rehabilitative, and environmental services. Services are provided by federal personnel in IHS facilities, through tribally operated health programs, and by private providers on a contract basis.

older adults, the terminated Klamaths suffered from social isolation and high unemployment. They were more likely to lack health insurance coverage and to have unmet needs for health care than the comparison groups. Even though they were younger than the national Indian sample, their health problems were similar; their health status compared poorly with non-Indians age 65 and over.

## METHODS EMPLOYED

The 1991 California report was prepared by the Institute of Health Policy Studies of the University of California, San Francisco, under the guidance of California Area Indian Health Service staff and a California Tribal Advisory Committee, which included a representative of the Association of Non-Federally Recognized Tribes of California. While allowing for limitations and problems with data quality, the report sought to utilize fully the existing sources of secondary data in the State of California. With the active cooperation of many agencies, key health status measures were obtained from vital statistics, hospital discharge records, case reports on infectious diseases, client and financial information from Medi-Cal (California's Medicaid program), and program data from selected State and Federal health and welfare programs. This summary will focus on the findings from two vital statistics sources — California birth and death certificates. Use of vital statistics records allowed comparisons of health status measures of California Indians with the total State population, with other racial/ethnic groups in California, and with Indians and others throughout the United States.

Whenever possible, the report included all persons identified as American Indian or Alaska Native (Eskimo or Aleut), although the text generally refers to the total group as "Indians" or "American Indians." For the

sake of clarity, the racial/ethnic terms most consistently found in the data sources were used with the understanding that other terms are sometimes preferred by the persons to whom they refer and may be more accurate (e.g., Native American rather than Indian, Latina/Latino rather than Hispanic, or African American rather than black).

Because American Indians could not be identified in vital statistics according to federally recognized status, inferential measures were used based on county of residence. The Tribal Advisory Committee first classified California counties according to inclusion in the IHS Service Area (Indian v. non-Indian counties). Among the Indian counties, the committee determined whether Indian residents were primarily members of federally recognized tribes; and whether at least 80 percent, 50–79 percent, or none of the American Indian residents had access to an IHS contract clinic within 30 minutes' driving distance.\*

In addition to the analysis of secondary data, information on a selected sample of non-federally recognized Indians was collected by the tribal health programs to determine current sources of health care, resources for payment of health care, and availability and accessibility of alternatives other than care supported by the Indian Health Service. The persons contacted consisted of a random sample of California Indians who were coded as non-federally recognized in the patient registration files from the tribal clinics. While preliminary in nature, this effort was the first attempt to collect information specifically on non-federally recognized California Indians in order to develop estimates of access to care and the prevalence of health needs among this segment of the IHS-eligible population in California. Results of that assessment are included in this summary of key findings from the report.

\* One Indian county on the California border, Alpine County, was not classified according to accessibility of IHS contract clinics because an unknown proportion of its Indian residents are served by a clinic operated by the Phoenix Area of the Indian Health Service.



## OVERALL OBSERVATIONS

In spite of many limitations and data quality issues, consistent findings emerged from all of the sources of information used in the study. The review of secondary data and the results of the assessment of non-federally recognized California Indians demonstrate convincingly that unmet need for a variety of health services exists among California's Indian population, and that any restrictions in eligibility or inadequate levels of funding for the currently eligible IHS population could have serious health consequences. The consistency of the findings provides strong evidence for the following general observations:

1. By many measures, the health status of California Indians is very similar to that of American Indians/Alaska Natives served by the Indian Health Service in the other Reservation States, and health risks are much greater compared with the general population in California.
2. The maternal and child risk profile for California Indians presents a disturbing picture that demands public health action.

3. The health status of non-federally recognized Indians of California appears to be no better than that of federally recognized Indians. Some findings suggest that the health status of the non-federally recognized may be worse and deserves special attention. No evidence exists that resources currently available outside of the Indian Health Service are adequate to meet urgent needs for care.

4. American Indians in California generally lack private health insurance coverage and rely heavily on Medi-Cal, which does not always ensure timely access to adequate care.

5. Tribally operated health programs have central importance not only due to the lack of adequate alternative resources, but also because of the preference for Indian-specific and culturally competent services.

6. Some findings, such as the risk of premature and preventable death, deserve immediate attention due to the overwhelming impact on California Indian health status and the evidence of serious inequities. ■



## California Indians

The legal status of the Indians of California and the litigation affecting them is based upon all government laws concerned with California Indians from the time the Spanish explorers and missionaries arrived in the area of California.

At about the time that the U.S. Congress admitted California into the Union, an Act of Congress (Sept. 30, 1850) authorized the President to negotiate treaties with the Indians of California to cede and relinquish to the United States their title and interests to all lands. From 1851 to 1852, treaties were negotiated by representatives of 139 different Indian groups for reservations, clothing, food, and education. However, these treaties were not ratified by the U.S. Senate. It was not until 1972, after many years of litigation, that a "final determination" was made in lieu of the initial treaties. A \$46 million settlement for distribution to nearly 70,000 Indians of California was made.

Congress has at times established two classes of California Indians. The first of these are termed "Indians of California" and are defined as "all Indians who were residing in the State of California on June 1, 1852, and their descendants now living in said State." The other group is "Indians in California," made up of nonindigenous Indians residing in California.

The focus of this report was on those Indians of California who are not members of an Indian tribe recognized by the Federal Government. An impact analysis of eligibility changes conducted by the Indian Health Service in 1991 estimated that fewer than 20,000 current California IHS registrants were not federally recognized Indians.



# California Indian Population

**B**ased on preliminary 1990 census figures, Table 1 indicates an estimated increase of 20.3 percent statewide for the California Indian population from 1980 to 1990. The 1990 estimate of 242,164 represents 0.8 percent of the total California population and 12.4 percent of the American Indian/Alaska Native population of the United States. The increase was concentrated in the Indian counties, implying potential growth in the service population for the Indian Health Service.

According to census figures, the rate of increase appeared to be greater for residents of primarily nonrecognized counties (54.0 percent v. 35.9 percent increase for primarily federally recognized counties). Residents of non-federally recognized counties represented 8.5 percent (17,054) of all California Indians in 1980 and 10.8 percent (26,264) in 1990. The population

increase in counties without accessible IHS contract clinics was 48.7 percent. These population figures suggest that members of non-federally recognized tribes compose a substantial and increasing proportion of the California Indian population, and that an increasing number of Indians may not be served by existing IHS contract clinics.

