

OVERVIEW OF THE INDIAN HEALTH SERVICE PROGRAM

The Department of Health and Human Services (DHHS), primarily through the Indian Health Service (IHS) of the Public Health Service (PHS), is responsible for providing Federal health services to American Indians and Alaska Natives. Federal Indian health services are based on the laws which the Congress has passed pursuant to its authority to regulate commerce with the Indian Nations as explicitly specified in the Constitution and in other pertinent authorities.

The Indian Health program became a primary responsibility of the PHS under P.L. 83-568, the Transfer Act, on August 5, 1954. This Act provides "that all functions, responsibilities, authorities, and duties ... relating to the maintenance and operation of hospital and health facilities for Indians, and the conservation of Indian health ... shall be administered by the Surgeon General of the United States Public Health Service."

The IHS goal is to raise the health status of American Indians and Alaska Natives to the highest possible level. The mission is to provide a comprehensive health services delivery system for American Indians and Alaska Natives with opportunity for maximum tribal involvement in developing and managing programs to meet their health needs. The IHS also acts as the principal Federal health advocate for Indian people by assuring they have knowledge of and access to all Federal, State, and local health programs they are entitled to as American citizens. It is also the responsibility of the IHS to work with these programs so they will be cognizant of entitlements of Indian people.

The IHS has carried out its responsibilities through developing and operating a health services delivery system designed to provide a broad-spectrum program of preventive, curative, rehabilitative and environmental services. This system integrates health services delivered directly through IHS facilities and staff on the one hand, with those purchased by IHS through contractual arrangements on the other, taking into account other health resources to which the Indians have access. Tribes are also actively involved in program implementation.

The 1975 Indian Self-Determination Act, P.L. 93-638 as amended, builds upon IHS policy by giving Tribes the option of manning and managing IHS programs in their communities, and provides for funding for improvement of Tribal capability to contract under the Act. The 1976 Indian Health Care Improvement Act, P. L. 94-437 as amended, was intended to elevate the health status of American Indians and Alaska Natives to a level equal to that of the general population through a program of authorized higher resource levels in the IHS budget. Appropriated resources were used to expand health services, build and renovate medical facilities, and step up the construction of safe drinking water and sanitary disposal facilities. It also established programs designed to increase the number of Indian health professionals for Indian needs and to improve health care access for Indian people living in urban areas.

The operation of the IHS health services delivery system is managed through local administrative units called service units. A service unit is the basic health organization for a geographic area served by the IHS program, just as a county or city health department is the basic health organization in a State health department.



These are defined areas, usually centered around a single federal reservation in the continental United States, or a population concentration in Alaska.

A few service units cover a number of small reservations; some large reservations are divided into a number of service units. The service units are grouped into larger cultural-demographic-geographic management jurisdictions which are administered by Area Offices.



PURPOSE AND DESCRIPTION OF REGIONAL DIFFERENCES IN INDIAN HEALTH

The IHS Regional Differences in Indian Health attempts to fulfill the basic statistical information requirements of parties that are interested in the IHS, and its relationship with the American Indian and Alaska Native people. The tables and charts contained in the IHS Regional Differences in Indian Health describe the IHS program, and the health status of American Indians and Alaska Natives. Information pertaining to the IHS structure, and American Indian and Alaska Native demography and patient care are included. Current regional differences are depicted, and comparisons to the general population are made, when appropriate. Historical trend information can be found in the IHS companion publication called Trends in Indian Health.

The tables and charts are grouped into five major categories: 1) IHS Structure, 2) Population Statistics, 3) Natality and Infant/Maternal Mortality Statistics, 4) General Mortality Statistics, and 5) Patient Care Statistics. The tables provide detailed data, while the charts show significant relationships. A table and its corresponding chart appear next to each other. However, some charts that are self-explanatory do not have a corresponding table. Also, a table may have more than one chart associated with it.



SUMMARY OF DATA SHOWN

Indian Health Service Structure

The IHS is comprised of 11 regional administrative units called Area Offices. There is also an Office located in Tucson which is responsible for administering health services delivery. For the present statistical purposes, the Tucson Office is also considered an Area Office, thereby making 12 in total. The 12 IHS Area Offices are:

Aberdeen	Nashville
Alaska	Navajo
Albuquerque	Oklahoma
Bemidji	Phoenix
Billings	Portland
California	Tucson

As of October 1, 1993, the Area Offices consisted of 143 basic administrative units called service units. Of the 143 service units, 70 were operated by Tribes. The number of service units ranged from 2 in Tucson to 23 in California.

