

1992

Indian Health Service Strategic Plan 2006-2011

Indian Health Service

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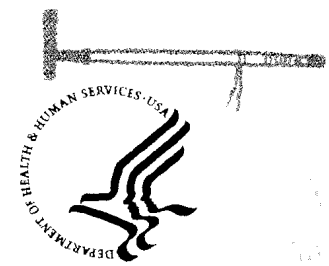
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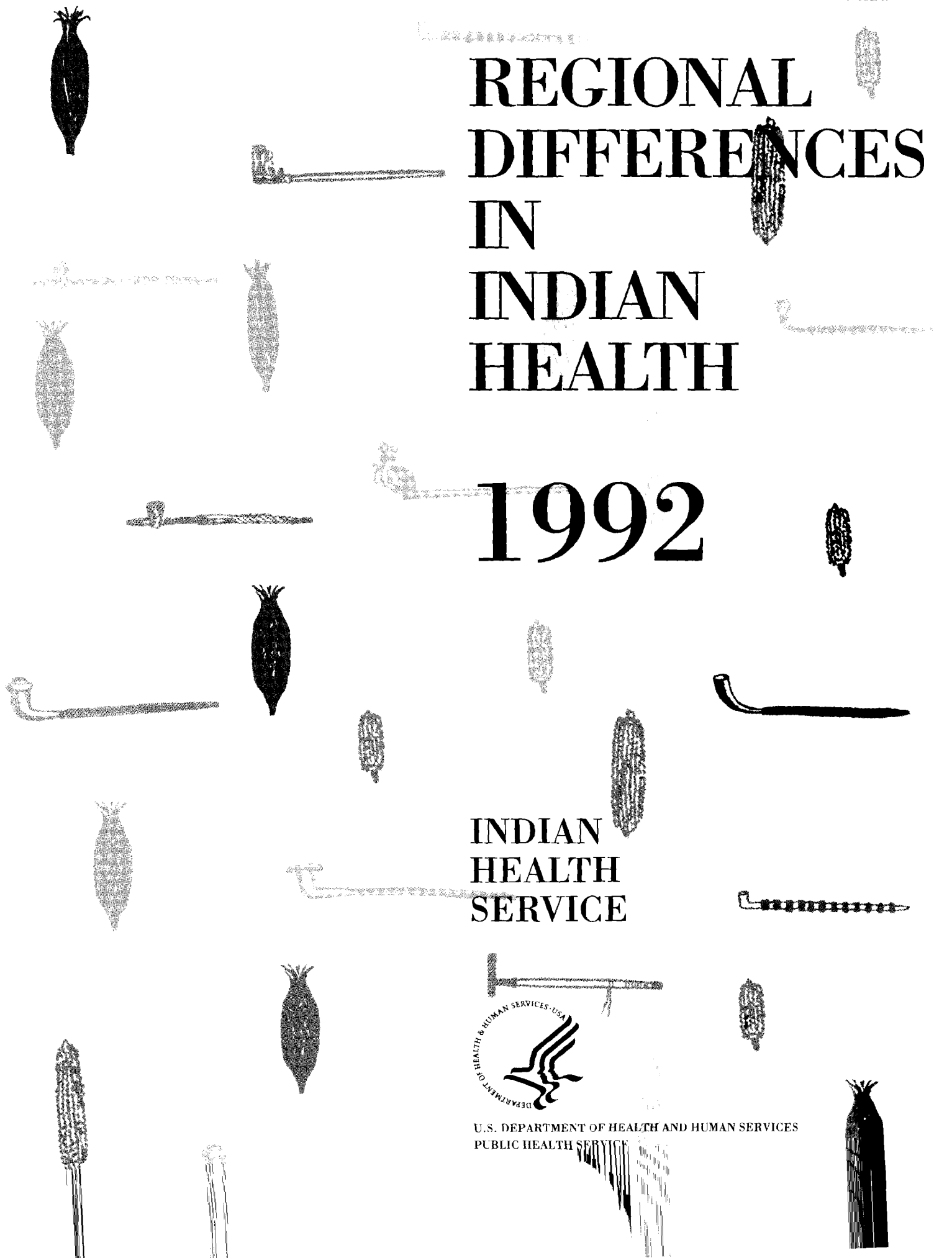
REGIONAL DIFFERENCES IN INDIAN HEALTH

1992

INDIAN HEALTH SERVICE



U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
PUBLIC HEALTH SERVICE



INDIAN HEALTH SERVICE

REGIONAL
DIFFERENCES
IN INDIAN
HEALTH

1992

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
PUBLIC HEALTH SERVICE
INDIAN HEALTH SERVICE
OFFICE OF PLANNING, EVALUATION, AND LEGISLATION
DIVISION OF PROGRAM STATISTICS

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PREFACE

Since 1955, the U.S. Public Health Service through its Indian Health Service (IHS) component, has had the responsibility for providing comprehensive health services to American Indian and Alaska Native people in order to elevate their health status to the highest possible level. The mission of the IHS is to ensure the equity, availability, and accessibility of a comprehensive high quality health care delivery system providing maximum involvement of American Indians and Alaska Natives in defining their health needs, setting priorities for their local areas, and managing and controlling their health program.

This publication presents tables and charts that 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 presented, and comparisons to the general population are made, when appropriate.



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New Article:

Accession Number: 9705623

Title: Regional differences in Indian Health - 1992.

Abstract:

This Indian Health Service (IHS) publication attempts to fulfill the basic statistical information requirements of parties interested in the IHS, and its relationship with the American Indian and Alaska Native (AI/AN) people. The tables and charts 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. Regional differences are depicted, and comparisons to the general population are made, when appropriate. 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.

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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 elevate the health status of American Indians and Alaska Natives to the highest level possible. The mission is to ensure equity, availability and accessibility of a comprehensive high quality health care delivery system providing maximum involvement of American Indians and Alaska Natives in defining their health needs, setting health priorities for their local areas, and managing and controlling their health program. The IHS also acts as the principal Federal health advocate for Indian people by assuring they have knowl-

edge 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 facili-

ties, 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 IHS Headquarters Office located in Tucson, the Office of Health Program Research and Development, 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
- Alaska
- Albuquerque
- Bemidji
- Billings
- California
- Nashville
- Navajo
- Oklahoma
- Phoenix
- Portland
- Tucson

As of October 1, 1991, the Area Offices consisted of 136 basic administrative units called service units. Of the 136 service units, 61 were operated by Tribes. The number of service units ranged from 2 in Tucson to 21 in California.

The IHS operated 42 hospitals, 65 health centers, 4 school health centers, and 52 health stations; while Tribes operated 8 hospitals, 93 health centers, 3 school health centers, 63 health stations, and 172 Alaska village clinics. Both California and Portland had no hospitals while Phoenix and Aberdeen had 8 and 9 hospitals, respectively. Tucson had the fewest health centers with 3, and Oklahoma the most with 28.

Population Statistics

In fiscal year 1990, 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 1,105,000. Tucson (18,921) and Nashville (32,234) had the smallest user populations while Oklahoma (237,630) and Navajo (219,531) had the largest user populations.

The Indian population is younger, less educated and poorer than the U.S. All Races population. For the IHS service population in 1990, 13.4 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 Bemidji at 11.6 percent and Aberdeen at 15.5 percent. The median years of school completed (based on the 1980 Census) was above 12 for half the IHS Areas, compared to an IHS-wide figure of 12.1 and a U.S. All Races figure of 12.5. However, Alaska and Navajo were only at 9.3 years. The median household income (based on the 1980 Census) for the IHS service area was \$11,471, while for the U.S. All Races it was \$16,841. Navajo had the lowest median household income at \$8,412, and Alaska the highest at \$15,750.

Natality and Infant/Maternal Mortality Statistics

The birth rate for American Indians and Alaska Natives residing in the IHS service area was 30.3 (rate per 1,000 population) in 1986–1988. It is nearly double the 1987 birth rate of 15.7 for the U.S. All Races population. For the period 1986–1988, there were 8 maternal deaths in the IHS service area population. Only the Phoenix Area (3 deaths) and the Navajo 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 11.1 (rate per 1,000 live births) in 1986–1988 compared to 10.1 for the U.S. All Races population in 1987. However, there appears to be underreporting of Indian race on death certificates in 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 12.7, 26 percent higher than the U.S. rate. The infant mortality rate varied considerably among these 9 Areas, ranging from 8.3 in Albuquerque to 19.8 in Aberdeen.

General Mortality Statistics

In 1986–1988, the age-adjusted mortality rate (all causes) for American Indians and Alaska Natives residing in the IHS service area was 665.8 (rate per 100,000 population) compared to 535.5 for the U.S. All Races population in 1987. When the 3 IHS Areas with apparent problems in underreporting of Indian race on death certificates are excluded, the rate is 803.1. This is 50 percent greater than the U.S. rate. The Tucson and Aberdeen Areas had rates

(1,113.2 and 1,056.3, respectively) about double the U.S. rate.

The 2 leading causes of death for the IHS service area population in 1986–1988 were “diseases of the heart” and “accidents and adverse effects.” This was also the order for 4 of the IHS Areas (Aberdeen, Billings, California, and Portland). Five (5) IHS Areas (Alaska, Albuquerque, Navajo, Phoenix, and Tucson) had the order reversed. The other 3 IHS Areas, Bemidji, Nashville and Oklahoma, had the same 2 leading causes of death as the U.S. All Races population (1987), 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 each of the specific causes of death identified in this publication, the 1986–1988 Indian age-adjusted mortality rate (calculated by excluding the 3 IHS Areas with apparent death certificate problems) was greater than the 1987 U.S. All Races rate, except for malignant neoplasms. 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.

- 1) tuberculosis—780 percent greater
- 2) alcoholism—663 percent greater
- 3) accidents—295 percent greater
- 4) diabetes mellitus—268 percent greater
- 5) homicide—134 percent greater
- 6) suicide—95 percent greater
- 7) gastrointestinal diseases—77 percent greater

- 8) cerebrovascular diseases—9 percent greater
- 9) diseases of the heart—1 percent greater
- 10) malignant neoplasms—12 percent less

Patient Care Statistics

In FY 1990, there were approximately 197,000 admissions to IHS and Tribal direct and contract general hospitals. The number of admissions ranged from 936 in California to 20,381 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.” This was the leading cause in all but 3 IHS Areas. “Respiratory system diseases” was the leading cause in the other 3 IHS Areas.

The total number of outpatient visits (IHS and Tribal direct and contract facilities) was approximately 5.0 million in FY 1990.

Tucson had the fewest outpatient visits with 86,222 and Oklahoma had the most with 889,915. The leading cause of outpatient visits in IHS and Tribal direct and contract facilities was “supplementary classifications.” It was also the leading cause in 8 of the 12 IHS Areas. 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 1991, there were over 2.3 million dental services provided at IHS and Tribal direct and contract facilities. Two IHS Areas provided 35 percent of the dental services, Oklahoma (447,193) and Navajo (372,276).

The rate of new tuberculosis cases for the IHS in CY 1990 was 2.5 times the rate for the U.S., 25.7 new cases per 100,000 population compared to 10.3. Each IHS Area had a rate greater than the U.S. rate.

SOURCES

AND LIMITATIONS OF DATA

Population Statistics

IH S 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 outpatient 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 beyond the Census year are projected through linear regression techniques, using 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 1980 Census. These Census data (from Census 1980 Summary Tape File 4) and certain government financial assistance data are contained in the American Indian/Alaska Native Data Base. The American Indian/Alaska Native Data Base was developed by CSR, Incorporated, under a contract with the Office of the Assistant Secretary for Planning and Evaluation, U.S. Department of Health and Human Services. The contract also required CSR, Incorporated to produce a report, "Indian People in Indian Lands, 1980," based on the data base. In that report, county-level Census data were analyzed for counties that were included in the IHS service area in 1980. The data represent all American Indians and Alaska Natives in IHS counties—not just those who utilize IHS services. In instances where a county was split between two IHS Areas, the analyses placed the entire county population in the IHS Area that had the majority of the county population. The results from that analyses have been used in this publication.

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 appearing 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. Those records identified as pertaining to American Indians and Alaska Natives are provided to IHS. The IHS records 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. An extract of the IHS patient registration file was matched against the NDI for 1986–1988. The results of the NDI match are currently being analyzed to determine 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 Area. It also

appears that this problem exists in the Oklahoma and Portland Areas. Therefore, the mortality rates 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 rates with and without the data for these 3 Areas.

Nativity 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 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, will henceforth show 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. 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.

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 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 and keying 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.

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.

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

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

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

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 serv-

ices 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 AIHS Division of Program Statistics. Specific responsibilities are as follows:

General Information

Anthony J. D'Angelo, *Director, Division of Program Statistics*

Demographic Statistics

Aaron O. Handler, *Chief, Demographic Statistics Branch*

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JoAnn Pappalardo, *Computer Systems Analyst*

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Bonnie Matheson, *Computer Assistant*

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

The Division address and phone number are as follows:

Indian Health Service
Office of Planning, Evaluation and Legislation
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Parklawn Building, Room 6-41
5600 Fishers Lane
Rockville, Maryland 20857
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Chart 1.5
NUMBER OF SERVICE UNITS AND
FACILITIES OPERATED BY ALBUQUERQUE
AREA AND TRIBES
Oct. 1, 1991

In the Albuquerque Area, Indian Health Service operated 5 hospitals, 9 health centers, 1 school health center, and 7 health stations as of October 1, 1991. Tribes operated 2 health centers as of October 1, 1991.

Type of Facility	IHS	Tribal
Service Units	7	—
Hospitals	5	—
Outpatient Facilities	17	2
Health Centers	9	2
School Health Centers	1	—
Health Stations	7	—

Chart 1.6
NUMBER OF SERVICE UNITS AND
FACILITIES OPERATED BY BEMIDJI
AREA AND TRIBES
Oct. 1, 1991

In the Bemidji Area, Indian Health Service operated 2 hospitals, 2 health centers, and 5 health stations as of October 1, 1991. Tribes operated 10 health centers and 16 health stations as of October 1, 1991.

Type of Facility	IHS	Tribal
Service Units	3	10
Hospitals	2	—
Outpatient Facilities	7	26
Health Centers	2	10
School Health Centers	—	—
Health Stations	5	16

Chart 1.7
NUMBER OF SERVICE UNITS AND
FACILITIES OPERATED BY BILLINGS
AREA AND TRIBES
OCT. 1, 1991

Type of Facility	IHS	Tribal
Service Units	8	—
Hospitals	3	—
Outpatient Facilities	12	—
Health Centers	8	—
School Health Centers	—	—
Health Stations	4	—

In the Billings Area, Indian Health Service operated 3 hospitals, 8 health centers, and 4 health stations as of October 1, 1991. The Tribes did not operate any facilities as of October 1, 1991.

Chart 1.8
NUMBER OF SERVICE UNITS AND
FACILITIES OPERATED BY CALIFORNIA
AREA AND TRIBES
OCT. 1, 1991

Type of Facility	IHS	Tribal
Service Units	—	21
Hospitals	—	—
Outpatient Facilities	—	49
Health Centers	—	25
School Health Centers	—	—
Health Stations	—	24

In the California Area, Indian Health Service did not operate any facilities as of October 1, 1991. Tribes operated 25 health centers and 24 health stations as of October 1, 1991.

PART 1—INDIAN HEALTH SERVICE STRUCTURE

Chart 1.1
INDIAN HEALTH SERVICE AREA OFFICES

The Indian Health Service is comprised of 12 regional administrative units called Area Offices. IHS responsibilities extend to all or parts of 33 States known as Reservation States.

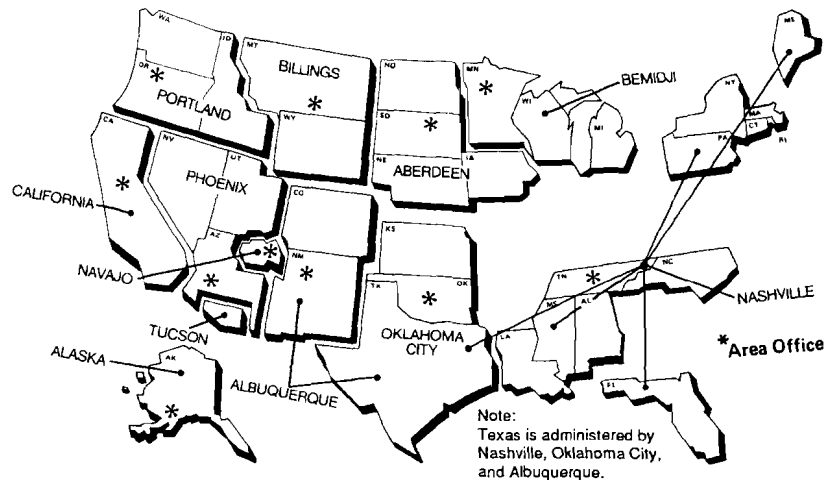


Chart 1.2
NUMBER OF SERVICE UNITS AND FACILITIES OPERATED BY IHS AND TRIBES
OCT. 1, 1991

Indian Health Service operated 42 hospitals, 65 health centers, 4 school health centers, and 52 health stations as of October 1, 1991. Tribes operated 8 hospitals, 93 health centers, 3 school health centers, 63 health stations, and 172 Alaska village clinics as of October 1, 1991.

Type of Facility	IHS	Tribal
Service Units	75	61
Hospitals	42	8
Outpatient Facilities	121	331
Health Centers	65	93
School Health Centers	4	3
Health Stations	52	63
Alaska Village Clinics	—	172

Chart 1.3
NUMBER OF SERVICE UNITS AND
FACILITIES OPERATED BY ABERDEEN
AREA AND TRIBES
OCT. 1, 1991

Type of Facility	IHS	Tribal
Service Units	13	—
Hospitals	9	—
Outpatient Facilities	22	7
Health Centers	7	3
School Health Centers	1	2
Health Stations	14	2

In the Aberdeen Area, Indian Health Service operated 9 hospitals, 7 health centers, 1 school health center, and 14 health stations as of October 1, 1991. Tribes operated 3 health centers, 2 school health centers, and 2 health stations as of October 1, 1991.

Chart 1.4
NUMBER OF SERVICE UNITS AND
FACILITIES OPERATED BY ALASKA
AREA AND TRIBES
OCT. 1, 1991

Type of Facility	IHS	Tribal
Service Units	2	7
Hospitals	2	5
Outpatient Facilities	1	183
Health Centers	1	11
School Health Centers	—	—
Health Stations	—	—
Alaska Village Clinics	—	172

In the Alaska Area, Indian Health Service operated 2 hospitals and 1 health center as of October 1, 1991. Tribes operated 5 hospitals, 11 health centers, and 172 village clinics as of October 1, 1991.

Chart 1.9
NUMBER OF SERVICE UNITS AND
FACILITIES OPERATED BY NASHVILLE
AREA AND TRIBES
Oct. 1, 1991

In the Nashville Area, Indian Health Service operated 1 hospital and 1 health station as of October 1, 1991. Tribes operated 1 hospital, 13 health centers, 1 school health center, and 4 health stations as of October 1, 1991.

Type of Facility	IHS	Tribal
Service Units	1	17
Hospitals	1	1
Outpatient Facilities	1	18
Health Centers	—	13
School Health Centers	—	1
Health Stations	1	4

Chart 1.10
NUMBER OF SERVICE UNITS AND
FACILITIES OPERATED BY NAVAJO
AREA AND TRIBES
Oct. 1, 1991

In the Navajo Area, Indian Health Service operated 6 hospitals, 7 health centers, 1 school health center, and 10 health stations as of October 1, 1991. The Navajo Tribe did not operate any facilities as of October 1, 1991.

Type of Facility	IHS	Tribal
Service Units	8	—
Hospitals	6	—
Outpatient Facilities	18	—
Health Centers	7	—
School Health Centers	1	—
Health Stations	10	—

Chart 1.11

NUMBER OF SERVICE UNITS AND FACILITIES OPERATED BY OKLAHOMA AREA AND TRIBES

OCT. 1, 1991

Type of Facility	IHS	Tribal
Service Units	10	2
Hospitals	5	2
Outpatient Facilities	13	17
Health Centers	12	16
School Health Centers	—	—
Health Stations	1	1

In the Oklahoma Area, Indian Health Service operated 5 hospitals, 12 health centers, and 1 health station as of October 1, 1991. Tribes operated 2 hospitals, 16 health centers, and 1 health station as of October 1, 1991.

Chart 1.12

NUMBER OF SERVICE UNITS AND FACILITIES OPERATED BY PHOENIX AREA AND TRIBES

OCT. 1, 1991

Type of Facility	IHS	Tribal
Service Units	10	—
Hospitals	8	—
Outpatient Facilities	15	7
Health Centers	6	5
School Health Centers	1	—
Health Stations	8	2

In the Phoenix Area, Indian Health Service operated 8 hospitals, 6 health centers, 1 school health center, and 8 health stations as of October 1, 1991. Tribes operated 5 health centers and 2 health stations as of October 1, 1991.

Chart 1.13

NUMBER OF SERVICE UNITS AND FACILITIES OPERATED BY PORTLAND AREA AND TRIBES

OCT. 1, 1991

In the Portland Area, Indian Health Service operated 11 health centers and 1 health station as of October 1, 1991. Tribes operated 7 health centers and 14 health stations as of October 1, 1991.

Type of Facility	IHS	Tribal
Service Units	11	4
Hospitals	—	—
Outpatient Facilities	12	21
Health Centers	11	7
School Health Centers	—	—
Health Stations	1	14

Chart 1.14

NUMBER OF SERVICE UNITS AND FACILITIES OPERATED BY TUCSON AREA AND TRIBES

OCT. 1, 1991

In the Tucson Area, Indian Health Service operated 1 hospital, 2 health centers, and 1 health station as of October 1, 1991. There was 1 Tribally-operated health center as of October 1, 1991.

Type of Facility	IHS	Tribal
Service Units	2	—
Hospitals	1	—
Outpatient Facilities	3	1
Health Centers	2	1
School Health Centers	—	—
Health Stations	1	—

PART 2—POPULATION STATISTICS

Chart 2.1
IHS USER POPULATION
FY 1990

In FY 1990, the Indian Health Service user population was over 1.1 million. Over 41 percent of the user population was concentrated in 2 IHS Areas, Oklahoma and Navajo.

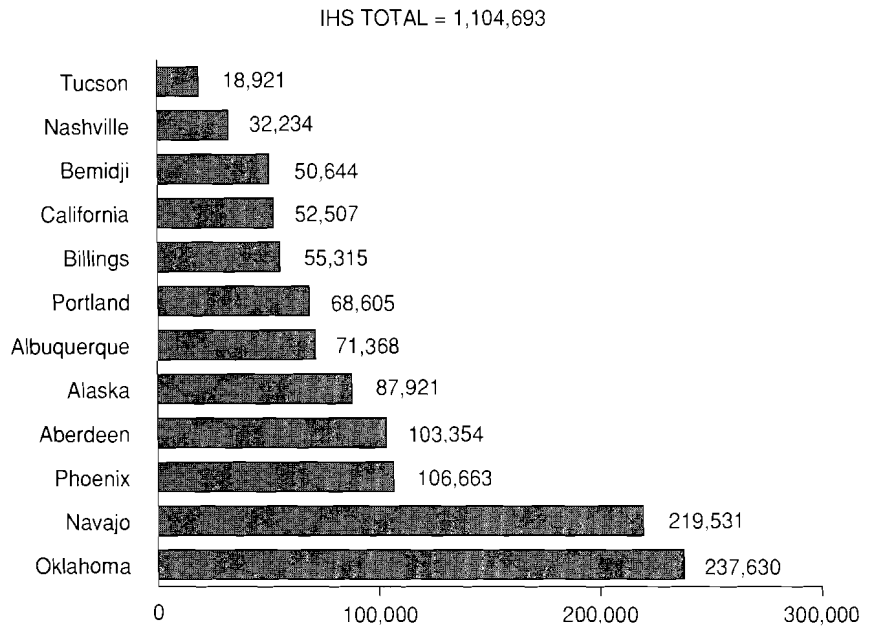


Chart 2.2
PERCENT OF FEMALES IN POPULATION
1990

The ratio of females to males in 1990 was close to 50:50 for the user population and the U.S. All Races populations. California had the highest percentage of females at 54.9.

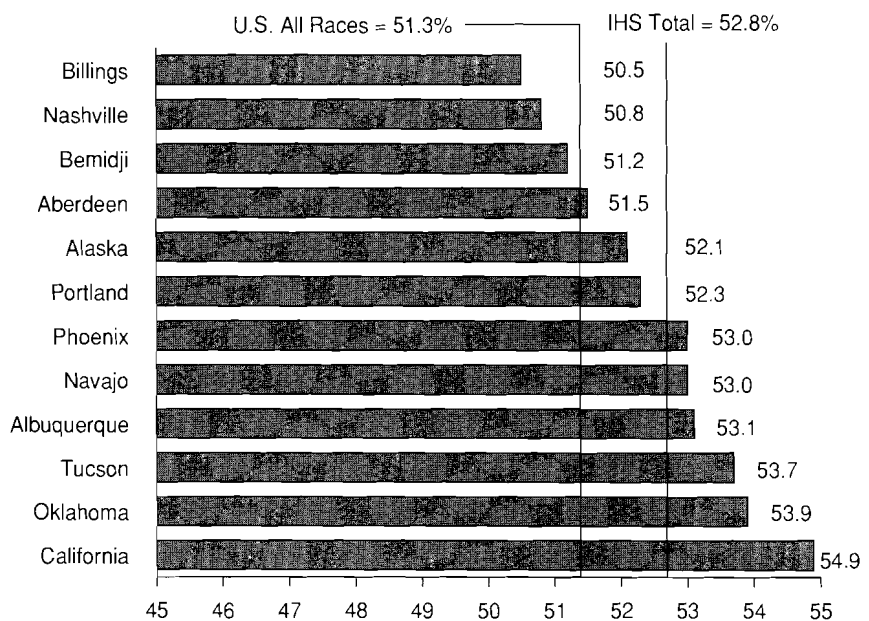
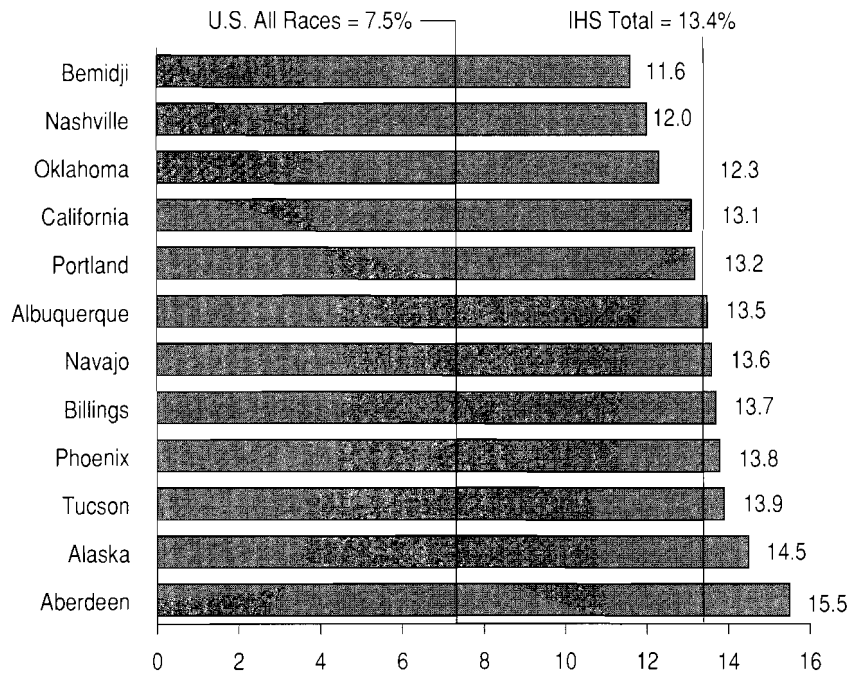
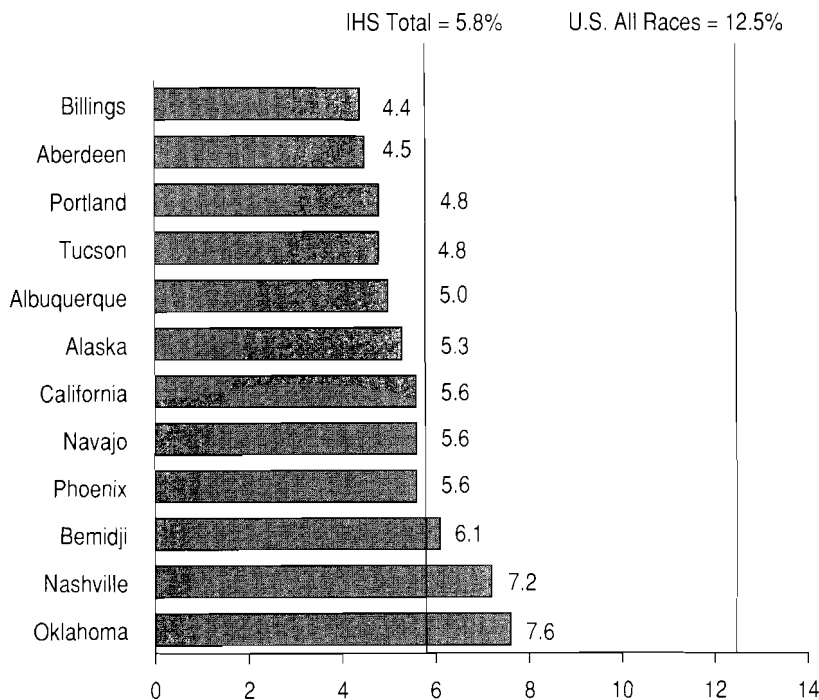


Chart 2.3
PERCENT OF POPULATION UNDER AGE 5
1990



The IHS user population in 1990 was considerably younger than the U.S. All Races population. The Bemidji Area, which had the lowest percentage of population under age 5 (11.6), still had a percentage that was over 1.5 times the U.S. All Races percentage (7.5).

