

## **Indian Health Service (IHS) Statistical Note**

Prepared by the IHS Division of Program Statistics

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**SUBJECT:** American Indian and Alaska Native Population Figures Used by the Indian Health Service

### **Introduction**

The Indian Health Service (IHS) uses two types of population figures in its various activities -- IHS service population and IHS user population. This statistical note defines these two types of population figures, describes how they are calculated, identifies their limitations, and indicates for what purposes they are used.

### **IHS Service Population**

#### Definition.

The count of those individuals residing in the IHS service area who identified themselves as American Indian, Eskimo, or Aleut during the U.S. Decennial Census.

This count is sometimes referred to as the "eligible" population in contrast to "user" population, since it is not known whether these individuals actually "use" IHS services.

#### How Calculated.

IHS service population figures are based on official U.S. Census Bureau county data. The Census Bureau enumerates those individuals who identify themselves as American Indian, Eskimo, or Aleut. The IHS service population consists of those enumerated American Indians, Eskimos, and Aleuts who reside in the geographic areas in which IHS has responsibilities ("on or near" reservations, i.e., contract health service delivery areas (CHSDAs)).

IHS service populations between Census years (e.g., 1980 and 1990) are estimated by the Demographic Statistics Branch (DSB) of the Division of Program Statistics (DPS) using 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. For example, the American Indian service population enumerated in 1990 was approximately 8 percent higher than that estimated by DPS for 1989 based on the 1980 Census. Therefore, after release of the 1990 enumeration figures, DSB smoothed the service population estimates for 1981-1989.

IHS service populations beyond the latest Census year (1990) are projected through linear regression techniques, using the latest 10 years of Indian birth and death data provided by the National Center for Health Statistics (NCHS). The estimated natural change for a county (estimated number of births minus estimated number of deaths) is applied accumulatively to the latest Census enumeration for the county for each year beyond the Census. DSB produces a new set of projections each year based on the most current 10 years of birth and death data that it has obtained from NCHS.

The lowest geographic level that service populations are produced for is county. However, if a county is split between service units, DSB allocates the county population to the affected service units based upon percentage splits developed by the IHS Areas. These percentage splits are calculated using sub-county Census data and Census maps. (In FY 1993, 40 of the 490 IHS service counties were split in this way.) DSB produces service populations for IHS Areas, service units, and counties. DSB also generates Indian population estimates and projections, using the same methodology, for non-IHS counties. Therefore, DSB produces Census-based Indian population figures for every U.S. county and all 50 States.

DSB does not currently forecast changes in the service population distribution by age and sex. Rather, appropriate Indian age and sex distributions from Decennial Census years for counties in the IHS service area are applied to population estimates for intercensal years.

#### Limitations.

The main limitation of Census-based population data is the undercount of Indians resulting from self identification of race. During the Census, persons are asked to select the race they most identify with. Persons who are part Indian may choose to identify with their other race during the Census. Therefore, the service population would not count them even though they are Indian and eligible for IHS services. On the other hand, there may be some individuals who are not Indian but identify as Indian during the Census. Supposedly this happened in several California communities during the 1980 Census. However, it appears that with each Census more persons of Indian descent are choosing to identify as Indian thereby increasing the Indian enumeration more than would be expected based on natural change.

Although the Census does collect Tribe information (enrolled or principal Tribe) for persons who report Indian race, over 20 percent of respondents did not report a Tribe during the 1980 and 1990 Censuses. The Tribe information collected on Census forms is not considered very reliable for this reason. Therefore, it is not possible to accurately determine whether a person who identifies as Indian in the Census is eligible for IHS services (i.e., the person may be a State-recognized Indian or belong to a Tribe recognized by a foreign government such as Canada or Mexico). Also since the Census Bureau does not release individual records with person-level identifiers, it is not possible to determine whether these "Indians" use IHS services.

Another limitation of the IHS service population estimates and projections is the lack of detailed intercensal data on migration for American Indians. As a result, DSB is not able to adjust the IHS service population estimates and projections for Indian migration. The effect on the IHS service population as a whole (i.e., the total over all IHS Areas) is probably not very great. However, population figures for smaller geographic areas, e.g., a county, may have a large error if there was a large migration in or out of the area during the time period in question.