The IHS operated 41 hospitals, 66 health centers, 4 school health centers, and 44 health stations; while Tribes operated 8 hospitals, 110 health centers, 4 school health centers, 62 health stations, and 171 Alaska village clinics. Both California and Portland had no hospitals while Aberdeen and Phoenix had 8 hospitals each. Tucson had the fewest health centers with 3, and California the most with 32.

Population Statistics

In fiscal year 1992 the IHS user population (count of those American Indians and Alaska Natives who used IHS services at least once during the last 3-year period) was approximately 1,150,000. Tucson (18,799) and Nashville (34,167) had the smallest user populations while Oklahoma (246,750) and Navajo (226,754) had the largest user populations.

The Indian population is younger, less educated and poorer than the U.S. All Races population. For the IHS user population in 1992, 13.3 percent of the persons were under age 5 compared to 7.5 percent for the U.S. All Races population. There was considerable variation by Area with Nashville at 10.9 percent and Alaska at 14.5 percent. According to the 1990 Census, 65.3 percent of Indians (age 25 and older) residing in the current Reservation States are high school graduates or higher compared to 75.2 percent for the U.S. All Races population. For 3 IHS Areas (Tucson, Navajo, and Phoenix), the percentage was less than 60.0 (based on State-level Indian data). The 1990 Census also indicated that the median household income in 1989 for Indians residing in the current Reservation States was \$19,886, while for the U.S. All Races it was \$30,056. Aberdeen had the lowest median household income at \$12,310, and California the highest at \$28,029 (based on State-level Indian data).

Natality and Infant/Maternal Mortality Statistics

The birth rate for American Indians and Alaska Natives residing in the IHS service area was 28.1 (rate per 1,000 population) in 1989-1991. It is 1.7 times the 1990 birth rate of 16.7 for the U.S. All Races population. For the period 1989-1991, there were

10 maternal deaths in the IHS service area population. Only the Navajo Area (5 deaths) and the Aberdeen Area (2 deaths) had more than 1 maternal death.

The infant mortality rate for American Indians and Alaska Natives residing in the IHS service area was 10.2 (rate per 1,000 live births) in 1989-1991 compared to 9.2 for the U.S. All Races population in 1990. However, there appears to be underreporting of Indian race on death certificates in at least 3 IHS Areas -- California, Oklahoma, and Portland. When these 3 Areas are excluded from the calculation, the IHS infant mortality rate for the 9 remaining Areas is 12.0, 30 percent higher than the U.S. rate. The infant mortality rate varied considerably among these 9 Areas, ranging from 8.0 in Albuquerque to 17.5 in Aberdeen.

General Mortality Statistics

In 1989-1991, the age-adjusted mortality rate (all causes) for American Indians and Alaska Natives residing in the IHS service area was 585.2 (rate per 100,000 population) compared to 520.2 for the U.S. All Races population in 1990. When the 3 IHS Areas with apparent problems in underreporting of Indian race on death certificates are excluded, the rate is 713.9. This is 37 percent greater than the U.S. rate. The Aberdeen Area rate of 1,067.2 is more than double the U.S. rate.

The 2 leading causes of death for the IHS service area population in 1989-1991 were "diseases of the heart" and "accidents and adverse effects." However, this was the order for only 3 of the IHS Areas (Billings, Phoenix, and Tucson). Three (3) IHS Areas (Alaska, Albuquerque, and Navajo) had the order reversed. The remaining 6 IHS Areas (Aberdeen, Bemidji, California, Nashville, Oklahoma, and Portland) had the same 2 leading causes of death as the U.S. All Races population (1990), i.e., "diseases of the heart" and "malignant neoplasms." The leading causes of death were determined without any adjustment for age which is the customary method. However, it should be noted that the age composition of a population does influence its mortality pattern.

For most of the specific causes of death identified in this publication, the 1989-1991 Indian age-adjusted mortality rate (calculated by excluding the 3 IHS Areas with apparent death certificate problems) was greater than the 1990 U.S. All Races rate. There was also considerable variation in the rates among the IHS Areas. However, some of the Area rates need to be interpreted with caution because of the small number of deaths involved. Following is a comparison of the Indian (9 Area) rate to the U.S. rate where there are significant differences.

- 1) alcoholism—630 percent greater
- 2) tuberculosis—580 percent greater
- 3) diabetes mellitus—232 percent greater
- 4) accidents—216 percent greater
- 5) suicide—85 percent greater
- 6) homicide—80 percent greater
- 7) malignant neoplasms—18 percent less

Patient Care Statistics

In FY 1992 there were over 93,000 admissions to IHS and Tribal direct and contract general hospitals. The number of admissions ranged from 876 in Tucson to 20,147 in Navajo. The leading cause of hospitalization in IHS and Tribal direct and contract general hospitals was "obstetric deliveries and complications of puerperium and pregnancy." There were 5 IHS Areas with a different leading cause; Bemidji and

Nashville (circulatory system diseases), Billings and Tucson (respiratory system diseases), and Portland (digestive system diseases).