The Tribal Advisory Committee for this study advised caution in the use of census data for the California Indian population due to the potential for error and misclassification.<sup>2,3</sup> A post-enumeration survey to assess the accuracy of the 1990 census revealed that as many as 1.4 million Californians were missed in the original count.<sup>4</sup> In the United States as a whole, the Census Bureau estimated a 7.9 percent undercount of American Indians.<sup>4</sup> Of all groups in the U.S. population, American Indians have been counted with the least reliability.<sup>5</sup> Evalu-

Table 1  
American Indian/Alaska Native Population, by Type of County  
California, 1990

County Type	Total CA Indian	Non-Indian	Federally Recognized	Non-Federally Recognized	IHS Contract Clinic Accessible to ≥ 80% AI/AN	IHS Contract Clinic Accessible to 50-79% AI/AN	IHS Contract Clinic Not Accessible to AI/AN
1990 Population	242,164	107,825	134,339	26,264	64,038	26,714	16,792
Percent of AI/AN Population	100.0	44.5	55.5	22.6	26.4	11.0	6.9
Percent of All Races Population	0.8	1.2	0.6	1.0	1.3	1.0	1.7
Percent Gain 1980-90	20.3	39.9	8.1	35.9	38.8	37.0	48.7



ation of data quality issues led to a decision not to calculate population-based rates using census figures for denominator data in this study. However, census data were reported as the best available estimates of population trends and indicators of social and economic characteristics of Indian people relative to the general population.

### **SOCIAL AND ECONOMIC CHARACTERISTICS**

In general, the socioeconomic status of California Indians appears to be higher than that of Indians in the United States as a whole, but lower than that of the total population in California. Conditions in California seem to be more favorable both for Indians and for persons of all races compared to the United States overall, and the discrepancy between Indians and others is generally smaller in California. Nonetheless, the social and economic profile of California Indians raises concerns about health risks linked to poverty and demographic considerations.

In 1980, the median age of California Indians was 25.8, compared to 30.0 for all races in California and the United States and 22.6 for Indians in the 33 Reservation States.\* Indian families were larger than the average family in California, with mean family size of 3.5 for

Indians, compared with 3.2 for all races. California's Indian family size was actually somewhat smaller than that of the average family in the United States (3.8 persons), and considerably smaller than the average Indian family size nationwide (4.6 persons).

The median income of Indian families in California in 1979 was \$16,548, with a mean family income of \$19,621 and per capita income of \$6,030. These income figures were consistently lower than for the total California population, though higher than for Indians in all the Reservation States. Two-thirds (65.7 percent) of California Indians age 25 and over completed four years of high school, approximately the same percentage as for the total U.S. population. However, only 9.8 percent completed four or more years of college, compared with 19.6 percent of the total California population. Labor force participation of California Indians, for both men and women, was on par with that of all races in California, and compared favorably with the participation of Indians and others in the United States. However, unemployment rates were much higher for Indians than for Californians of all races (11.8 percent v. 6.5 percent). Unemployment was particularly high for Indian men, at 12.6 percent. These economic and educational disadvantages would be expected to result in health risks for California's Indian population. ■



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\* At the time this report was prepared, these data were not yet available from the 1990 census.



# Maternal and Child Health

## BACKGROUND

**E**mphasis was placed on maternal and child health measures because of the availability of population-based data in birth certificates and the importance of perinatal outcomes in predicting the future health of a population. Although the quality of data varies among particular items on birth certificates and the potential exists for misclassification of race/ethnicity, information is more likely to be solicited and verified directly from the families than in many other data sources. The demographic data obtainable from birth certificates are also updated more frequently than census information.

## DEFINITIONS AND METHODS

In part because of the tendency for American Indian statistics to be underreported, an inclusive definition was used for Indian births. The criterion was that either or both parents be recorded as American Indian/Alaska Native on the birth certificate; Hispanics were not excluded. Any child meeting this criterion could potentially be eligible for Indian Health Service benefits and might share the social and health risks that have historically been prevalent among American Indians. The sample was restricted to California residents (defined by mother's ZIP Code), since the relevant IHS eligibility issues pertain only to State residents.

## MATERNAL AGE

Mothers of Indian newborns are younger than the statewide norm, as demonstrated by Table 2; the

high proportion of Indian births to teenage mothers is cause for concern. From 1986 to 1988, 16.7 percent of Indian births, compared with 10.9 percent of all births in California, were to women under age 20. The proportion was especially high in the primarily non-federally recognized counties (20.7 percent). The pattern for the counties rated by access to IHS contract clinics indicates that births to teenagers are most common in the areas where Indian clinics are least available. Of special concern are births to school-age women under age 18, who are known to be at risk for social and economic reasons. Among Indian births, 6.6 percent were to women under 18, compared with 4.0 percent of total births. In Indian counties without access to an IHS contract clinic, 10.2 percent of Indian births were to women under 18. These findings indicate a need for further information on the availability of family planning services, appropriate maternity care services for teenage women, and educational and employment opportunities for young Indian women.

## MATERNAL EDUCATION

Among Indian births in California, mothers' educational levels were found to be lower than for the State as a whole, and especially low for births in the primarily non-federally recognized counties. Statewide, Indian births were no more likely than total births to occur among women with less than a high school education. However, 5.6 percent of Indian births, compared with 15.2 percent of total births, were to women who had completed college. More than 41.0 percent of Indian births in the primarily non-federally recognized counties were to women without a high school education, and



only 2.9 percent were to college graduates. These figures reflect in part the likelihood of births to teenagers in the non-federally recognized counties; early childbearing is a predictor of low educational attainment and restricted economic opportunities.

## BIRTHWEIGHT

Low birthweight, related to premature delivery and/or small size for gestational age, is the most important predictor of infant mortality and a critical health status indicator.<sup>6</sup> Infants weighing 2,500 grams (approximately 5.5 pounds) or less are almost 40 times more likely to die in the first month of life than heavier babies.<sup>7</sup> Those low-birthweight babies who survive have increased risks of congenital anomalies, mental retardation, growth and development problems, respiratory problems, blindness, autism, cerebral palsy, epilepsy, and other conditions.<sup>8</sup> In *Healthy People 2000: National Health Promotion and Disease Prevention Objectives*,<sup>9</sup> issued by the U.S. Public Health Service, one of the maternal and child health objectives is to "Reduce low birthweight to an incidence of no more than 5 percent of live births...". The baseline for this objective is the national rate of 6.9 percent low birthweight in 1987.

