



Trends

in Indian Health

1998–99

Department of Health and Human Services

Donna E. Shalala

Secretary

Indian Health Service

Michael H. Trujillo, M.D., M.P.H., M.S.

Director

Office of Public Health

Gary J. Hartz, P.E.

Acting Director

Program Statistics Team

Edna L. Paisano

Team Leader



Preface

Since 1955, the Indian Health Service (IHS) 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 provide a comprehensive health services delivery system for American Indians and Alaska Natives with opportunity for maximum Tribal involvement in developing and managing programs to meet their health needs.

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, patient care, and community health are included. Current and trend information are presented, and comparisons with other population groups are made, when appropriate.



Michael H. Trujillo, M.D., M.P.H., M.S.

Assistant Surgeon General

Director, Indian Health Service

Contents

Overview of the Indian Health Service Program	1
Purpose and Description of Trends in Indian Health	3
Summary of Data Shown	5
Indian Health Service Structure	5
Population Statistics	5
Natality and Infant/Maternal Mortality Statistics	6
General Mortality Statistics	6
Patient Care Statistics	7
Community Health Statistics	7
Initiative to Eliminate Racial and Ethnic Disparities in Health	9
Sources and Limitations of Data	13
Population Statistics	13
Vital Event Statistics	14
Patient Care Statistics	17
Community Health Statistics	18
Glossary	21
Sources of Additional Information	23

Tables and Charts

Part 1 – Indian Health Service Structure

Chart 1.1	Indian Health Service	25
Chart 1.2	Indian Health Service Area Offices	25
Chart 1.3	Indian and Alaska Native Tribal Governments	26
Chart 1.4	Urban Indian Health Programs.....	26
Chart 1.5	Number of Facilities Operated by Indian Health Service and Tribes	27
Chart 1.6	Trend in Indian Health Service Budget	27
Table 1.6	Trend in Indian Health Service Budget	28
Chart 1.7	Accreditation Status of Selected Health Facilities	29
Table 1.7	Accreditation Status of Hospitals, Health Centers, and Regional Youth Treatment Centers	29
Chart 1.8	Accreditation Status of Indian Health Service Laboratories	30
Table 1.8	Indian Health Service Laboratory Accreditation Status.....	30
Chart 1.9	Proficiency Rating for Indian Health Service Laboratory Services	31
Table 1.9	Proficiency Rating for Indian Health Service Laboratory Services	31
Chart 1.10	Outpatient Prescriptions Filled per Pharmacist	32

Contents

Table 1.10	Outpatient Prescriptions Filled per Pharmacist	32
Chart 1.11	Pharmacy Workload by Type of Activity	33
Table 1.11	Pharmacy Workload by Type of Activity	33
Chart 1.12	Ambulatory Medical Visits per Pharmacist	34
Table 1.12	Ambulatory Medical Visits per Pharmacist	34

Part 2—Population Statistics

Chart 2.1	Indian Health Service—Service Population	35
Chart 2.2	Indian Health Service—Service Population by Area	35
Table 2.1	Indian Health Service—Service Population by Area	36
Chart 2.3	Population by Age and Sex, 1990 Census	37
Table 2.3	Age and Sex Percent Distribution	38
Chart 2.4	Population by Age, 1990	39
Table 2.4	Percent Age Distribution	39
Chart 2.5	Educational Attainment	40
Chart 2.6	Employment Status by Sex	40
Chart 2.7	Income Status in 1989	41
Table 2.5	Selected Economic Profiles for the United States, 1990 Census	42
Chart 2.8	Urban Indian Health Programs Service Area Population	43
Table 2.8	Urban Indian Health Programs Service Area Population by Category	43

Part 3— Nativity and Infant/Maternal Mortality Statistics

Chart 3.1	Birth Rates	45
Table 3.1	Number and Rate of Live Births	46
Chart 3.2	Births of Low Weight (Under 2,500 Grams) as a Percent of Total Live Births by Age of Mother	47
Table 3.2	Births of Low Birthweight (Under 2,500 Grams) by Age of Mother	48
Chart 3.3	Births of High Weight (4,000 Grams or More) as a Percent of Total Live Births by Age of Mother	49
Table 3.3	Births of High Birthweight (4,000 Grams or More) by Age of Mother	50
Chart 3.4	Birth Order by Age of Mother, Percent Within Birth Order, American Indians and Alaska Natives	51
Chart 3.5	Birth Order by Age of Mother—U.S. All Races	51
Chart 3.6	Birth Order by Age of Mother—U.S. White	52
Table 3.4	Number and Percent Distribution of Live Births by Age of Mother within Birth Order	53
Chart 3.7	Maternal Death Rates	54
Table 3.7	Maternal Deaths and Death Rates	55
Chart 3.8	Infant Mortality Rates	56
Table 3.8	Infant Mortality Rates	57
Chart 3.9	Infant Mortality Rates by Age	58
Table 3.9	Infant Mortality Rates by Age	59

Contents

Chart 3.10	Leading Causes of Infant Deaths	60	Table 4.6	Ten Leading Causes of Death for Decedents 55 to 64 Years of Age	70
Chart 3.11	Leading Causes of Neonatal Deaths	61	Chart 4.7	Death Rates, Leading Causes: Ages 65+ Years	71
Chart 3.12	Leading Causes of Postneonatal Deaths	62	Table 4.7	Ten Leading Causes of Death for Decedents 65 Years Old and Older	71
Table 3.10	Leading Causes of Infant Deaths by Age	63	Chart 4.8	Death Rates for Leading Causes	72
Part 4—General Mortality Statistics					
Chart 4.1	Death Rates, Leading Causes: Ages 1 to 4 years	65	Table 4.8	Ten Leading Causes of Death for Decedents of All Ages	72
Table 4.1	Ten Leading Causes of Death for Decedents 1 to 4 Years of Age	65	Chart 4.9	Death Rates, Leading Causes: Males	73
Chart 4.2	Death Rates, Leading Causes: Ages 5 to 14 Years	66	Chart 4.10	Death Rates, Leading Causes: Females	73
Table 4.2	Ten Leading Causes of Death for Decedents 5 to 14 Years of Age	66	Table 4.9	Leading Causes of Death by Sex	74
Chart 4.3	Death Rates, Leading Causes: Ages 15 to 24 Years	67	Chart 4.11	Selected Age-Adjusted Death Rates, Ratio of Indians to U.S. All Races	75
Table 4.3	Ten Leading Causes of Death for Decedents 15 to 24 Years of Age	67	Table 4.11	Age-Adjusted Death Rates	76
Chart 4.4	Death Rates, Leading Causes: Ages 25 to 44 Years	68	Chart 4.12	Age-Specific Death Rates, Ratio of Indians and Alaska Natives to U.S. All Races	77
Table 4.4	Ten Leading Causes of Death for Decedents 25 to 44 Years of Age	68	Chart 4.13	Age-Specific Death Rates, Ratio of Indians and Alaska Natives to U.S. White	78
Chart 4.5	Death Rates, Leading Causes: Ages 45 to 54 Years	69	Table 4.12	Age-Specific Death Rates	79
Table 4.5	Ten Leading Causes of Death for Decedents 45 to 54 Years of Age	69	Chart 4.14	Deaths by Age	80
Chart 4.6	Death Rates, Leading Causes: Ages 55 to 64 Years	70	Chart 4.15	Deaths by Age and Race	81
			Chart 4.16	Deaths by Age and Sex	83
			Table 4.14	Number and Percent Distribution of Deaths by Age and Sex	82
			Chart 4.17	Age-Adjusted Injury and Poisoning Death Rates	84