The total number of outpatient visits (IHS and Tribal direct and contract facilities) was approximately 5.7 million in FY 1992. Tucson had the fewest outpatient visits with 72,867 and Oklahoma had the most with 1,013,286. The leading cause of outpatient visits in IHS and Tribal direct and contract facilities was "supplementary classifications." All IHS Areas had this same leading cause. The "supplementary classifications" category includes such clinical impressions as "other preventive health services," "well child care," "physical examination," "tests only" (lab, x-ray, screening), and "hospital, medical, or surgical follow-up."

In FY 1993, there were nearly 2.6 million dental services provided at IHS and Tribal direct and contract facilities. Two IHS Areas provided 35 percent of the dental services, Oklahoma (489,697) and Navajo (409,747).

The rate of new tuberculosis cases for the IHS in CY 1991 was 2.2 times the rate for the U.S., 23.1 new cases per 100,000 population compared to 10.4. Only 2 IHS Areas (California and Bemidji) had a rate less than the U.S. rate.



SOURCES AND LIMITATIONS OF DATA

Population Statistics

IHS user population estimates are based on data from the IHS Patient Registration System. Patients who receive direct or contract health services from IHS or Tribally-operated programs are registered in the Patient Registration System. Those registered Indian patients that had at least one direct or contract inpatient stay or outpatient visit or a direct dental visit during the last 3 years are defined as users. The Patient Registration System was first implemented in 1984, and by now is considered to be fairly complete and accurate. It is possible for patients to register at more than one site, but the IHS central computer is programmed to unduplicate registration records within an Area. Those cases that are not clear are sent to the IHS Area Offices as possible duplicates for resolution.

The IHS user population estimates, which are shown in this publication, need to be contrasted with the IHS service population (eligible population) estimates, which are shown in the Trends in Indian Health publication. The service population estimates are based on official U.S. Census Bureau county data. These are self-identified Indians who may or may not use IHS services. IHS service populations between Census years (e.g., 1980 and 1990) are estimated by a smoothing technique in order to show a gradual transition between Census years. This normally results in upward revisions to service population figures projected prior to a Census, since each Census tends to do a better job in enumerating American Indians and Alaska Natives. IHS service populations beyond the latest Census year (1990) are projected through linear regression techniques, using the most current 10 years of Indian birth and death data provided by the National Center for Health Statistics.

IHS user population figures are used for calculating IHS patient care rates. However, since State birth and death certificates do not provide information on use of IHS services, IHS service population figures are used in calculating Indian vital event rates for the IHS service area.

The social and economic data contained in this publication are from the 1990 Census. At the time of this publication, IHS had not yet obtained county-level social and economic data. Therefore, State-level data were used to develop estimates for each IHS Area. That is, Indian data for each of the States where an IHS Area currently provides services were combined to form an estimate for the IHS Area. IHS has made arrangements with the Census Bureau to obtain county-level social and economic data for Indians which will allow IHS to make more precise calculations at the IHS Area level.

Vital Event Statistics

American Indian and Alaska Native vital event statistics are derived from data furnished annually to the IHS by the National Center for Health Statistics (NCHS). Vital event statistics for the U.S. population were derived from data in various NCHS publications, as well as from some unpublished data from NCHS. NCHS obtains birth and death records for all U.S. residents from the State departments of health, based on information reported on official State birth and death certificates. The records NCHS provides IHS contain the same basic demographic items as the vital event records maintained by NCHS for all U.S. residents, but with names, addresses, and record identification numbers deleted. It should be noted that Tribal identity is not recorded on these records.

The data are subject to the degree of accuracy of reporting by the States to NCHS. NCHS does perform numerous edit checks, and imputes values for non-responses. IHS is using the National Death Index (NDI) maintained by NCHS to determine the extent of the underreporting of Indian race on death certificates. The results of the NDI match should indicate in which States the problems are occurring. IHS will then target the "problem" States for special efforts aimed at the improvement of the reporting of race.

It is already known that there is an underreporting of Indian race on State death certificates in the California, Oklahoma, and Portland Areas. Therefore, the indices based on mortality (i.e., mortality rates, years of productive life lost, and life expectancy at birth) that appear in this publication for these Areas are suspect and should be interpreted with caution. As a result, this publication shows IHS-wide mortality-based rates with and without the data for these 3 Areas.