The percentage of low birthweight among American Indians in California from 1986 to 1988 was 6.4 percent; this was higher than the

rate for all races in California (6.0 percent) and considerably higher than the rate of 5.2 percent for whites and Hispanics (excluding Indians). Low birthweight among American Indian infants in California also exceeded the Indian rate nationwide (6.1 percent). In California, as in the United States, Indian women have lower rates of low-birthweight infants than women of all races in the younger age groups, but the pattern reverses among older women. Potential explanations to be explored are the effects of high parity, the cumulative effects of poverty, and the influence of diabetes and gestational diabetes on infant birthweight among older Indian women.

## PRENATAL CARE UTILIZATION

Table 2 presents birth certificate information on utilization of prenatal care for Indian births. The *Healthy People 2000* objective pertaining to prenatal care is to "Increase to at least 90 percent the proportion of all pregnant women who receive prenatal care in the first trimester of pregnancy..." (baseline: 76 percent of live births in 1987). Though the 1987 baseline for American Indian/Alaska Native women was considerably lower (60.2 percent), the same target of 90.0 percent for the year 2000 was set for American Indians as a special population. In California from 1986 to 1988, prenatal care was initiated in the first trimester for 68.3 percent of Indian births v. 74.4 percent of total births. Late (third trimester) or no care was

Table 2  
Characteristics of Births, by Type of County  
California, 1986-88

County Type	Total CA	Indian	Non-Indian	Federally Recognized	Non-Federally Recognized	IFS Contract Clinic Accessible to ≥ 80% AI/AN	IFS Contract Clinic Accessible to ≥ 50-79% AI/AN	IFS Contract Clinic Not Accessible to AI/AN
Number of Births 1986-1988	16,935	3,681	3,254	5,130	1,596	5,770	1,308	1,081
Percent of Total AI/AN Births	100.0	51.3	48.7	30.3	2.4	34.1	10.7	6.4
Percent Teen Births, AI/AN	16.7	17.7	15.7	15.5	20.7	16.3	20.0	21.3
Percent Teen Births, All Races	10.9	12.0	10.5	11.4	13.2	11.2	13.0	13.1
Prenatal Care in First Trimester AI/AN	68.3	66.9	69.8	68.4	66.3	64.6	64.3	58.1
All Races	74.4	73.2	74.8	72.6	74.3	73.2	73.1	72.7
Late or No Prenatal Care AI/AN	7.8	8.7	6.9	7.6	9.1	9.8	8.8	14.4
All Races	5.8	6.5	5.5	6.9	5.7	6.9	5.7	6.6



received for 7.8 percent of Indian births and 5.8 percent of total births.

Delayed prenatal care appears to be a severe problem in the primarily non-federally recognized counties. Late or no care was received for 9.1 percent of the Indian births in those counties, compared with 5.7 percent of total births in the same counties and 7.6 percent of Indian births in primarily federally recognized counties. (For all races combined, receipt of care was better in the non-federally recognized counties.) Furthermore, an extremely high percentage (14.4 percent) of Indian women giving birth in the counties without access to an IHS contract clinic had delayed prenatal care. Although the contract clinics do not always provide prenatal care services, they may serve a gateway function to facilitate entry into care.

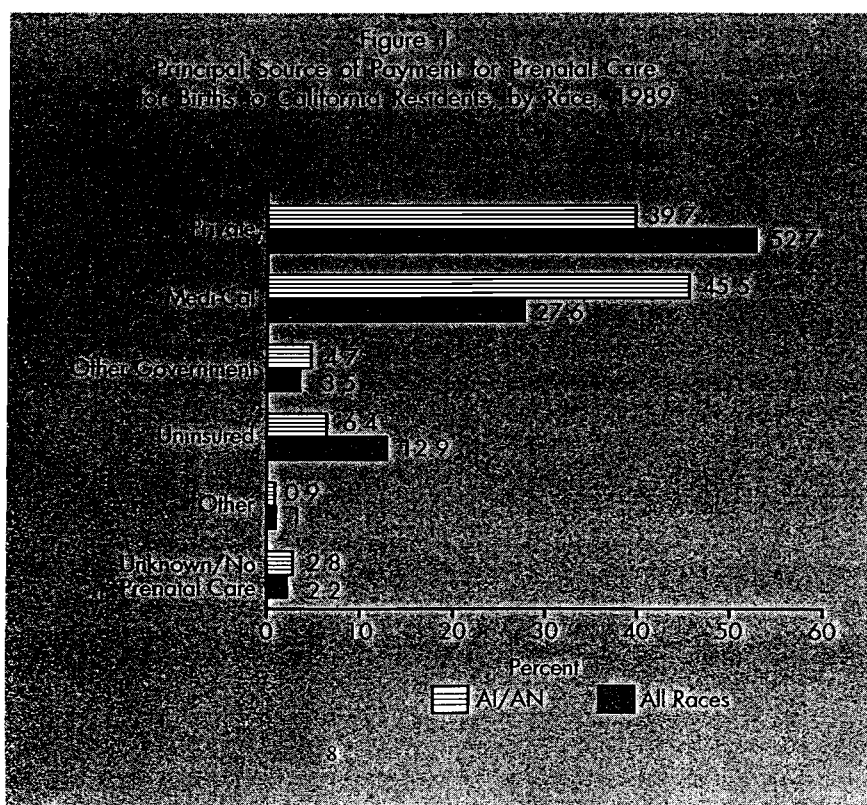
### INSURANCE STATUS

Figure 1 documents the insurance coverage of childbearing women in California for prenatal care in 1989. Mothers of Indian children were less likely to be uninsured than all mothers (6.4 percent v. 12.9 percent). However, Indian mothers were much more likely to rely on Medi-Cal (45.5 percent v. 27.6 percent) and much less likely to have private insurance coverage (39.7 percent v. 52.7 percent).

In primarily non-federally recognized counties, 66.2 percent of Indian births were covered by Medi-Cal. Only 22.7 percent of Indians were privately insured in primarily non-federally recognized counties, compared with 31.7 percent in the primarily federally recognized area. The lack of private insurance for Indians is not surprising due to low socioeconomic status, high unemployment rates, and concentration of employment in nonprofessional and nonmanagerial occupations.