Contents

Table 4.17	Injury and Poisoning Deaths and Death Rates	85	Table 4.26	Firearm Injury Death Rates by Age and Sex	103
Chart 4.18	Injury and Poisoning Death Rates by Age and Sex	86	Chart 4.27	Age-Adjusted Other Injury Death Rates	104
Table 4.18	Injury and Poisoning Death Rates by Age and Sex	87	Table 4.27	Other Injury Deaths and Death Rates	105
Chart 4.19	Age-Adjusted Accident Death Rates	88	Chart 4.28	Other Injury Death Rates by Age and Sex	106
Table 4.19	Accident Deaths and Death Rates	89	Table 4.28	Other Injury Death Rates by Age and Sex	107
Chart 4.20	Accident Death Rates by Age and Sex	90	Chart 4.29	Age-Adjusted Alcoholism Death Rates	108
Table 4.20	Accident Death Rates by Age and Sex	91	Table 4.29	Alcoholism Deaths and Death Rates	109
Chart 4.21	Age-Adjusted Suicide Death Rates	92	Chart 4.30	Alcoholism Death Rates by Age and Sex	110
Table 4.21	Suicide Deaths and Death Rates	93	Table 4.30	Alcoholism Death Rates by Age and Sex	111
Chart 4.22	Suicide Death Rates by Age and Sex	94	Chart 4.31	Age-Adjusted Chronic Liver Disease and Cirrhosis Death Rates	112
Table 4.22	Suicide Death Rates by Age and Sex	95	Table 4.31	Chronic Liver Disease and Cirrhosis Deaths and Death Rates	113
Chart 4.23	Age-Adjusted Homicide Death Rates	96	Chart 4.32	Chronic Liver Disease and Cirrhosis Death Rates by Age and Sex	114
Table 4.23	Homicide Deaths and Death Rates	97	Table 4.32	Chronic Liver Disease and Cirrhosis Death Rates by Age and Sex	115
Chart 4.24	Homicide Death Rates by Age and Sex	98	Chart 4.33	Age-Adjusted Malignant Neoplasm Death Rates	116
Table 4.24	Homicide Death Rates by Age and Sex	99	Table 4.33	Malignant Neoplasm Deaths and Death Rates	117
Chart 4.25	Age-Adjusted Firearm Injury Death Rates	100	Chart 4.34	Malignant Neoplasm Death Rates by Age and Sex	118
Table 4.25	Firearm Injury Deaths and Death Rates	101			
Chart 4.26	Firearm Injury Death Rates by Age and Sex	102			

Contents

Table 4.34	Malignant Neoplasm Death Rates by Age and Sex	119	Chart 4.44	Pneumonia and Influenza Death Rates by Age and Sex	134
Chart 4.35	Age-Adjusted Lung Cancer Death Rates	120	Table 4.44	Pneumonia and Influenza Death Rates by Age and Sex	135
Table 4.35	Lung Cancer Deaths and Death Rates	121	Chart 4.45	Age-Adjusted Tuberculosis Death Rates	136
Chart 4.36	Lung Cancer Death Rates by Age and Sex	122	Table 4.45	Tuberculosis Deaths and Death Rates	137
Table 4.36	Lung Cancer Death Rates by Age and Sex	123	Chart 4.46	Age-Adjusted Diabetes Mellitus Death Rates	138
Chart 4.37	Death Rates for Leading Cancer Sites	124	Table 4.46	Diabetes Mellitus Deaths and Death Rates	139
Table 4.37	Leading Sites for Cancer Deaths for Decedents of All Ages	125	Chart 4.47	Diabetes Mellitus Death Rates by Age and Sex	140
Chart 4.38	Death Rates, Leading Cancer Sites: Males	126	Table 4.47	Diabetes Mellitus Death Rates by Age and Sex	141
Chart 4.39	Death Rates, Leading Cancer Sites: Females	126	Chart 4.48	Age-Adjusted Heart Disease Death Rates	142
Table 4.38	Leading Sites for Cancer Deaths by Sex	127	Table 4.48	Heart Disease Deaths and Death Rates	143
Chart 4.40	Death Rates, Leading Cancer Sites: Ages 55+ Years	128	Chart 4.49	Heart Disease Death Rates by Age and Sex	144
Table 4.40	Leading Sites for Cancer Deaths for Decedents 55 Years Old and Older	129	Table 4.49	Heart Disease Death Rates by Age and Sex	145
Chart 4.41	Death Rates, Leading Cancer Sites: Males, 55+ Years	130	Chart 4.50	Age-Adjusted Cerebrovascular Diseases Death Rates	146
Chart 4.42	Death Rates, Leading Cancer Sites: Females, 55+ Years	130	Table 4.50	Cerebrovascular Diseases Deaths and Death Rates	147
Table 4.41	Leading Sites for Cancer Deaths by Sex, 55 Years Old and Older	131	Chart 4.51	Cerebrovascular Diseases Death Rates by Age and Sex	148
Chart 4.43	Age-Adjusted Pneumonia and Influenza Death Rates	132	Table 4.51	Cerebrovascular Diseases Death Rates by Age and Sex	149
Table 4.43	Pneumonia and Influenza Deaths and Death Rates	133	Chart 4.52	Age-Adjusted Alzheimer's Disease Death Rates	150
			Table 4.52	Alzheimer's Disease Deaths and Death Rates	151

Contents

Chart 4.53	Alzheimer's Disease Death Rates by Age and Sex	152
Table 4.53	Alzheimer's Disease Death Rates by Age and Sex	153
Chart 4.54	Age-Adjusted Gastrointestinal Disease Death Rates	154
Table 4.54	Gastrointestinal Disease Deaths and Death Rates	155
Chart 4.55	Human Immunodeficiency Virus (HIV) Infection Death Rates	156
Table 4.55	Human Immunodeficiency Virus (HIV) Infection Deaths and Death Rates	157
Chart 4.56	Human Immunodeficiency Virus (HIV) Infection Death Rates by Age and Sex	158
Table 4.56	Human Immunodeficiency Virus (HIV) Infection Death Rates by Age and Sex	159
Chart 4.57	Life Expectancy at Birth	160
Chart 4.58	Years of Potential Life Lost	161
Chart 4.59	Age-Adjusted Death Rates	162
Table 4.57	Overall Measures of Indian Health	163
Chart 4.60	Indian Health Service Program Accomplishments Since 1973	164
Chart 4.61	Indian Health Service Program Accomplishments Since 1987	165
Table 4.60	Program Accomplishments	166

Part 5—Patient Care Statistics

Chart 5.1	Indian Health Service Tribal Health Contract and Grant/Compact Awards	167
Table 5.1	Indian Health Service Tribal Health Contract and Grant/Compact Awards	168
Chart 5.2	Indian Health Service Tribal Health Contract and Grant/Compact Awards by Type	169
Table 5.2	Indian Health Service Tribal Health Contract and Grant/Compact Awards by Type	169
Chart 5.3	Urban Indian Health Program Workload and Appropriation	170
Table 5.3	Urban Indian Health Program Workload and Appropriation	171
Chart 5.4	Number of Hospital Admissions	172
Table 5.4	Number of Admissions	173
Chart 5.5	Average Daily Hospital Patient Load	174
Table 5.5	Average Daily Patient Load	175
Chart 5.6	Leading Causes of Hospitalization: Ages Under 1 Year	176
Table 5.6	Ten Leading Causes of Hospitalization for GM&S Patients Under 1 Year of Age	177
Chart 5.7	Leading Causes of Hospitalization: Ages 1 to 4 Years	178