#### Uses.

IHS service population estimates and projections are used for specific purposes. They are used in developing the IHS annual budget justification, i.e., in terms of estimating the number of Indians to be served in the budget year and the rate of population growth. They are used to estimate the number of Indians in the IHS service area who do not have current access to IHS services, i.e., by comparing the service population to the user population for a geographic area. The resulting unserved population figure is used as a factor in some resource allocation models. Since there are insufficient years of user population estimates to develop reliable user population growth rates, the service population growth rate is also applied to user populations for projection purposes. This growth rate is also used for projecting planning year utilization in workload forecasting for facility planning. However, the main use of service populations is in calculating vital event rates, since there is a correspondence between racial definitions used in U.S. Census procedures and State vital event record preparation procedures. State birth and death certificates are similar to Census results in that they do not provide information on eligibility for or use of IHS services.

### **IHS User Population**

#### Definition.

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

#### How Calculated.

IHS user population estimates are based on data from the IHS Patient Registration System central database maintained by the Division of Data Processing Services (Data Center), Office of Information Resources Management, in Albuquerque. Patients who receive direct or contract health services from IHS or Tribally-operated programs are registered in the Patient Registration System. Those registered Indian patients that had at least one direct or contract inpatient stay or outpatient visit or a direct dental visit (as recorded in the IHS central database) during the last three years are defined as users.

The Patient Care Statistics Branch (PCSB) of DPS produces user population estimates by Area and service unit. The estimate for a service unit includes only those "users" who are residents of the service unit. The user population estimate is not facility based, and therefore does not give a service unit credit for "users" who cross service unit boundaries.

Detailed age and sex distributions are calculated for the user population estimates based on the date of birth and sex data recorded on Patient Registration records. Since IHS does not have sufficient years of user population estimates upon which to base projections, PCSB currently assumes that the user population for a service unit will change at the same rate as the service population is estimated to change, i.e., at the rate of natural change.

#### Limitations.

The IHS Patient Registration System was first implemented in 1984. It is now considered to be fairly accurate and complete. It is possible for patients to register at more than one site, but the IHS central database is programmed to unduplicate records within an Area. The Data Center sends periodic reports to the IHS Areas showing possible duplicate registration records. The accuracy of the Patient Registration database is highly dependent on the Areas determining which records are in fact duplicates and taking appropriate actions to unduplicate the records in the central database. IHS is in the process of making the Social Security Number its primary patient identifier. This should greatly assist in unduplicating records.

User populations were first estimated in 1986. The methodology for producing the estimates has been modified somewhat over time so that now it relies almost exclusively on the results of the match between Patient Registration records and workload records. One exception is for a service unit where a Tribal contractor is not currently required to submit workload records to the IHS central database. In this situation, a survey is conducted to estimate what proportion of the registrants are active. A random sample of registration records is drawn from the central database. Then at the facility(s), the corresponding patient charts are examined to determine whether a patient encounter, as defined previously, took place during the last three years. With the establishment of the Core Data Set Requirements, it is expected that all Tribal contractors will be submitting workload data, and no adjustments will be necessary. Another exception is made for newly-recognized Tribes that have had a health program in operation for less than three years. User population estimates are developed based on the initial estimate of the number of Tribal members/descendants residing in the service unit and percent active factors experienced by other service units in the Area.

The user population estimate for a service unit is defined to include only the residents of the service unit. In this way, the sum of the service unit figures results in an unduplicated count of users across service units. For some applications, it is necessary to know how many individuals used the health services in a service unit

regardless of where they reside. This information can be derived from Patient Registration reports.

#### Uses.

IHS user population estimates are used for most IHS planning activities. The user population is the population figure that IHS has most control over, is an indicator of actual dependence on the IHS system for health care, and treats each IHS Area in the same manner. User populations are used for facility planning purposes. That is, they are used to calculate the base-period utilization rate for determining over and under-utilization of services in workload forecasting.

They are also used as input to the Resource Requirements Methodology (RRM) for calculating the staffing requirements for new and/or replacement facilities. Whenever RRM is applied, the user populations are used as the population variable. The user populations are used in resource allocation applications as the base-period population figure upon which the allocation is based. They are also used in calculating patient care utilization rates since they represent the population actually receiving care. If a user population projection is required, the most recent user population estimate is adjusted by the applicable service population growth factor for the geographic area in question, as discussed previously.