Chart 2.4
PERCENT OF POPULATION OVER AGE 64
1990



12.5 percent of the U.S. All Races population was over age 64 in 1990, compared to 5.8 for the IHS user population. Oklahoma and Nashville had the highest percentage for this age group (7.6 and 7.2).

Chart 2.5
MEDIAN YEARS OF SCHOOL COMPLETED:
AGE 25 AND OLDER
1980

The median years of school completed in 1980 for the IHS service area population is close to the U.S. All Races population, that is, 12.1 to 12.5. However, for Tucson the figure is 11.0, and for Alaska and Navajo it is only 9.3.

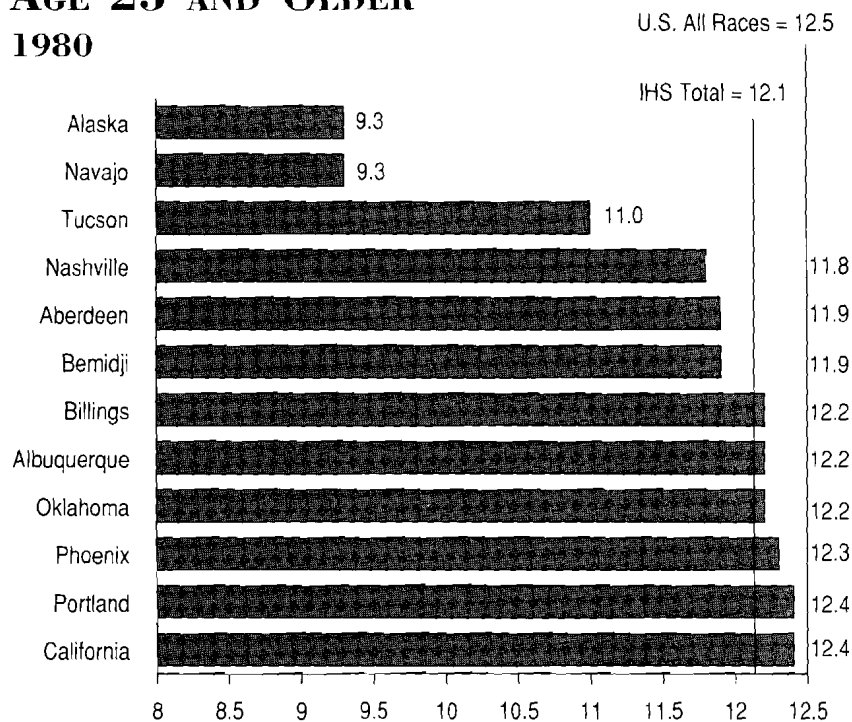


Chart 2.6
PERCENT OF
MALES AGE 20 TO 64 EMPLOYED
1980

In 1980, 62.8 percent of males age 20 to 64 in the IHS service area population were employed, compared to 80.4 percent for the U.S. All Races population. Four of the IHS Areas had percentages less than 57.0, with Alaska being the lowest at 48.4 percent.

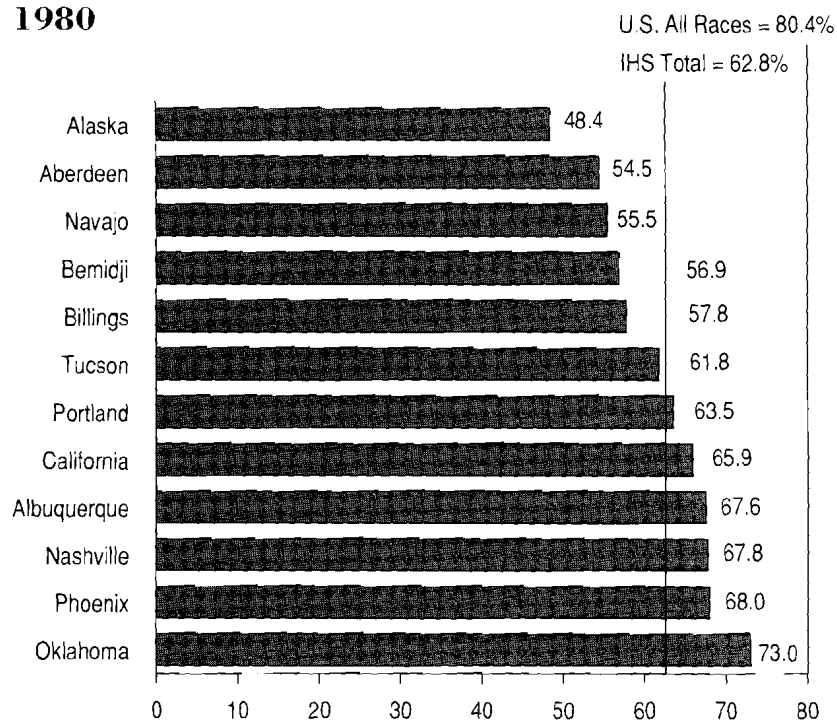
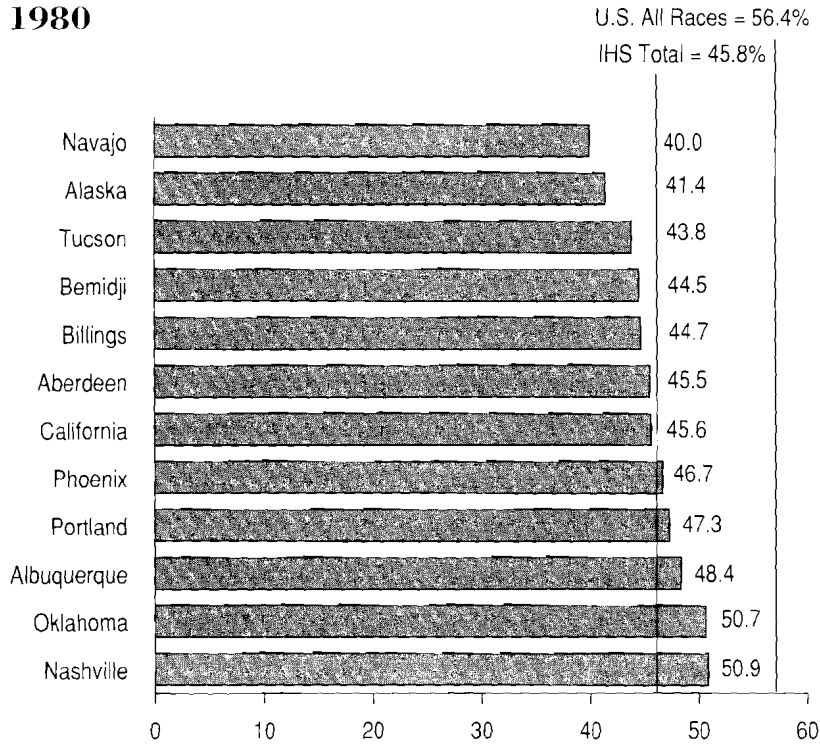
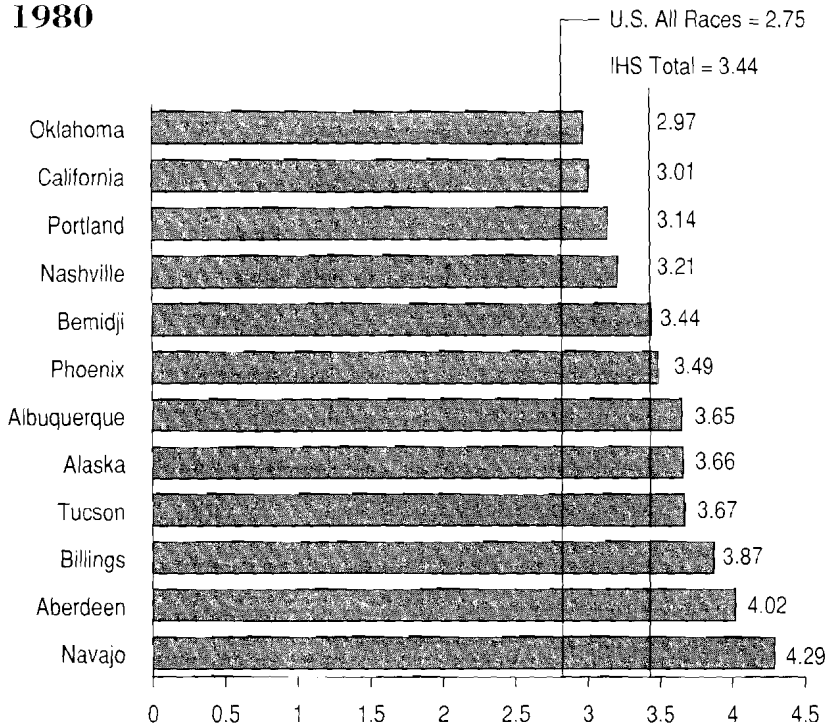


Chart 2.7
PERCENT OF
FEMALES AGE 20 TO 64 EMPLOYED
1980



In 1980, 45.8 percent of females age 20 to 64 in the IHS service area population were employed, compared to 56.4 percent for the U.S. All Races population. Three of the IHS Areas had percentages less than 44.0, with Navajo being the lowest at 40.0 percent.

Chart 2.8
AVERAGE HOUSEHOLD SIZE
1980



The Indian population has a considerably larger average household size than the U.S. All Races population as indicated by data from the 1980 Census. The average size for the U.S. All Races population was 2.75, while 8 of the IHS Areas had averages exceeding 3.4.

Chart 2.9
MEDIAN HOUSEHOLD INCOME
1979

The median household income in 1979 for the IHS service area population was only \$11,471, compared to \$16,841 for the U.S. All Races population. The figure varied greatly among the IHS Areas, ranging from \$8,412 in Navajo to \$15,750 in Alaska.

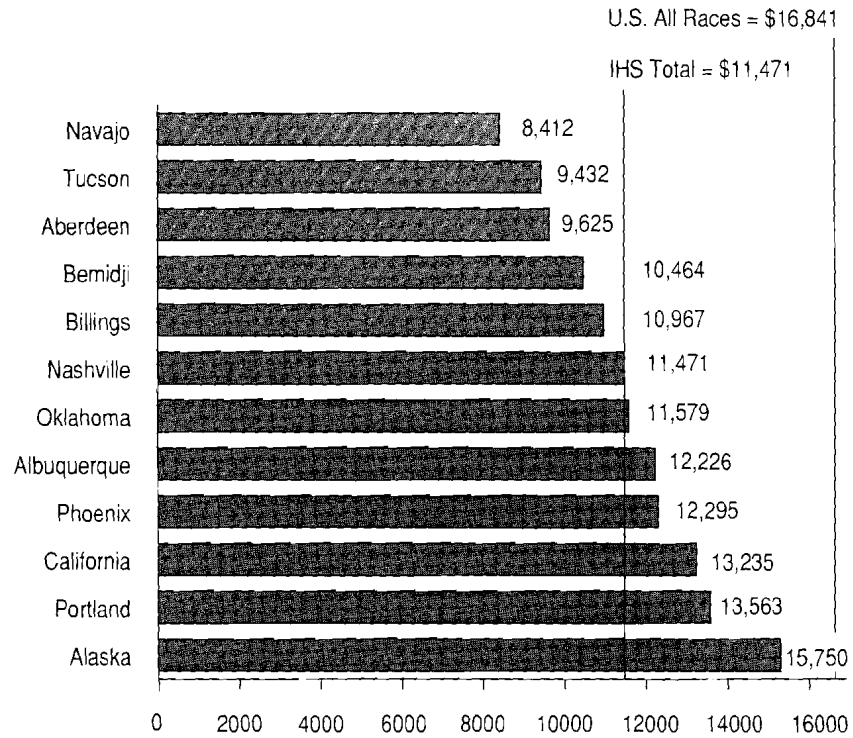


Chart 2.10
PERCENT OF POPULATION
BELOW POVERTY LEVEL
1979

In 1979, 12.4 percent of the U.S. All Races population was below the poverty level. This contrasted sharply with the Indian population where 6 of the IHS Areas were greater than 30.0 percent, and 2 Areas were greater than 40.0 percent.

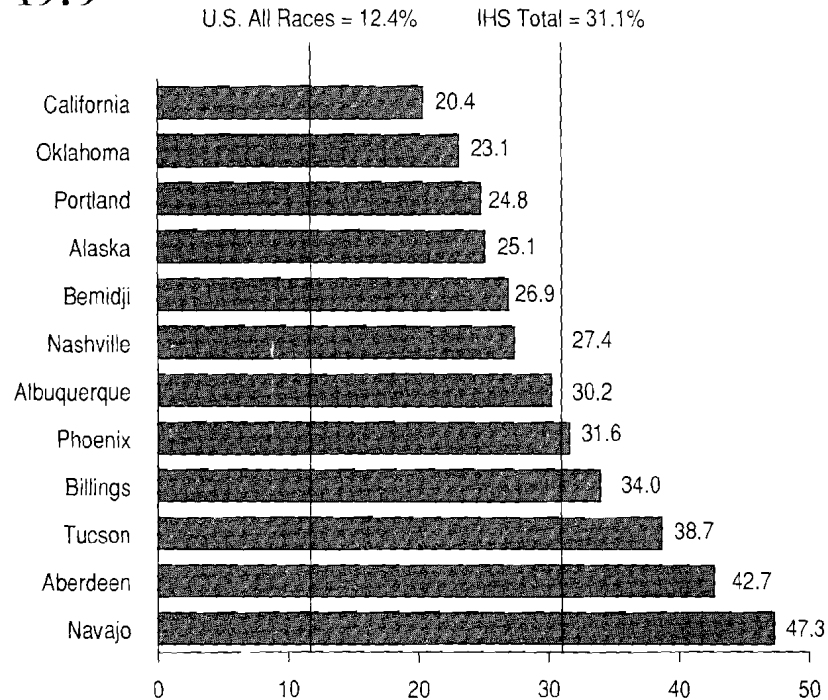
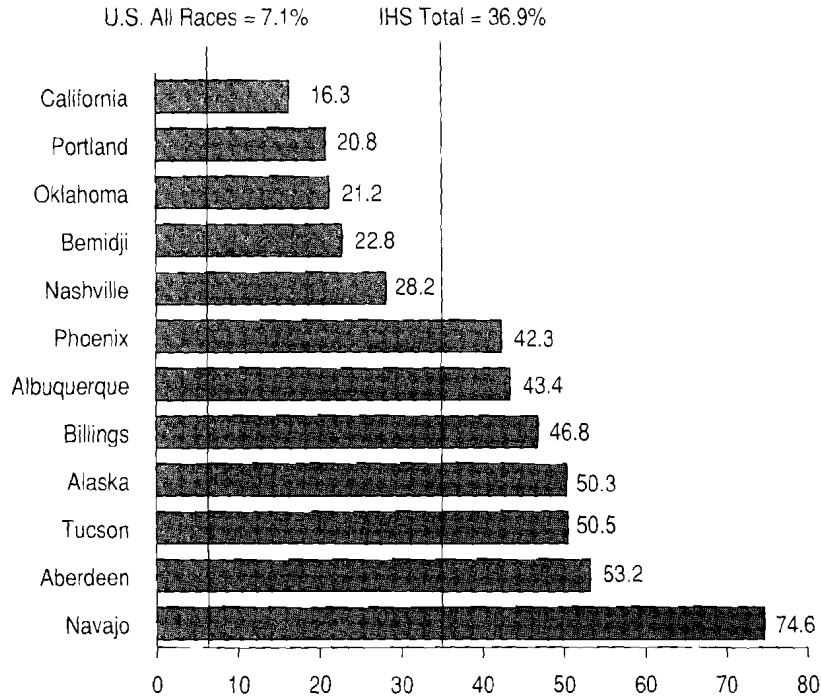


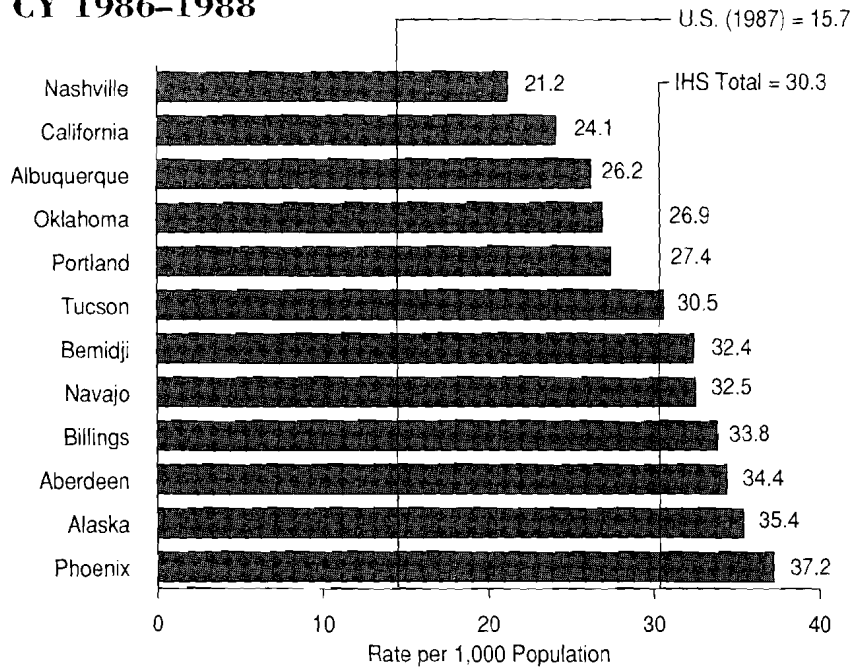
Chart 2.11
PERCENT OF HOUSEHOLDS
WITH NO PHONE
1980



For the IHS service area population in 1980, the percentage of households with no phone was over 5 times greater than for the U.S. All Races population, 36.9 to 7.1 percent. In 7 of the IHS Areas, the percentage was greater than 42.0, and in Navajo it was 74.6.

PART 3—NATALITY AND INFANT/MATERNAL MORTALITY STATISTICS

Chart 3.1
BIRTH RATES
CY 1986-1988



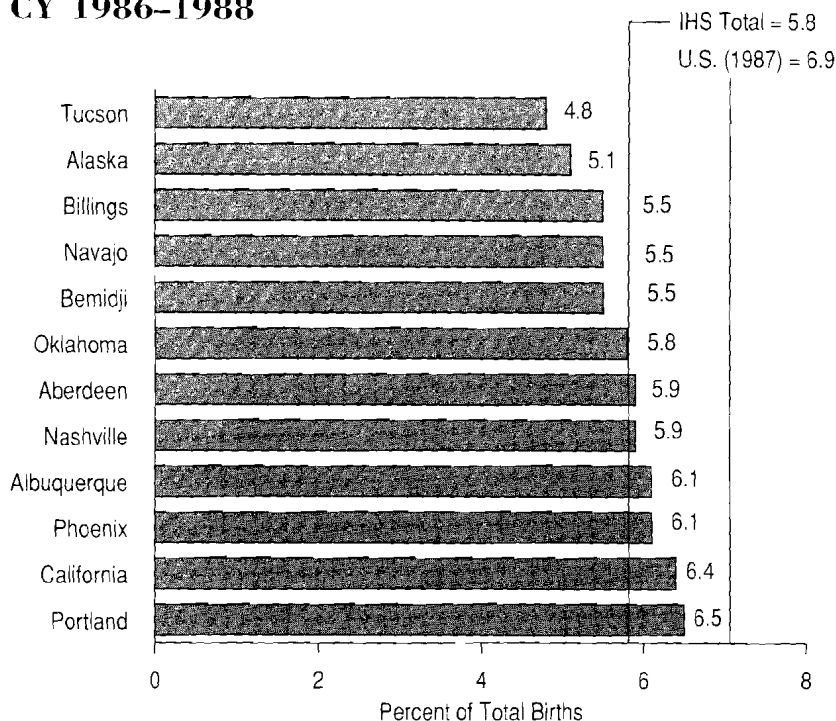
The birth rate for the IHS service area population in 1986-1988 was nearly double the rate for the U.S. All Races population in 1987, i.e., 30.3 compared to 15.7. Even the IHS Area with the lowest birth rate (Nashville, 21.2) had a rate considerably greater than the U.S. rate (35 percent greater).

Table 3.1
NUMBER AND RATE OF LIVE BIRTHS
CY 1986-1988

	Number	Rate ¹
U.S. All Races (1987)	3,809,394	15.7
All IHS Areas	91,903	30.3
Aberdeen	7,993	34.4
Alaska	8,294	35.4
Albuquerque	4,325	26.2
Bemidji	4,919	32.4
Billings	4,595	33.8
California	5,660	24.1
Nashville	2,359	21.2
Navajo	17,167	32.5
Oklahoma	16,354	26.9
Phoenix	10,023	37.2
Portland	8,466	27.4
Tucson	1,748	30.5

¹ Rate per 1,000 population.

Chart 3.2
LOW WEIGHT BIRTHS
CY 1986-1988



For 1986-1988, 5.8 percent of all Indian births in the IHS service area were low weight (less than 2,500 grams) births. This was better than the figure for the U.S. All Races population, i.e., 6.9 percent in 1987. All IHS Areas had relatively fewer low weight births than occurred in the general population.

Table 3.2
BIRTHS OF LOW WEIGHT AS A PERCENT
OF TOTAL LIVE BIRTHS
CY 1986-1988

	Total Live Births ¹	Number Low Weight ²	Percent Low Weight ³
<i>U.S. All Races (1987)</i>	3,809,394	262,344	6.9
<i>All IHS Areas</i>	91,903	5,309	5.8
Aberdeen	7,993	467	5.9
Alaska	8,294	418	5.1
Albuquerque	4,325	261	6.1
Bemidji	4,919	271	5.5
Billings	4,595	251	5.5
California	5,660	361	6.4
Nashville	2,359	140	5.9
Navajo	17,167	941	5.5
Oklahoma	16,354	954	5.8
Phoenix	10,023	613	6.1
Portland	8,466	548	6.5
Tucson	1,748	84	4.8

¹ Includes 4,855 U.S. All Races live births and 165 American Indian/Alaska Native live births with birth weight not stated.

² Births of less than 2,500 grams.

³ Percent low weight based on live births with a birth weight reported.

Chart 3.3
MATERNAL DEATHS
CY 1986-1988

There were 8 maternal deaths in the IHS service area population in 1986-1988. Only the Phoenix Area (3 deaths) and the Navajo Area (2 deaths) had more than 1 maternal death.

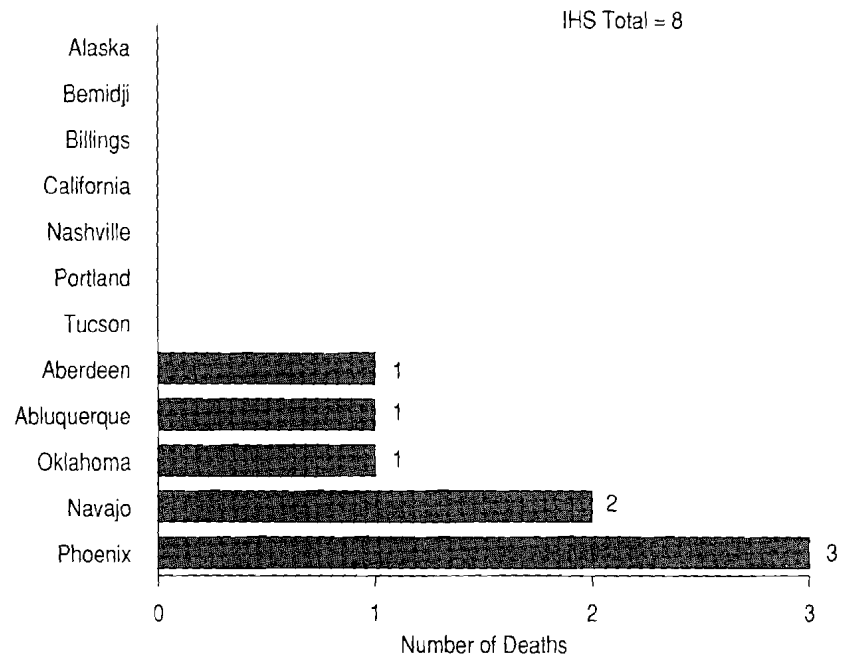
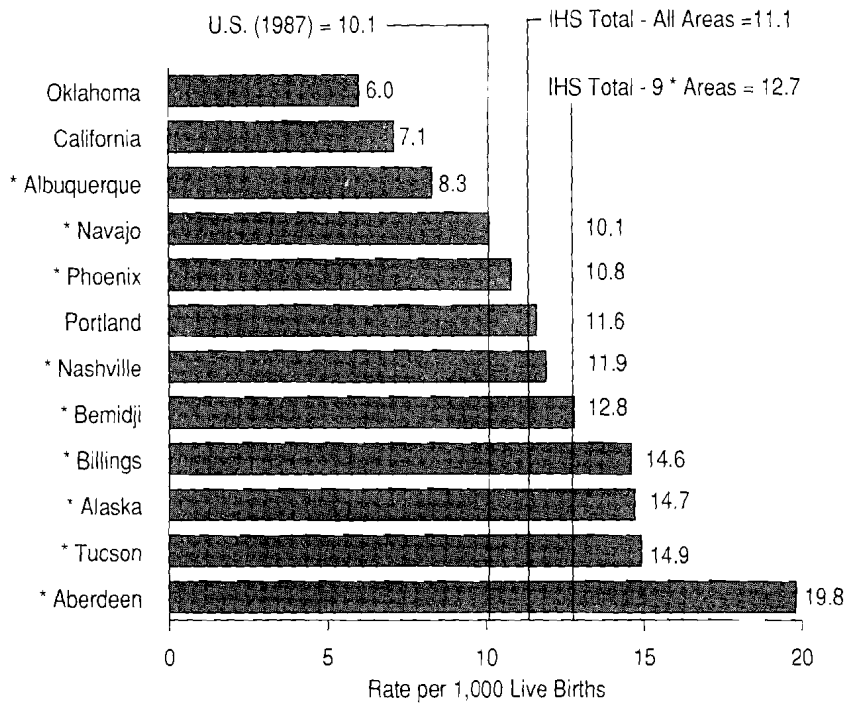


Chart 3.4
INFANT MORTALITY RATES
CY 1986–1988



The infant mortality rate for the IHS service area population in 1986–1988 was 11.1. When the 3 IHS Areas with apparent problems in underreporting of Indian race on death certificates are excluded, the rate is 12.7. This is 26 percent higher than the U.S. All Races rate of 10.1 for 1987. The Aberdeen and Tucson Areas had the highest rates, 19.8 and 14.9, respectively.

Table 3.4
INFANT MORTALITY RATES
(UNDER 1 YEAR)
CY 1986–1988

	Live Births	Infant Deaths	Rate ¹
U.S. All Races (1987)	3,809,394	38,408	10.1
All IHS Areas	91,903	1,017	11.1
9* Areas ²	61,423	781	12.7
Aberdeen*	7,993	158	19.8
Alaska*	8,294	122	14.7
Albuquerque *	4,325	36	8.3
Bemidji*	4,919	63	12.8
Billings*	4,595	67	14.6
California	5,660	40	7.1
Nashville*	2,359	28	11.9
Navajo*	17,167	173	10.1
Oklahoma	16,354	98	6.0
Phoenix*	10,023	108	10.8
Portland	8,466	98	11.6
Tucson*	1,748	26	14.9

¹ Rate per 1,000 live births.

² The 3 IHS Areas that do not have an asterisk (California, Oklahoma, and Portland) appear to have a problem with underreporting of Indian race on death certificates. Therefore a separate IHS rate was calculated excluding these 3 Areas.

Chart 3.5
NEONATAL MORTALITY RATES
CY 1986-1988

The neonatal mortality rate for the IHS service area population in 1986-1988 was 5.1. When the 3 IHS Areas with apparent problems in underreporting of Indian race on death certificates are excluded, the rate is 5.8. This is still less than the U.S. All Races rate of 6.5 for 1987. The Aberdeen Area had the highest rate at 7.9.