Contents

Table 5.7	Ten Leading Causes of Hospitalization for GM&S Patients Ages 1 to 4 Years	179
Chart 5.8	Leading Causes of Hospitalization: Ages 5 to 14 years	180
Table 5.8	Ten Leading Causes of Hospitalization for GM&S Patients 5 to 14 Years of Age	181
Chart 5.9	Leading Causes of Hospitalization: Ages 15 to 24 years	182
Table 5.9	Ten Leading Causes of Hospitalization for GM&S Patients 15 to 24 Years of Age	183
Chart 5.10	Leading Causes of Hospitalization: Ages 25 to 44 years	184
Table 5.10	Ten Leading Causes of Hospitalization for GM&S Patients 25 to 44 Years of Age	185
Chart 5.11	Leading Causes of Hospitalization: Ages 45 to 54 years	186
Table 5.11	Ten Leading Causes of Hospitalization for GM&S Patients 45 to 54 Years of Age	187
Chart 5.12	Leading Causes of Hospitalization: Ages 55 to 64 years	188
Table 5.12	Ten Leading Causes of Hospitalization for GM&S Patients 55 to 64 Years of Age	189
Chart 5.13	Leading Causes of Hospitalization: Ages 65+ years	190
Table 5.13	Ten Leading Causes of Hospitalization for GM&S Patients 65 Years Old and Older	191
Chart 5.14	Leading Causes of Hospitalization	192
Table 5.14	Ten Leading Causes of Hospitalization for GM&S Patients by Sex	193
Chart 5.15	Leading Causes of Hospitalization for Males	194
Chart 5.16	Leading Causes of Hospitalization for Females	195
Table 5.15	Ten Leading Causes of Hospitalization by Sex	196
Chart 5.17	Hospital Discharge Rates by Age	197
Table 5.17	Comparison of Indian Health Service and U.S. Hospital Discharge Rates by Age	198
Chart 5.18	Beds per Hospital	199
Table 5.18	Comparison of Indian Health Service and U.S. Hospitals by Bed Size	199
Chart 5.19	Number of Ambulatory Medical Visits	200
Table 5.19	Number of Ambulatory Medical Visits	201
Chart 5.20	Leading Causes of Ambulatory Medical Visits: Ages Under 1 Year	202
Table 5.20	Ten Leading Causes of Ambulatory Medical Clinical Impressions for Patients Under 1 Year of Age	203

Contents

Chart 5.21	Leading Causes of Ambulatory Medical Visits: Ages 1 to 4 Years	204	Table 5.26	Ten Leading Causes of Ambulatory Medical Clinical Impressions for Patients Ages 55 to 64 Years	215
Table 5.21	Ten Leading Causes of Ambulatory Medical Clinical Impressions for Patients Ages 1 to 4 Years	205	Chart 5.27	Leading Causes of Ambulatory Medical Visits: Ages 65+ Years	216
Chart 5.22	Leading Causes of Ambulatory Medical Visits: Ages 5 to 14 years	206	Table 5.27	Ten Leading Causes of Ambulatory Medical Clinical Impressions for Patients Ages 65 Years and Older	217
Table 5.22	Ten Leading Causes of Ambulatory Medical Clinical Impressions for Patients Ages 5 to 14 Years	207	Chart 5.28	Leading Causes of Ambulatory Medical Visits	218
Chart 5.23	Leading Causes of Ambulatory Medical Visits: Ages 15 to 24 Years	208	Table 5.28	Ten Leading Causes of Ambulatory Medical Clinical Impressions	219
Table 5.23	Ten Leading Causes of Ambulatory Medical Clinical Impressions for Patients Ages 15 to 24 Years	209	Chart 5.29	Leading Causes of Ambulatory Medical Visits for Males	220
Chart 5.24	Leading Causes of Ambulatory Medical Visits: Ages 25 to 44 Years	210	Chart 5.30	Leading Causes of Ambulatory Medical Visits for Females	221
Table 5.24	Ten Leading Causes of Ambulatory Medical Clinical Impressions for Patients Ages 25 to 44 Years	211	Table 5.29	Number of Ambulatory Medical Clinical Impressions for Leading Major Categories by Sex	222
Chart 5.25	Leading Causes of Ambulatory Medical Visits: Ages 45 to 54 Years	212	Chart 5.31	Percent Distributions for Population and Patient Care Workloads, Ages Under 25	223
Table 5.25	Ten Leading Causes of Ambulatory Medical Clinical Impressions for Patients Ages 45 to 54 Years	213	Chart 5.32	Percent Distributions for Population and Patient Care Workloads, Ages Over 24	224
Chart 5.26	Leading Causes of Ambulatory Medical Visits: Ages 55 to 64 Years	214	Table 5.31	Percent Distributions for Estimated Population, Ambulatory Medical Clinical Impressions, and Inpatient Discharges and Days.....	224
			Chart 5.33	Percent Distribution of Ambulatory Medical Visits by Type of Provider	225

Contents

Table 5.33	Number of Ambulatory Medical Visits by Type of Provider	225	Chart 6.4	Hospitalizations for Injuries and Poisonings	238
Chart 5.34	Trend in Average Daily Patient Load	226	Chart 6.5	Age-Adjusted Motor Vehicle Death Rates for Males	238
Chart 5.35	Trend in Number of Ambulatory Medical Visits	226	Table 6.5	Motor Vehicle Deaths and Death Rates for Males	239
Chart 5.36	Trend in Preventive Ambulatory Medical Visits	227	Chart 6.6	Age-Adjusted Motor Vehicle Death Rates for Females	240
Chart 5.37	Dental Services Provided	228	Table 6.6	Motor Vehicle Deaths and Death Rates for Females	241
Chart 5.38	Dental Services Provided by Tribal/Urban Programs	230	Chart 6.7	Indian Health Service Nutrition and Dietetics—Trend in Patient/Client Contacts by Nutrition Function ...	242
Table 5.37	Number of Dental Services Provided	229	Chart 6.8	Indian Health Service Nutrition and Dietetics—Percent of Contacts by Setting	243
Chart 5.39	Trend in Community Water Systems Monitoring Fluoridation	231	Chart 6.9	Indian Health Service Nutrition and Dietetics—Percent of Contacts by Nutrition Function	243
Chart 5.40	Annual Preventive Sealant Usage	232	Table 6.8	Nutrition and Dietetics Patient/Client Contacts	244
Part 6—Community Health Statistics			Chart 6.10	Leading Clinical Nutrition Patient/Client Contacts	245
Chart 6.1	Age-Adjusted Drug Related Death Rates	233	Table 6.10	Leading Clinical Nutrition Patient/Client Contacts	245
Table 6.1	Drug Related Deaths and Death Rates	234	Chart 6.11	Indian Health Service Public Health Nursing—Percent of Visits by Program Area	246
Chart 6.2	Drug Related Death Rates by Age and Sex	235	Table 6.11	IHS Public Health Nursing Visits by Program Area	246
Table 6.2	Drug Related Death Rates by Age and Sex	236	Chart 6.12	Indian Health Service Public Health Nursing—Percent of PHN Time by Type of Activity	247
Chart 6.3	Alcohol-Related Discharge Rates (First-Listed Diagnosis)	237			
Table 6.3	Number and Rate for Discharges with a First-Listed Diagnosis of Alcoholism for Persons 15 Years and Older	237			

