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MINNESOTA INDIAN PEOPLE SELECTED HEALTH STATISTICS



Minnesota Center for Health Statistics
Minnesota Department of Health

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I. INTRODUCTION

Minnesota Indian People: Selected Health Statistics represents the second attempt by the Minnesota Center for Health Statistics to consolidate demographic and health statistical information pertaining to the Indian residents of Minnesota. The first was a paper entitled Sampler--Indian Health in Minnesota written in 1974.^{1/} It is published as a companion piece to Minnesota Indian People: Health Care Guidelines published by the office of Community Development, Minnesota Department of Health.

Data regarding the population characteristics and selected health events of the American Indian residents of Minnesota have been compiled in this publication from a number of sources, including the Minnesota Department of Health, the National Center for Health Statistics, U.S. Bureau of Census, and the Indian Health Service (IHS). Data was obtained for the county level and aggregated into statistical information for various geo-political levels such as Urban Area, Service Unit, and State. There is no information in this report which is specific to a Reservation. The closest approximation to a Reservation area would be an IHS--Service Unit, encompassing a greater geographical area and a larger Indian population than the individual Reservation (See Technical Notes for a definition of Service Unit and Urban Area).

Statistics are shown for selected years from 1960 through 1977, with most of the information pertaining to the years 1974 to 1976. There are six sections to this report: Introduction, Technical Notes and Concepts, Selected Demographic Data, Natality Statistics, Mortality Statistics, and Conclusion. A Glossary and Appendix follows the Conclusion.

This publication hopes to meet the needs of various agencies, organizations, and citizens, including:

- 1) Minnesota tribal and urban Indian people, along with the Indian Health Service, who formulate health plans which attempt to address the unmet health needs of Minnesota Indian people,

^{1/} Thompson, David, Sampler--Indian Health in Minnesota, 1974.
Mr. Thompson produced the report under contract with the Indian Health Board of Minneapolis, Inc.

- 2) Local Boards of Health which, under the Minnesota Community Health Services Act of 1976, must identify health needs of all residents within their jurisdiction, including Indian people,
- 3) Health System Agencies and other federal and state agencies who require health information in order to document health needs of Indian people within their jurisdiction,
- 4) Organizations who may require documented health information on Indian people in order to apply for grants and contracts, and
- 5) Educational institutions and personnel who request health information on Minnesota Indian people.

II. TECHNICAL NOTES AND CONCEPTS

This chapter describes certain basic terms with which the reader should be familiar in order to aid in comprehension of the statistical information contained in Chapters III - VI.

Indian People: For the sake of simplicity and fewer semantic arguments, this report uses the terms "Indians" or "Indian people." "Native Americans" or "American Indians" could also have been used. There are those who could argue correctly for the use of any one of these terms, however the final decision on terminology will be left to the reader. There has been no attempt in this report to describe health data on the bases of tribal affiliation.

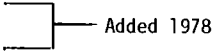
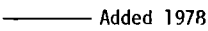
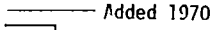
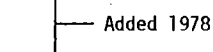
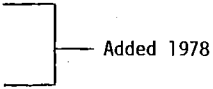

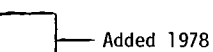
Service Unit Definition: Service units are geographically designated areas (usually non-metropolitan counties) within which the Indian Health Service (IHS) is legally mandated to provide health services to members of federally recognized tribes. These health services must be provided to the extent resources permit, either directly or through contracts. See Minnesota Indian People: Health Care Guidelines^{1/} for further information.

Counties which make up IHS Service Units in Minnesota are listed in Table 1. Most Service Units are named by the principal Indian people residing within the boundaries and are similar to reservations geographically. No attempt has been made to categorize Indian people on the basis of eligibility for IHS services or Bureau of Indian Affairs (BIA) services. All Indian people residing within the counties which make up Service Units are referred to as Service Unit Indian people.

Urban Area Definition: For purposes of this publication, all Indian people residing within the geographical areas of Hennepin County, Ramsey County, or the city of Duluth are considered to be Urban Indians. These areas are also listed in Table 1.