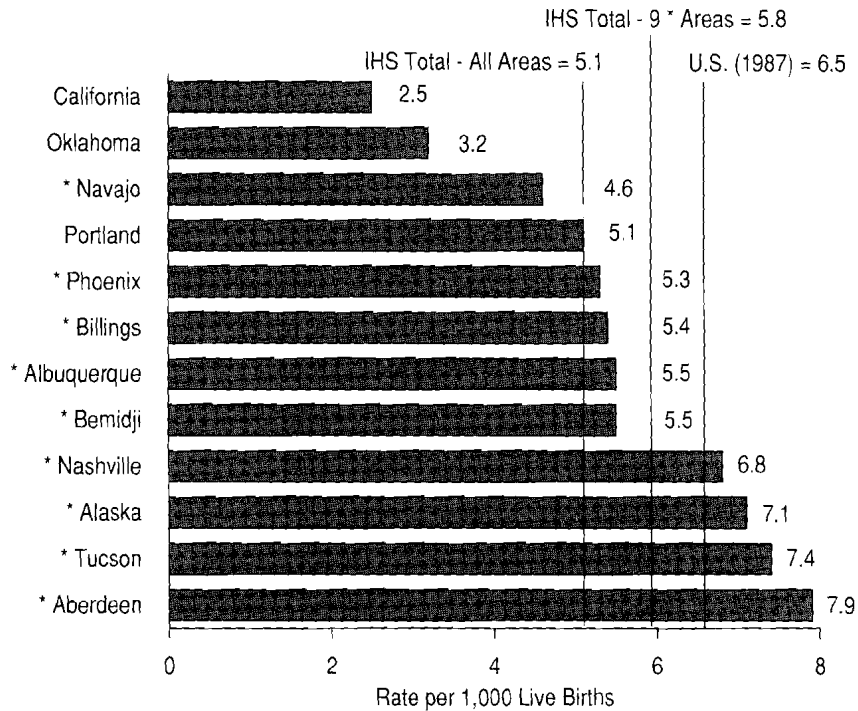


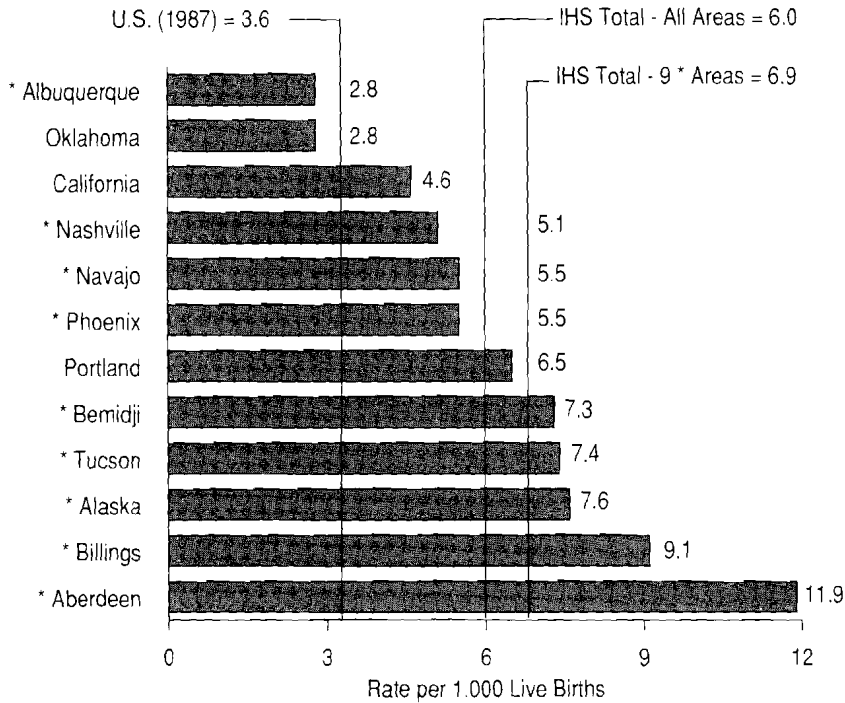
Table 3.5
NEONATAL MORTALITY RATES
(UNDER 28 DAYS)
CY 1986-1988

	Live Births	Infant Deaths	Rate ¹
U.S. All Races (1987)	3,809,394	24,627	6.5
All IHS Areas	91,903	469	5.1
9* Areas ²	61,423	359	5.8
Aberdeen*	7,993	63	7.9
Alaska*	8,294	59	7.1
Albuquerque*	4,325	24	5.5
Bemidji*	4,919	27	5.5
Billings*	4,595	25	5.4
California	5,660	14	2.5
Nashville*	2,359	16	6.8
Navajo*	17,167	79	4.6
Oklahoma	16,354	53	3.2
Phoenix*	10,023	53	5.3
Portland	8,466	43	5.1
Tucson*	1,748	13	7.4

¹ Rate per 1,000 live births.

² The 3 IHS Areas that do not have an asterisk (California, Oklahoma, and Portland) appear to have a problem with underreporting of Indian race on death certificates. Therefore a separate IHS rate was calculated excluding these 3 Areas.

Chart 3.6
POSTNEONATAL MORTALITY RATES
CY 1986-1988



The postneonatal mortality rate for the IHS service area population in 1986-1988 was 6.0. When the 3 IHS Areas with apparent problems in underreporting of Indian race on death certificates are excluded, the rate is 6.9. This is almost twice the U.S. All Races rate of 3.6 for 1987. The Aberdeen and Billings Areas had the highest rates, 11.9 and 9.1, respectively.

Table 3.6
POSTNEONATAL MORTALITY RATES
(28 DAYS TO UNDER 1 YEAR)
CY 1986-1988

	Live Births	Infant Deaths	Rate ¹
U.S. All Races (1987)	3,809,394	13,781	3.6
All IHS Areas	91,903	548	6.0
9* Areas ²	61,423	422	6.9
Aberdeen*	7,993	95	11.9
Alaska*	8,294	63	7.6
Albuquerque*	4,325	12	2.8
Bemidji*	4,919	36	7.3
Billings*	4,595	42	9.1
California	5,660	26	4.6
Nashville*	2,359	12	5.1
Navajo*	17,167	94	5.5
Oklahoma	16,354	45	2.8
Phoenix*	10,023	55	5.5
Portland	8,466	55	6.5
Tucson*	1,748	13	7.4

¹ Rate per 1,000 live births.

² The 3 IHS Areas that do not have an asterisk (California, Oklahoma, and Portland) appear to have a problem with underreporting of Indian race on death certificates. Therefore a separate IHS rate was calculated excluding these 3 Areas.

Chart 3.7
LEADING CAUSES OF INFANT DEATHS:
ALL IHS AREAS
CY 1986-1988

In 1986-1988, 24.0 percent of all infant deaths in the IHS service area were caused by sudden infant death syndrome. This was followed by congenital anomalies at 18.8 percent.

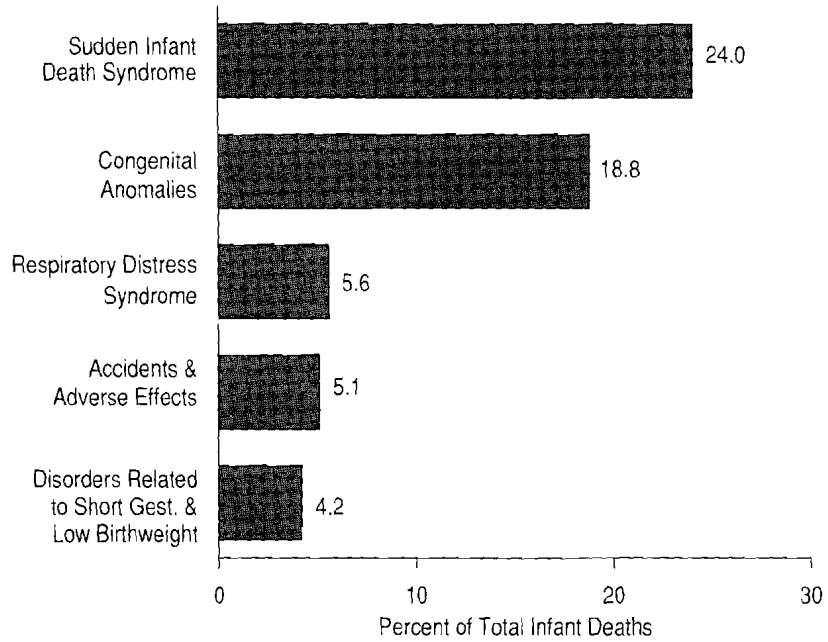


Chart 3.8
LEADING CAUSES OF INFANT DEATHS:
U.S. ALL RACES
1987

In 1987, 20.5 percent of all infant deaths in the U.S. were caused by congenital anomalies. This was followed by sudden infant death syndrome at 13.6 percent.

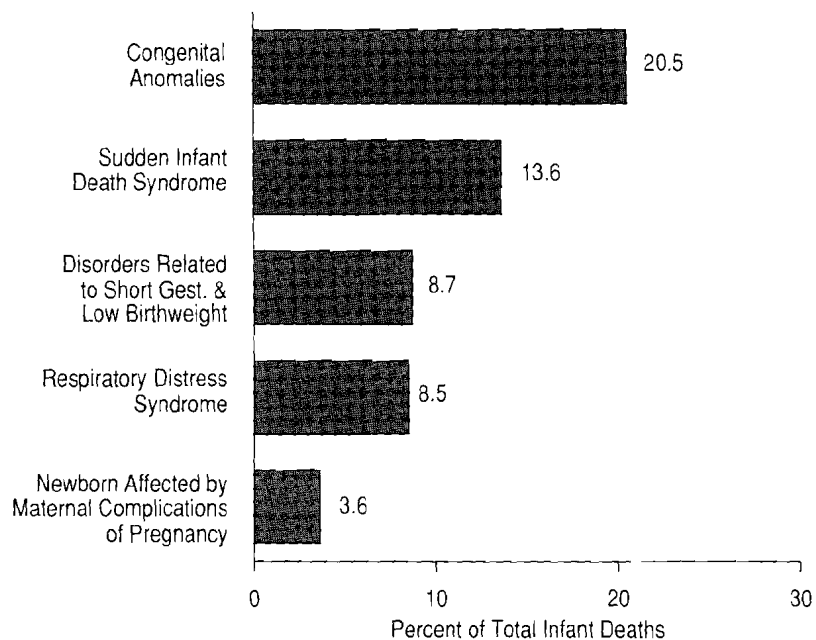
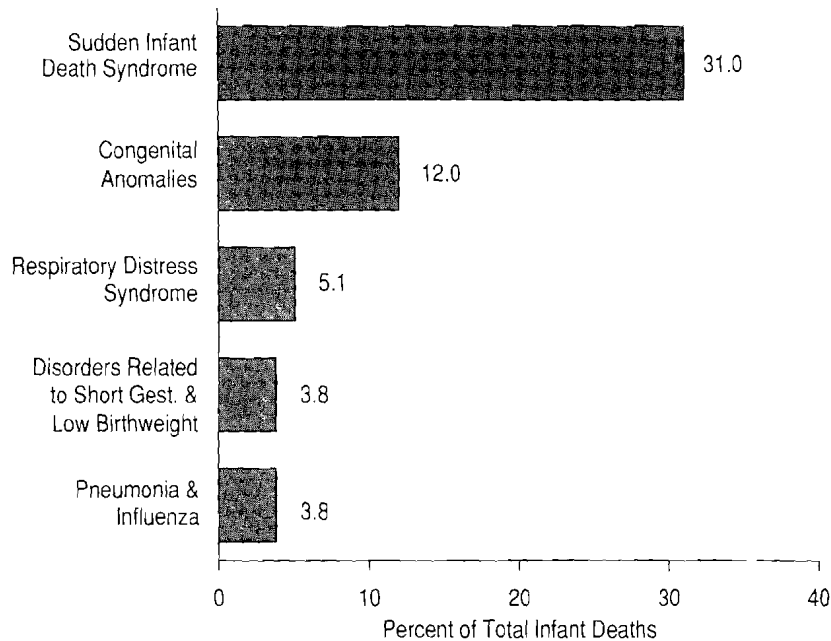
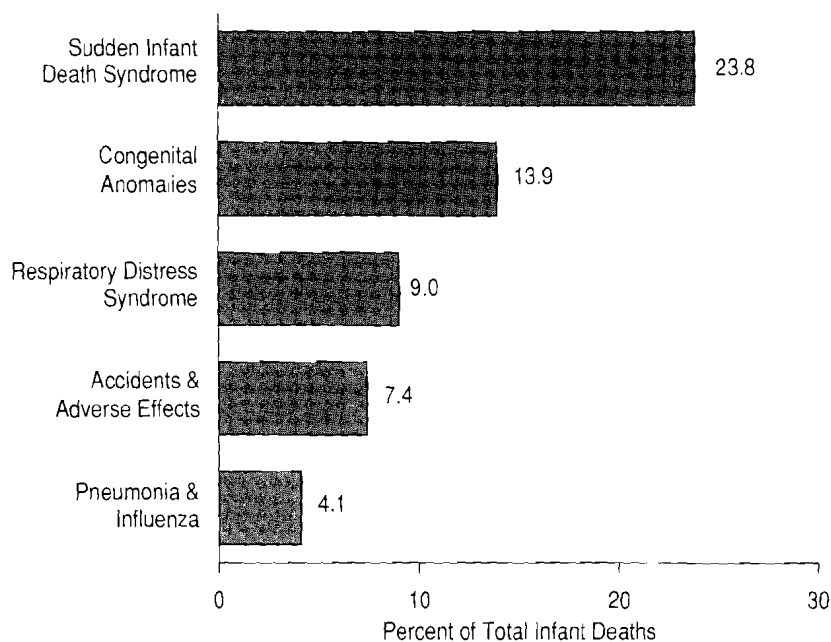


Chart 3.9
LEADING CAUSES OF INFANT DEATHS:
ABERDEEN AREA
CY 1986-1988



In 1986-1988, 31.0 percent of all infant deaths in the Aberdeen Area were caused by sudden infant death syndrome. This was followed by congenital anomalies at 12.0 percent.

Chart 3.10
LEADING CAUSES OF INFANT DEATHS:
ALASKA AREA
CY 1986-1988



In 1986-1988, 23.8 percent of all infant deaths in the Alaska Area were caused by sudden infant death syndrome. This was followed by congenital anomalies at 13.9 percent.

Chart 3.11
LEADING CAUSES OF INFANT DEATHS:
ALBUQUERQUE AREA
CY 1986-1988

In 1986-1988, 41.7 percent of all infant deaths in the Albuquerque Area were caused by congenital anomalies. This was followed by sudden infant death syndrome at 11.1 percent.

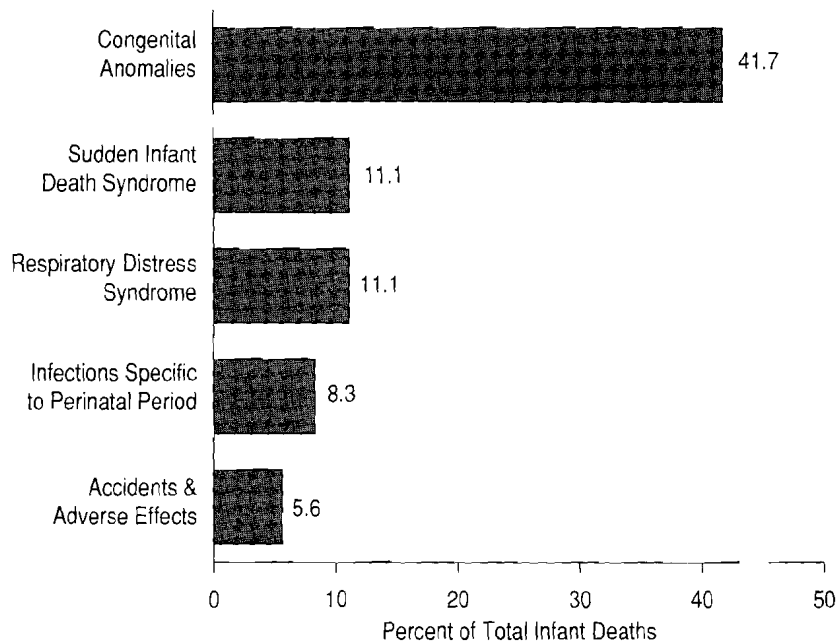


Chart 3.12
LEADING CAUSES OF INFANT DEATHS:
BEMIDJI AREA
CY 1986-1988

In 1986-1988, 31.7 percent of all infant deaths in the Bemidji Area were caused by sudden infant death syndrome. This was followed by congenital anomalies at 17.5 percent.

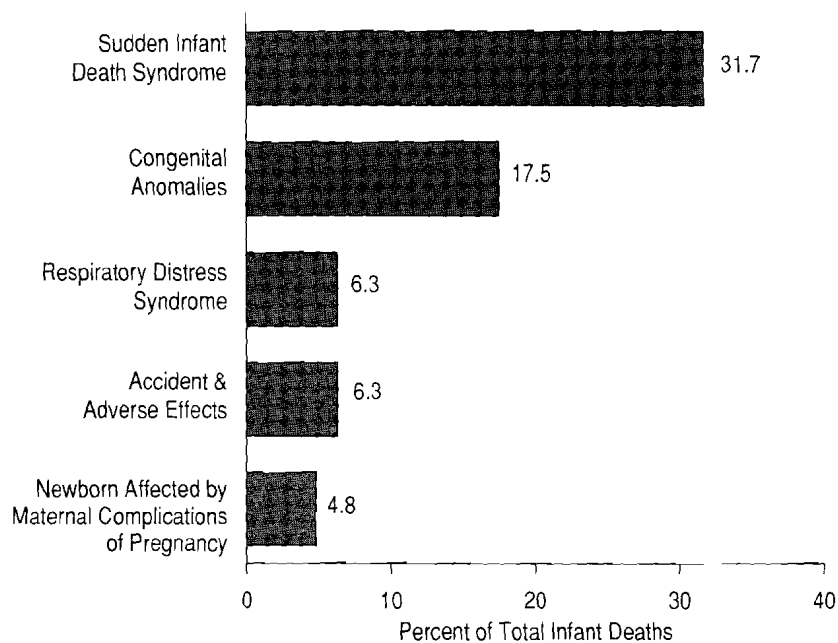
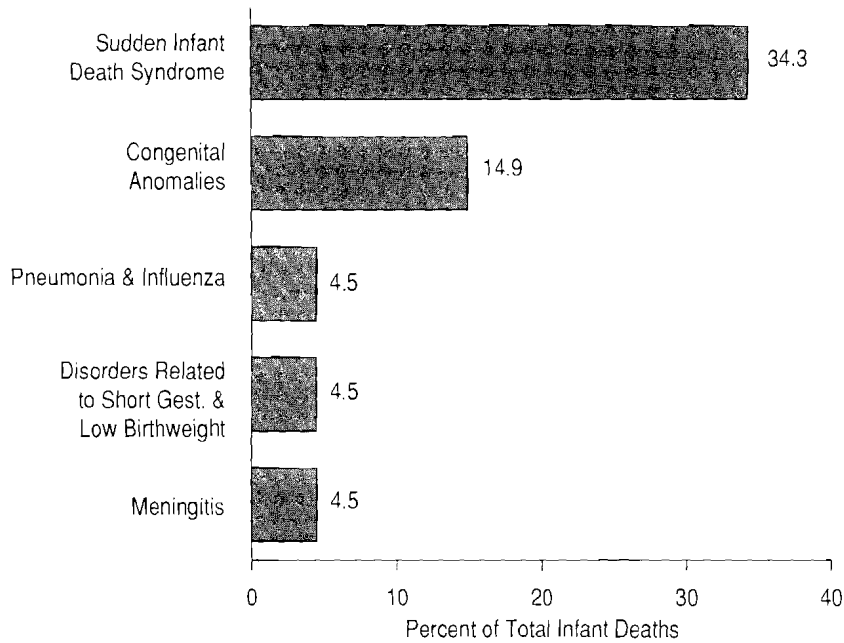
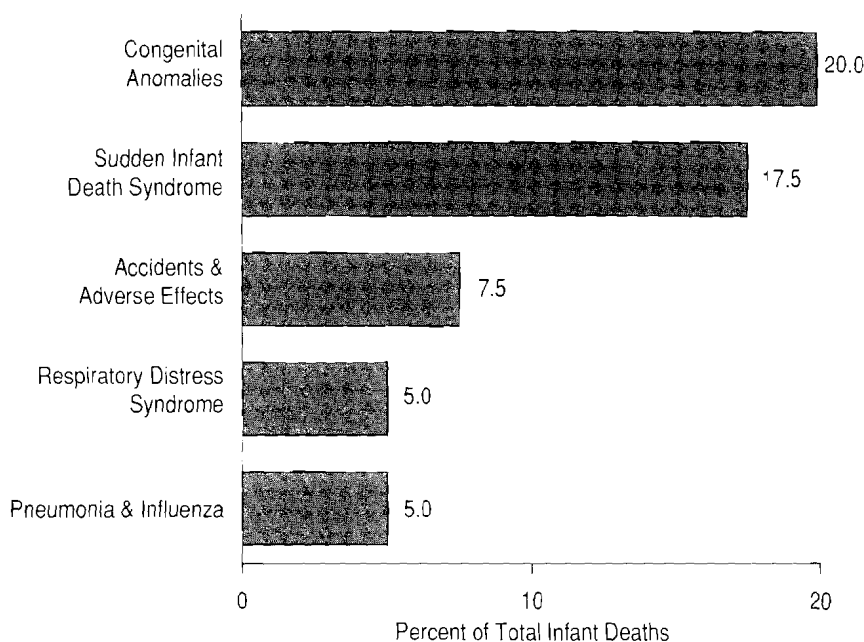


Chart 3.13
LEADING CAUSES OF INFANT DEATHS:
BILLINGS AREA
CY 1986-1988



In 1986-1988, 34.3 percent of all infant deaths in the Billings Area were caused by sudden infant death syndrome. This was followed by congenital anomalies at 14.9 percent.

Chart 3.14
LEADING CAUSES OF INFANT DEATHS:
CALIFORNIA AREA
CY 1986-1988



In 1986-1988, 20.0 percent of all infant deaths in the California Area were caused by congenital anomalies. This was followed by sudden infant death syndrome at 17.5 percent.

Chart 3.15
LEADING CAUSES OF INFANT DEATHS:
NASHVILLE AREA
CY 1986-1988

In 1986-1988, 25.0 percent of all infant deaths in the Nashville Area were caused by congenital anomalies. Another 25.0 percent were caused by sudden infant death syndrome.

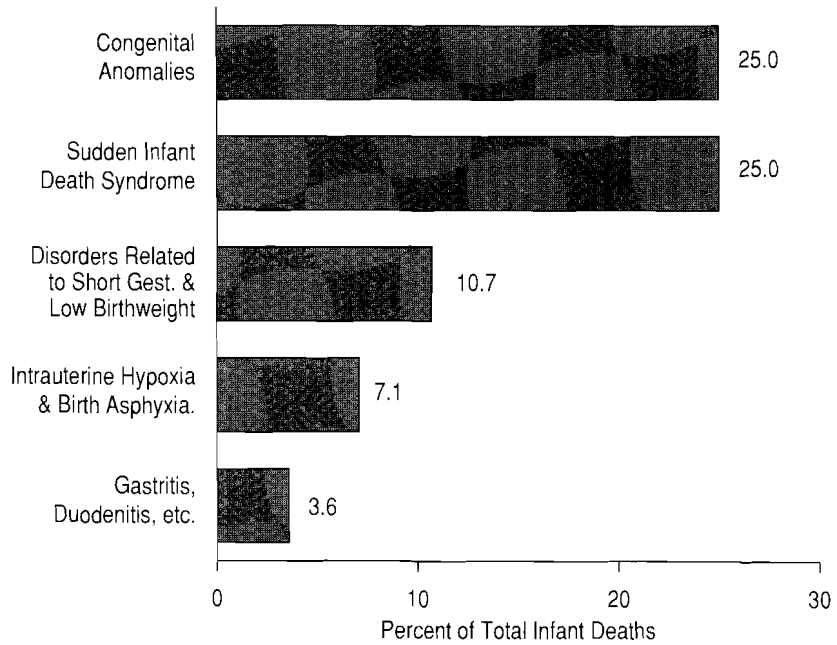


Chart 3.16
LEADING CAUSES OF INFANT DEATHS:
NAVAJO AREA
CY 1986-1988

In 1986-1988, 27.7 percent of all infant deaths in the Navajo Area were caused by congenital anomalies. This was followed by sudden infant death syndrome at 8.1 percent.

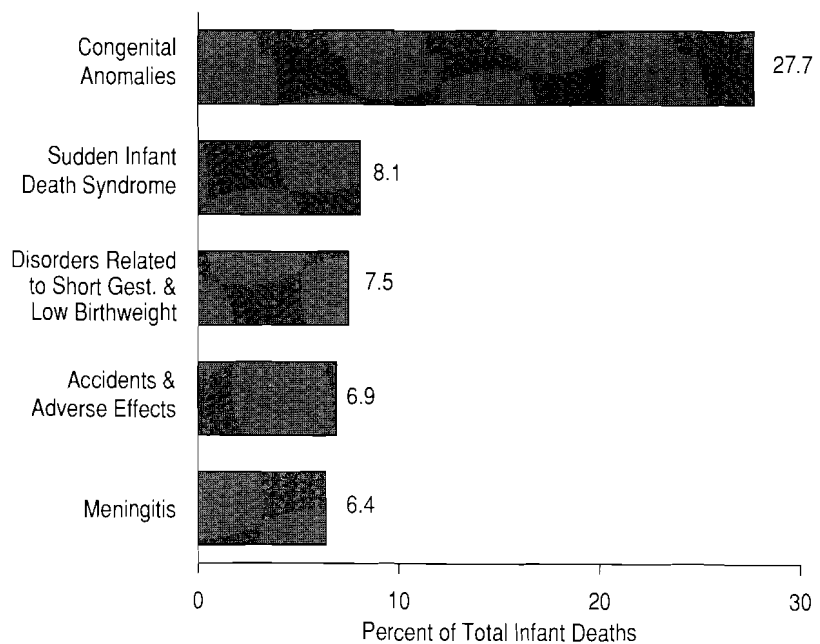
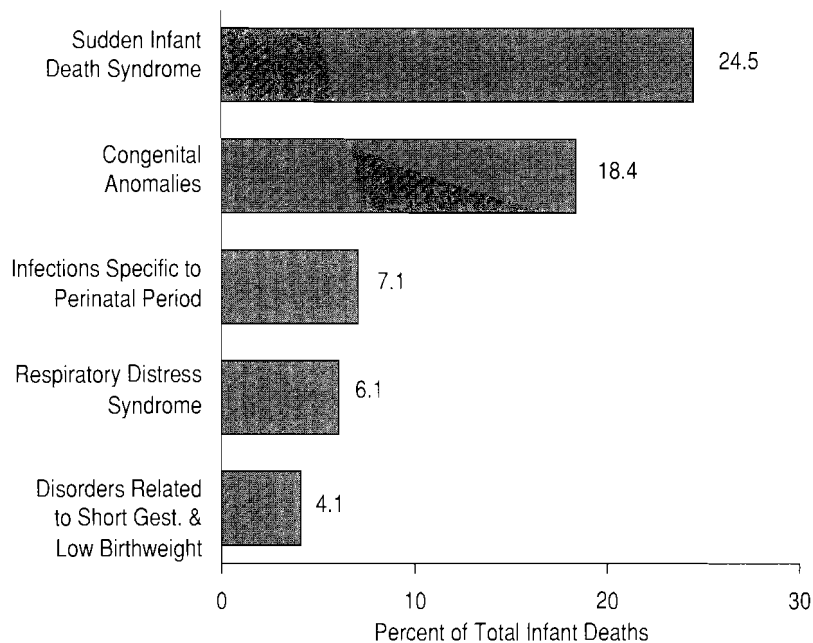
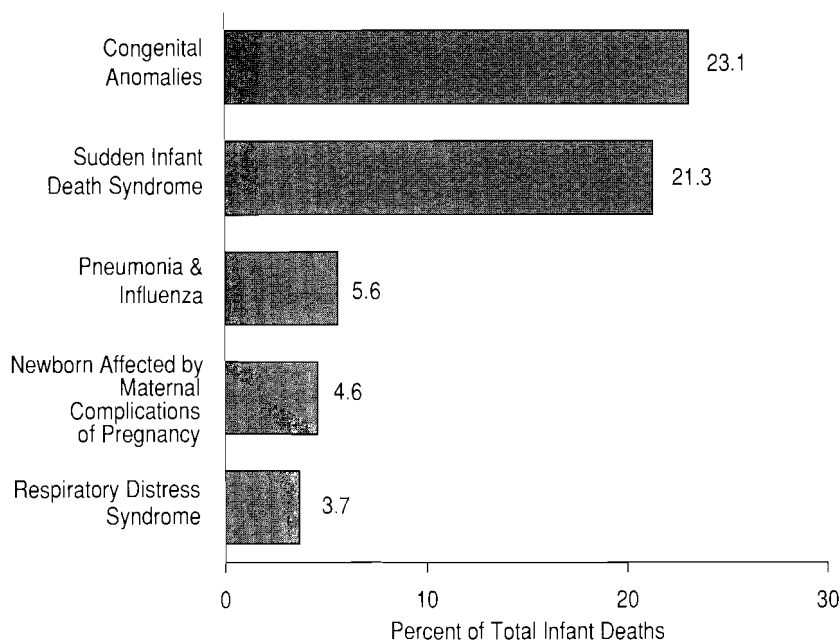


Chart 3.17
LEADING CAUSES OF INFANT DEATHS:
OKLAHOMA AREA
CY 1986-1988



In 1986-1988, 24.5 percent of all infant deaths in the Oklahoma Area were caused by sudden infant death syndrome. This was followed by congenital anomalies at 18.4 percent.