Contents

Table 6.12	IHS Public Health Nursing Time Worked by Type of Activity	247	Chart 6.20	Types of Indian Homes Provided with Sanitation Facilities by Indian Health Service	254
Chart 6.13	Indian Health Service Public Health Nursing— Percent Visits by Age and Sex	248	Table 6.20	Indian Homes Provided with Sanitation Facilities by IHS	254
Table 6.13	IHS Public Health Nursing Visits by Age and Sex of Patients	248	Chart 6.21	Contributions to Indian Health Service Sanitation Facilities Projects	255
Chart 6.14	Indian Health Service Public Health Nursing Visits by Age	249	Table 6.21	P.L. 86-121 Program— Summary of Cash Contributions Received by Contributor	255
Table 6.14	IHS Public Health Nursing Visits by Age of Patients	249	Chart 6.22	Sanitation Facilities Deficiencies—Costs	256
Chart 6.15	Distribution of CHR Client Contacts by Setting	250	Chart 6.23	Sanitation Facilities Deficiencies—Units	256
Table 6.15	Community Health Representative Client Contacts by Setting	250	Table 6.22	Sanitation Facilities Deficiency Summary	257
Chart 6.16	CHR Client Contacts, Trend in Leading Detailed Activities	251	Chart 6.24	Indian Health Service Health Education— Percent of Provider Hours by Location	258
Table 6.16	Community Health Representative Client Contacts for Leading Detail Activities	251	Table 6.24	IHS Health Education Provider Hours by Location	258
Chart 6.17	Leading Health Problems for CHR Client Contacts	252	Chart 6.25	Indian Health Service Health Education— Percent of Clients Served by Location	259
Table 6.17	Community Health Representative Client Contacts for Leading Health Problems	252	Table 6.25	IHS Health Education Clients Served by Location	259
Chart 6.18	Leading Types of CHR Incoming Client Referrals	253	Chart 6.26	Indian Health Service Health Education— Percent of Provider Hours by Task Function	260
Chart 6.19	Leading Types of CHR Outgoing Client Referrals	253	Table 6.26	IHS Health Education Provider Hours by Task Function	260



Contents

Chart 6.27	Indian Health Service Health Education— Percent of Clients Served by Task Function	261
Table 6.27	IHS Health Education Clients Served by Task Function	261
Glossary of ICD-9 Codes		263
Methods Used to Rank Leading Sites of Cancer Deaths		269
Index to Charts and Tables		271



Overview

of the Indian Health Service Program

The Indian Health Service (IHS), an agency within the Department of Health and Human Services (HHS), is responsible for providing federal health services to American Indians and Alaska Natives. The provision of health services to federally recognized Indians grew out of a special relationship between the federal government and Indian Tribes. This government-to-government relationship is based on Article I, Section 8, of the United States Constitution, and has been given form and substance by numerous treaties, laws, Supreme Court decisions, and Executive Orders.

The Indian Health program became a primary responsibility of the HHS 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 is the federal health care provider and health advocate for Indian people, and its goal is to raise their health status to the highest possible level. The mission is to provide a comprehensive health services delivery system for American Indians and Alaska Natives with opportunity for maximum Tribal involvement in developing and managing programs to meet their needs. It is also the responsibility of the IHS to work with the people involved in the health delivery programs so that they can be cognizant of entitlements of Indian people, as American citizens, to all federal, State, and local health programs, in addition to IHS and Tribal services. The IHS also acts as the principal federal health advocate for American Indian and Alaska Native people in the building of health coalitions, networks, and partnerships with Tribal nations and other government agencies as well as with non-federal organizations, e.g., academic medical centers and private foundations.



Overview

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, purchased by IHS through contractual arrangements with providers in the private sector, and delivered through Tribally operated programs and urban Indian health programs.

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

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

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 & Description

of Trends in Indian Health

The IHS *Trends in Indian Health* attempts to fulfill the basic statistical information requirements of parties that are interested in the IHS. The tables and charts contained in the IHS *Trends in Indian Health* describe the IHS program and the health status of American Indians and Alaska Natives residing in the IHS service area. The IHS service area consists of counties on and near federal Indian reservations. The Indians residing in the service area comprise about 60 percent of all Indians residing in the U.S.

Information pertaining to the IHS structure and American Indian and Alaska Native demography, patient care, and community health are included. Historical trends are depicted, and comparisons to other population groups are made, when appropriate. Current regional differences information can be found in the IHS companion publication called *Regional Differences in Indian Health*.

The tables and charts are grouped into six major categories: 1) IHS Structure, 2) Population Statistics, 3) Natality and Infant/Maternal Mortality Statistics, 4) General Mortality Statistics, 5) Patient Care Statistics, and 6) Community Health 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 few tables have more than one chart associated with them.



Summary

of Data Shown

Indian Health Service Structure

The IHS is comprised of 12 regional administrative units called Area Offices. As of October 1, 1998, the Area Offices consisted of 151 basic administrative units called service units. Of the 151 service units, 85 were operated by Tribes.

The IHS operated 37 hospitals, 59 health centers, 4 school health centers, and 44 health stations. Tribes have two different vehicles for exercising their self-determination—they can choose to take over the operation of an IHS facility through a P.L. 93-638 self-determination contract (Title I) or a P.L. 93-638 self-governance compact (Title III). A distinction is made in this publication regarding these two Tribal modes of operation, i.e., Title I and Title III. Tribes operated 12 hospitals (Title I, 3 hospitals and Title III, 9 hospitals), 155 health centers (Title I, 98 and Title III, 57), 3 school health centers (Title I, 1 and Title III, 2), 76 health stations (Title I, 60 and Title III, 16), and 160 Alaska village clinics (Title I, 16 and Title III, 144).

There were 36 Urban Projects ranging from information referral and community health services to comprehensive primary health care services.

As of January 20, 1999, all IHS and Tribally-operated hospitals and eligible IHS-operated health centers were accredited by the Joint Commission on Accreditation of Healthcare Organizations (JCAHO). Since 1990, 9 of 13 (69 percent) of the Regional Youth Treatment Centers have become accredited by JCAHO or the Commission on Accreditation of Rehabilitation Facilities. The remaining 4 are preparing for accreditation.

IHS proficiency testing rating exceeded the requirements of the Clinical Laboratory Improvement Amendments of 1988 (CLIA '88) for all private and public sector laboratories. Overall proficiency rating for IHS laboratories is 98 percent. CLIA '88 requires 80 percent proficiency on all regulated analytes.

In FY 1995, there were nearly 97 million pharmacy workload units in IHS and Tribal direct facilities. Over 61 percent of these were associated with outpatient care.

Population Statistics

In Fiscal Year 2000, the IHS service population (count of those American Indians and Alaska Natives who are eligible for IHS services) will be approximately 1.51 million. Since 1990, the IHS service population is increasing at a rate of about 2.3 percent per year, excluding the impact of new Tribes.

The Indian population residing in the IHS service area is younger than the U.S. All Races population, based on the 1990 Census. For Indians, 33 percent of the population was younger than 15 years, and 6 percent was older than 64 years. For the U.S. All Races population, the corresponding values were 22 and 13 percent respectively. The Indian median age was 24.2 years compared with 32.9 years for U.S. All Races.

Summary

According to the 1990 census, there were over 605,000 Indians residing in the Urban Indian Health Program.