^{1/} Minnesota Indian People: Health Care Guidelines. Office of Community Development, Minnesota Department of Health.

TABLE 1
Service Unit and Urban Area Designations
By County, 1966-1978

<u>Service Units</u>	<u>County</u>	
Fond du Lac	Carlton St. Louis (part) ^{1/}	
Grand Portage	Cook	
Greater Leech Lake	Cass Itasca Hubbard Beltrami (part)	
Mille Lacs	Aitkin Mille Lacs Pine Kanabec	
Minnesota Sioux	Goodhue Redwood Yellow Medicine Scott Chippewa Renville Pierce (Wis.)	 
Nett Lake	Koochiching St. Louis (part) ^{1/}	
Red Lake	Beltrami ^{2/} Clearwater Lake of the Woods Pennington Roseau	
White Earth	Becker Clearwater ^{2/} Hubbard Mahnommen Norman Polk	 
<u>Urban Area</u>	<u>County or City</u>	
	Hennepin County Ramsey County City of Duluth	

This list is intended as an aid when using Service Unit or Urban Area statistics. Indicated are the groupings of counties into service units and the additions or deletions of county vital event data (births and deaths) to the service unit data base by the Indian Health Service. 1978 additions and deletions for Service Units will be incorporated into the Indian Health Service data system in 1979.

Source: Office of Program Planning, Bemidji Program Office, Indian Health Service, 1978

^{1/} St. Louis is community coded. Until 1977 the upper third was assigned to the Nett Lake Service Unit. The lower third, excluding Duluth, was assigned to the Fond du Lac Service Unit. In 1978 the lower half, including Duluth was assigned to the Fond du Lac Service Unit and the upper half was assigned to the Nett Lake Service Unit.

^{2/} All from 1966-1977. Part deleted in 1978.

Data Coverage: The three major groups of Indian people described in this publication are Minnesota--All Indians, Service Unit Indians, and Urban Indians. Service Unit and Urban Indian data have not always been gathered by the geographical designations described in Table 1. Sample data pertaining to these Indian groups have been utilized.

Data pertaining to Service Unit Indians represent either all Indian people residing within the IHS Service Units of Minnesota or a representative sample of these Indian people. For example, when the birth rates are described for Service Unit Indian people in Table 6, all Service Unit Indian people are included. But in Table 3, Selected Demographic Characteristics, Service Unit Indian people are represented by the Indian people residing in either Beltrami, Becker, Itasca, or Cass Counties (as of 1970 these four counties represented 62% of all Service Unit Indian people in Minnesota). When a sample is used, a footnote will describe which Indian people are included.

The same is true for Urban Indian people. For example, when the birth rates for Urban Indian people are described in Table 6, All Urban Indian people are included. But in Table 3, Demographic Characteristics, Urban Indian people are represented by the Indian people residing in Hennepin County only (as of 1970, this county represented 71% of All Urban Indian people in Minnesota). When a sample for Urban Indian people is used, a footnote will describe the sample.

Occurrence and Residence: All data used in this publication are residence data. The reader may wish to consult the Glossary for a definition of the term "residence."

Observed Frequencies and Margins of Statistical Error: The number and characteristics of all phenomena reported at the county, service unit, urban area or state, unless otherwise noted, are a complete count of these events, and as such, are not subject to sampling error or variation.

When comparing frequencies and rates over a period of time or for different areas, the number of events that actually occurred may be considered as one of a large series of possible results that could have arisen under the

same circumstances. For example, there is considerable fluctuation from time to time in the numbers and characteristics of births and deaths reported for any geographical area even when there has been no change in the underlying conditions which give rise to these events. The probable range of values may be estimated from the actual figures according to certain statistical procedures. Thus the underlying conditions which resulted in 54 infant deaths for Minnesota-All Indians from 1970-1972 might have produced 44 or 62 infant deaths.