Chart 3.18
LEADING CAUSES OF INFANT DEATHS:
PHOENIX AREA
CY 1986-1988



In 1986-1988, 23.1 percent of all infant deaths in the Phoenix Area were caused by congenital anomalies. This was followed by sudden infant death syndrome at 21.3 percent.

Chart 3.19
LEADING CAUSES OF INFANT DEATHS:
PORTLAND AREA
CY 1986-1988

In 1986-1988, 39.8 percent of all infant deaths in the Portland Area were caused by sudden infant death syndrome. This was followed by respiratory distress syndrome at 9.2 percent.

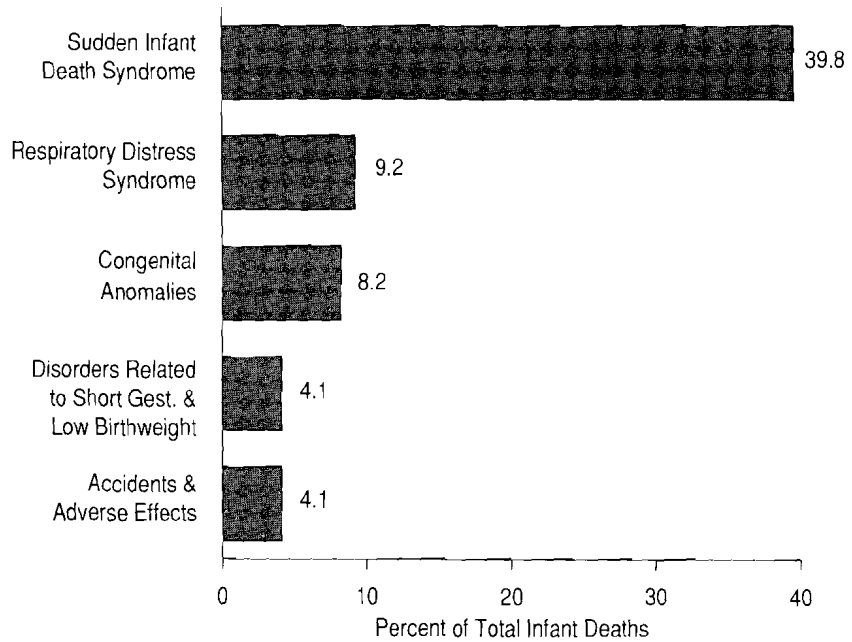
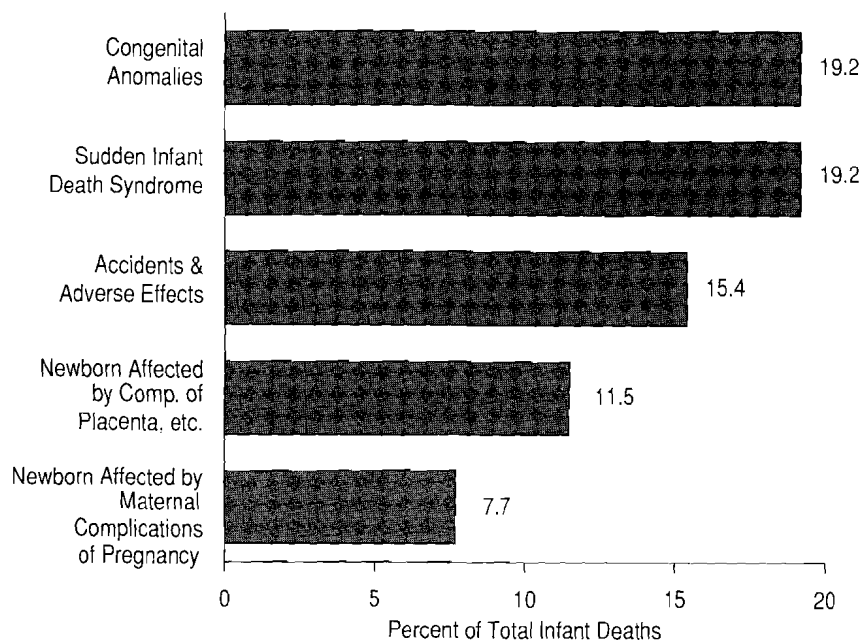


Chart 3.20
LEADING CAUSES OF INFANT DEATHS:
TUCSON AREA
CY 1986-1988

In 1986-1988, 19.2 percent of all infant deaths in the Tucson Area were caused by congenital anomalies. Another 19.2 percent were caused by sudden infant death syndrome.



PART 4—GENERAL MORTALITY STATISTICS

Chart 4.1
AGE-ADJUSTED MORTALITY RATES
CY 1986-1988

In 1986-1988, the age-adjusted mortality rate (all causes) for the IHS service area population was 665.8. When the 3 IHS Areas with apparent problems in underreporting of Indian race on death certificates are excluded, the rate is 803.1. This is 50 percent higher than the U.S. All Races rate of 535.5 for 1987. The Tucson and Aberdeen rates were about double the U.S. rate.

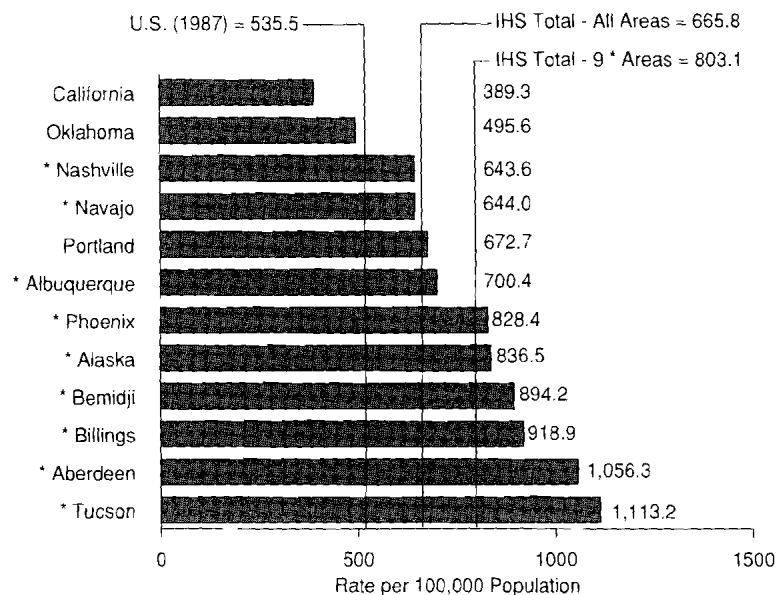


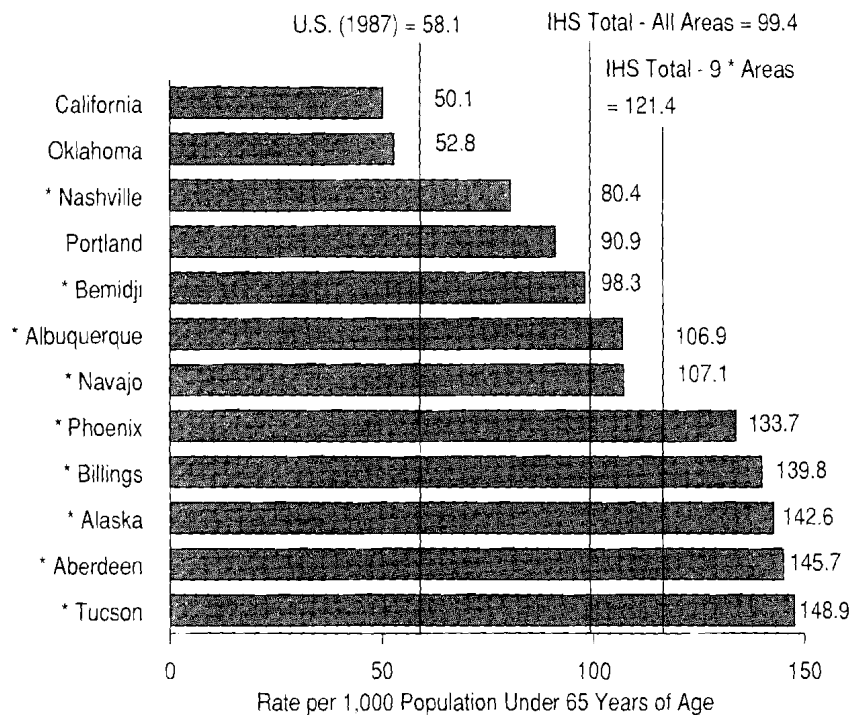
Table 4.1
AGE-ADJUSTED MORTALITY RATES
(ALL CAUSES)
CY 1986-1988

	Total Deaths	Rate ¹
U.S. All Races (1987)	2,123,323	535.5
All IHS Areas	17,409	665.8
9* Areas ²	11,861	803.1
Aberdeen*	1,837	1,056.3
Alaska*	1,557	836.5
Albuquerque*	868	700.4
Bemidji*	1,008	894.2
Billings*	961	918.9
California	771	389.3
Nashville*	632	643.6
Navajo*	2,722	644.0
Oklahoma	3,155	495.6
Phoenix*	1,797	828.4
Portland	1,622	672.7
Tucson*	479	1,113.2

¹ Rate per 100,000 population.

² The 3 IHS Areas that do not have an asterisk (California, Oklahoma, and Portland) appear to have a problem with underreporting of Indian race on death certificates. Therefore a separate IHS rate was calculated excluding these 3 Areas.

Chart 4.2
YEARS OF PRODUCTIVE LIFE LOST RATES
CY 1986-1988



In 1986-1988, the years of productive life lost rate (all causes) for the IHS service area population was 99.4. When the 3 IHS Areas with apparent problems in underreporting of Indian race on death certificates are excluded, the rate is 121.4. This is more than double the U.S. All Races rate of 58.1 for 1987. Each of the remaining 9 IHS Areas had a rate greater than the U.S. All Races rate.

Table 4.2
YEARS OF PRODUCTIVE LIFE LOST
(YPLL) RATES (ALL CAUSES)
CY 1986-1988

	Number of YPLL ¹	Rate ²
U.S. All Races (1987)	12,398,000	58.1
All IHS Areas	286,147	99.4
9* Areas ³	218,397	121.4
Aberdeen*	32,306	145.7
Alaska*	31,920	142.6
Albuquerque*	16,883	106.9
Bemidji*	14,274	98.3
Billings*	18,158	139.8
California	11,200	50.1
Nashville*	8,439	80.4
Navajo*	53,964	107.1
Oklahoma	29,660	52.8
Phoenix*	34,316	133.7
Portland	26,890	90.9
Tucson*	8,137	148.9

¹ Years of Productive Life Lost (YPLL) is 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.

² Rate per 1,000 population under 65 years of age.

³ The 3 IHS Areas that do not have an asterisk (California, Oklahoma, and Portland) appear to have a problem with underreporting of Indian race on death certificates. Therefore a separate IHS rate was calculated excluding these 3 Areas.

Chart 4.3
LEADING CAUSES OF DEATH:
ALL IHS AREAS
CY 1986-1988

In 1986-1988, 22.1 percent of all deaths in the IHS service area were caused by diseases of the heart. This was followed by accidents and adverse effects at 17.1 percent.

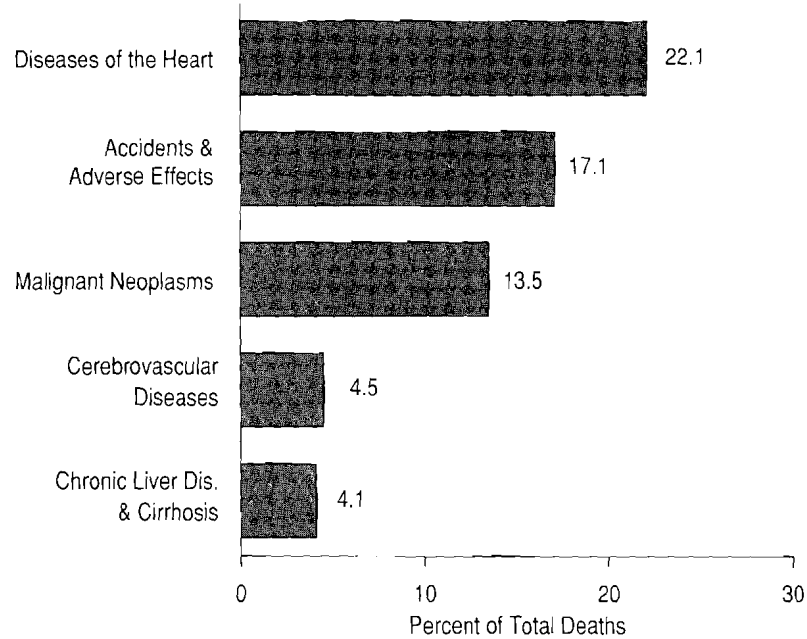


Chart 4.4
LEADING CAUSES OF DEATH:
U.S. ALL RACES
CY 1987

In 1987, 35.8 percent of all deaths in the U.S. were caused by diseases of the heart. This was followed by malignant neoplasms at 22.5 percent.

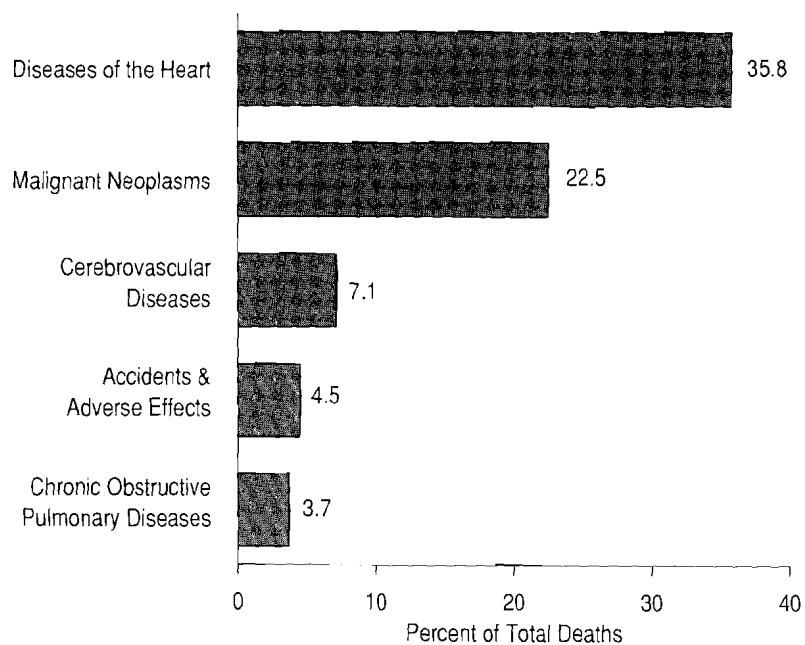
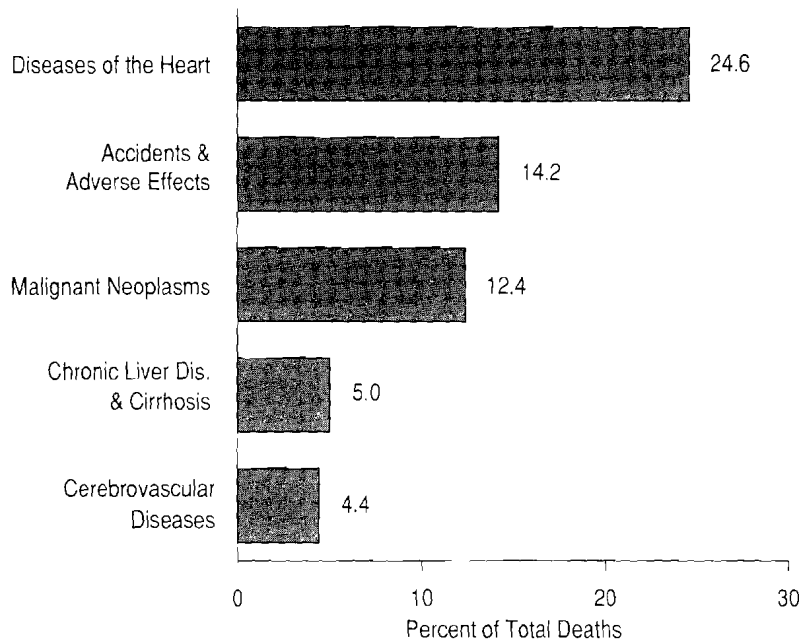
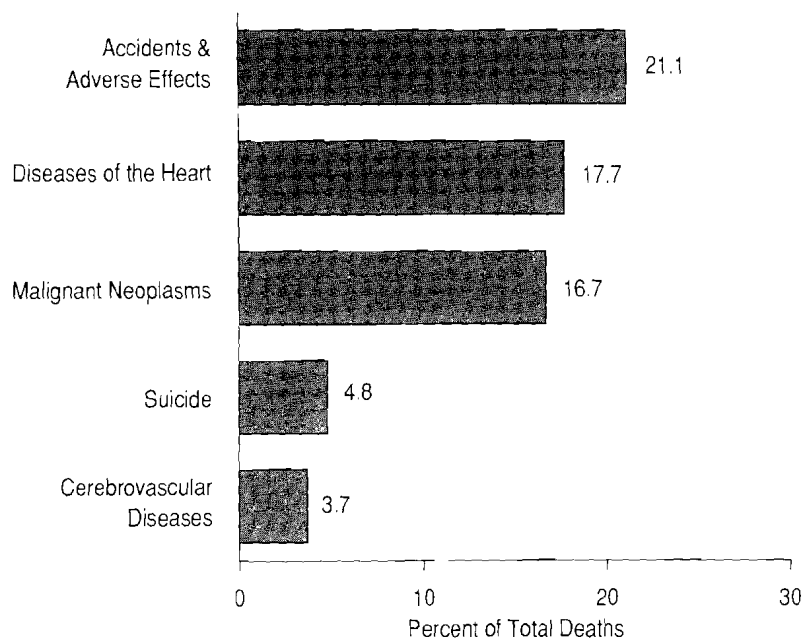


Chart 4.5
LEADING CAUSES OF DEATH:
ABERDEEN AREA
CY 1986-1988



In 1986-1988, 24.6 percent of all deaths in the Aberdeen Area were caused by diseases of the heart. This was followed by accidents and adverse effects at 14.2 percent.

Chart 4.6
LEADING CAUSES OF DEATH:
ALASKA AREA
CY 1986-1988



In 1986-1988, 21.1 percent of all deaths in the Alaska Area were caused by accidents and adverse effects. This was followed by diseases of the heart at 17.7 percent.

Chart 4.7
LEADING CAUSES OF DEATH:
ALBUQUERQUE AREA
CY 1986-1988

In 1986-1988, 19.3 percent of all deaths in the Albuquerque Area were caused by accidents and adverse effects. This was followed by diseases of the heart at 14.0 percent.

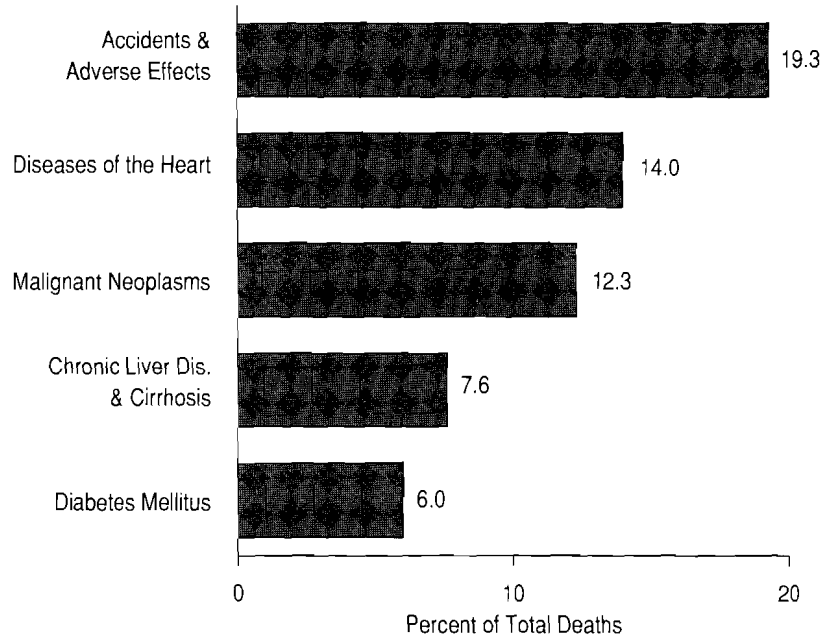


Chart 4.8
LEADING CAUSES OF DEATH:
BEMIDJI AREA
CY 1986-1988

In 1986-1988, 27.1 percent of all deaths in the Bemidji Area were caused by diseases of the heart. This was followed by malignant neoplasms at 15.1 percent.

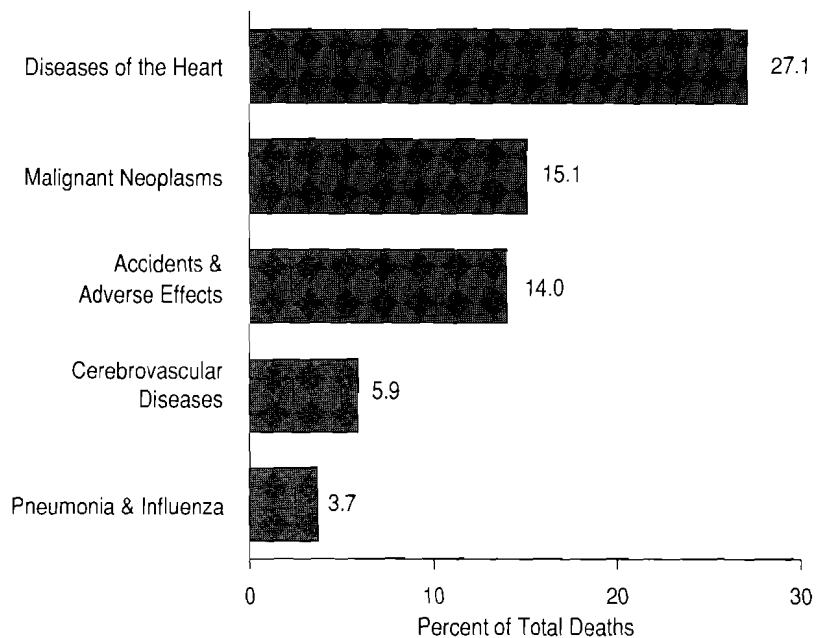
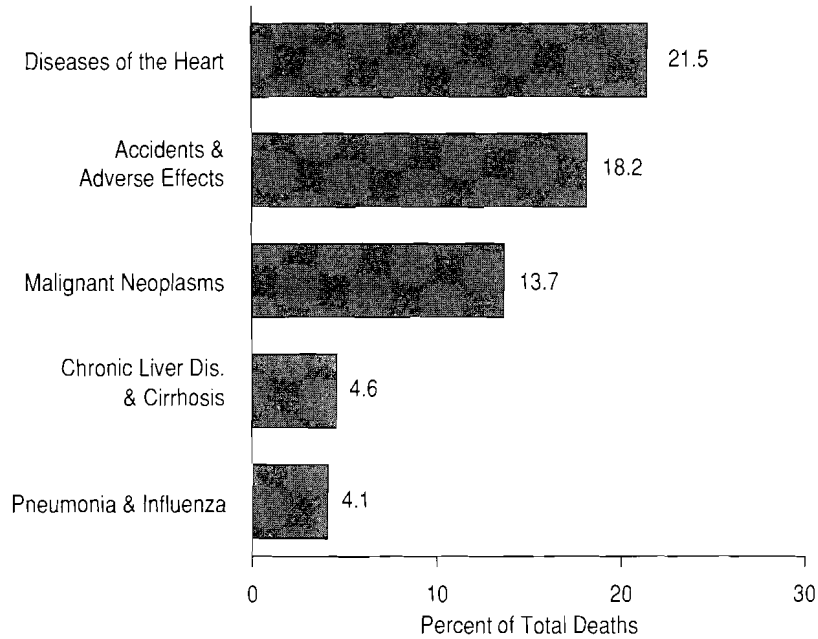
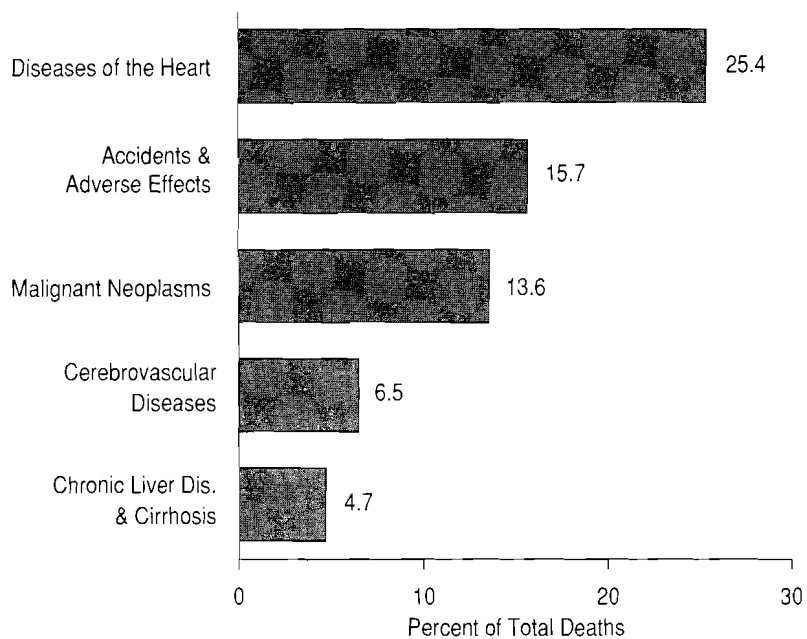


Chart 4.9
LEADING CAUSES OF DEATH:
BILLINGS AREA
CY 1986-1988



In 1986-1988, 21.5 percent of all deaths in the Billings Area were caused by diseases of the heart. This was followed by accidents and adverse effects at 18.2 percent.

Chart 4.10
LEADING CAUSES OF DEATH:
CALIFORNIA AREA
CY 1986-1988



In 1986-1988, 25.4 percent of all deaths in the California Area were caused by diseases of the heart. This was followed by accidents and adverse effects at 15.7 percent.

Chart 4.11
LEADING CAUSES OF DEATH:
NASHVILLE AREA
CY 1986-1988

In 1986-1988, 26.6 percent of all deaths in the Nashville Area were caused by diseases of the heart. This was followed by malignant neoplasms at 15.7 percent.

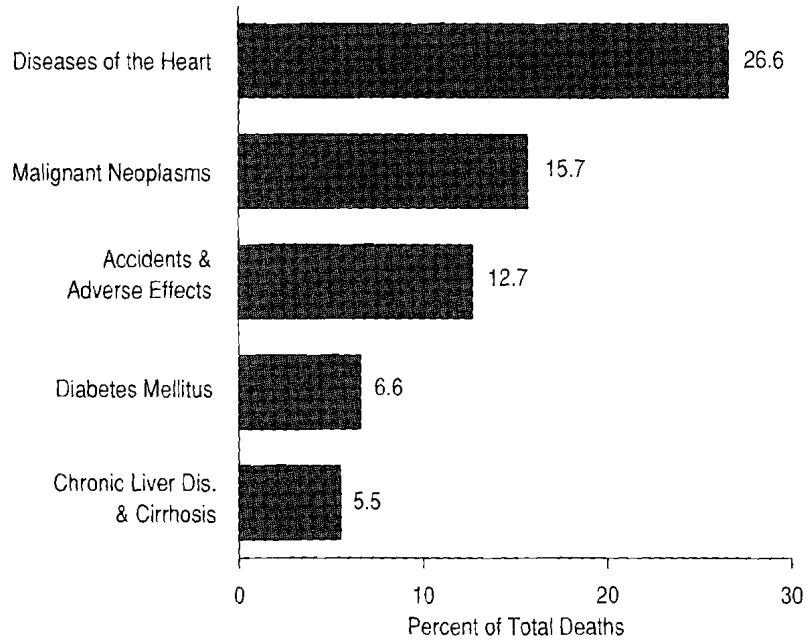


Chart 4.12
LEADING CAUSES OF DEATH:
NAVAJO AREA
CY 1986-1988

In 1986-1988, 26.6 percent of all deaths in the Navajo Area were caused by accidents and adverse effects. This was followed by diseases of the heart at 14.3 percent.