Medicaid has been credited with major improvements in utilization of prenatal care for underserved groups. During the period of initial implementation of Medi-Cal in California from 1968 to 1978, increases in early prenatal care were greater for Medi-Cal than for non-Medi-Cal births in all racial/ethnic groups.<sup>10</sup> However, Medicaid's accomplishments have been constrained by a mixture of administrative and financial factors, and receipt of prenatal care by Medicaid clients is far from optimal. From 1986 to 1987, the U.S. General Accounting Office conducted a national survey on prenatal care among Medicaid recipients and uninsured women.<sup>11</sup> Poor care (defined as entry in the last trimester or completion of fewer than four physician visits) was reported for 24 percent of the uninsured and 16 percent of the women on Medicaid in that study, compared with 2 percent among a group of privately insured patients. Other studies have found poorer utilization among Medicaid patients than among uninsured women.<sup>12,13</sup>

The relationship between insurance status and utilization appears to vary across racial/ethnic groups<sup>14</sup> and needs to be better understood for the American Indian population. In particular, geographic availability of Medi-Cal providers and delays in Medi-Cal eligibility determination must be examined for Indian women throughout California. The impact of recent Medi-Cal maternity eligibility expansions and enhanced Medi-Cal maternity benefits should be evaluated with attention to the special needs of California Indians.





## INFANT MORTALITY

The most widely used indicator of maternal and child health is the rate of infant mortality. Infant deaths in the first year of life correlate with many risk factors shared by vulnerable populations. These factors include poor maternal health and nutritional status, inadequate health care, poverty, low educational levels, and unfavorable environmental conditions. Infant mortality is also sensitive to the uneven distribution of income and social resources and the organization of health and welfare systems.<sup>15</sup> Some innovative research in California has recently revealed that Indian infant mortality may be a problem of much greater magnitude than previously recognized.<sup>16</sup>

The national objective set by the U.S. Public Health Service for the year 2000 is to "Reduce the infant mortality rate to no more than 7 per 1,000 live births" (baseline of 10.1 per 1,000 live births in 1987). Because of racial variations in infant mortality, special population targets were set in the Public Health Service objectives. For American Indians/Alaska Natives, the objectives are 8.5 per 1,000 live births for infant mortality, i.e. deaths in the first year of life (1987 baseline: 12.5) and 4.0 per 1,000 live births for postneonatal mortality, i.e. deaths from 28 days until the end of the first year (1987 baseline: 6.5).

California's reported Indian infant death rates have been extremely low in recent years. According to calculations by the Indian Health Service and the National Center for Health Statistics, California's infant mortality rates for American Indians/Alaska Natives from 1984 to 1986 were 3.3–3.9 per 1,000 live births, compared with rates of 9.2–10.3 for Indians in the United States. The numerator data for these rates were taken from infant death certificates, and denominators were drawn from birth certificates. Using a Birth Cohort File containing linked birth and infant death certificate data, Watson and Oreglia<sup>16</sup> recalculated California's Indian infant mortality rate for the same time period and found that the rate roughly tripled. Classifying infants as Indian

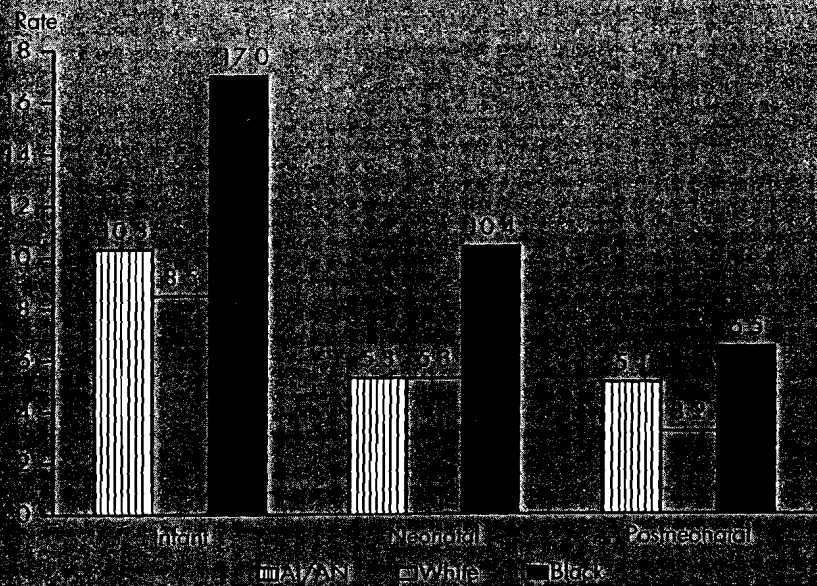
if either parent was recorded as Indian on the birth certificate, they obtained an infant mortality rate of 10.3 deaths per 1,000 live births. A similar effort by the Centers for Disease Control and Prevention using a national Linked Birth-Death File revised the U.S. Indian rate for 1983 upward from 10.7 to 14.4.<sup>17</sup>

The 1989 California study by Watson and Oreglia<sup>16</sup> offers convincing evidence of severe underreporting of American Indian/Alaska Native identity on infant death certificates, and cautions against complacency in relation to the problem of Indian infant mortality. Figure 2 presents California infant death rates for the period 1984–86 using the State's Linked Birth-Cohort Files. In these analyses, Indian infants were defined as those with mother and/or father recorded as Indian on the birth certificate, including Hispanics. It is proposed that these methods present the truest approximation of Indian infant mortality in California.

Indian infant mortality (10.3 deaths per 1,000 live births) in California from 1984 to 1986 was higher than the statewide rate (9.3) and considerably higher than the white rate of 8.5, though much lower than the rate of 17.0 for blacks. The rate of neonatal death (under 28 days of age) was the same for Indians and whites, 5.3, compared with 10.4 for blacks. The postneonatal death rate for Indians was alarmingly high. Postneonatal mortality for California Indians was 5.1 deaths per 1,000 live births, compared with 3.2 for whites. The black postneonatal mortality rate (6.5) was more than double the white rate, but the gap in postneonatal deaths between American Indians/Alaska Natives and blacks was much narrower than the difference in neonatal mortality. Once the California Indian rates are adjusted in this way, they are higher than the published U.S. Indian rates for infant and neonatal deaths and comparable for postneonatal deaths. Presumably, these U.S. rates are underestimated and will achieve greater accuracy with the use of linked files. Comparisons between California and the United States as a whole should thus be deferred, and public health officials should be alerted to the



Figure 2  
Infant Mortality Rates\*  
for Births to California Residents, by Race, 1984-86



\*Deaths per 1,000 live births to infants under one year (Infant), under 28 days (neonatal) and 28 to 364 days (postneonatal)

likelihood of underestimation of Indian infant mortality in vital statistics.