According to the 1990 Census, Indians have lower incomes than the general population. In 1989, Indians residing in the current Reservation States had a median household income of \$19,897 compared with \$30,056 for the U.S. All Races population. During this time period, 31.6 percent of Indians lived below the poverty level in contrast to 13.1 percent for the U.S. All Races population.

Nativity and Infant/Maternal Mortality Statistics

The birth rate for American Indians and Alaska Natives residing in the IHS service area was 24.1 (rate per 1,000 population) in 1994-1996. It is 63 percent greater than the 1995 birth rate of 14.8 for the U.S. All Races population.

The maternal mortality rate for American Indians and Alaska Natives residing in the IHS service area dropped from 27.7 (rate per 100,000 live births) in 1972-1974 to 6.1 in 1994-1996, a decrease of 78 percent. These rates have been adjusted for

miscoding of Indian race on death certificates. In 1994-1996, there was only one maternal death, actual and adjusted.

The infant mortality rate for American Indians and Alaska Natives residing in the IHS service area dropped from 22.2 (rate per 1,000 live births) in 1972-1974 to 6.1 in 1994-1996, a decrease of 58 percent. These rates have been adjusted for miscoding of Indian race on death certificates. The 1994-1996 rate is 22 percent higher than the U.S. All Races rate of 7.6 for 1995.

General Mortality Statistics

The leading cause of death for American Indians and Alaska Natives residing in the IHS service area (1994-1996) was diseases of the heart followed by malignant neoplasms (the same as for the total U.S. All Races population in 1995). However, the cause of death rankings differ by sex. For Indian males, the top two causes were diseases of the heart and accidents. For Indian females, the top two causes were diseases of the heart and malignant neoplasms.

In 1994-1996, the Indian (IHS service area) age-adjusted death rates for the following causes were considerably higher than those for the U.S. All Races population in 1995. These Indian rates have been adjusted for miscoding of Indian race on death certificates.

1. alcoholism—
627 percent greater,
2. tuberculosis—
533 percent greater,
3. diabetes mellitus—
249 percent greater,
4. accidents—
204 percent greater,
5. suicide—
72 percent greater,
6. pneumonia and influenza—
71 percent greater, and
7. homicide—
63 percent greater.



Summary

Patient Care Statistics

In FY 1997 (provisional), there were about 85,000 admissions to IHS and Tribal direct and contract general hospitals. The leading cause of hospitalization was obstetric deliveries and complications of pregnancy and puerperium.

The total number of ambulatory medical visits (IHS and Tribal direct and contract facilities) was over 7.3 million in FY 1997 (provisional), an increase of over 1,500 percent since FY 1955. The leading cause of ambulatory medical visits in IHS and Tribal direct and contract facilities was supplementary classification conditions. The supplementary classification 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.

The number of direct and contract dental services provided (IHS, Tribal, and Urban), as reported to the IHS central database, increased nearly 1,100 percent (from under 0.2 million in FY 1955 to about 2.1 million in FY 1998).

Community Health Statistics

For people accepted for treatment into the IHS substance abuse treatment program, most initial contacts are for alcohol addiction only. However, the number of initial contacts involving other drugs has been increasing. Also, the age-adjusted drug-related death rate for Indians residing in the IHS service area increased from 3.4 deaths per 100,000 population in 1979-1981 to 8.4 in 1994-1996. These rates have been adjusted for miscoding of Indian race on death certificates. The 1994-1996 rate is 65 percent higher than the U.S. All Races rate of 5.1 for 1995.

The IHS Injury Prevention (IP) program has a wide variety of projects in place in all IHS Areas to address this major health problem. Exemplary projects are: child passenger protection, roadway/roadside hazard identification, safety belt use promotion, deterring drinking and driving, drowning prevention, smoke detector usage, helmet use, and injury prevention campaign. The IHS IP program has contributed to a 32 percent decline in IHS and Tribal direct and contract hospitalizations for injuries and poisonings since FY 1987.

The nutrition and dietetics program reported over 87,000 patient/client contacts during FY 1998. Nearly one-half of the contacts were in the hospital setting (46 percent) followed by the contacts for ambulatory clinic (34 percent) and community (20 percent). Nearly three-fourths (73 percent) of the contacts were for clinical nutrition counseling and one-fifth (20 percent) were for health promotion. Of the clinical nutrition counseling contacts, the majority were for general nutrition (36 percent) and diabetes (32 percent).

The number of patient/client contacts reported by the nutrition and dietetics program has decreased 77 percent since FY 1993. However, this does not necessarily reflect a decrease in total workload. There have been many changes in the IHS nutrition and dietetics program during the mid to late 1990's that have been instrumental in contributing to a decrease in workload reporting by local nutrition personnel. Among them are loss of IHS Area and Headquarters nutritionists responsible for coordinating and orienting new staff to the IHS Nutrition and Dietetics Program Activity Reporting System, as well as the transition of many former IHS



Summary

facilities to Tribally-operated and administered programs that no longer submit data to the IHS central database.

There were over 321,000 public health nursing visits recorded in the Headquarters reports for FY 1998. The most frequent program areas dealt with during these visits were health promotion/disease prevention (43 percent of the visits), morbidity (16 percent), and child health (8 percent). The visits were concentrated in two age groups, children under 5 years of age (20 percent) and adults over the age of 64 (16 percent). Female visits outnumbered male visits by 51 percent.

The community health representative (CHR) program reported nearly 2.3 million client contacts in FY 1998. Most of these contacts took place in the community (34 percent). The two leading detailed activities for CHR contacts in FY 1998 were case management (22 percent) and health education (20 percent). The reduction of reported CHR services in FY 1998 (from 4.1 million in FY 1993) reflects the transfer of resources to Tribes as part of the Self-Governance activity. Most Self-Governance Tribes elected not to use the national CHR program reporting system.

Since 1960, over 230,000 Indian homes were funded by IHS for the provision of sanitation facilities. These services included water and sewerage facilities, solid waste disposal systems and technical assistance to establish and equip operation and maintenance organizations for new, rehabilitated, and existing homes. Contributions to IHS sanitation facilities projects are received from numerous sources. In FY 1998, the largest source of funds (47 percent of the total) was attributable to Tribes. State governments contributed 35 percent and the Department of Housing and Urban Development (HUD) Infrastructure provided 9 percent of the funds for these cooperative projects.

The FY 1999 sanitation deficiencies to serve existing American Indian and Alaska Native homes and communities totals \$696 million. This amount is to provide first service sanitation facilities, to upgrade existing facilities, to provide solid waste facilities, and to provide assistance to operation and maintenance organizations.

Health education providers in FY 1998 spent the majority of their time in the office (43 percent of total provider hours) followed by Tribal worksite (14 percent) and hospital/clinic (12 percent). Twenty-seven percent of health education clients were served at a school location and 20 percent at a Tribal worksite. Health education providers devoted 27 percent of their time to support services and 23 percent to implementing/teaching. Over 90 percent of health education clients received services in one of two functional areas—implementing/teaching (61 percent) or design education objectives/materials (29 percent). These health education percentages are based on reporting from only some of the IHS Areas. See the “Sources and Limitations of Data” section that follows for a more complete discussion of the data qualifications.



Initiative

to Eliminate Racial and Ethnic Disparities in Health

Initiative

The HHS is working on an Initiative to Eliminate Racial and Ethnic Disparities in Health. This is part of the President's Initiative on Race and is in response to the President's commitment of the nation to the goal of eliminating by the year 2010 racial and ethnic disparities in six areas.