Rates calculated from a small number of events or for a small population exhibit considerable variation. For example, Table 2 shows the differences in birth rates for 2 populations with an increase of 2 births:

TABLE 2. Example of the Influence of Two Observed Events Upon a Small and Large Population

Population A

Observed # Births at Two Points in Time	Estimated Population at July 1	Calculated Rate Per 1,000 People Per Year
2	100	20.0
4	100	40.0

Population B

Observed # Births at Two Points in Time	Estimated Population at July 1	Calculated Rate Per 1,000 People Per Year
200	10,000	20.0
202	10,000	20.2

Population "A" consists of 100 people. An increase of 2 births over time doubles the birth rate from 20 to 40 (Consult Glossary for methodology used when calculating birth rates). By comparison, a larger population such as that of "B" experiences only a slight increase in the birth rate (from 20.0 to 20.2). Because the population base for many Indian Peoples is small, related health data is often aggregated into three and five-year totals for statistical use in this publication. In all instances where

fewer than 30 discrete events are encountered, extreme caution should be used in interpreting the calculated rates.

When either data frequencies (events) or populations are small, the reader is encouraged to use the aggregated data as the best estimate. For example, in 1974-1976 on the Minnesota Sioux Service Unit 24.7% of the Indian births were illegitimate (out-of-wedlock). But the average number of illegitimate births is small (2.3), and the population is small (429). So, although 24.7% is the actual proportion of Indian illegitimate births, this statistic is unreliable. The next best estimate to use would be from the total Service Units during 1974-1976. Here, the percent of illegitimate Indian births is 40.0%.

Minnesota Indian Population Estimates and Projections: Service Unit, Urban Area, and State Indian population estimates and projections^{1/} were calculated using several data sources and are based upon differing assumptions. A brief description of the data sources, key assumptions, and methodology follow.

State Indian Population

Most of the Indian population estimates and projections used in this publication were developed by the IHS. As a Federal Agency, the IHS is legally mandated to base its population estimations and projections on the U.S. Census. However, problems have arisen because of the documented undercount of Indian peoples in the 1970 Census of the Population. The undercount was substantial, probably proportionately greater for Indian peoples than for any other racial group in society. Estimates of this undercount range from 3.7% to 20% of the actual Indian population.^{2/}

1/ See Glossary for a definition of "estimates" and "projections."

2/ The reader may wish to consult A Study of Selected Socio-Economic Characteristics of Ethnic Minorities Based on the 1970 Census, Volume III: American Indian. Office of Special Concerns, DHEW, HEW Publication No. (OS) 75-122, 1974. Quoting from that publication... "Official estimates by the Bureau of Indian Affairs (BIA) and other counts of populations on reservations do not agree with the figures of the U.S. Census. Several tribes have made their own population counts, which record even higher figures than the BIA... In 1970, over 21,000 persons enumerated as white had an American Indian language as their mother tongue... The difference between IHS and Census figures is too great to be accounted for except by undercount."

Service Unit Indian Population

Most estimates and projections of service unit populations used in this publication were also developed by the IHS. Until 1976 all the Indian Health Service Indian population estimates and projections were based upon the difference between the 1960 and 1970 U.S. Census counts. This difference was divided by 10 to obtain an annual inter- and post-censal count. Starting in 1976 the IHS used three other factors in addition to the 1970 U.S. Census in estimating and projecting Service Unit Indian populations. These factors were births, deaths, migration. (The migration factor is calculated annually by the U.S. Bureau of Census for "All Races" of each county of the United States for the purpose of revenue sharing.) This new method is more sophisticated and potentially more accurate, but continues to use an undercounted baseline. The Indian Health Service acknowledges this fact and hopes the migration factor may mitigate some discrepancies caused by the undercount. The statistical experience of the Minnesota Center for Health Statistics suggests that the first method for calculating the growth of the Service Unit Indian population is accurate.