The heightened risk of postneonatal mortality highlights the social and economic causes of Indian health problems, since environmental factors are most critical in the postneonatal period. Nearly half (45.9 percent) of infant deaths to California Indians were to babies in the normal birthweight range (2,500-3,999 grams or approximately 5.5-8.75 pounds). Deaths to infants of all races were more concentrated among low-birthweight babies; the normal range accounted for 36.8 percent of deaths. This provides further evidence that preventable deaths may be occurring to medically low-risk Indian infants due to adverse socioeconomic conditions. Aggressive followup of mothers and infants during the postpartum period and throughout the first year of life appears critical for reducing infant mortality among American Indians. A comprehensive range of medical and nonmedical services is indicated, including economic and social supports as well as educational programs. ■





# Other Mortality

## METHODS AND DATA ISSUES

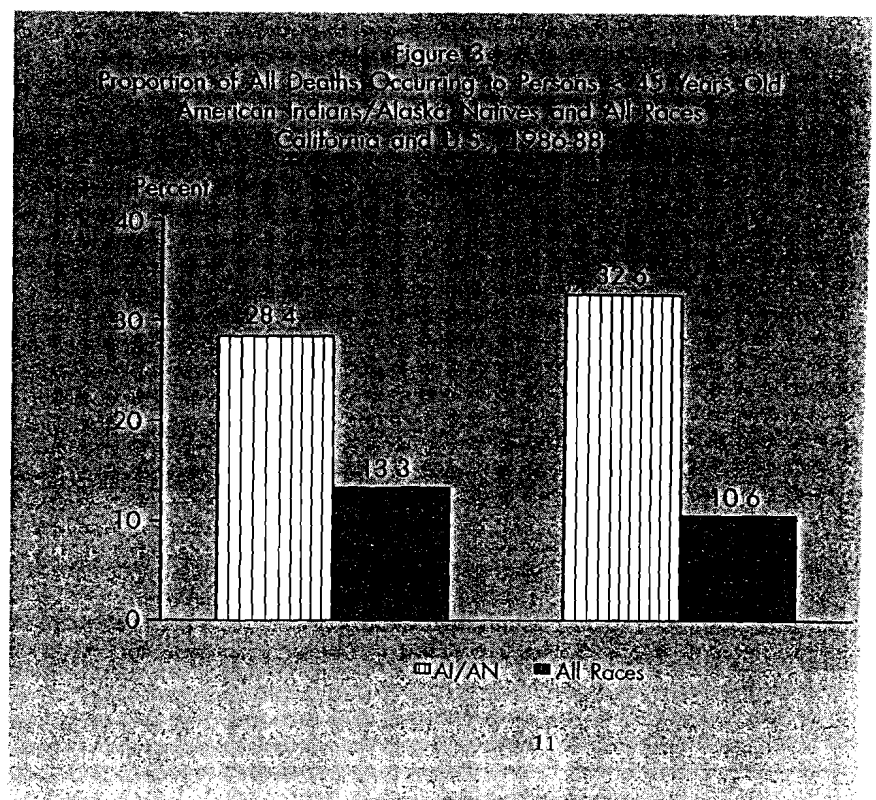
Indian mortality rates at all ages based on census denominator data in California and other States are implausibly low.<sup>18</sup> By examining proportions of deaths in particular age groups and proportions of deaths attributable to various causes, this study avoided biases that would have resulted from the use of unreliable and outdated census population counts to calculate mortality rates. However, data drawn from death certificates are also subject to certain limitations.

The likelihood of California Indians having Hispanic surnames and living off reservations increases the chance of racial/ethnic misclassification in death certificates. Based on Watson and Oreglia<sup>16</sup> and Watson et al.'s<sup>19</sup> evidence of underreporting of Indian identity in California's infant death certificates, special studies are justified to assess the underreporting of Indian deaths at all ages. Problems with the reliability and validity of death certificate data have been a cause for concern at the national level. The National Committee on Vital and Health Statistics convened a workshop in 1989 to assess the quality of cause-of-death data in death certificates and to make recommendations for future improvements. To improve the accuracy and utility of death certificates for research purposes, racial/ethnic coding should be examined in conjunction with evaluation of causes of death.

## AGE DISTRIBUTION

The age distribution of reported deaths is a useful indicator of health status and can be easily compared between different populations.

Figure 3 provides stark evidence of premature death among the California Indian population. Following the pattern for the United States, deaths occur among American Indians in California at much younger ages compared with the total California population. From 1986 to 1988 in California, Indian deaths were more than twice as likely as deaths statewide to occur before the age of 45 (28.4 percent v. 13.3 percent). In fact, 11.2 percent of Indian deaths were to young people under the age of 25, compared with 5.3 percent of total deaths. Indian males in California were particularly likely to die before the age of 45 (32.7 percent v. 17.6 percent for all races), and only 38.8 percent of Indian male deaths occurred at age 65 or over. Over three-quarters (76.6 percent) of total female deaths in California were to women age 65 or over, while half (49.3 percent) of Indian female deaths were within that age group.





## CAUSES OF DEATH

The age distribution of Indian deaths implies that causes of death are different when compared with the general population. Likely causes of death vary by age, and early death eliminates the possibility of dying from causes related to aging. The skewing of mortality towards younger age groups is a distressing commentary on the life experience of American Indians in the United States; it indicates great need and opportunity for intervention activities to address preventable mortality.

Underlying causes of death were investigated from California death certificates for deaths occurring to California residents during 1986-88.\* Table 3 indicates that the 10 leading

causes of death from 1986 to 1988 were the same but ranked differently for Indians in California, Indians in the United States, and all races in California. In ranked order for California Indians, these causes were: diseases of the heart; malignant neoplasms; accidents (motor vehicle and all other); chronic liver disease and cirrhosis; cerebrovascular disease; homicide and legal intervention; diabetes mellitus; pneumonia and influenza; suicide; and chronic obstructive pulmonary diseases. California Indians appear to be more similar to U.S. Indians than to California's total population.