The six health focus areas are: infant mortality, diabetes mellitus, cardiovascular diseases, human immunodeficiency virus (HIV), deficits in breast and cervical cancer screening and management, and deficits in child and adult immunization rates.

The American Indian and Alaska Native population is being addressed, along with other racial/ethnic minority groups as part of this disparities initiative. There is information in this publication that relates to five of the six health focus areas.

Infant Mortality

The American Indian and Alaska Native infant mortality rate has decreased 58 percent since 1972-74. Despite this improvement, the Indian rate in 1994-96 was still 22 percent greater than the U.S. All Races rate in 1995, i.e., 9.3 deaths per 1,000 live births compared to 7.6. The top two leading causes of Indian infant deaths were sudden infant death syndrome and congenital anomalies. For the All Races population, they were congenital anomalies and disorders related to short gestation and low birthweight. The Indian death data has been adjusted for miscoding of Indian race on death certificates.

Indian infants are more likely to die during the postneonatal period (28 days to under 1 year) than the neonatal period (under 28 days). The reverse is true for the U.S. All Races population. In 1994-96, the Indian postneonatal mortality rate was 7 percent greater than the Indian neonatal mortality rate, i.e., 4.8 versus 4.5. In contrast, the U.S. All Races neonatal mortality rate in 1995 was 81 percent greater than its postneonatal mortality rate, 4.9 to 2.7. The Indian rates have been adjusted for miscoding of Indian race on death certificates.

See Part 3 of this publication for tables and charts related to the infant mortality focus area. Additional information on this topic is provided in the *Regional Differences in Indian Health* publication.



Initiative

Diabetes Mellitus

The rate of diabetes deaths has been increasing in both the Indian and U.S. All Races populations. Since 1981-83, the Indian age-adjusted diabetes death rate has increased 93 percent. For the U.S. All Races population, the increase since 1982 has been 39 percent. Indians die from diabetes mellitus at a much greater rate than the U.S. All Races population. In 1994-96, the Indian age-adjusted rate (46.4 deaths per 100,000 population) was 3.5 times the 1995 All Races rate (13.3). The Indian rates have been adjusted for miscoding of Indian race on death certificates.

For both Indian females and males in 1994-96, the age-specific diabetes mellitus death rate generally increases with age. The Indian female rate (non-zero rates) was greater than Indian male rate, except for age groups 25 to 34 years and 35 to 44 years. These Indian rates have been adjusted for miscoding of Indian race on death certificates.

See Charts and Tables 4.46 and 4.47. Additional information on this topic is provided in the *Regional Differences in Indian Health* publication.

Cardiovascular Diseases

Deaths to cardiovascular diseases have been decreasing in the U.S. All Races population at a greater rate than in the Indian population. Since 1973, the age-adjusted heart disease death rate for the U.S. All Races population has decreased 43 percent and the cerebrovascular diseases death rate has decreased 58 percent. The comparable percentage decreases for the Indian population since 1972-74 are 4 and 35 percent, respectively. The current Indian death rates due to cardiovascular diseases are somewhat elevated compared to the rates for the U.S. All Races population. In particular, Indians died from diseases of the heart in 1994-96 at an age-adjusted rate 13 percent higher than that for the All Races population in 1995, i.e., 156.0 compared to 138.3. A similar relationship exists for deaths due to cerebrovascular diseases. The Indian rate of 30.5 in 1994-96 was 14 percent higher than the All Races rate of 26.7 in 1995. The Indian rates have been adjusted for miscoding of Indian race on death certificates.

Indian males are more likely to die from heart disease than Indian females, their age-specific death rate was higher for all age groups in 1994-96, except for age groups 1 to 4 and 15 to 24 years. However, for cerebrovascular diseases, the age-specific death rates were relatively close for Indian males and females. For both conditions for males, the death rate increased with age starting with age groups over 4 years. These Indian rates have been adjusted for miscoding of Indian race on death certificates.

See Charts and Tables 4.48 through 4.51. Additional information on this topic is provided in the *Regional Differences in Indian Health* publication.



Initiative

Human Immunodeficiency Virus (HIV)

Indians deaths from HIV infection have not reached the level experienced in the general population. In 1994-96, the Indian age-adjusted death rate (6.2) was 60 percent less than the U.S. All Races rate in 1995 (15.6). The Indian age-adjusted death rate for HIV infection has been increasing at a somewhat higher rate than that for the All Races population. Since 1987-1989, the Indian rate has increased 417 percent, while since 1988, the All Races rate has increased 129 percent. The Indian rates have been adjusted for miscoding of Indian race on death certificates.

Indian males more often die from HIV infection than Indian females. The peak age-specific death rate for Indian males in 1994-96 (27.7 for 35-44 years) was 4.3 times the Indian female peak rate (6.5 for 25-34 years). These Indian rates have been adjusted for miscoding of Indian race on death certificates.

See Charts and Tables 4.53 and 4.54. Additional information on this topic is provided in the *Regional Differences in Indian Health* publication.

Breast and Cervical Cancers

This publication does not have information on cancer screening rates. However, information is provided on leading sites for cancer deaths. For Indian decedents of all ages in 1994-96, female breast was the third leading cancer death site and cervix uteri was the fourteenth. When only Indian female sites for cancer deaths are ranked, female breast moves to second and cervix uteri moves to seventh. In 1994-96, there were 3.7 times as many deaths due to female breast than there were for cervix uteri (253 to 69). These Indian counts have been adjusted for miscoding of Indian race on death certificates. See Chart and Table 4.37, Chart 4.39, and Table 4.38. Additional information on this topic is provided in the *Regional Differences in Indian Health* publication.

Immunization Rates

This publication does not have information on immunization rates. Information on immunization rates for children is provided in the *Regional Differences in Indian Health* publication.



Sources & Limitations of Data

Population Statistics

The IHS service population consists of American Indians and Alaska Natives identified to be eligible for IHS services. IHS service population estimates are based on official U.S. Census Bureau county data. The Census Bureau enumerates those individuals who identify themselves as being American Indian, Eskimo or Aleut. The IHS service population is estimated by counting those American Indians, Eskimos, and Aleuts (as identified during the Census) who reside in the geographic areas in which IHS has responsibilities (“on or near” reservations, i.e., contract health service delivery areas (CHSDAs)). The IHS service population comprises approximately 60 percent of all Indians residing in the U.S. These people may or may not use IHS services.

The IHS service population estimates, which are shown in this publication, need to be contrasted to the IHS user population estimates that are shown in the *Regional Differences in Indian Health* publication. IHS user population estimates are based on data from the IHS Patient Registration System. Patients who receive direct or contract health services from IHS or Tribally-operated programs are registered in the Patient Registration System. Those registered Indian patients that had at least one direct or contract inpatient stay, ambulatory medical visit, or dental visit during the last 3 years are defined as users. IHS user population figures are used for calculating IHS patient care rates. In contrast, IHS service population figures are used in calculating Indian vital event rates since State birth and death certificates do not provide information on use of IHS services.