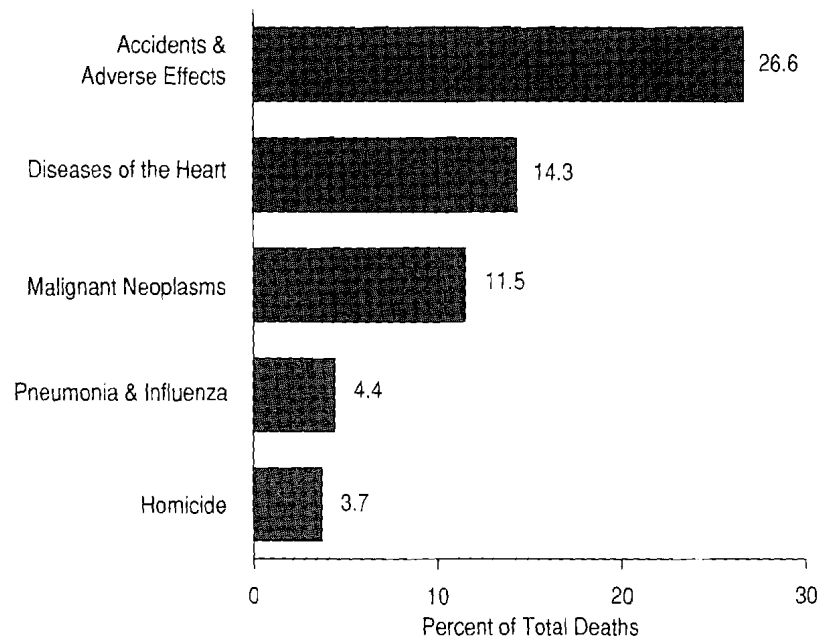
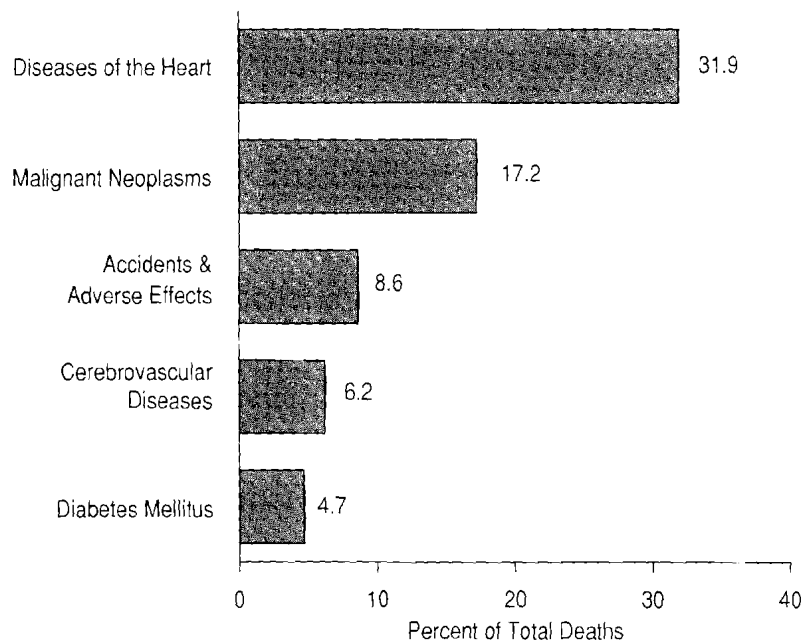
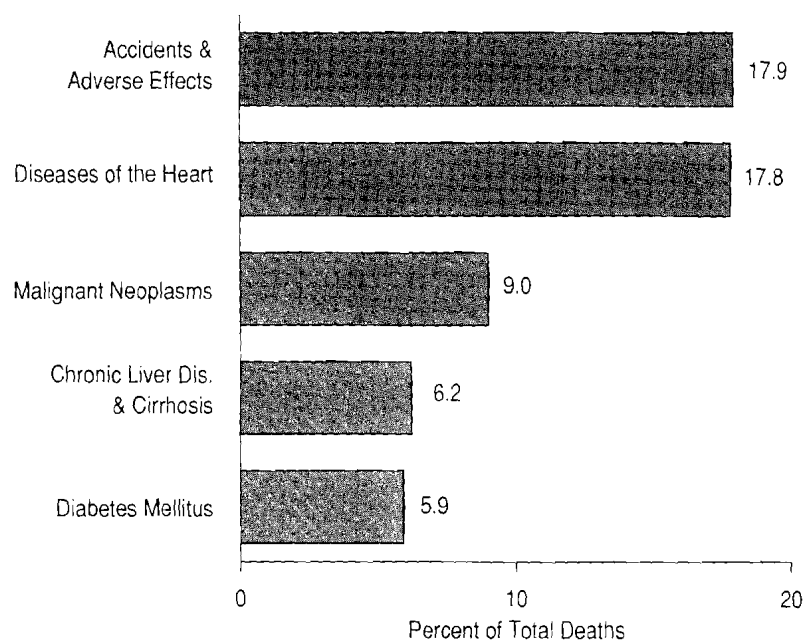


Chart 4.13
LEADING CAUSES OF DEATH:
OKLAHOMA AREA
CY 1986-1988



In 1986-1988, 31.9 percent of all deaths in the Oklahoma Area were caused by diseases of the heart. This was followed by malignant neoplasms at 17.2 percent.

Chart 4.14
LEADING CAUSES OF DEATH:
PHOENIX AREA
CY 1986-1988



In 1986-1988, 17.9 percent of all deaths in the Phoenix Area were caused by accidents and adverse effects. This was followed by diseases of the heart at 17.8 percent.

Chart 4.15
LEADING CAUSES OF DEATH:
PORTLAND AREA
CY 1986-1988

In 1986-1988, 22.2 percent of all deaths in the Portland Area were caused by diseases of the heart. This was followed by accidents and adverse effects at 16.9 percent.

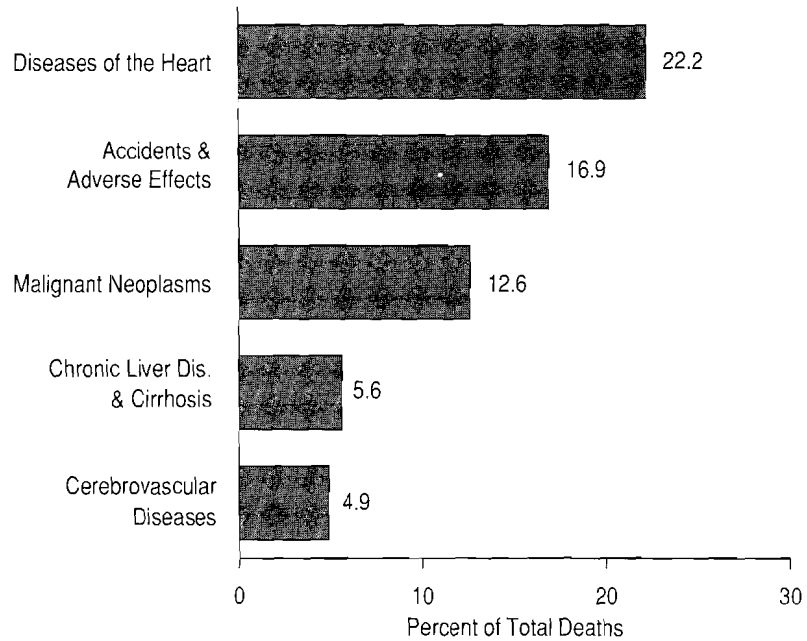


Chart 4.16
LEADING CAUSES OF DEATH:
TUCSON AREA
CY 1986-1988

In 1986-1988, 21.7 percent of all deaths in the Tucson Area were caused by accidents and adverse effects. This was followed by diseases of the heart at 17.5 percent.

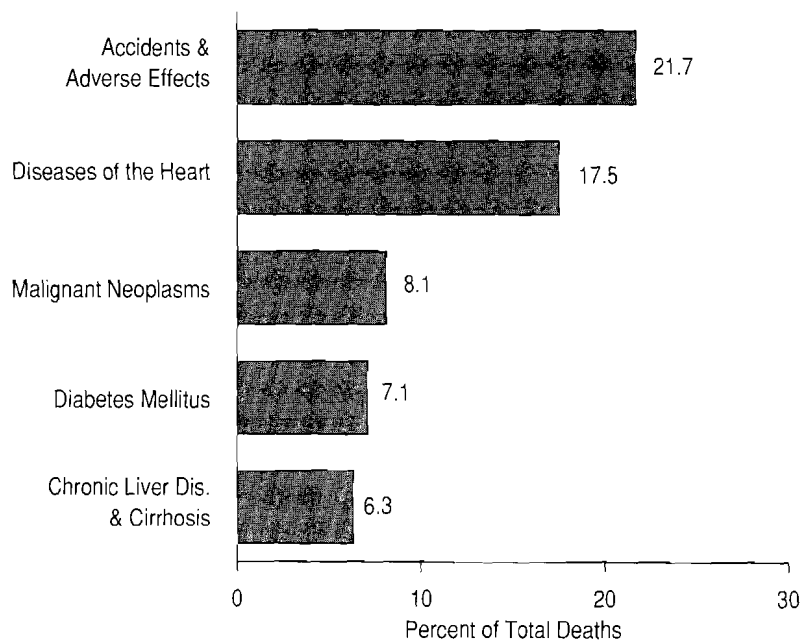
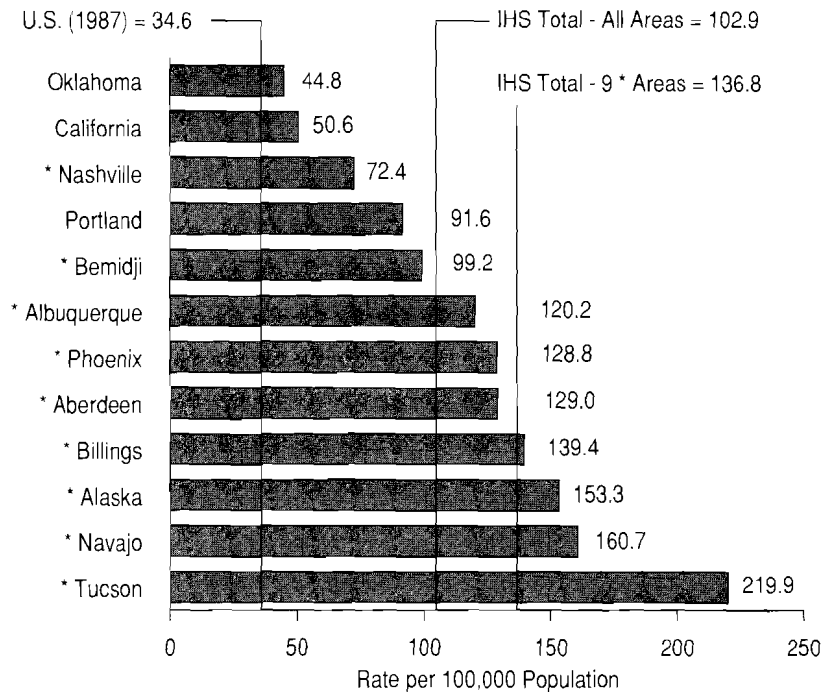


Chart 4.17
AGE-ADJUSTED
ACCIDENT MORTALITY RATES
CY 1986-1988



In 1986-1988, the age-adjusted accident mortality rate for the IHS service area population was 102.9. When the 3 IHS Areas with apparent problems in underreporting of Indian race on death certificates are excluded, the rate is 136.8. This is 295 percent higher than the U.S. All Races rate of 34.6 for 1987. The Tucson Area had the highest rate which was mainly attributable to motor vehicle accidents.

Table 4.17
AGE-ADJUSTED
ACCIDENT MORTALITY RATES
CY 1986-1988

	All Accidents		Motor Vehicle		Other Accidents	
	Deaths	Rate ¹	Deaths	Rate ¹	Deaths	Rate ¹
U.S. All Races (1987)	95,020	34.6	48,290	19.5	46,730	15.2
All IHS Areas	2,965	102.9	1,687	57.5	1,278	45.5
9* Areas ²	2,301	136.8	1,303	75.2	998	61.5
Aberdeen*	260	129.0	143	69.7	117	59.3
Alaska*	328	153.3	68	32.6	260	120.8
Albuquerque*	167	120.2	119	83.6	48	36.6
Bemidji*	141	99.2	72	49.6	69	49.7
Billings*	175	139.4	110	82.2	65	57.2
California	121	50.6	79	32.5	42	18.1
Nashville*	80	72.4	53	47.6	27	24.9
Navajo*	724	160.7	460	97.9	264	62.9
Oklahoma	269	44.8	156	26.2	113	18.6
Phoenix*	322	128.8	211	81.5	111	47.3
Portland	274	91.6	149	48.4	125	43.2
Tucson*	104	219.9	67	138.0	37	81.9

¹ Age-adjusted rate per 100,000 population. Rates based on a small number of deaths should be interpreted with caution.

² The 3 IHS Areas that do not have an asterisk (California, Oklahoma, and Portland) appear to have a problem with underreporting of Indian race on death certificates. Therefore a separate IHS rate was calculated excluding these 3 Areas.

Chart 4.18
AGE-ADJUSTED
ALCOHOLISM MORTALITY RATES
CY 1986-1988

In 1986-1988, the age-adjusted alcoholism mortality rate for the IHS service area population was 32.7. When the 3 IHS Areas with apparent problems in underreporting of Indian race on death certificates are excluded, the rate is 45.8. This is 663 percent higher than the U.S. All Races rate of 6.0 for 1987. The Aberdeen Area rate of 69.9 was 11.7 times the U.S. rate.

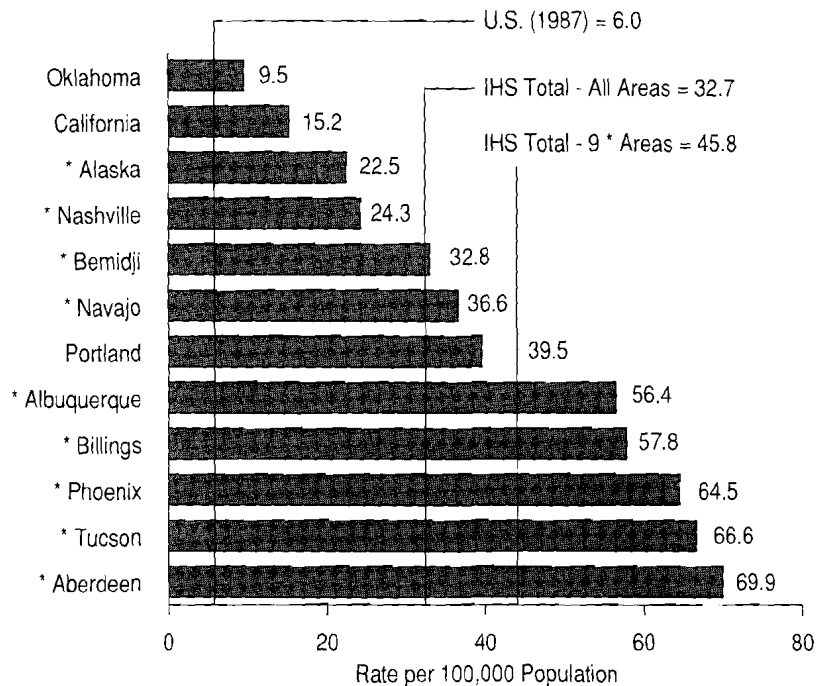


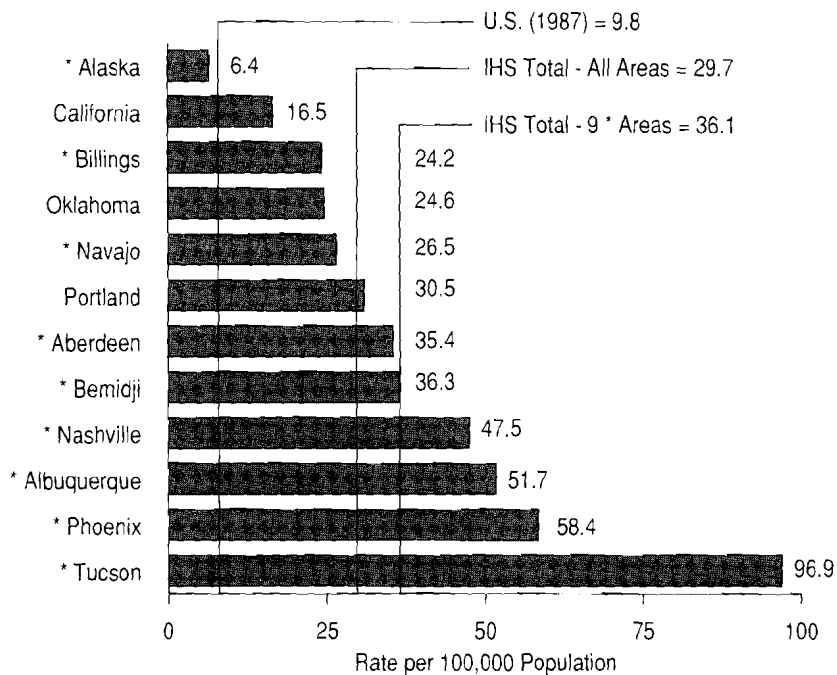
Table 4.18
AGE-ADJUSTED
ALCOHOLISM MORTALITY RATES
CY 1986-1988

	Deaths	Rate ¹
U.S. All Races (1987)	15,909	6.0
All IHS Areas	742	32.7
9* Areas ²	580	45.8
Aberdeen*	99	69.9
Alaska*	37	22.5
Albuquerque*	60	56.4
Bemidji*	31	32.8
Billings*	51	57.8
California	29	15.2
Nashville*	21	24.3
Navajo*	127	36.6
Oklahoma	47	9.5
Phoenix*	129	64.5
Portland	86	39.5
Tucson*	25	66.6

¹ Age-adjusted rate per 100,000 population. Rates based on a small number of deaths should be interpreted with caution.

² The 3 IHS Areas that do not have an asterisk (California, Oklahoma, and Portland) appear to have a problem with underreporting of Indian race on death certificates. Therefore a separate IHS rate was calculated excluding these 3 Areas.

Chart 4.19
AGE-ADJUSTED DIABETES MELLITUS
MORTALITY RATES
CY 1986-1988



In 1986-1988, the age-adjusted diabetes mortality rate for the IHS service area population was 29.7. When the 3 IHS Areas with apparent problems in underreporting of Indian race on death certificates are excluded, the rate is 36.1. This is 268 percent higher than the U.S. All Races rate of 9.8 for 1987. All of the IHS Area rates were greater than the U.S. rate with the exception of the Alaska rate.

Table 4.19
AGE-ADJUSTED DIABETES MELLITUS
MORTALITY RATES
CY 1986-1988

	Deaths	Rate ¹
U.S. All Races (1987)	38,532	9.8
All IHS Areas	683	29.7
9* Areas ²	443	36.1
Aberdeen*	52	35.4
Alaska*	10	6.4
Albuquerque*	52	51.7
Bemidji*	36	36.3
Billings*	22	24.2
California	29	16.5
Nashville*	42	47.5
Navajo*	89	26.5
Oklahoma	149	24.6
Phoenix*	106	58.4
Portland	62	30.5
Tucson*	34	96.9

¹ Age-adjusted rate per 100,000 population. Rates based on a small number of deaths should be interpreted with caution.

² The 3 IHS Areas that do not have an asterisk (California, Oklahoma, and Portland) appear to have a problem with underreporting of Indian race on death certificates. Therefore a separate IHS rate was calculated excluding these 3 Areas.

Chart 4.20
AGE-ADJUSTED HOMICIDE
MORTALITY RATES
CY 1986-1988

In 1986-1988, the age-adjusted homicide mortality rate for the IHS service area population was 16.9. When the 3 IHS Areas with apparent problems in underreporting of Indian race on death certificates are excluded, the rate is 20.1. This is 134 percent higher than the U.S. All Races rate of 8.6 for 1987. The Tucson Area rate of 36.6 was over 4 times the U.S. rate.

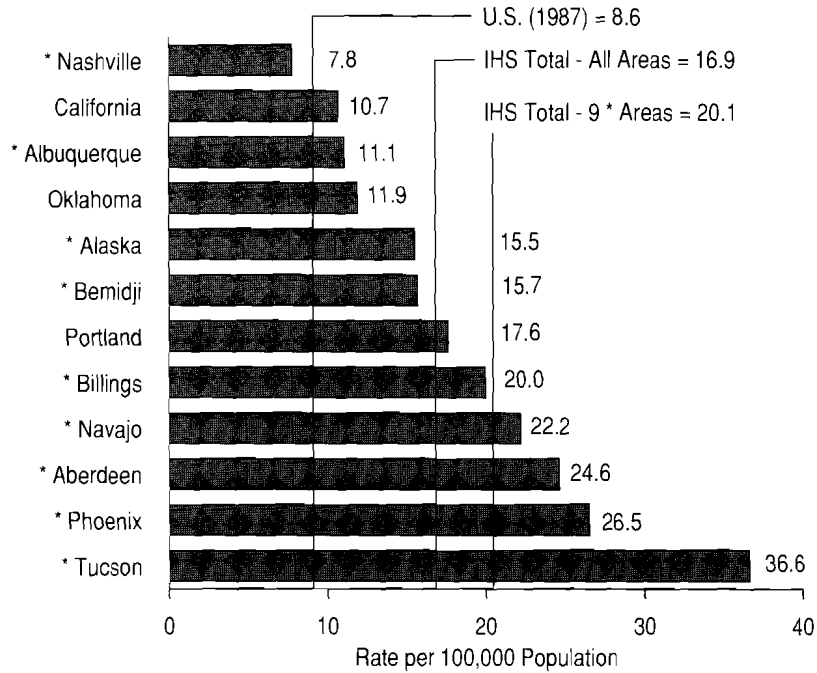


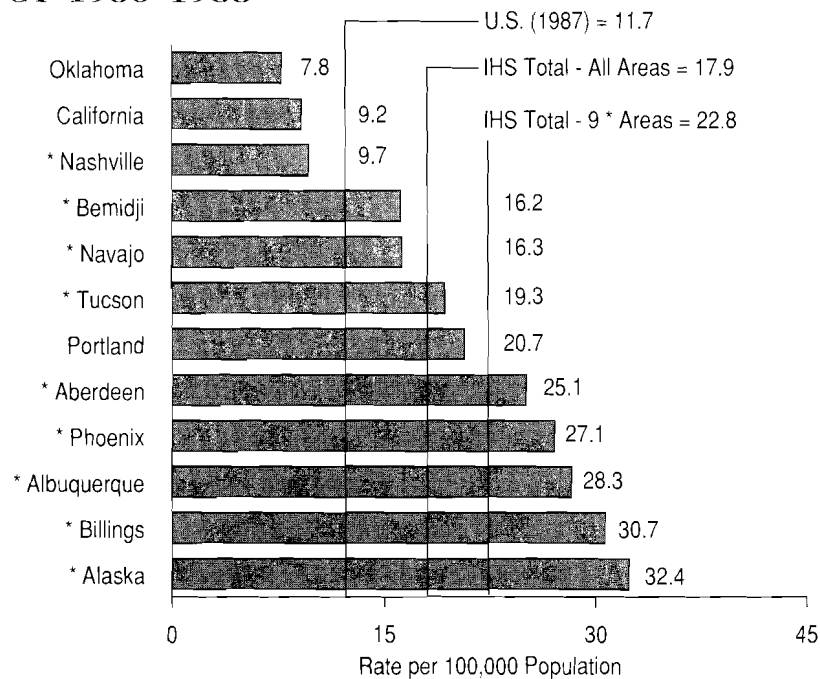
Table 4.20
AGE-ADJUSTED HOMICIDE
MORTALITY RATES
CY 1986-1988

	Deaths	Rate ¹
U.S. All Races (1987)	21,203	8.6
All IHS Areas	494	16.9
9* Areas ²	349	20.1
Aberdeen*	52	24.6
Alaska*	35	15.5
Albuquerque*	16	11.1
Bemidji*	23	15.7
Billings*	28	20.0
California	26	10.7
Nashville*	9	7.8
Navajo*	100	22.2
Oklahoma	66	11.9
Phoenix*	69	26.5
Portland	53	17.6
Tucson*	17	36.6

¹ Age-adjusted rate per 100,000 population. Rates based on a small number of deaths should be interpreted with caution.

² The 3 IHS Areas that do not have an asterisk (California, Oklahoma, and Portland) appear to have a problem with underreporting of Indian race on death certificates. Therefore a separate IHS rate was calculated excluding these 3 Areas.

Chart 4.21
AGE-ADJUSTED SUICIDE
MORTALITY RATES
CY 1986-1988



In 1986-1988, the age-adjusted suicide mortality rate for the IHS service area population was 17.9. When the 3 IHS Areas with apparent problems in underreporting of Indian race on death certificates are excluded, the rate is 22.8. This is 95 percent higher than the U.S. All Races rate of 11.7 for 1987. Five Areas (Alaska, Billings, Albuquerque, Phoenix, and Aberdeen) had rates more than double the U.S. rate.

Table 4.21
AGE-ADJUSTED SUICIDE
MORTALITY RATES
CY 1986-1988

	Deaths	Rate ¹
U.S. All Races (1987)	30,796	11.7
All IHS Areas	534	17.9
9* Areas ²	403	22.8
Aberdeen*	57	25.1
Alaska*	75	32.4
Albuquerque*	43	28.3
Bemidji*	24	16.2
Billings*	37	30.7
California	21	9.2
Nashville*	10	9.7
Navajo*	76	16.3
Oklahoma	45	7.8
Phoenix*	70	27.1
Portland	65	20.7
Tucson*	11	19.3

¹ Age-adjusted rate per 100,000 population. Rates based on a small number of deaths should be interpreted with caution.

² The 3 IHS Areas that do not have an asterisk (California, Oklahoma, and Portland) appear to have a problem with underreporting of Indian race on death certificates. Therefore a separate IHS rate was calculated excluding these 3 Areas.

Chart 4.22
AGE-ADJUSTED TUBERCULOSIS
MORTALITY RATES
CY 1986-1988

In 1986-1988, the age-adjusted tuberculosis mortality rate for the IHS service area population was 3.2. When the 3 IHS Areas with apparent problems in underreporting of Indian race on death certificates are excluded, the rate is 4.4. This is 780 percent higher than the U.S. All Races rate of 0.5 for 1987. The Area rates should be interpreted with caution because of the small number of deaths involved. The Navajo Area had the most deaths over the 3-year period with 22.

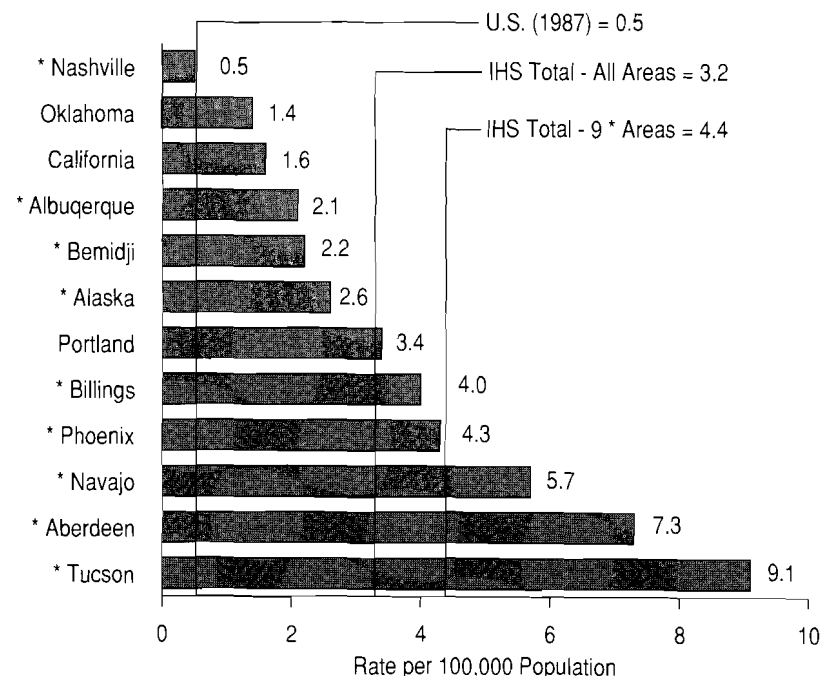


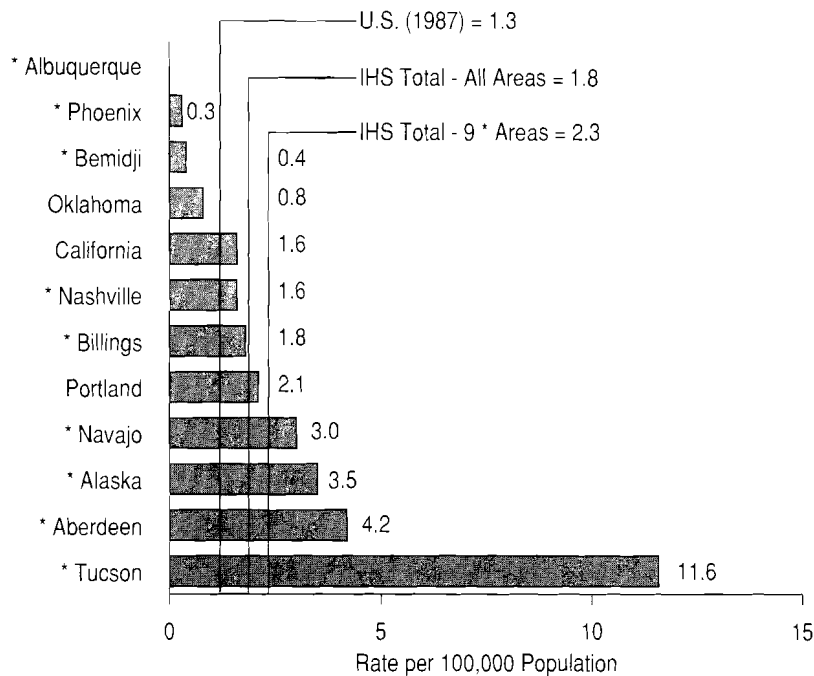
Table 4.22
AGE-ADJUSTED TUBERCULOSIS
MORTALITY RATES
CY 1986-1988

	Deaths	Rate ¹
U.S. All Races (1987)	1,755	0.5
All IHS Areas	75	3.2
9* Areas ²	56	4.4
Aberdeen*	10	7.3
Alaska*	4	2.6
Albuquerque*	2	2.1
Bemidji*	2	2.2
Billings*	4	4.0
California	3	1.6
Nashville*	1	0.5
Navajo*	22	5.7
Oklahoma	9	1.4
Phoenix*	8	4.3
Portland	7	3.4
Tucson*	3	9.1

¹ Rate per 100,000 population. Rates based on a small number of deaths should be interpreted with caution.