As Table 3 shows, chronic liver disease and cirrhosis, which are alcohol-related causes of death, caused a higher proportion of Indian deaths in California (6.7 percent) compared with U.S. Indians (4.3 percent) or California's

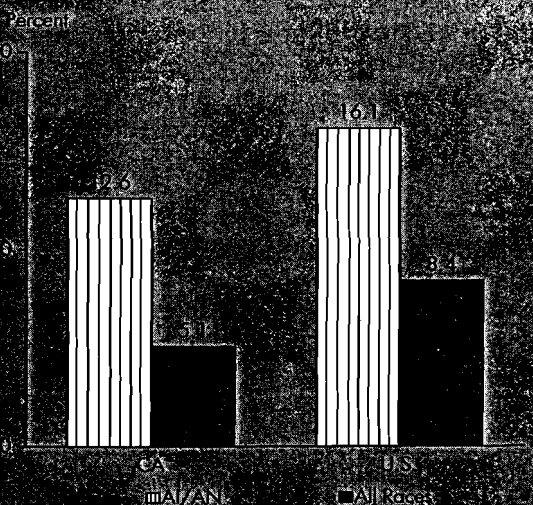
Table 3  
10 Leading Causes of Death As Proportion of All Deaths, 1986-88  
American Indians/Alaska Natives, California and United States  
All Races, California

Cause of Death	AI/ANI California	AI/ANI United States	All Races California
All Causes	100.0	100.0	100.0
Diseases of the heart	25.5	23.1	33.1
Malignant neoplasms	16.1	13.7	22.5
Accidents	12.6	16.1	5.1
Motor vehicle	(7.3)	(9.3)	(2.7)
Other	(5.4)	(6.8)	(2.4)
Chronic liver disease and cirrhosis	6.7	4.3	1.2
Cerebrovascular disease	5.0	4.6	7.5
Homicide and legal intervention	3.4	3.0	1.5
Diabetes mellitus	3.1	3.6	1.6
Pneumonia and influenza	3.1	3.4	4.0
Suicide	2.6	3.0	1.2
Chronic obstructive pulmonary disease	2.6	2.2	4.3
All other causes	19.3	23.0	16.6

\* All causes of death were analyzed for this study using California death certificates and published U.S. data from the Indian Health Service and the National Center for Health Statistics. The classification system of diagnostic codes from the International Classification of Diseases, 9th Revision (ICD-9), which is routinely used by the Indian Health Service's Office of Planning, Evaluation, and Legislation, was applied to the California data for the sake of consistency and comparability.



Figure 4  
Proportion of Deaths Due to Injury  
American Indians/Alaska Natives and All Races  
California and U.S.



total population (1.9 percent). Within California, homicide and legal intervention, diabetes mellitus, and suicide accounted for higher proportions of Indian v. total deaths. Homicide and legal intervention caused 8.3 percent of all Indian male deaths from 1986 to 1988, compared with 2.2 percent of total male deaths. Cerebrovascular disease, pneumonia and influenza, and chronic obstructive pulmonary disease were all somewhat more prominent as causes of death among the total population than among California Indians.

As seen in Figure 4, the proportion of deaths due to injury was lower for California Indians than for U.S. Indians (12.6 percent v. 16.1 percent), but much higher for Indians than for the general population in California (5.1 percent). Accidents were especially prominent as a cause of death among Indian boys and men in California (15.1 percent of male deaths v. 8.4 percent of female deaths). Motor vehicle deaths alone accounted for 9.4 percent of all deaths to Indian males. In the primarily non-federally recognized counties of California, nearly a quarter (22.7 percent) of deaths to Indian boys and men were caused by accidents.

The effects of tobacco and alcohol on Indian mortality were further investigated using methodologies published by the CDC to calculate smoking-attributable and alcohol-related mortality.<sup>20, 21</sup> Although the number of Indian deaths involved was small, the findings were alarming. Figure 5 shows that 41.7 percent of deaths to Indian women and 37.4 percent of deaths to Indian men were attributable to cigarette smoking from 1986 to 1988, compared with 12.4 percent and 17.8 percent, respectively, of deaths to women and men of all races. The higher proportion of smoking-attributable deaths to women v. men is notable among Indians, given the reverse situation among the total population.

Alcohol-related mortality for California Indians was found to be comparable to mortality due to smoking from 1986 to 1988, although the effects appeared to be greater for men, as seen in Figure 6. (See p. 16.) One-third (33.6 percent) of deaths to Indian women and more than two-fifths (42.1 percent) of deaths to Indian men were alcohol-related. The contrast with deaths for all races is stark; the comparable proportions for the total

Figure 5  
Smoking-Attributable Mortality  
for California Residents by Sex and Race 1986-88

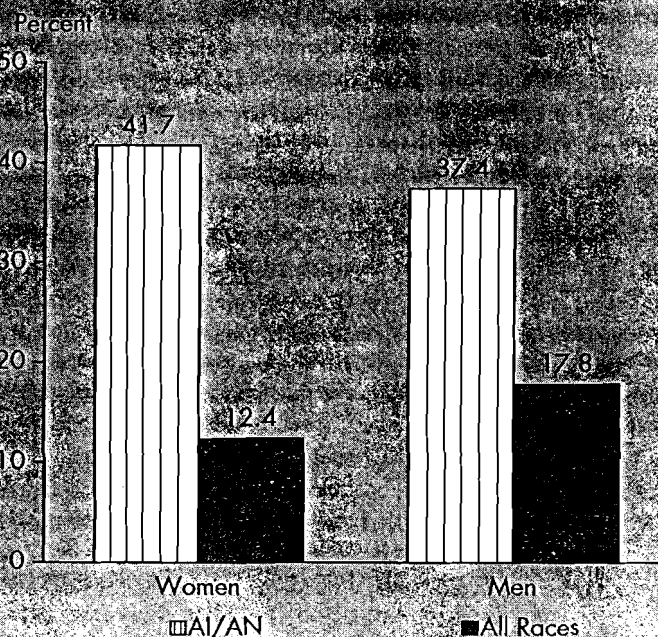




Figure 6  
Alcohol-Related Mortality  
for California Residents, by Sex and Race, 1986-81



population were 4.3 percent for women and 8.4 percent for men.

Proportionate mortality is a relative, not an absolute measure, and its interpretation can be complex. However, these findings have broad implications for health promotion and disease prevention among California Indians. Strategies for reduction of tobacco and alcohol consumption, education and prevention programs to lower rates of heart disease, cancer screening programs, and accident prevention appear to be urgent priorities.

This information also highlights the need to improve the quality of data needed to calculate mortality rates for the California Indian population. Age- and sex-specific information is needed on the particular diseases of the heart that claim Indian lives prematurely, the specific sites of cancer, the types of motor vehicle and other accidents, the relationships between tobacco and alcohol and the major causes of death, and the interactions between different conditions common to Indian people. ■





# *Non-Federally Recognized California Indians*

## **ASSESSMENT OF NON-FEDERALLY RECOGNIZED INDIANS OF CALIFORNIA**

**A**ccording to Indian Health Service registration records, approximately one-fourth of currently registered American Indians at California Indian tribal health clinics are not members of a federally recognized Indian tribe of California. Information was collected on current insurance status, current use of tribal health programs and other providers, and financial and other barriers to receipt of care among a sample of adults 18 years and older selected from contract clinic patients identified as non-federally recognized Indians of California (NRICA) in March 1991.