IHS service populations between Census years (e.g., 1980 and 1990) are estimated by a smoothing technique in order to show a gradual transition between Census years. This normally results in upward revisions to service population figures projected prior to a Census, since each Census tends to do a better job in enumerating American Indians and Alaska Natives. For example, the American Indian and Alaska Native service population enumerated in 1990 was approximately 8 percent higher than that estimated by IHS for 1989. Therefore, after release of the 1990 enumeration figures, IHS smoothed the service population estimates for 1981-1989. That set of smoothed populations was used in the 1992 edition of this series. Subsequently, the Census Bureau issued revised 1990 Census American Indian and Alaska Native population counts by age and sex for all U.S. counties. They resulted in a 3.9 percent increase for the 1990 IHS service population using these “new” 1990 Census counts compared to the “old” 1990 Census counts. In order



Sources & Limitations

to adjust for this 1990 increase, IHS again smoothed the service populations for 1981-1989. This second set of smoothed populations was used in the 1993 edition of the series. The Census Bureau then issued revised 1980 Census American Indian and Alaska Native population counts by age and sex for all U.S. counties, as was done for 1990. They resulted in a 2.8 percent increase for the 1980 IHS service population using these "new" 1980 Census counts compared with the "old" 1980 Census counts. In order to adjust for this 1980 increase, IHS for a third time smoothed the service populations for 1981-1989. This third set of smoothed populations was used for the first time in the 1994 edition of the series.

IHS service populations beyond the latest Census year (1990) are projected through linear regression techniques, using the most current 10 years of Indian birth and death data provided by the National Center for Health Statistics. The natural change (estimated number of births minus estimated number of deaths) is applied to the latest Census enumeration.

The IHS does not currently forecast changes in the service population distribution by age and sex. Rather, appropriate Indian age and sex distributions from Census years are applied to population estimates for non-Census years.

The social and economic data contained in this publication are from the 1990 Census. They reflect the characteristics of persons that self-identified as Indian during the Census.

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. The records NCHS provides IHS contain the same basic demographic items as the vital event records maintained by NCHS

for all U.S. residents, but with names, addresses, and record identification numbers deleted. It should be noted that Tribal identity is not recorded on these records. Tabulations of vital events for this publication are by place of residence.

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.

It is known that there is miscoding of Indian race on State death certificates, especially in areas distant from traditional Indian reservations. In order to determine the degree and scope of the miscoding, IHS conducted a study utilizing the National Death Index (NDI) maintained by the NCHS. The study involved matching IHS patient records of those patients who could have died during 1986 through 1988 with all death records of U.S. residents for 1986 through 1988 as contained on the NDI. The results were published in a document entitled, *Adjusting for Miscoding of Indian Race on State Death Certificates*, November 1996. The study revealed that on 10.9 percent of the matched IHS-NDI records, the race reported for the decedent



Sources & Limitations

was other than American Indian or Alaska Native. The percentage of records with inconsistent classification of race ranged from 1.2 percent in the Navajo Area to 28.0 and 30.4 percent in the Oklahoma and California Areas, respectively.

The results of the NDI study provide sufficient numbers to calculate adjustments for each IHS Area, IHS overall, and selected age groups. In addition to these adjustments based on the study findings, IHS assumed the following; a) the results from 1986-88 apply to other years, b) IHS age-group adjustments applied also to each Area, and c) the Area adjustments applied to the causes of death used in this publication (i.e., if an Area's total deaths needed to be increased by 10 percent, than the deaths for each cause of death would also increase by this same rate). These assumptions cannot be statistically supported by the results of the study. However, IHS felt that it was necessary to adjust all of the death rates in this publication to provide a meaningful and comprehensive look at health status. IHS also believes that they are reasonable adjustments.

These NDI adjustments were used for the first time in the 1997 edition of this publication. Both unadjusted and adjusted information is shown, as applicable. The adjustments were applied to the results obtained from using an unadjusted death file. In the 1997 edition, only the latest three years (1992-94 at that time) of death data were adjusted based on the study findings. Starting with this edition, the adjustments are extended to 1989 through 1995 data years.

IHS has more specific adjustment factors for the age group under 1 year. These are derived from the linked birth/infant death data sets produced by the NCHS. IHS now has sufficient years of this data set (1983-91 and 1995-96) to calculate adjusted infant mortality rates. In this edition (as was done for the first time in the 1997 edition with 1992-94 data), unadjusted and adjusted infant mortality rates will be shown for 1988 through 1995 data years. IHS is assuming that data years for which linked data sets were not produced (NCHS did not produce linked data sets prior to data year 1983 and for data years 1992-94) can be adjusted based on the results from other linked data sets, which is not statistically sound but reasonable. These adjustments based on the linked data sets take precedent over the NDI adjustments for the under 1 year age group, described above.

The vital event statistics in this publication pertain to only American Indians and Alaska Natives residing in the IHS service area. Editions of this publication before 1992 showed vital event statistics calculated on a Reservation State basis. Therefore, data were included for Indians residing outside the geographic areas for which IHS has responsibility. This was done in order to show trends starting in FY 1955, to correspond with the inception of the Indian Health Service (IHS) program. Prior to 1972, only total Reservation State data are available.

Now that there are sufficient vital event data available for the IHS service area to show meaningful trends, this publication shows vital event statistics for the IHS service population, starting with data for calendar year 1972. IHS service area data are more indicative of the health status of the Indians that IHS serves. Reservation State vital event rates tend to be lower in value (i.e., lower birth rates, lower death rates) than IHS service area rates. However, the vital event tables in this publication will still include the 1955 Reservation State figure as an historical benchmark.



Sources & Limitations

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

Beginning with the 1996 edition, the leading causes of death are shown for finer age groups in support of the IHS Director's initiatives on youth and elder care. In particular, the 1 to 14 year age group has been split into 1 to 4 and 5 to 14, and the 45 to 64 year age group has been split into 45 to 54 and 55 to 64.

The age-adjusted death 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 since this is the standard used by NCHS. The rates for the total population and for each race-sex group were adjusted separately, by using the same standard population. The age-adjusted rates were based on 10-year age groups. It is important not to compare age-adjusted death rates with crude rates.

Prior to the 1993 edition of this publication, alcoholism deaths were defined through the use of three ICD-9 cause of death code groups; 291—alcoholic psychoses; 303—alcohol dependence syndrome and; 571.0–571.3—alcoholic liver disease. Various IHS Area statisticians and epidemiologists believed this definition to be incomplete and suggested that it be expanded to include five additional ICD-9 code categories. These “new” categories were used for the first time in the 1993 edition. They include; 305.0—alcohol overdose; 425.5—alcoholic cardiomyopathy; 535.3—alcoholic gastritis; 790.3—elevated blood-alcohol level; and E860.0, E860.1—accidental poisoning by alcohol, not else-

where classified. This expanded definition results in about a 25 percent increase in the number of alcoholism deaths identified in comparison to the previous 3-group definition. NCHS is now publishing alcoholism deaths with a definition that includes codes that IHS had not used, i.e., 357.5—alcoholic polyneuropathy and all of E860 (not just E860.0 and E860.1)—accidental poisoning by alcohol. To be consistent with NCHS, these additional codes are now used by IHS starting with the 1996 edition. The NCHS definition includes all of the code groups previously used by IHS plus these new codes. This NCHS definition of alcoholism deaths is now used in all IHS publications, including *Regional Differences in Indian Health*.

NCHS is also now publishing drug-related deaths with a definition that includes codes that IHS had not used, i.e., 292—drug psychoses and E962.0—assaults from poisoning by drugs and medicaments. To be consistent with NCHS, this additional code was used by IHS for the first time in the 1996 edition. The NCHS definition includes all of the code groups previously used by IHS plus these two codes. This NCHS definition of drug-related deaths is now used in all IHS publications, including *Regional Differences in Indian Health*.