² The 3 IHS Areas that do not have an asterisk (California, Oklahoma, and Portland) appear to have a problem with underreporting of Indian race on death certificates. Therefore a separate IHS rate was calculated excluding these 3 Areas.

Chart 4.23
AGE-ADJUSTED GASTROINTESTINAL
DISEASES MORTALITY RATES
CY 1986-1988



In 1986-1988, the age-adjusted gastrointestinal diseases mortality rate for the IHS service area population was 1.8. When the 3 IHS Areas with apparent problems in underreporting of Indian race on death certificates are excluded, the rate is 2.3. This is 1.8 times the U.S. All Races rate of 1.3 for 1987. The Area rates should be interpreted with caution because of the small number of deaths involved. The Navajo Area had the most deaths over the 3-year period with 13.

Table 4.23
AGE-ADJUSTED GASTROINTESTINAL
DISEASES MORTALITY RATES
CY 1986-1988

	Deaths	Rate ¹
U.S. All Races (1987)	5,629	1.3
All IHS Areas	53	1.8
9* Areas ²	36	2.3
Aberdeen*	7	4.2
Alaska*	6	3.5
Albuquerque*	0	0.0
Bemidji*	1	0.4
Billings*	2	1.8
California	4	1.6
Nashville*	2	1.6
Navajo*	13	3.0
Oklahoma	7	0.8
Phoenix*	1	0.3
Portland	6	2.1
Tucson*	4	11.6

¹ Age-adjusted rate per 100,000 population. Rates based on a small number of deaths should be interpreted with caution.

² The 3 IHS Areas that do not have an asterisk (California, Oklahoma, and Portland) appear to have a problem with underreporting of Indian race on death certificates. Therefore a separate IHS rate was calculated excluding these 3 Areas.

Chart 4.24

**AGE-ADJUSTED DISEASES OF THE HEART MORTALITY RATES
CY 1986-1988**

In 1986-1988, the age-adjusted diseases of the heart mortality rate for the IHS service area population was 156.1. When the 3 IHS Areas with apparent problems in underreporting of Indian race on death certificates are excluded, the rate is 170.8. This is slightly higher than the U.S. All Races rate of 169.6 for 1987. The Navajo and Albuquerque Area rates are well below the U.S. rate.

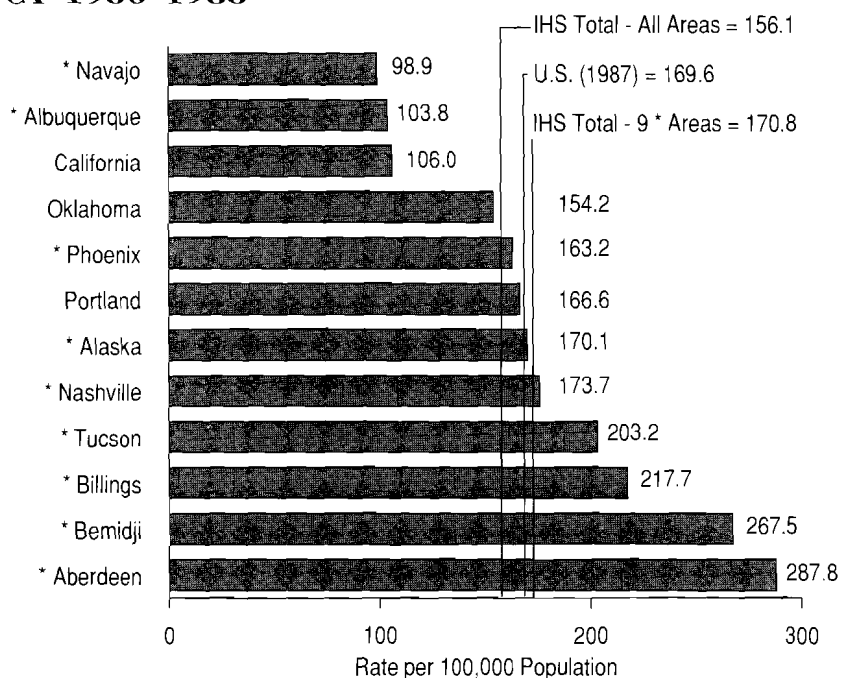


Table 4.24

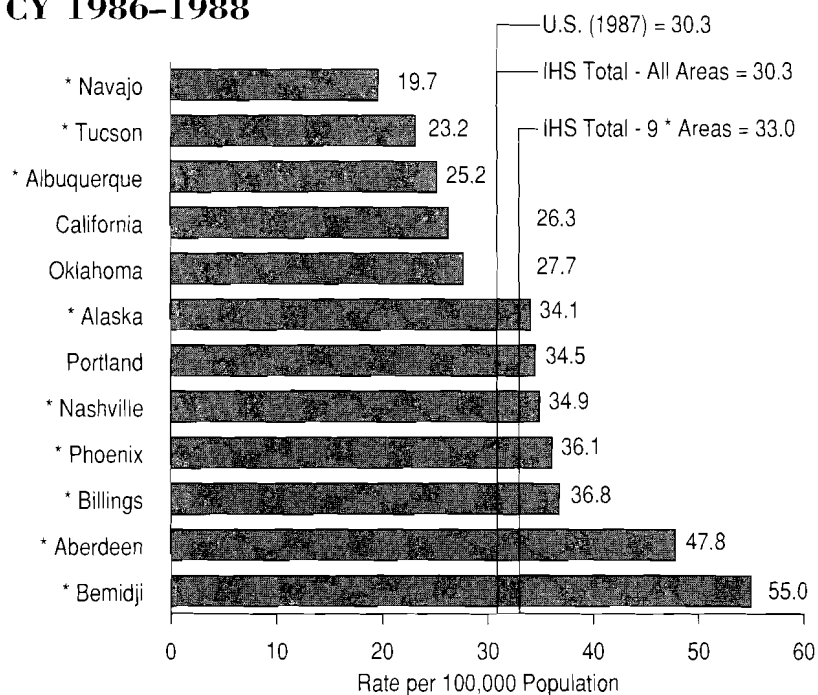
**AGE-ADJUSTED DISEASES OF THE HEART MORTALITY RATES
CY 1986-1988**

	Deaths	Rate ¹
U.S. All Races (1987)	760,353	169.6
All IHS Areas	3,854	156.1
9* Areas ²	2,290	170.8
Aberdeen*	452	287.8
Alaska*	275	170.1
Albuquerque*	122	103.8
Bemidji*	273	267.5
Billings*	207	217.7
California	196	106.0
Nashville*	168	173.7
Navajo*	389	98.9
Oklahoma	1,008	154.2
Phoenix*	320	163.2
Portland	360	166.6
Tucson*	84	203.2

¹ Age-adjusted rate per 100,000 population. Rates based on a small number of deaths should be interpreted with caution.

² The 3 IHS Areas that do not have an asterisk (California, Oklahoma, and Portland) appear to have a problem with underreporting of Indian race on death certificates. Therefore a separate IHS rate was calculated excluding these 3 Areas.

Chart 4.25
AGE-ADJUSTED CEREBROVASCULAR
DISEASES MORTALITY RATES
CY 1986-1988



In 1986-1988, the age-adjusted cerebrovascular diseases mortality rate for the IHS service area population was 30.3. When the 3 IHS Areas with apparent problems in underreporting of Indian race on death certificates are excluded, the rate is 33.0. This is 9 percent higher than the U.S. All Races rate of 30.3 for 1987. The Bemidji Area rate of 55.0 was nearly 3 times the Navajo Area rate of 19.7.

Table 4.25
AGE-ADJUSTED CEREBROVASCULAR
DISEASES MORTALITY RATES
CY 1986-1988

	Deaths	Rate ¹
U.S. All Races (1987)	149,835	30.3
All IHS Areas	779	30.3
9* Areas ²	456	33.0
Aberdeen*	81	47.8
Alaska*	57	34.1
Albuquerque*	32	25.2
Bemidji*	59	55.0
Billings*	35	36.8
California	49	26.3
Nashville*	33	34.9
Navajo*	78	19.7
Oklahoma	195	27.7
Phoenix*	72	36.1
Portland	79	34.5
Tucson*	9	23.2

¹ Age-adjusted rate per 100,000 population. Rates based on a small number of deaths should be interpreted with caution.

² The 3 IHS Areas that do not have an asterisk (California, Oklahoma, and Portland) appear to have a problem with underreporting of Indian race on death certificates. Therefore a separate IHS rate was calculated excluding these 3 Areas.

Chart 4.26
AGE-ADJUSTED MALIGNANT NEOPLASM
MORTALITY RATES
CY 1986-1988

In 1986-1988, the age-adjusted malignant neoplasm mortality rate for the IHS service area population was 99.8. When the 3 IHS Areas with apparent problems in underreporting of Indian race on death certificates are excluded, the rate is 116.3. This is 12 percent less than the U.S. All Races rate of 132.9 for 1987. However, the Alaska, Aberdeen, Bemidji, and Billings Areas had rates greater than the U.S. rate.

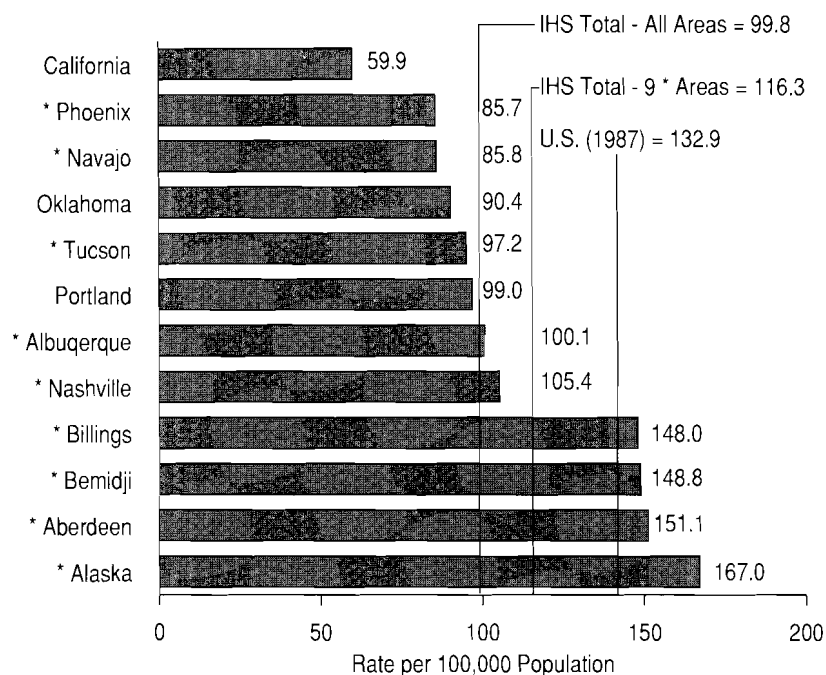


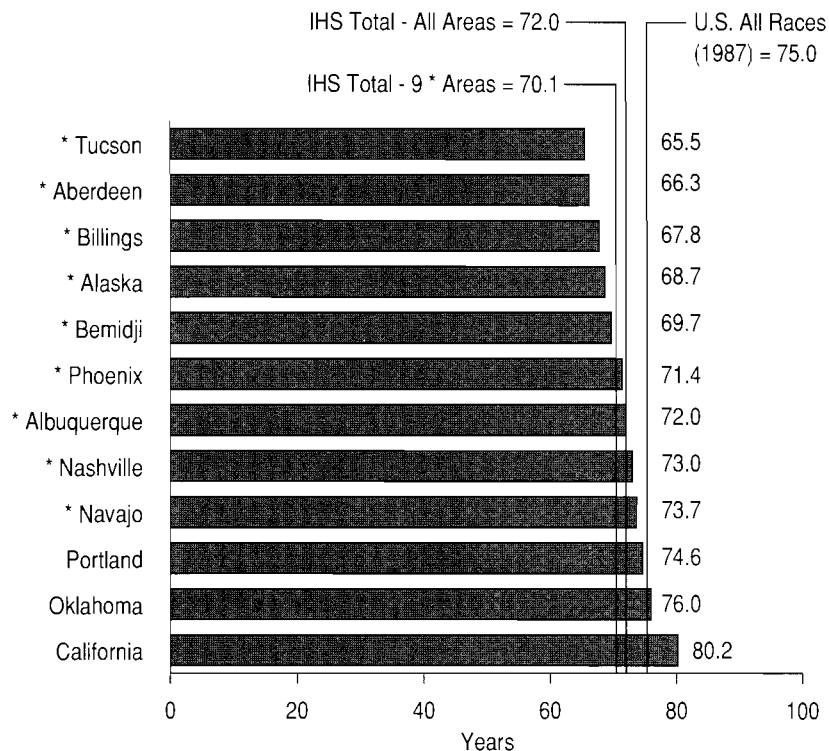
Table 4.26
AGE-ADJUSTED MALIGNANT NEOPLASM
MORTALITY RATES
CY 1986-1988

	Deaths	Rate ¹
U.S. All Races (1987)	476,927	132.9
All IHS Areas	2,344	99.8
9* Areas ²	1,492	116.3
Aberdeen*	228	151.1
Alaska*	260	167.0
Albuquerque*	107	100.1
Bemidji*	152	148.8
Billings*	132	148.0
California	105	59.9
Nashville*	99	105.4
Navajo*	312	85.8
Oklahoma	543	90.4
Phoenix*	163	85.7
Portland	204	99.0
Tucson*	39	97.2

¹ Age-adjusted rate per 100,000 population. Rates based on a small number of deaths should be interpreted with caution.

² The 3 IHS Areas that do not have an asterisk (California, Oklahoma, and Portland) appear to have a problem with underreporting of Indian race on death certificates. Therefore a separate IHS rate was calculated excluding these 3 Areas.

Chart 4.27
LIFE EXPECTANCY AT BIRTH
CY 1986-1988



In 1986-1988, the life expectancy at birth for the IHS service area population was 72.0 years. When the 3 IHS Areas with apparent problems in underreporting of Indian race on death certificates are excluded, the life expectancy is 70.1 years. This is 4.9 years less than the 1987 figure of 75.0 for the U.S. All Races population. Tucson and Aberdeen had figures approximately 9 years less than the U.S. figure.

PART 5—PATIENT CARE STATISTICS

Chart 5.1
NUMBER OF ADMISSIONS
FY 1990

In FY 1990, there were approximately 97,000 admissions to IHS and Tribal direct and contract hospitals. Approximately 37 percent of these admissions were in 2 IHS Areas, Navajo (20,381) and Oklahoma (14,899).

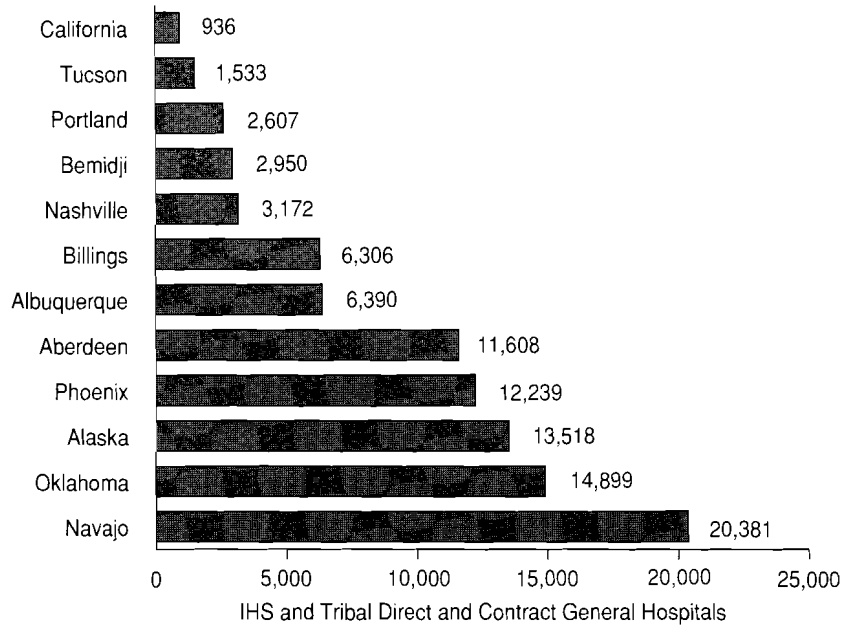


Chart 5.2
HOSPITAL ADMISSION RATES
FY 1990

The IHS admission rate of 873.9 admissions per 10,000 population in FY 1990 was 31 percent lower than the U.S. rate of 1,262.0 in CY 1989. The IHS Area rates ranged from 178.3 in California, where the IHS provides little inpatient care, to 1,537.5 in Alaska.

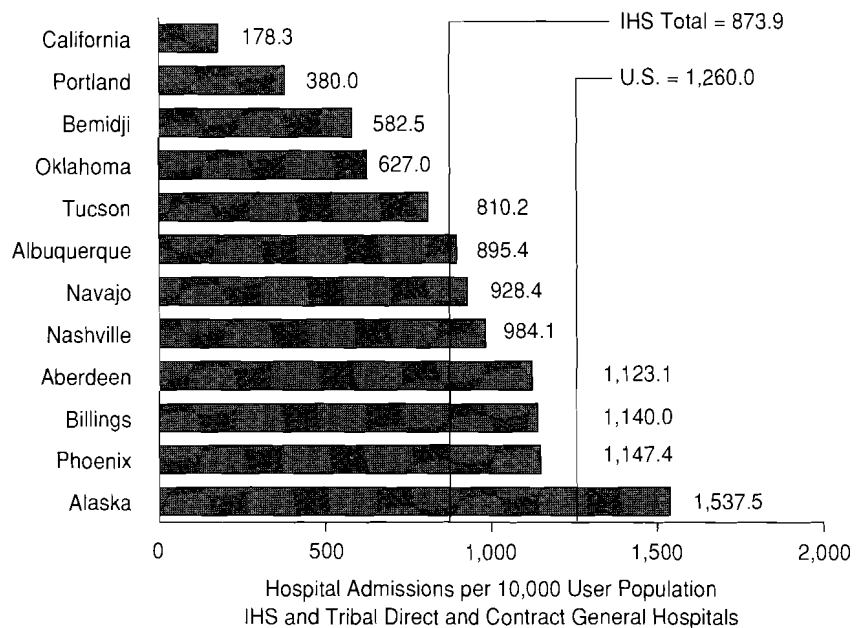


Table 5.1
NUMBER AND RATE OF ADMISSIONS

	Total Admission Rate ¹	Total Admissions	IHS Admissions		Tribal Admissions	
			Direct	Contract	Direct	Contract
<i>U.S.</i>	1,262.0	² 31,116				
<i>All IHS Areas</i>	873.9	96,539	65,972	17,490	7,022	6,055
Aberdeen	1,123.1	11,608	7,835	3,397	—	376
Alaska	1,537.5	13,518	6,965	331	4,547	1,675
Albuquerque	895.4	6,390	5,060	1,330	—	—
Bemidji	582.5	2,950	1,375	358	—	1,217
Billings	1,140.0	6,306	3,208	3,098	—	—
California	178.3	936	—	—	—	936
Nashville	984.1	3,172	1,118	170	927	957
Navajo	928.4	20,381	18,247	2,134	—	—
Oklahoma	627.0	14,899	10,813	2,429	1,548	109
Phoenix	1,147.4	12,239	10,473	1,766	—	—
Portland	380.0	2,607	—	2,149	—	458
Tucson	810.2	1,533	878	328	—	327

¹ Number of admissions per 10,000 population.

² Number of admissions in thousands.

Sources: IHS Direct: Monthly Report of Inpatient Services.

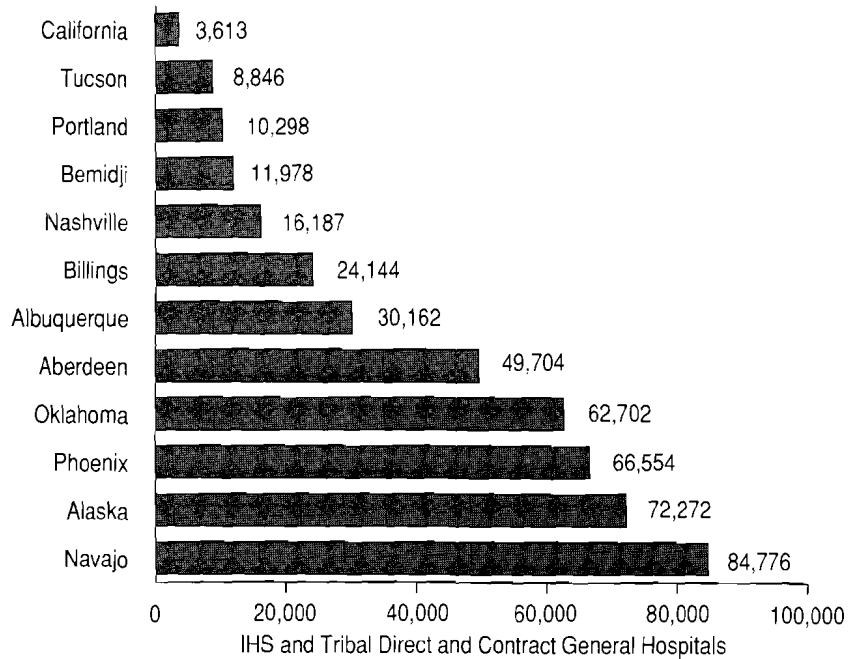
IHS Contract: Contract Statistical Systems (Report 3I).

Tribal Direct and Contract: IHS Area submissions.

U.S.: Hospital Statistics, 1990-91 Edition, American Hospital Association, Table 5A.

Indian Health Service and Tribal Direct and Contract General Hospitals, FY 1990 U.S. Short-Stay Community Hospitals, CY 1989

Chart 5.3
NUMBER OF HOSPITAL DAYS
FY 1990



The number of inpatient days in IHS and Tribal direct and contract general hospitals was over 441,000 in FY 1990. The number varied considerably among the IHS Areas, ranging from 3,613 in California to 84,776 in Navajo.

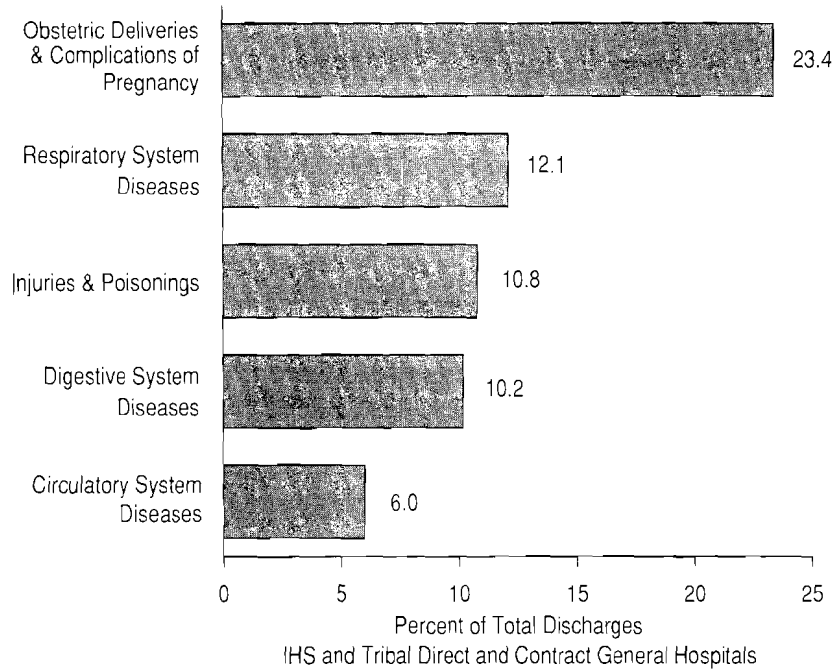
Table 5.3
NUMBER OF HOSPITAL DAYS

Indian Health Service and Tribal Direct and Contract General Hospitals, FY 1990

	Total Days	IHS Days		Tribal Days	
		Direct	Contract	Direct	Contract
<i>All Areas</i>	441,236	301,207	83,187	32,761	24,081
Aberdeen	49,704	31,682	16,616	—	1,406
Alaska	72,272	44,442	1,523	21,553	4,754
Albuquerque	30,162	25,078	5,084	—	—
Bemidji	11,978	5,140	1,471	—	5,367
Billings	24,144	10,964	13,180	—	—
California	3,613	—	—	—	3,613
Nashville	16,187	6,163	789	4,033	5,202
Navajo	84,776	73,108	11,668	—	—
Oklahoma	62,702	41,318	13,484	7,175	725
Phoenix	66,554	57,329	9,225	—	—
Portland	10,298	—	8,328	—	1,970
Tucson	8,846	5,983	1,819	—	1,044

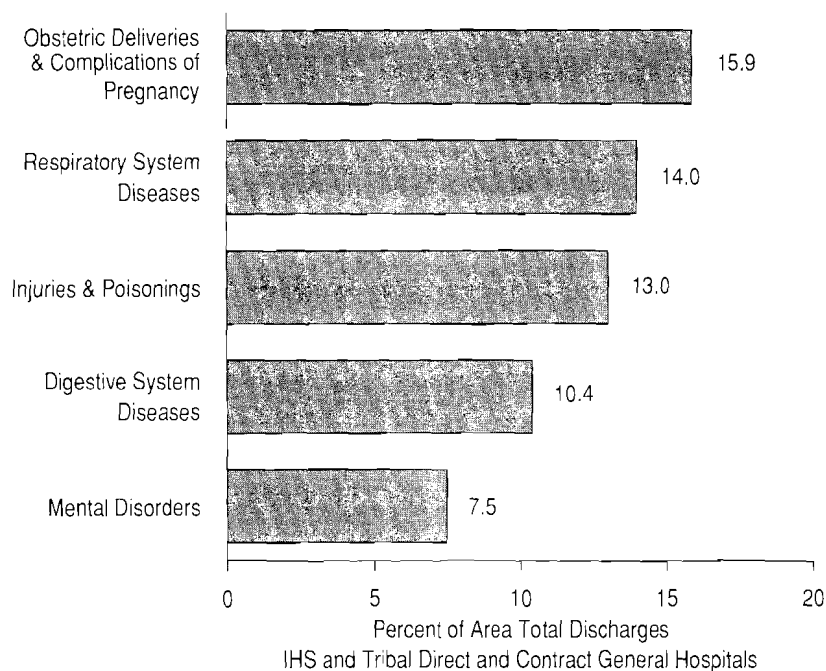
Sources: IHS Direct: Monthly Report of Inpatient Services.
 IHS Contract: Contract Statistical Systems (Report 3I).
 Tribal Direct and Contract: IHS Area submissions.

Chart 5.4
LEADING CAUSES OF HOSPITALIZATION:
ALL IHS AREAS
FY 1990



In FY 1990, 23.4 percent of all discharges from IHS and Tribal direct and contract general hospitals pertained to obstetric deliveries and complications of puerperium and pregnancy. This was followed by respiratory system diseases at 12.1 percent.

Chart 5.5
LEADING CAUSES OF HOSPITALIZATION:
ABERDEEN AREA
FY 1990



For the Aberdeen Area in FY 1990, 15.9 percent of all discharges from IHS and Tribal direct and contract general hospitals pertained to obstetric deliveries and complications of puerperium and pregnancy. This was followed by respiratory system diseases at 14.0 percent.

Chart 5.6
LEADING CAUSES OF HOSPITALIZATION:
ALASKA AREA
FY 1990

For the Alaska Area in FY 1990, 24.0 percent of all discharges from IHS and Tribal direct and contract general hospitals pertained to obstetric deliveries and complications of puerperium and pregnancy. This was followed by injuries and poisonings at 12.4 percent.

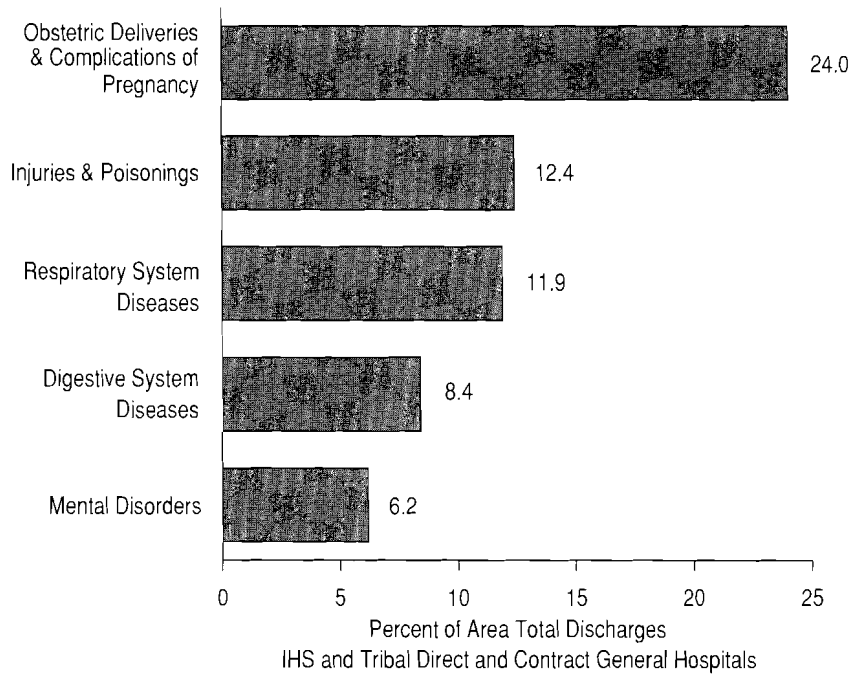


Chart 5.7
LEADING CAUSES OF HOSPITALIZATION:
ALBUQUERQUE AREA
FY 1990

For the Albuquerque Area in FY 1990, 20.2 percent of all discharges from IHS and Tribal direct and contract general hospitals pertained to obstetric deliveries and complications of puerperium and pregnancy. This was followed by injuries and poisonings at 11.3 percent.