Out of an original sample of 1,013 identified registrants at 12 participating clinics, it was possible to analyze data on 348 respondents. The other 60 percent of potential subjects were eliminated from the sample because they had died, declined to participate, could not be contacted, or failed to meet the inclusion criteria. Respondents were more likely to be older and female compared with nonrespondents. Informal notes made by the survey team identified about half of the nonrespondents as unavailable at the time of the survey for reasons including moving away or being incarcerated. The tribal health programs contacted 123 respondents (30 percent) by phone and 284 respondents (70 percent) in person. No marked differences were noted in the age and sex distributions between these two groups.

The study instrument was adapted from the 1987 Survey of American Indians and Alaska Natives (SAIAN), which was developed and conducted by the Agency for Health Care Policy

and Research of the U.S. Public Health Service. The SAIAN was designed to produce statistically unbiased estimates that were representative of the civilian population living on or near reservations and eligible for IHS services. It was conducted as a companion to a larger national survey, the 1987 National Medical Expenditure Survey (NMES).

Only 11 percent of the NRICA study population possessed education beyond high school. Nearly half (47 percent) had at least one child under age 16 in the household, and 58 percent reported annual household income under \$12,000. Three-quarters (75 percent) of the NRICA respondents reported that they had a usual source of medical care. Nearly three-fifths (58 percent) of the NRICA respondents reported three or more visits to a health care provider in the past year, with an annual average number of visits of 6.5 for the entire group. Thirty-six percent also reported a visit during 1990 by a Community Health Representative, a type of home health aide trained and utilized extensively in the IHS system. Over half of the NRICA respondents did not pay any out-of-pocket expenses for health care in 1990, but the average payment in 1990 for the entire group was \$356.

The majority of NRICA respondents held some type of health care coverage, as shown in Table 4. (See p. 19.) The most common was Medicaid (28 percent), followed by private insurance (24 percent) and Medicare (14 percent). One-third (33 percent) had no form of health insurance. Respondents were also asked, "If you applied, would you be eligible for any of the following health payment sources?" A small increase in coverage was indicated for both private and public insurance, but 29 percent of the NRICA could not identify any form of coverage for which they would be eligible.





## Indian Health Presence in California

Health services for American Indians began in the early 1800's when U.S. Army physicians took steps to curb smallpox and other contagious diseases among Indian tribes living in the vicinity of military posts. Some treaties negotiated with Indian tribes provided some kind of medical services. Although most treaties imposed time limits of five to 20 years for provision of care, the Federal Government adopted a policy of continuing services after the original benefit period expired.

Transfer of the Bureau of Indian Affairs from the War Department to the Department of the Interior in 1849 stimulated the extension of physicians' services to Indians by emphasizing non-military aspects of Indian administration and by developing a corps of civilian field employees. Within 25 years, about half of the Indian agencies had a physician. By 1900, the Indian Medical Service was established.

Professional medical supervision of Indian health activities was begun in 1908 with the establishment of the position of chief medical supervisor and was strengthened in the 1920's by the creation of the Health Division and appointment of district directors. The first appropriation earmarked specifically for general health service to Indians was made in 1911. In 1926, medical officers of the Public Health Service Commissioned Corps were detailed to certain positions in the program. Until the late 1920's, sanitation services did not extend beyond occasional cleanup campaigns and physicians' inspections of homes, schools, and Indian agencies. In 1928, sanitary engineers of the U.S. Public Health Service began assisting the Bureau of Indian Affairs in surveying water and sanitation systems and investigating other basic sanitation problems, usually restricted to Bureau installations. An expanded program to improve sanita-

tion in individual homes was begun in 1950. Five years later, Congress transferred responsibility for Indian health from the Department of the Interior to the U.S. Public Health Service. At the time, both medical facilities and personnel were inadequate to meet Indian health needs. Since 1955, the Division of Health, now called the Indian Health Service, has assumed more responsibility and expanded its staff significantly. Indian health services in California are a legacy of the thrust in the 1950's to terminate the special Federal relationship to Indians. After World War II, Federal Indian policy changed. Thousands of reservation Indians were forced to resettle in urban centers, where they were to be trained and employed. Major functions, responsibilities, and jurisdiction over Indians were transferred from the Federal Government to the States (18 USC 1162, 28 USC 1360). The Federal relationship with specific tribes was terminated, services were ended and assets were distributed to individual tribal members.<sup>22</sup>

On Aug. 1, 1953, Congress adopted House Concurrent Resolution 108 expressing its intent to free Indians as soon as possible from Federal supervision and control. Termination of California tribes was included in the resolution. The California Legislature had previously adopted Assembly Joint Resolution 39 calling for termination of Federal authority over Indians in the State of California. In 1953, the California Fourth District Court of Appeals affirmed the right of reservation Indians to direct county relief the same as other citizens. The Bureau of Indian Affairs began to liquidate all operations in 1953, including health services for California Indians. The California termination policy was continued by the U.S. Public Health Service (PHS) when responsibility for health services was transferred to PHS from the Bureau of Indian Affairs in 1955.

In 1968, the California Department of Health received a pilot grant from the

U.S. Department of Health, Education and Welfare (DHEW). This action was the first indication of restoration of funding for health services. In 1969, nine reservation-based project sites were allocated \$245,000 by the Indian Health Service through the State Department of Health as a demonstration project. The demonstration project was called the California Rural Indian Health Program. An Indian Health Service California Program office was established in Sacramento. This office was responsible for overseeing the implementation of contracts, and providing technical assistance to the California Rural Indian Health Projects. In 1970, DHEW decided to include within the Indian Health Service Program approximately 7,000 Indians residing on or near Indian reservations and rancherias, on the condition that Federal supplementation of health resources was provided for these persons.

In 1977, the IHS California Program Office budget increased to a level of \$2,894,000. Ten years later, the California Program Office was upgraded to the status of an IHS Area Office. The budget was increased to \$68,098,817 in 1993.