Natality statistics are based on the total file of birth records occurring in the U.S. each year. Mortality statistics are based on the total file of registered deaths occurring in the U.S. each year. Tabulations of vital events for IHS Areas are by place of residence.

The Indian vital event statistics in this publication pertain only to American Indians and Alaska Natives residing in the counties that make up the IHS service area. This contrasts with earlier editions of the Trends in Indian Health publication which showed vital event statistics for all American Indians and Alaska Natives residing in the Reservation States. Calculations done on a Reservation State basis include all counties within the State, even those outside the IHS service area. Reservation State vital event rates tend to be lower in value (i.e., lower birth rates, lower mortality rates) than IHS service area rates. Since prior to 1972, only total Reservation State data are available, Reservation State data need to be used to show trends going back to 1955, the inception of the IHS. However, now that there are sufficient vital event data available for the IHS service area to show meaningful trends, the Trends in Indian Health publication, beginning with the 1992 edition, shows vital event statistics for the IHS service population. The reason for this is that IHS service area data are more indicative of the health status of the Indians that IHS serves.

The Indian population is considerably younger than the U.S. All Races population. Therefore, the mortality rates presented in this publication have been age-adjusted, where applicable, so that appropriate comparisons can be made between these population groups. One exception is the information presented for leading causes of death. In order to determine the leading causes of death for a population group, it is necessary to rank causes of death without any adjustment for age. However, it should be kept in mind that the ranking of causes of death for a population group is affected by its age composition.

The age-adjusted mortality rates presented in this publication were computed by the direct method, that is, by applying the age-specific death rate for a given cause of death to the standard population distributed by age. The total population as enumerated in 1940 was selected as the standard to be consistent with NCHS. The rates for the total population and for each race-sex group were adjusted separately, by using the same standard population. The age-adjusted rates were based on 10-year age groups. An age-adjusted rate that was calculated based upon a small number of deaths should be interpreted with caution since the observed rate may be very different from the true underlying rate. This occasionally occurred when an Area rate was calculated for a specific cause of death, e.g., tuberculosis.

The vital event statistics in this publication are for the 3-year (calendar year) period, 1989-1991, as compared to 1987-1989 for the previous edition in this series.



Normally, each edition of this publication reflects only one year of new vital event data. However, this year the timing was such that two years of data (1990 and 1991) could be added. The population-based vital event rates are also different because of population adjustments. The service population estimates for the years 1981-1989 were smoothed again resulting in higher estimates (compared to the estimates used in prior editions) as a result of 1980 Census adjustments. The Census Bureau recently issued revised 1980 Census American Indian and Alaska Native population counts by age and sex for all U.S. counties which increased the total 1980 count. Population adjustments are explained in the previous discussion pertaining to "population statistics." Increased population bases have a downward effect on the calculation of rates.

Prior to the 1993 edition of this publication, alcoholism deaths were defined through the use of three ICD-9 cause of death code groups; 291-alcoholic psychoses; 303-alcohol dependence syndrome and; 571.0-571.3-alcoholic liver disease. Various IHS Area statisticians and epidemiologists believed this definition to be incomplete and suggested that it be expanded to include five additional ICD-9 code categories. These "new" categories were used for the first time in the 1993 edition. They include; 305.0-alcohol overdose; 425.5-alcoholic cardiomyopathy; 535.3-alcoholic gastritis; 790.3-elevated blood-alcohol level; and E860.0, E860.1-accidental poisoning by alcohol, not elsewhere classified. This expanded definition results in about a 25 percent increase in the number of alcoholism deaths identified in comparison to the previous 3-group definition. This expanded definition of alcoholism deaths is now used in all IHS publications, including Trends in Indian Health.

There is also a change in this edition regarding the treatment of deaths related to injuries and poisonings. In prior editions, mortality data were shown separately for three of the causes (i.e., accidents, suicide, and homicide) that comprise the injuries and poisonings group. Commencing with this edition, mortality data are now also shown for the composite group, "deaths due to injury and poisoning" (ICD-9 codes E800-E999) and the other causes that comprise this composite group. The same treatment will be used in the companion document, Trends in Indian Health. The following titles and codes are used for this purpose.