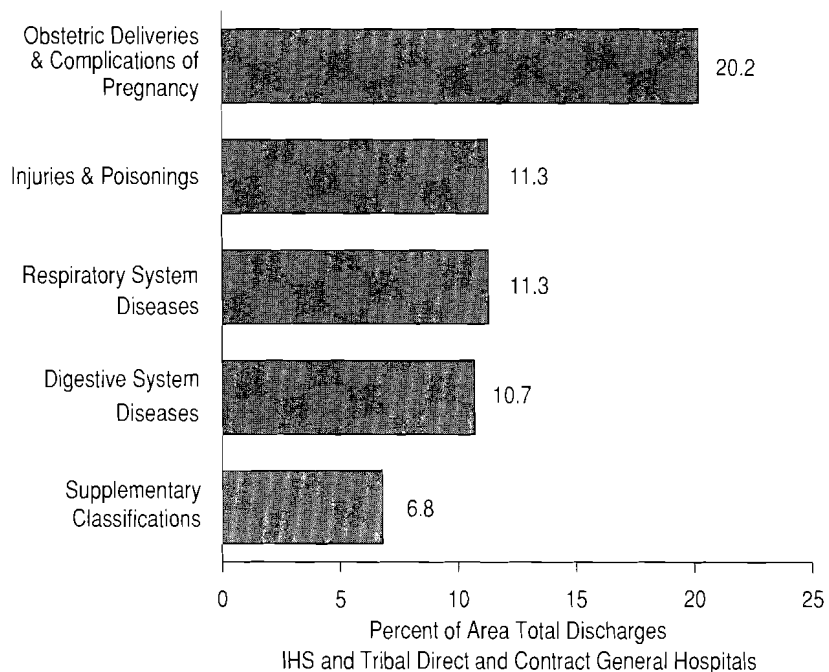
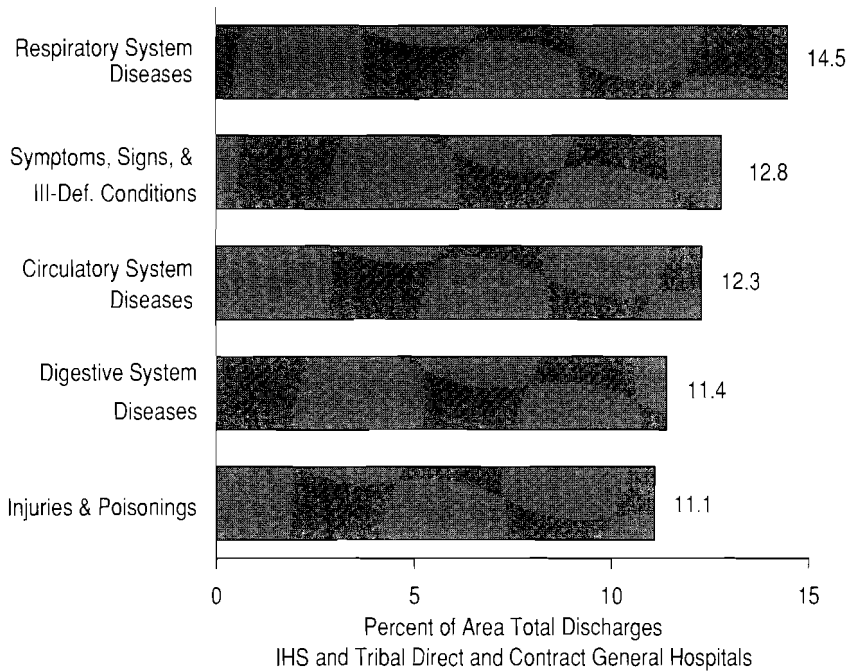
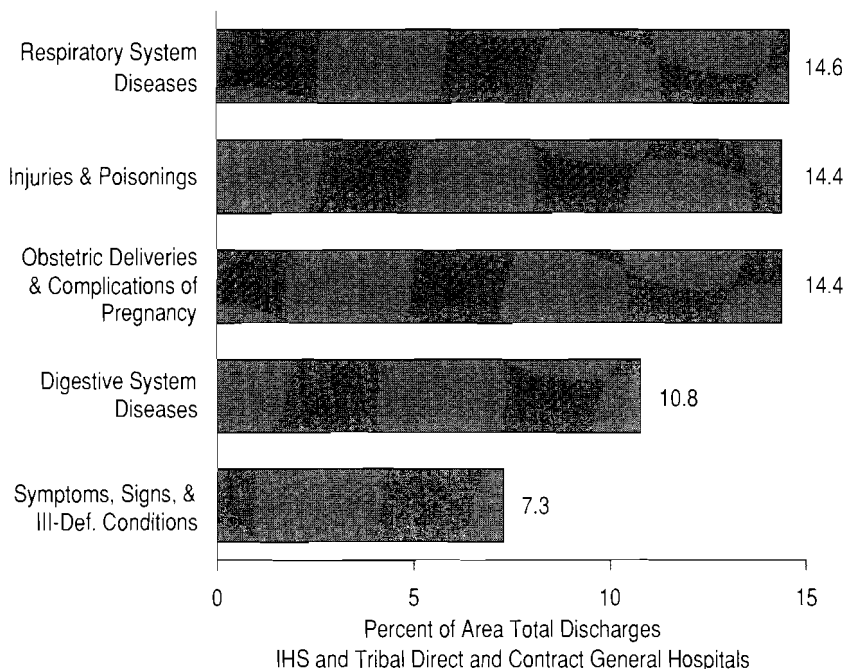


Chart 5.8
LEADING CAUSES OF HOSPITALIZATION:
BEMIDJI AREA
FY 1990



For the Bemidji Area in FY 1990, 14.5 percent of all discharges from IHS and Tribal direct and contract general hospitals pertained to respiratory system diseases. This was followed by symptoms, signs, and ill-defined conditions at 12.8 percent.

Chart 5.9
LEADING CAUSES OF HOSPITALIZATION:
BILLINGS AREA
FY 1990



For the Billings Area in FY 1990, 14.6 percent of all discharges from IHS and Tribal direct and contract general hospitals pertained to respiratory system diseases. This was followed by injuries and poisonings at 14.4 percent.

Chart 5.10
LEADING CAUSES OF HOSPITALIZATION:
CALIFORNIA AREA
FY 1990

There were no diagnostic inpatient data available for the California Area in FY 1990.

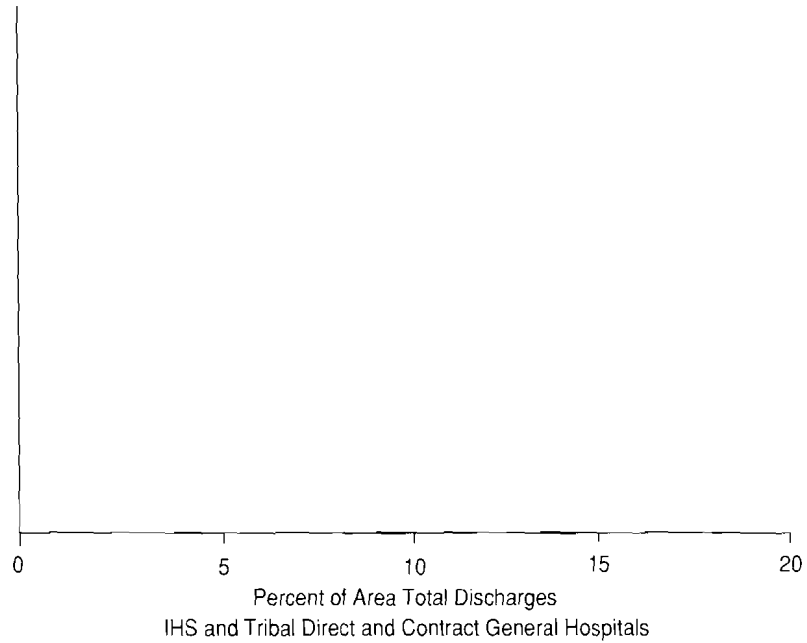


Chart 5.11
LEADING CAUSES OF HOSPITALIZATION:
NASHVILLE AREA
FY 1990

For the Nashville Area in FY 1990, 12.9 percent of all discharges from IHS and Tribal direct and contract general hospitals pertained to respiratory system diseases. This was followed by obstetric deliveries and complications of puerperium and pregnancy at 12.4 percent.

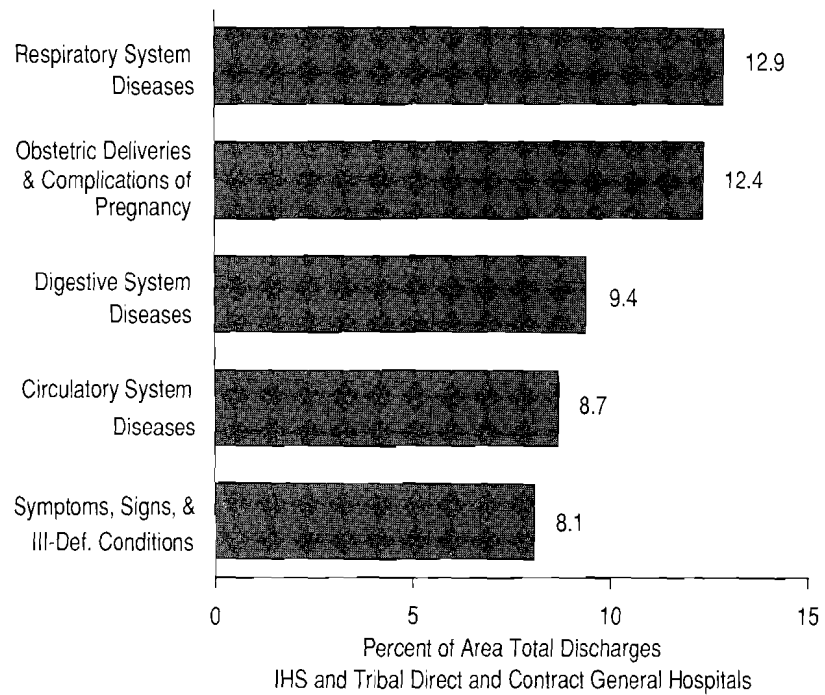
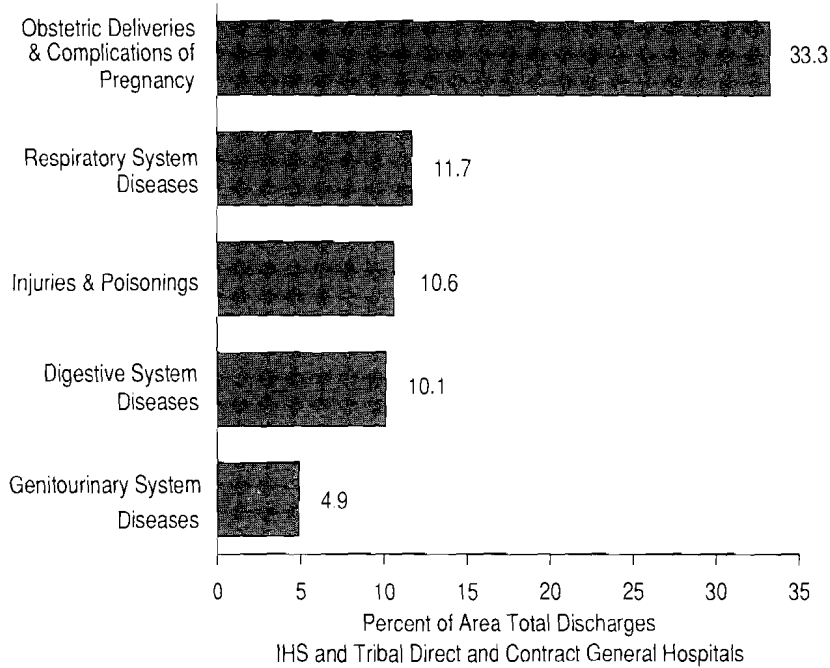
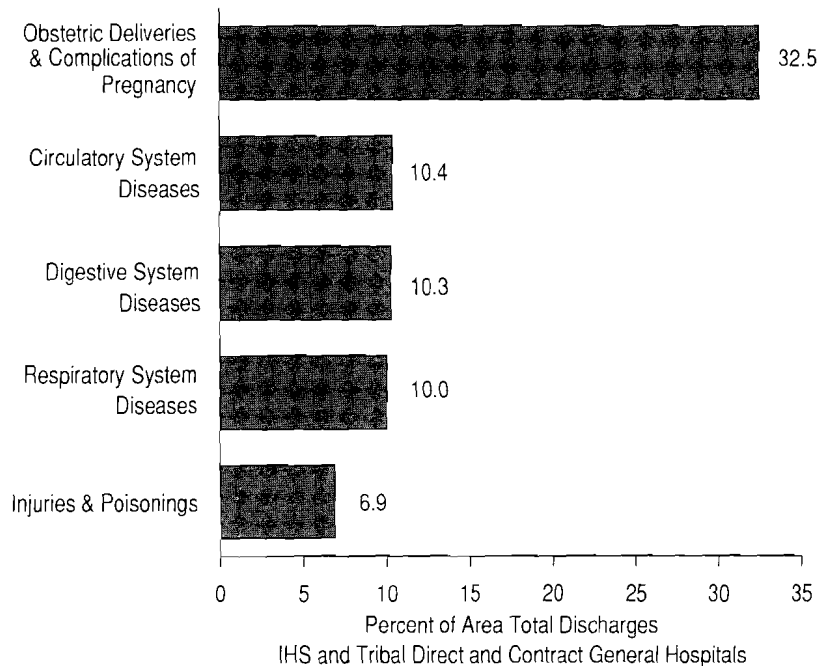


Chart 5.12
LEADING CAUSES OF HOSPITALIZATION:
NAVAJO AREA
FY 1990



For the Navajo Area in FY 1990, 33.3 percent of all discharges from IHS and Tribal direct and contract general hospitals pertained to obstetric deliveries and complications of puerperium and pregnancy. This was followed by respiratory system diseases at 11.7 percent.

Chart 5.13
LEADING CAUSES OF HOSPITALIZATION:
OKLAHOMA AREA
FY 1990



For the Oklahoma Area in FY 1990, 32.5 percent of all discharges from IHS and Tribal direct and contract general hospitals pertained to obstetric deliveries and complications of puerperium and pregnancy. This was followed by circulatory system diseases at 10.4 percent.

Chart 5.14
LEADING CAUSES OF HOSPITALIZATION:
PHOENIX AREA
FY 1990

For the Phoenix Area in FY 1990, 16.7 percent of all discharges from IHS and Tribal direct and contract general hospitals pertained to obstetric deliveries and complications of puerperium and pregnancy. This was followed by respiratory system diseases at 12.1 percent.

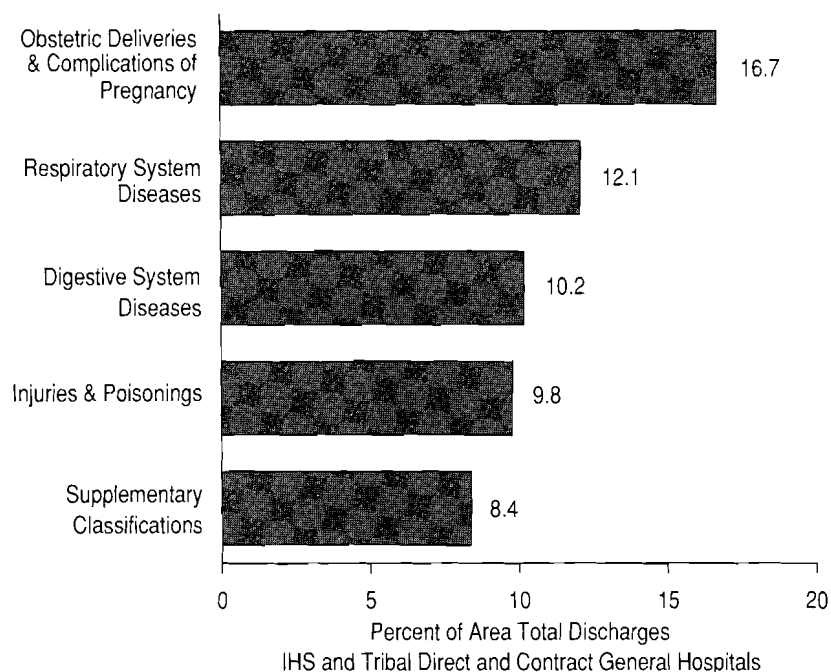


Chart 5.15
LEADING CAUSES OF HOSPITALIZATION:
PORTLAND AREA
FY 1990

For the Portland Area in FY 1990, 18.4 percent of all discharges from IHS and Tribal direct and contract general hospitals pertained to obstetric deliveries and complications of puerperium and pregnancy. This was followed by injuries and poisonings at 13.5 percent.

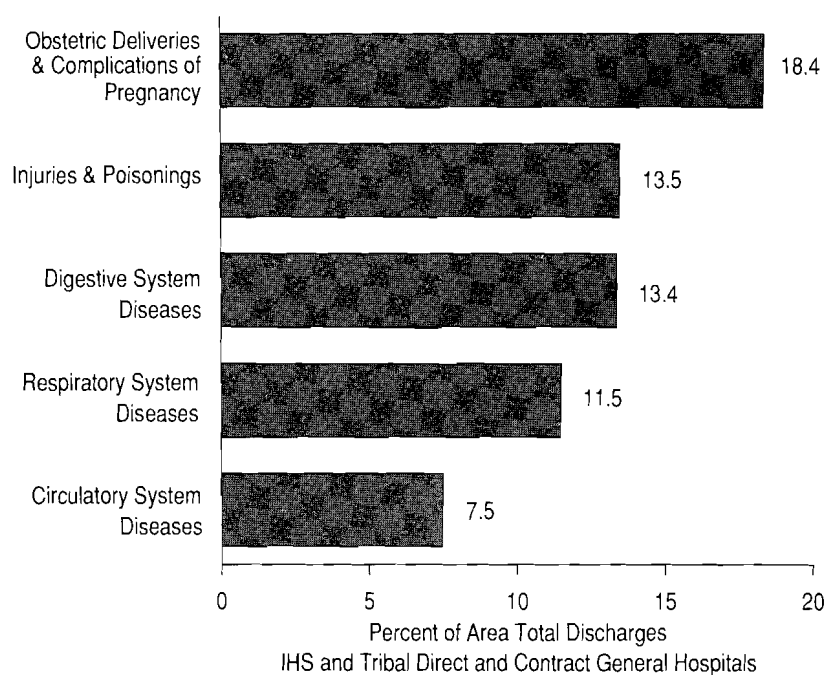
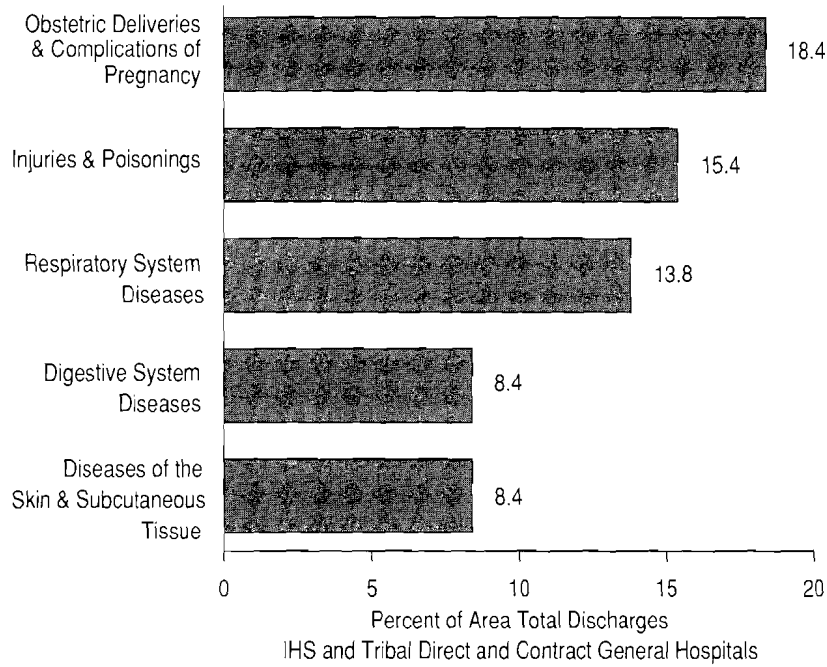


Chart 5.16
LEADING CAUSES OF HOSPITALIZATION:
TUCSON AREA
FY 1990



For the Tucson Area in FY 1990, 18.4 percent of all discharges from IHS and Tribal direct and contract general hospitals pertained to obstetric deliveries and complications of puerperium and pregnancy. This was followed by injuries and poisonings at 15.4 percent.

Chart 5.17
NUMBER OF OUTPATIENT VISITS
FY 1990

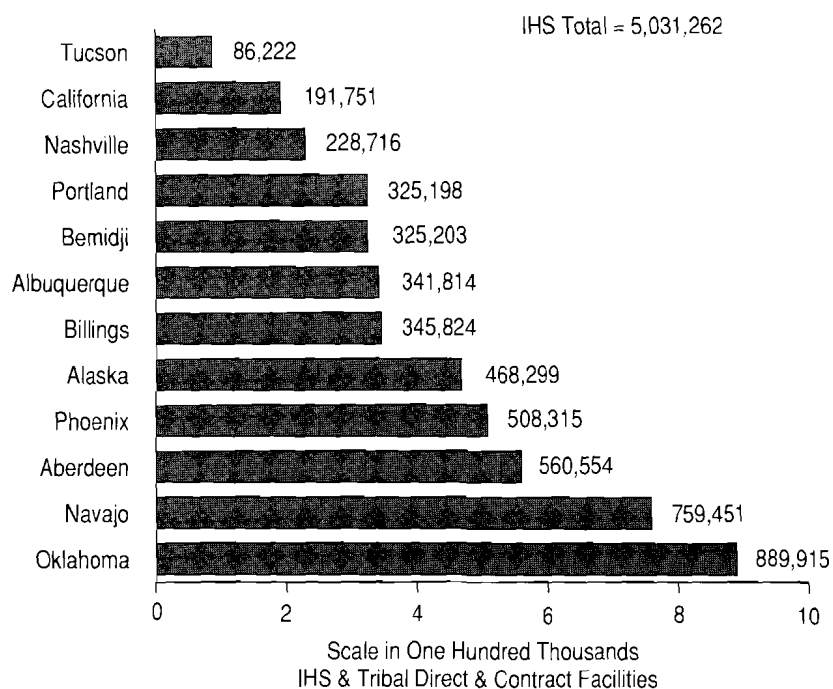


Table 5.17
NUMBER OF OUTPATIENT VISITS

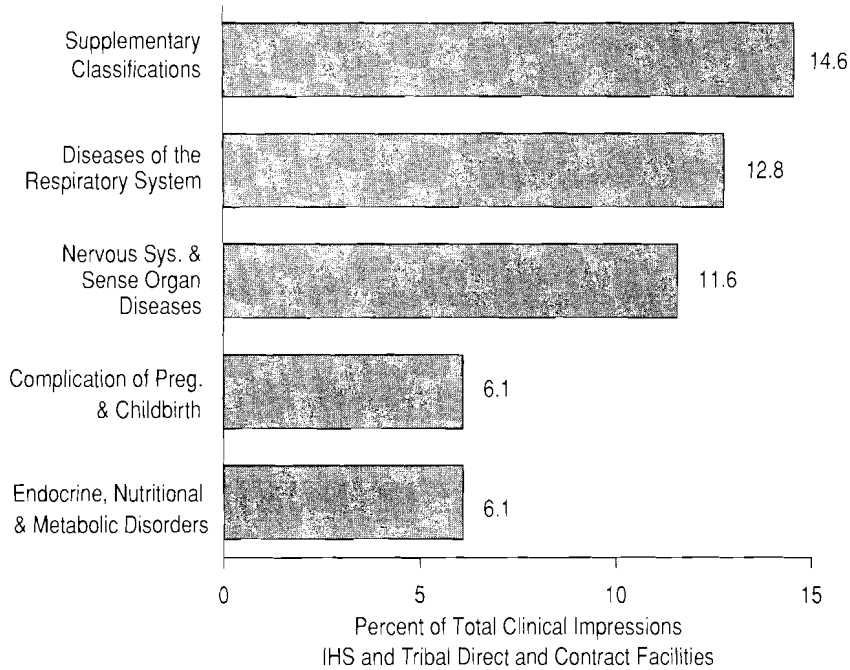
	Total	Indian Health Service		Tribal	
		Direct	Contract	Direct	Contract
All Areas	5,031,262	3,629,952	161,001	1,084,923	155,386
Aberdeen	560,554	483,461	14,649	57,906	4,538
Alaska	468,299	209,506	1,761	209,667	47,365
Albuquerque	341,814	316,237	6,415	19,162	—
Bemidji	325,203	118,666	3,244	175,422	27,871
Billings	345,824	316,179	29,645	—	—
California	191,751	—	—	172,604	19,147
Nashville	228,716	64,341	1,289	127,150	35,936
Navajo	759,451	715,025	44,426	—	—
Oklahoma	889,915	629,358	11,087	245,425	4,045
Phoenix	508,315	464,994	10,130	33,191	—
Portland	325,198	244,974	38,000	32,646	9,578
Tucson	86,222	67,211	355	11,750	6,906

Sources: IHS Direct: APC Data System (Report 1A).
 IHS Contract: Contract Statistical Data System (Report 3G).
 Tribal Direct and Contract: Area Submissions.

In FY 1990, there were over 5 million outpatient visits to IHS and Tribal direct and contract facilities. Two IHS Areas had 33 percent of the visits, Oklahoma (889,915) and Navajo (759,451).

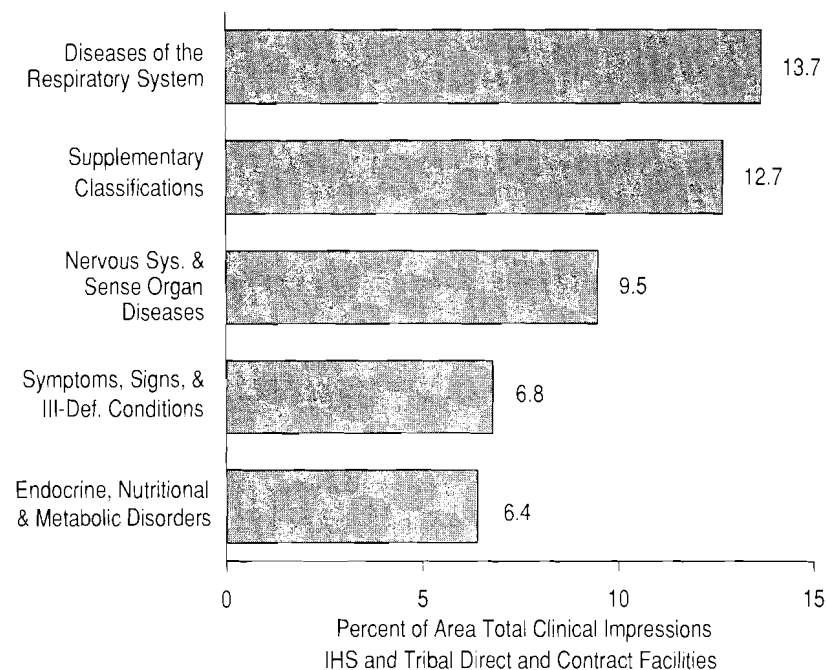
Indian Health Service and Tribal Direct and Contract Facilities, FY 1990

Chart 5.18
LEADING CAUSES OF OUTPATIENT VISITS:
ALL IHS AREAS
FY 1990



In FY 1990, 14.6 percent of all clinical impressions in IHS and Tribal direct and contract facilities pertained to supplementary classifications. This was followed by diseases of the respiratory system at 12.8 percent.

Chart 5.19
LEADING CAUSES OF OUTPATIENT VISITS:
ABERDEEN AREA
FY 1990



For the Aberdeen Area in FY 1990, 13.7 percent of all clinical impressions in IHS and Tribal direct and contract facilities pertained to diseases of the respiratory system. This was followed by supplementary classifications at 12.7 percent.

Chart 5.20
LEADING CAUSES OF OUTPATIENT VISITS:
ALASKA AREA
FY 1990

For the Alaska Area in FY 1990, 19.2 percent of all clinical impressions in IHS and Tribal direct and contract facilities pertained to supplementary classifications. This was followed by nervous system and sense organ diseases at 12.6 percent.