All health care services funded by the Indian Health Service in California are provided by tribal contracts through the Indian Self-Determination and Education Assistance Act (Public Law 93-638) of 1975, which allows a tribe or tribal consortium to establish and administer health care services contracts with the Indian Health Service. California (with an Indian population of more than 242,000, according to the 1990 census) contains the second-largest population of American Indians of all 33 Reservation States. Today, nearly 100,000 Indians and Alaska Natives widely dispersed on California reservations and rancherias depend upon this health care system. There are currently 21 tribally operated rural clinics, seven Urban Health Programs, and 13 freestanding Indian Alcoholism Programs in California. ■



## POPULATIONS OF SPECIAL CONCERN

Table 4  
Health Care Coverage of Non-Federally  
Recognized Indians of California, 1991

Type of Coverage	Percent
Private Health Insurance	24
Medicaid	28
Medicare	14
County Medically Indigent Program	5
Veterans Health Benefits	3
Other	8
No Health Coverage	33

Based on negative response to all the above.

Sixty percent of the NRICA survey population identified the local tribal health program as their usual source of care, compared with 24 percent reporting a doctor's office or group practice. The remainder reported various sources, such as hospital outpatient clinics, emergency rooms, urgent care clinics, and community clinics. In reporting on alternate resources for health care, 38 percent of the NRICA group indicated that they would use a tribal health program. The major expected shift in care was to county indigent programs, community clinics, and emergency rooms. There was no anticipated shift to private physicians in the community. Seven percent reported that they did not know where they would go.

One-third of the NRICA respondents reported at least one unmet health care need during 1990. The most frequently mentioned need was dental care, reported by 22 percent; followed by types of supplies (e.g. diabetic supplies, orthopedic supplies, and eyeglasses), reported by 19 percent; and prescription medications, reported by 18 percent. Factors in the choice of health care that were named as very important by more than 50 percent of respondents were: respect and kindness, dental care, affordability, help in obtaining other services, understanding of American Indian ways, and ease in getting to the clinic.

There are a number of subpopulations that are of special concern to policy makers and health care providers. Statistically significant information cannot be derived from the small NRICA sample, but descriptive information on these subgroups is summarized here:

**Pregnant women.** Twenty-three out of 122 women age 18 to 45 reported a pregnancy during 1990. Nine of those women reported difficulties in obtaining prenatal care.

**Persons with chronic conditions.** More than a quarter of the respondents reported one or more chronic conditions. This group was generally older than the total sample and more likely to report unmet health care needs.

**Elderly Persons.** Increasing age was associated with poorer health status and more chronic conditions. Less than 5 percent of the NRICA age 65 or older lacked health insurance, but half of those on Medicare were also on Medicaid, indicating extreme poverty among Indian elders.

**Uninsured persons.** One-third of the respondents had no health insurance. Compared with those who had some form of health coverage, they were twice as likely to lack a usual source of medical care. Of those who did report a usual source of care, 70 percent reported using the tribal health program; the remainder used emergency rooms for their care. Ease of payment for care was an important factor in the choice of health care provider for the uninsured. Members of the uninsured group were more often young and male, reported fewer chronic conditions, and enjoyed better health status than the total group; none reported an unmet health care need during 1990.

**Persons with no usual source of care.** Approximately one-fourth reported that they did not have a usual source of care. This group was more likely to be male than the total group and reported finances as a major barrier to the receipt of health care.



## DISCUSSION

Despite the small sample size and other limitations, this assessment produced a number of important findings. The NRICA population has a similar age distribution and health status but less college education compared with American Indians and Alaska Natives living on and near reservations throughout the United States. Their annual family income level is low, and they have an extremely low rate of private health care coverage. Over one-third report unmet health care needs, especially for dental care, diabetic and orthopedic supplies (such as special shoes to prevent amputations), and prescription medicines.

The health care sites for this population are strongly influenced by their financial resources and health care coverage. Only one-fourth had private insurance, which would provide the readiest access to the private practice community. Almost half of the NRICA had some form of public insurance, but reportedly few providers are willing to take new Medicaid and Medicare patients. A third had no insurance coverage at all, making their options severely limited.

The other alternatives these individuals were able to identify, such as community health clinics, county health programs, and emergency departments, are already serving at or beyond capacity and are threatened by cutbacks and closures. Thus, accessible and acceptable alternative providers for this population outside the tribal health programs seem to be very limited.

The assessment indicates that the NRICA population of California depends heavily upon the tribal health programs for medical care, with 60 percent of respondents reporting those programs as their usual source of care. That dependence is even greater for the uninsured. However, the tribal health program was not viewed as the place of last resort for care by the NRICA. Over half of the individuals with private health insurance or Medicare, who presumably could have sought care from the private medical community, indicated that the tribal health program was their usual source of care. Respondents indicated that having staff who are sensitive to American Indian ways is important in the choice of health care, and this feature was rated as more important than financial considerations. ■





# Conclusions

**T**his study documents the need for further research to improve the quality of data on California's American Indian and Alaska Native population, to assess their health status more accurately, and to evaluate the effectiveness and appropriateness of specific interventions and modes of health care service delivery. Additional research on the availability, accessibility, and acceptability of alternative resources is also needed to assess the potential impact of IHS eligibility changes. Both health status and health care access must be evaluated in the context of current fiscal conditions. California's deficit-ridden economy will dictate policies aimed at cost-containment for the foreseeable future.

Evidence presented in this report strongly suggests that there are many unmet health needs for both federally recognized and non-federally recognized California Indians. Health risks for Indian mothers and babies, disease and death caused by tobacco and alcohol use, and the disproportionate occurrence of preventable health problems all deserve aggressive public health action. Currently, the health status of non-federally recognized California Indians appears to be no better than that of federally

recognized California Indians. Since California tribal health programs are the primary source of health care for non-federally recognized California Indians and members of this group have very limited access to other sources of care, continued access to the tribal health programs is essential to maintaining even their current health status.

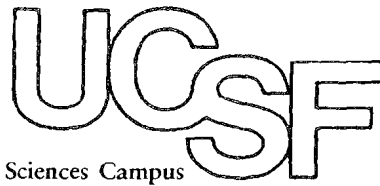
The current fiscal climate implies decreased availability of alternate resources for people who depend on services supported by the Indian Health Service. For the majority of such persons, loss of IHS benefits would undoubtedly increase dependence on public programs that are already greatly stressed. Various proposals are currently being developed to create universal health coverage in California and nationally, but the onset and nature of future programs are uncertain. The immediate need to maintain and expand coverage for all American Indians in California is urgent, but financial coverage alone will not ensure appropriate and acceptable care for the Indian population. Recent expansion of clinical services in California's tribally operated programs has led to a higher level of utilization, indicating both unmet need and a desire to obtain services in an Indian-specific environment. ■



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