Sources & Limitations

Injury and poisoning deaths are shown for various sub-groups in this publication, e.g., accidents, homicides, suicides. A new grouping, “injury by firearms,” was added starting with the 1996 edition because of its significance in the Indian community. It includes deaths with the following ICD-9 codes; E922—accident caused by firearm missile; E955.0-E955.4—suicide and self-inflicted injury by firearms; E965.0-E965.4 and E970—assault by firearms and legal intervention; E985.0-E985.4—injury by firearms, undetermined whether accidentally or purposely inflicted. Injury by firearm causes exclude explosives and other causes indirectly related to firearms.

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 that is prepared by each IHS hospital. It indicates the number of discharges and days by type of service (e.g., adult, pediatric, obstetric, newborn), and is used for the direct inpatient workload statistics. The Inpatient Care System is the source of IHS hospital inpatient data pertaining to various patient characteristics (age, sex, principal diagnoses,

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

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

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

Starting with the 1996 edition, leading causes of hospitalization and ambulatory medical visits are shown for specific age groups. In prior editions, they were only shown for all ages and by sex.

There are seven other information systems that provide data, presented in this report, pertaining to patient care. The Clinical Laboratory Workload Reporting System is the source of laboratory services data. The Pharmacy System is the source of pharmacy workload data. The Contract Information System and Grants Data System are the sources for Tribal health contract and grant awards information. The Urban Projects Reporting System is the source for workload data for the Urban Projects. The Dental Data System is the source for dental services data. The Fluoridation Data System, managed by the IHS Dental Services Team, is the source for fluoridation systems information. The Pharmacy System and Urban Projects Reporting System are manual systems, the others are automated. The systems are monitored by IHS Headquarters personnel.



Sources & Limitations

Community Health Statistics

The source of alcoholism and substance abuse program data is the Chemical Dependency Management Information System (CDMIS). This is an automated system, with computer edits, that is monitored by IHS Headquarters personnel.

The nutrition and dietetics statistics are derived from the IHS Nutrition and Dietetics Program Activity Reporting System (NDPARS). This is an automated system, with computer edits, that is monitored by IHS Headquarters personnel. Starting with FY 1994, the data reported through NDPARS are incomplete. There have been many changes in the IHS nutrition and dietetics program during the mid to late 1990's that have been instrumental in contributing to a decrease in workload reporting by local nutrition personnel. Among them are loss of IHS Area and Headquarters nutritionists responsible for coordinating and orienting new staff to the NDPARS, as well as the transition of many former IHS facilities to Tribally-operated and administered programs that no longer submit data to the IHS central database.

The public health nursing data are collected through the IHS Community Health Activity Reporting System. This is an automated system, with computer edits, that is monitored by IHS Headquarters personnel.

Data on the IHS Community Health Representatives (CHR) Program were obtained from the IHS Community Health Representative Information System (CHRIS II). CHRIS II is an automated reporting system that is monitored by IHS CHR Program Headquarters personnel. This system was approved by the Office of Management and Budget on March 31, 1989, and has been operational since July 10, 1989. Data are collected during one week randomly selected from each month. At the start of FY 1992 minor changes in the CHRIS II activity code categories were implemented. Primarily, the service codes were simplified by consolidating administrative functions. This change improved the data quality by greatly reducing the incidence of inaccurately

reported persons served when administrative functions were performed by CHRs. In addition, the setting category, "radio/telephone," was added to allow the reporting of CHR services provided to individuals via these media. Health area category names were changed only to add greater specificity and clarity to the activity reporting system and its data (e.g., "substance abuse" was changed to "alcohol/substance abuse"). Data presented encompass 12 sample reporting weeks. These data have been expanded to represent estimated workload for a 12-month period. Starting with FY 1994, the data reported through CHRIS II are incomplete. This is because most Tribes who are participating in the Self-Governance activity have elected not to use the national CHR program reporting system.



Sources & Limitations

The sanitation facilities statistics are derived from IHS reporting systems and financial systems. The IHS reporting systems are the Project Data System and the Sanitation Deficiency System. The Project Data System is the source of detailed data on P.L. 86-121 construction projects that provide water supplies and sewerage and waste disposal facilities to American Indians and Alaska Natives. It includes such data as community name, type and number of homes provided with services, the funds allocated and funds expended, completion dates and accomplishments. Data are collected quarterly. The Sanitation Deficiency System is the source of additional data on sanitation facilities serving American Indians and Alaska Natives. It includes such data as the number of homes served, water rates, fluoridation information, Safe Drinking Water Act Compliance, system reliability, and the unmet need for new or upgraded facilities. Data are collected annually. The systems are monitored by IHS Headquarters personnel.

The health education data are collected through the IHS Health Education Resource Management System (HERMS). This is an automated system, with computer edits, that is monitored by IHS Headquarters personnel. Currently, only some IHS Areas are reporting data using HERMS. The data have not been extrapolated to represent the totals of all IHS health education programs since the main purpose of the charts and tables is to show the distributions of provider hours and clients served. It is assumed that the distributions calculated from the data of the three to four Areas (depending on the chart/table) are similar to the distributions for all twelve Areas. It should be noted that the totals of provider hours and clients served are different for each chart/table due to specific report parameters. That is, different records may be excluded in the generation of the various reports because of screens specific to each report.



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.

Birthweight

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

Cause of Death

For the purpose of national death 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.

Community Health Representative (CHR)

Indians selected, employed, and supervised by their Tribes and trained by IHS to provide specific health care services at the community level.

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, that are available at least 40 hours a week for ambulatory 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.

High Birthweight

Birthweight of 4,000 grams or more.

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 of life 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.

Glossary

Live Birth

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

Low Birthweight

Birthweight of less than five pounds, eight ounces or 2,500 grams.

Maternal Death

The death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and the site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes.

Neonatal Mortality Rate

The number of deaths under 28 days of age per 1,000 live births.

Occurrence

Place where the event occurred.

Postneonatal Mortality Rate

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

Race

On death certificates, race is usually recorded by the funeral director who may or not query the family members of the decedent. The race of a newborn does not appear on the birth certificate. In this report if either the mother, the father, or both parents were recorded as American Indian or Alaska Native on the birth certificate, the birth is considered as an American Indian or Alaska Native birth.

Reservation State

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

Residence

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

Service Area

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

Service Population

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

Service Unit

The local administrative unit of IHS.

User Population

American Indians and Alaska Natives eligible for IHS services who have used those services at least once during the last 3-year period.

Years of Productive Life Lost (YPLL)

A mortality indicator that measures the burden of premature deaths. It is calculated by subtracting the age at death from age 65 and summing the result over all deaths.

Sources

of Additional Information

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

General Information

Edna L. Paisano, Team Leader
Program Statistics Team

Priscilla Sandoval
Program Analyst

Demographic Statistics

Aaron O. Handler, Team Leader
Demographic Statistics Team

Jo Ann N. Pappalardo
Computer Systems Analyst

Debra A. Heller
Statistician

Barbara A. Moore
Statistical Assistant

Patient Care Statistics

Linda J. Querec, Team Leader
Patient Care Statistics Team

Bonnie M. Matheson
Computer Assistant

Copies of this and other statistical publications may be obtained from the Team Secretary.

The address and phone number are as follows:

Indian Health Service

Office of Public Health

Program Statistics Team

Twinbrook Metro Plaza
12300 Twinbrook Parkway
Suite 450
Rockville, Maryland 20852

Phone: (301) 443-1180

Fax: (301) 443-1522

This publication, other IHS statistical publications, and links to IHS data files are available on the Program Statistics Web Site.

The address is:

http://www.ihs.gov/NonMedicalPrograms/IHS_stats