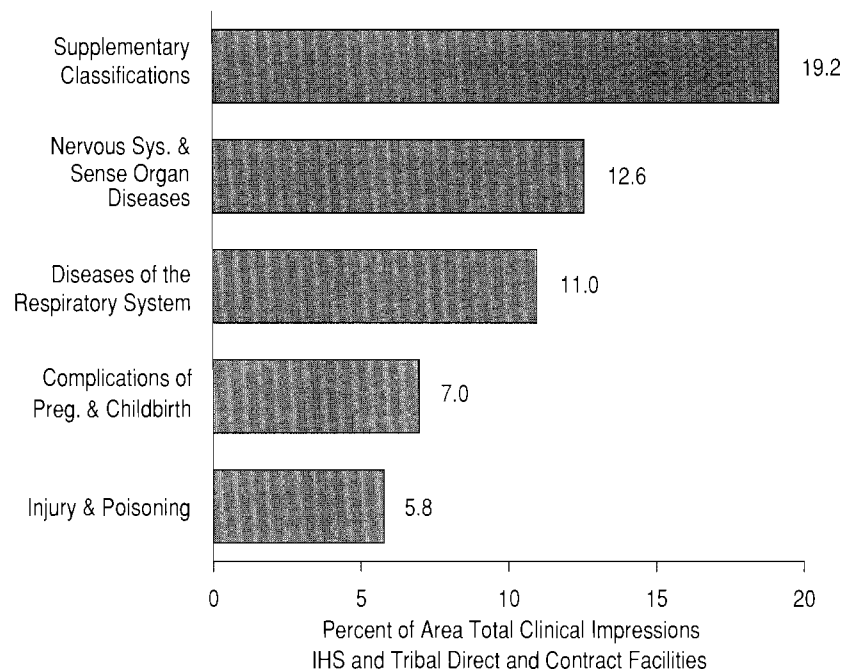


Chart 5.21
LEADING CAUSES OF OUTPATIENT VISITS:
ALBUQUERQUE AREA
FY 1990

For the Albuquerque Area in FY 1990, 14.4 percent of all clinical impressions in IHS and Tribal direct and contract facilities pertained to supplementary classifications. This was followed by nervous system and sense organ diseases at 13.7 percent.

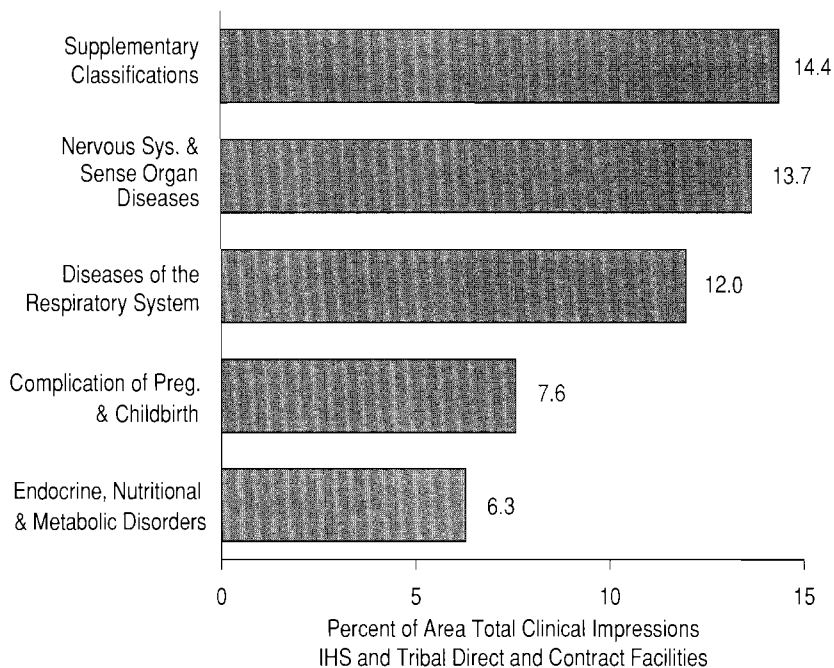
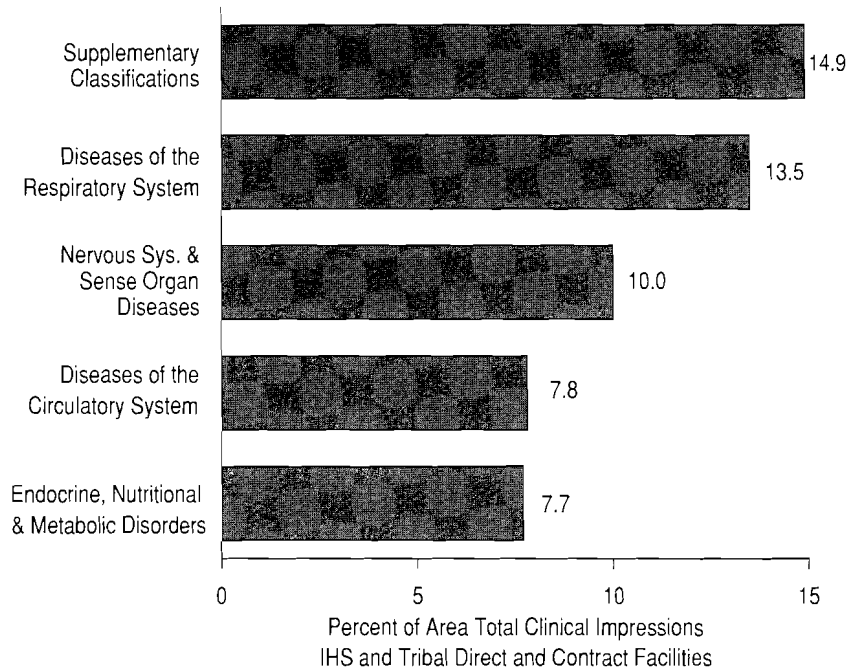
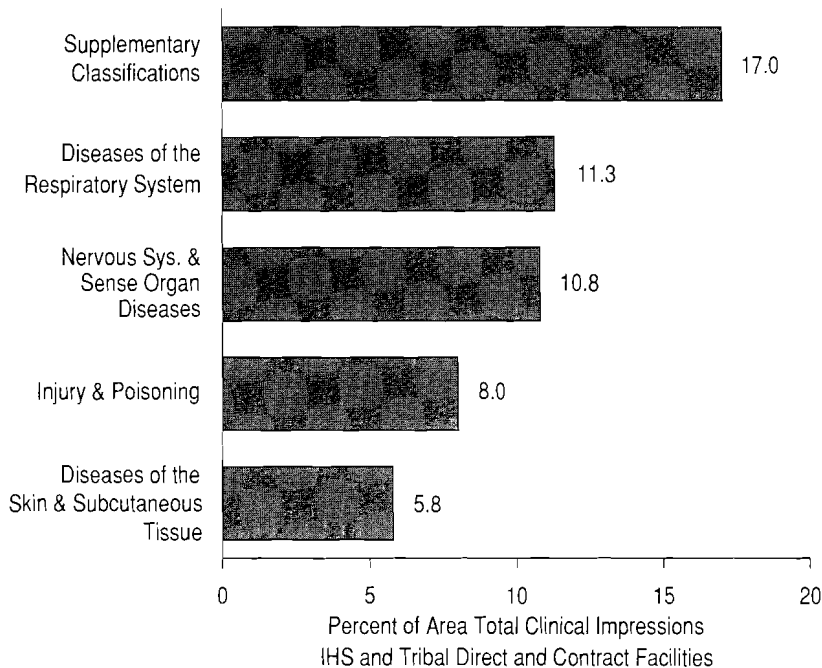


Chart 5.22
LEADING CAUSES OF OUTPATIENT VISITS:
BEMIDJI AREA
FY 1990



For the Bemidji Area in FY 1990, 14.9 percent of all clinical impressions in IHS and Tribal direct and contract facilities pertained to supplementary classifications. This was followed by diseases of the respiratory system at 13.5 percent.

Chart 5.23
LEADING CAUSES OF OUTPATIENT VISITS:
BILLINGS AREA
FY 1990



For the Billings Area in FY 1990, 17.0 percent of all clinical impressions in IHS and Tribal direct and contract facilities pertained to supplementary classifications. This was followed by diseases of the respiratory system at 11.3 percent.

Chart 5.24
LEADING CAUSES OF OUTPATIENT VISITS:
CALIFORNIA AREA
FY 1990

For the California Area in FY 1990, 14.3 percent of all clinical impressions in Tribal direct and contract facilities pertained to diseases of the respiratory system. This was followed by supplementary classifications at 14.0 percent.

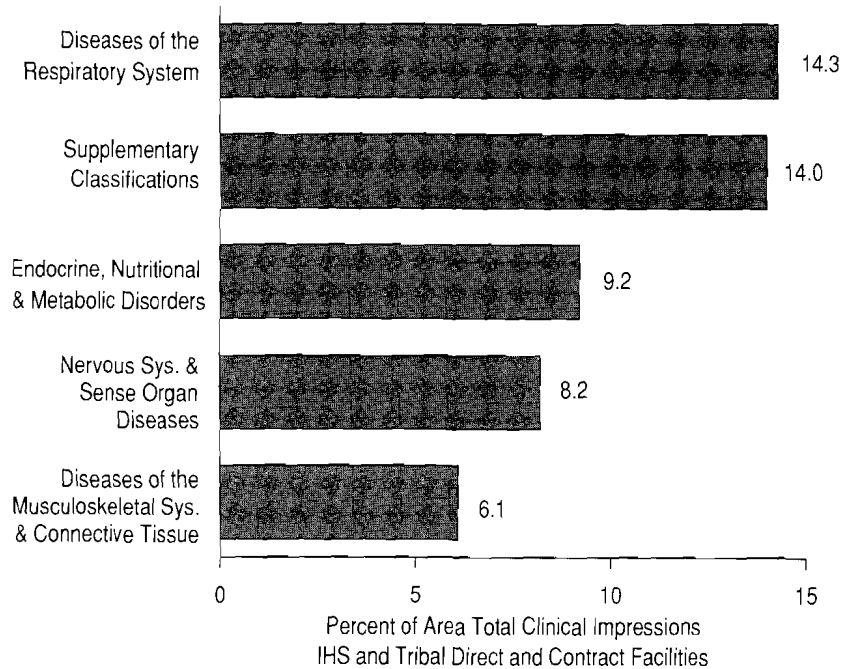


Chart 5.25
LEADING CAUSES OF OUTPATIENT VISITS:
NASHVILLE AREA
FY 1990

For the Nashville Area in FY 1990, 17.1 percent of all clinical impressions in IHS and Tribal direct and contract facilities pertained to supplementary classifications. This was followed by diseases of the respiratory system at 11.9 percent.

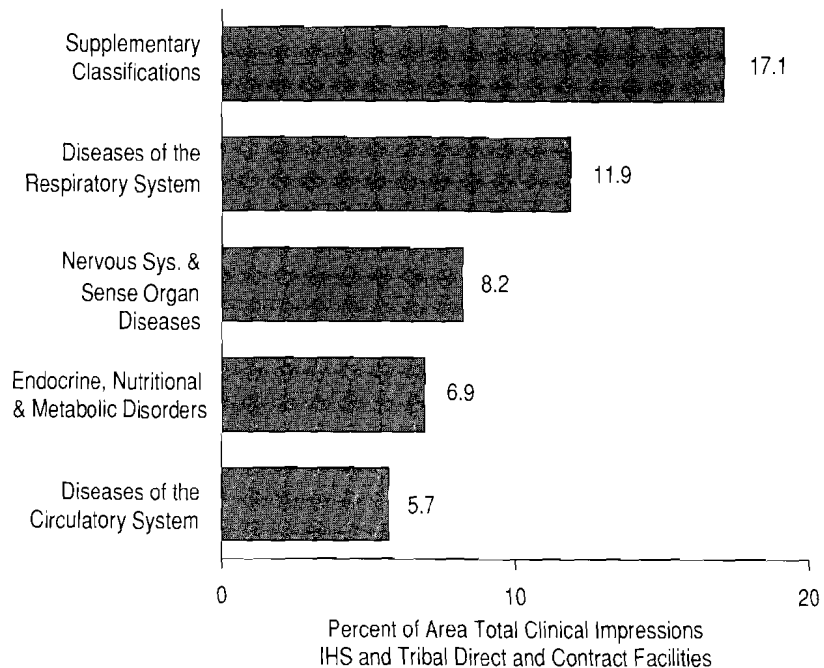
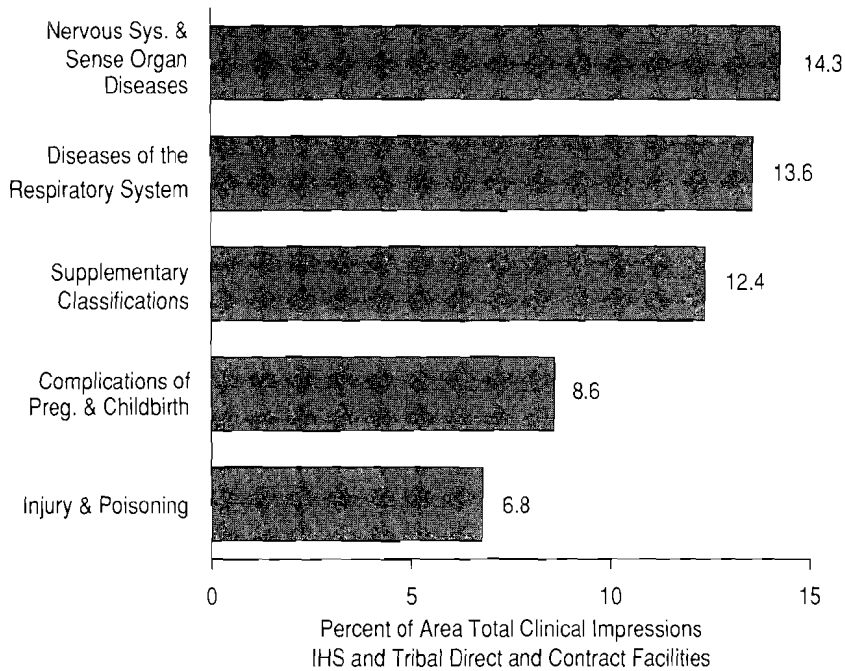
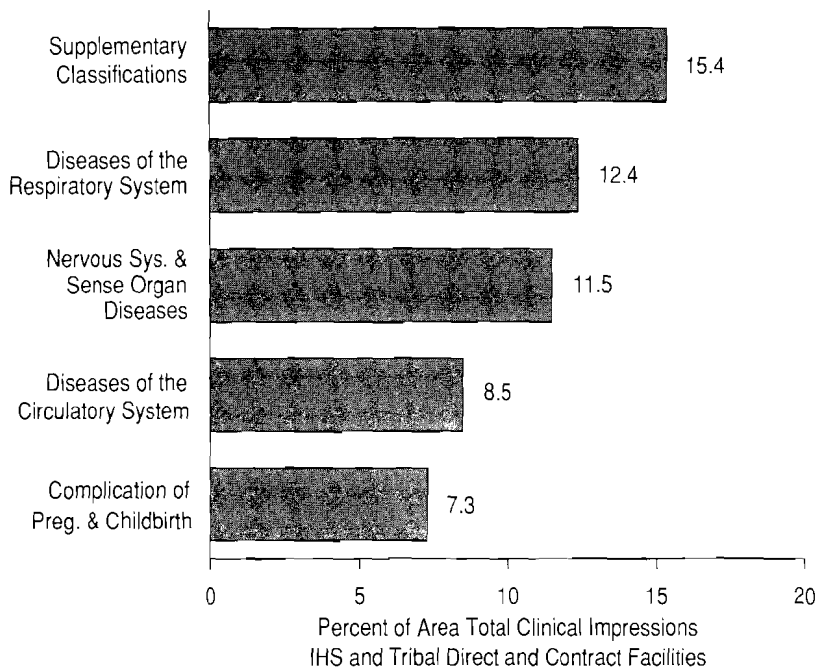


Chart 5.26
LEADING CAUSES OF OUTPATIENT VISITS:
NAVAJO AREA
FY 1990



For the Navajo Area in FY 1990, 14.3 percent of all clinical impressions in IHS and Tribal direct and contract facilities pertained to nervous system and sense organ diseases. This was followed by diseases of the respiratory system at 13.6 percent.

Chart 5.27
LEADING CAUSES OF OUTPATIENT VISITS:
OKLAHOMA AREA
FY 1990



For the Oklahoma Area in FY 1990, 15.4 percent of all clinical impressions in IHS and Tribal direct and contract facilities pertained to supplementary classifications. This was followed by diseases of the respiratory system at 12.4 percent.

Chart 5.28
LEADING CAUSES OF OUTPATIENT VISITS:
PHOENIX AREA
FY 1990

For the Phoenix Area in FY 1990, 14.0 percent of all clinical impressions in IHS and Tribal direct and contract facilities pertained to supplementary classifications. This was followed by nervous system and sense organ diseases at 13.9 percent.

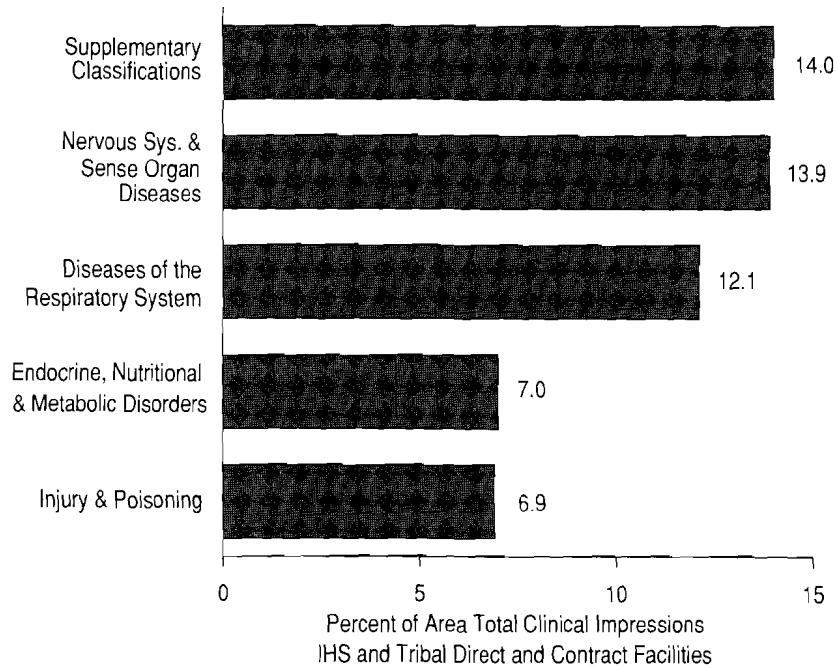


Chart 5.29
LEADING CAUSES OF OUTPATIENT VISITS:
PORTLAND AREA
FY 1990

For the Portland Area in FY 1990, 15.4 percent of all clinical impressions in IHS and Tribal direct and contract facilities pertained to diseases of the respiratory system. This was followed by supplementary classifications at 13.5 percent.

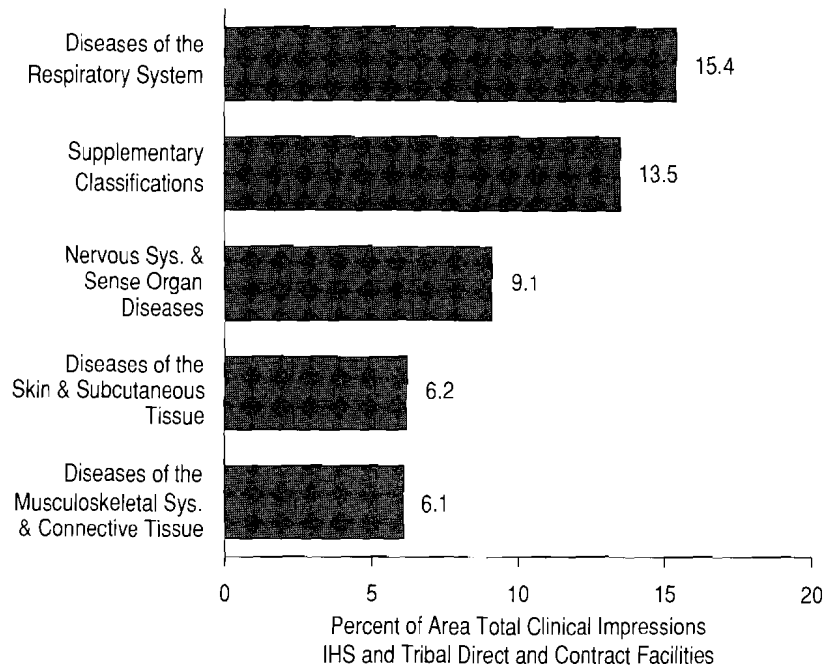
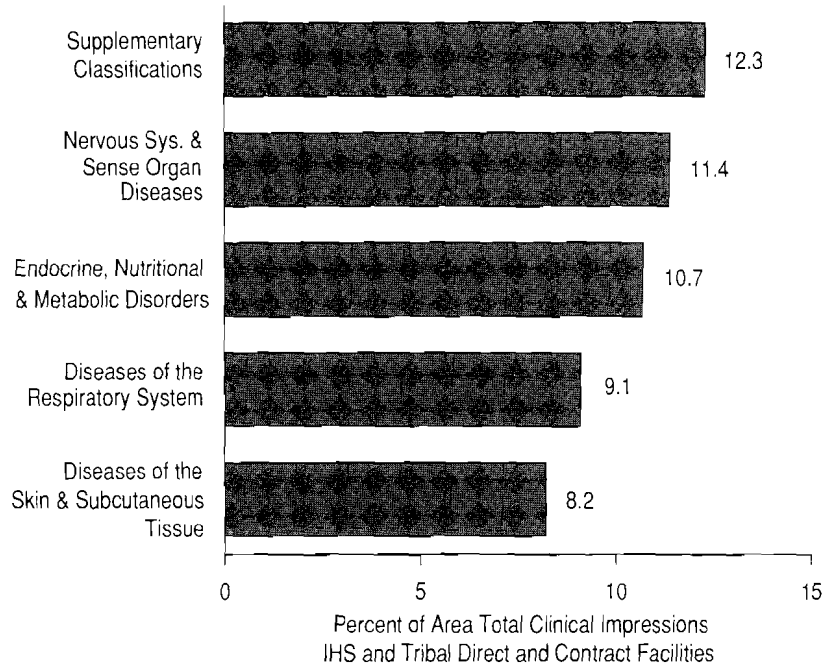
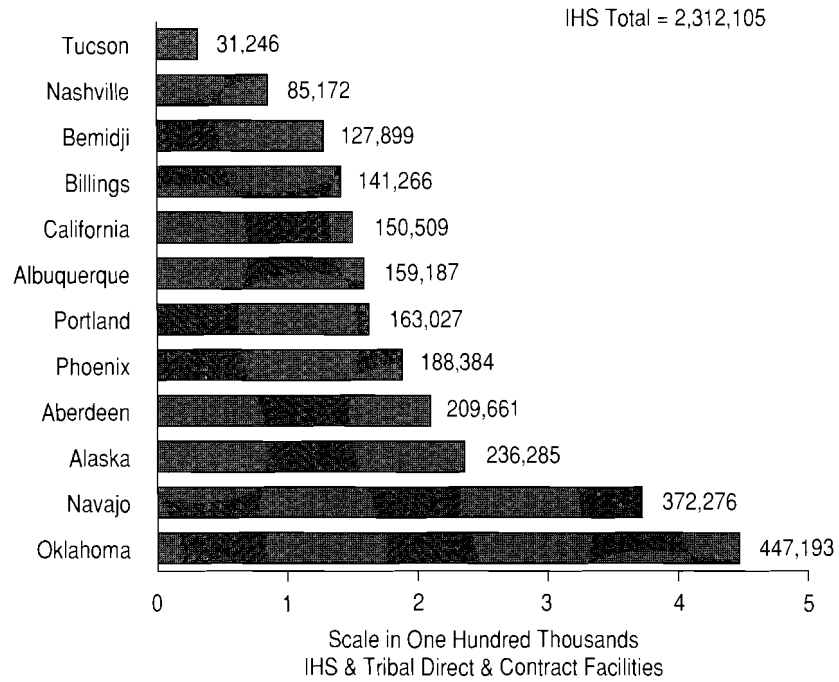


Chart 5.30
LEADING CAUSES OF OUTPATIENT VISITS:
TUCSON AREA
FY 1990



For the Tucson Area in FY 1990, 12.3 percent of all clinical impressions in IHS and Tribal direct and contract facilities pertained to supplementary classifications. This was followed by nervous system and sense organ diseases at 11.4 percent.

Chart 5.31
NUMBER OF DENTAL SERVICES PROVIDED
FY 1991



In FY 1990, there were over 2.3 million dental services provided at IHS and Tribal direct and contract facilities. Two IHS Areas provided 35 percent of the dental services, Oklahoma (447,193) and Navajo (372,276).

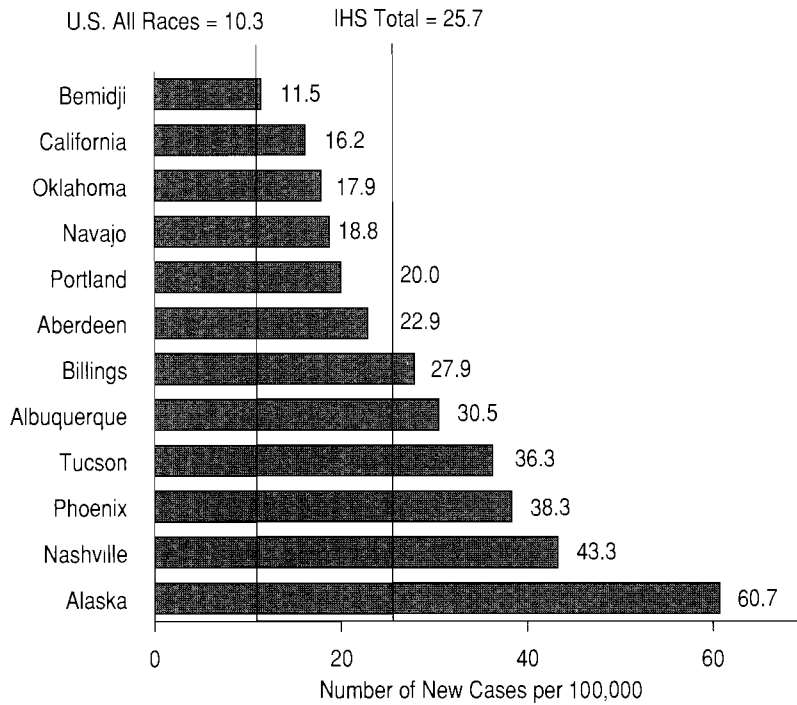
Table 5.31
NUMBER OF DENTAL SERVICES PROVIDED

	Total		IHS Direct		IHS Contract		Tribal Direct		Tribal Contract	
	Patients	Services	Patients	Services	Patients	Services	Patients	Services	Patients	Services
All IHS Areas	354,006	2,312,105	233,022	1,516,254	21,863	133,253	95,721	641,732	3,400	20,866
Aberdeen	34,419	209,661	26,049	161,521	2,131	9,753	5,801	36,026	438	2,361
Alaska	37,370	236,285	9,188	62,389	422	7,267	27,760	166,629	0	0
Albuquerque	23,702	159,187	22,182	148,917	139	726	1,381	9,544	0	0
Bemidji	18,418	127,899	6,900	40,580	1,079	11,568	9,399	70,428	1,040	5,323
Billings	21,547	141,266	19,356	130,476	2,191	10,790	0	0	0	0
California	20,586	150,509	0	0	0	0	20,361	148,869	225	1,640
Nashville	12,743	85,172	3,123	22,966	106	551	8,538	55,609	976	6,046
Navajo	63,721	372,276	54,652	338,724	9,069	33,552	0	0	0	0
Oklahoma	63,192	447,193	42,953	297,493	2,792	32,235	17,142	115,239	305	2,226
Phoenix	29,595	188,384	26,078	169,999	1,287	4,705	2,064	12,470	166	1,210
Portland	22,692	163,027	18,315	117,568	852	16,461	3,275	26,918	250	2,060
Tucson	6,021	31,246	4,226	25,601	1,795	5,645	0	0	0	0

Source: IHS Dental Data Reporting System.

Indian Health Service and Tribal Direct and Contract Facilities, FY 1991

Chart 5.32
RATE OF NEW TUBERCULOSIS CASES
CY 1990



The rate of new tuberculosis cases for the IHS in CY 1990 was 2.5 times the rate for the U.S., 25.7 new cases per 100,000 population compared to 10.3. Each IHS Area had a rate greater than the U.S. rate. Alaska, Nashville, Phoenix, and Tucson had rates greater than 35.0.

Table 5.32
NUMBER AND RATE OF NEW
TUBERCULOSIS CASES
CY 1990

	Case Rate ¹	Number of Cases
U.S.	10.3	25,701
All IHS Areas	25.7	298
Aberdeen	22.9	17
Alaska	60.7	52
Albuquerque	30.5	20
Bemidji	11.5	7
Billings	27.9	13
California	16.2	15
Nashville	43.3	21
Navajo	18.8	34
Oklahoma	17.9	46
Phoenix	38.3	41
Portland	20.0	24
Tucson	36.3	8

¹ Number of new cases per 100,000 population.
 Source: Centers for Disease Control (data by state and county).



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