- (new) Deaths due to injury and poisoning (E800-E999)
 - Accidental deaths (E800-E949)
 - Motor vehicle accidents (E810-E825)
 - Other accidents (E800-E807, E826-E949)
 - Suicide (E950-E959)
 - Homicide (E960-E978)
- (new) Injury undetermined whether accidentally or purposely inflicted (E980-E989)
- (new) Injury resulting from operations of war (E990-E999)

Patient Care Statistics

Patient care statistics are derived from IHS reporting systems. There are four main patient care reporting systems. The Monthly Inpatient Services Report is a patient census report which is prepared by each IHS hospital. It indicates the number of discharges and days by type of service (e.g., adult, pediatric, obstetric, newborn), and is used for the direct inpatient workload statistics. The Inpatient Care System is the source of IHS hospital inpatient data pertaining to various patient characteristics (age, sex, principal diagnoses, other diagnoses, community of

residence, etc.). The data are collected daily, one record per discharge. The Contract Care System is the source of similar contract hospital inpatient data.

The Ambulatory Patient Care System is the source of data pertaining to the number of outpatient visits at IHS facilities by various patient characteristics (age, sex, clinical impression, community of residence, etc.). The data are collected daily, one record per outpatient visit. The Contract Care System is the source of similar contract outpatient visit data.

The data from the automated systems are subject to recording, inputting, and transmitting errors. However, the IHS Division of Program Statistics monitors the reporting systems, and each one has a computer edit. In these ways, errors are kept to an acceptable level.

The Dental Data System is the source for dental services data. The system is monitored by IHS Headquarters Dental personnel. The tuberculosis data are based on cases reported to the Centers for Disease Control.



GLOSSARY

Age-Adjustment — The application of the age-specific rates in a population of interest to a standardized age distribution in order to eliminate the differences in observed rates that result from age differences in population composition. This adjustment is usually done when comparing two or more populations at one point in time or one population at two or more points in time.

Area — A defined geographic region for Indian Health Service (IHS) administrative purposes. Each Area Office administers several service units.

Average Daily Patient Load — The average number of patients occupying beds in a hospital on a daily basis. It is calculated by dividing total inpatient days for the year by 365.

Birth Weight — Weight of fetus or infant at time of delivery (recorded in pounds and ounces, or grams).

Cause of Death — For the purpose of national mortality statistics, every death is attributed to one underlying condition, based on information reported on the death certificate and utilizing the international rules for selecting the underlying cause of death from the reported conditions.

Contract Care — Services not available directly from IHS or Tribes that are purchased under contract from community hospitals and practitioners.

Health Center — A facility, physically separated from a hospital, with a full range of ambulatory services including at least primary care physicians, nursing, pharmacy, laboratory, and x-ray, which are available at least 40 hours a week for outpatient care.

Health Station — A facility, physically separated from a hospital or health center where primary care physician services are available on a regularly scheduled basis but for less than 40 hours a week.

Infant Mortality — Death of live-born children who have not reached their first birthday expressed as a rate (i.e., the number of infant deaths during a year per 1,000 live births reported in the year).

Life Expectancy — The average number of years remaining to a person at a particular age and is based on a given set of age-specific death rates, generally the mortality conditions existing in the period mentioned.

Live Birth — A live birth is the complete expulsion or extraction from its mother of a product of conception irrespective of the duration of pregnancy, which after such separation, breathes or shows any other evidence of life, such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles.

Low Birth Weight — Birth weight of less than five pounds, eight ounces or 2500 grams.

Neonatal Mortality Rate — The number of deaths under 28 days of age per 1,000 live births.

Occurrence — Place where the event occurred.

Postneonatal Mortality Rate — The number of deaths that occur from 28 days to 365 days after birth per 1,000 live births.

Race — On death certificates, race is usually recorded by the funeral director who may or not query the family members of the decedent. The race of a newborn does



not appear on the birth certificate. In this report if either the mother, or the father, or both parents were recorded as American Indian or Alaska Native on the birth certificate, the birth is considered as an American Indian or Alaska Native birth.

Reservation State — A State in which IHS has responsibilities for providing health care to American Indians or Alaska Natives.

Residence — Usual place of residence of person to whom event occurred. For births and deaths, residence is defined as the mother's place of residence.

Service Area — The geographic areas in which IHS has responsibilities -- "on or near" reservations, i.e., contract health service delivery areas.

Service Population — American Indians and Alaska Natives identified to be eligible for IHS services.

Service Unit — The local administrative unit of IHS.

User Population — American Indians and Alaska Natives who have used IHS services at least once during the last 3-year period.

Years of Productive Life Lost (YPLL) — A mortality indicator which measures the burden of premature deaths. It is calculated by subtracting the age at death from age 65 and summing the result over all deaths.

SOURCES OF ADDITIONAL INFORMATION

Additional Indian health status information can be obtained from the IHS Division of Program Statistics. Specific responsibilities are as follows:

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Copies of this and other Division publications may be obtained from Priscilla Sandoval or Monique E. Alston, Division Secretaries.

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