Urban Area Indian Population

Population estimates for the Hennepin and Ramsey Counties Urban Indian populations were calculated using a trend-analysis of available data, including the 1960 U.S. Census enumeration, the 1970 U.S. Census enumeration, and the natural increase from 1960-1976 (Births-Deaths). A migration factor calculated from the difference between the actual 1970 population enumeration and an estimate of the 1970 population based solely on the natural increase from 1960 to 1970 was factored into the calculation for projection purposes, as was a 20% undercount by the 1970 U.S. Census of these Indian people.^{1/}

The population estimates for the City of Duluth Indian population were also calculated using trend-analysis of available data, including the 1970 U.S. Census enumeration. A 20% undercount by the 1970 U.S. Census of Indian

^{1/} The undercount is discussed in Health and Mobility Survey of Reservation Indians, 1976, and Mobility and Health Care Utilization Among Urban Indians, 1974. Both publications are based on survey work conducted by the Indian Health Board of Minneapolis, Inc.

people of Duluth^{1/} was factored into the calculation for projection purposes, as were population projections calculated by the Indian Health Service for the southern half of St. Louis County for 1979-1984. This population is largely centered in Duluth (See Table A-4, Fond du Lac Service Unit for these population projections).

Minnesota "All Races" (Total Resident) Populations, Estimations and Projections: The Minnesota State Demographer, in cooperation with the U.S. Bureau of the Census is responsible for developing population estimates and projections. The Minnesota Center for Health Statistics was responsible for the function until 1973 and its estimates are used in this publication where the respective data years are the object of focus.

^{1/} The undercount is discussed in Health and Mobility Survey of Reservation Indians, 1976, and Mobility and Health Care Utilization Among Urban Indians, 1974. Both publications are based on survey work conducted by the Indian Health Board of Minneapolis, Inc.

III. SELECTED DEMOGRAPHIC DATA

There are two sections to this chapter, an overall demographic section, and a more detailed analysis of selected population phenomena, including age pyramids, maps, and population estimates and projections.

In 1970 the U.S. Census enumerated 23,128 Indian people in Minnesota.^{1/} Almost 70% of these individuals identified themselves as the Ojibwe (Chippewa) tribe. The next largest tribal affiliation was Dakota (Sioux) with approximately 8% of all Minnesota Indians.^{2/} People of other tribes represented in Minnesota include the Winnebago, Oneida, Cherokee, Apache and Menominee.^{3/} Estimates of the present (1977) Minnesota Indian population range from 28,000 to 35,000.^{4/}

Selected Demographic Characteristics: Table 3 displays comparative 1970 information about six population groups: U.S. "All Races"; U.S. "All Indians"; Minnesota "All Races"; Minnesota "All Indians"; "Urban Indians" (Hennepin County); and "Service Unit Indians" (4 selected counties). The eight categories chosen for comparison include population characteristics, family characteristics, state of birth, school characteristics, income characteristics, employment status, percent under poverty level, and housing characteristics.

Table 3 indicates that "All Indians" of Minnesota, compared to "All Races" in 1970 had:

- | | |
|---|------------------------------|
| <ul style="list-style-type: none">- A higher percentage of younger people aged less than 25; 53.3% vs. 40.0%- A lower percentage of older people aged 65 and over- A younger population; median age 17.2 vs. 26.8 years | } Population Characteristics |
|---|------------------------------|

^{1/} Not taking into consideration any undercount.

^{2/} U.S. Department of Commerce, Bureau of the Census.

^{3/} Data from Indian Health Board of Minneapolis, Inc.

^{4/} 28,469 is an estimate used in this publication. 35,000 was a 1973 estimate of the Minnesota Indian Affairs Commission (Source: Indians in Minnesota. League of Women Voters of Minnesota, 1974).

- More persons per family; 4.61 vs. 3.69 people
 - A higher percentage of families with children (both under 6 and under 18); 46.4% vs. 28.9% and 73.9% vs. 57.9% respectively
 - A higher percentage of families with a female as head; 27.9% vs. 8.0%
 - More children born to each unit of 1,000 "ever married" women aged 35-44; 5,181 vs. 3,618 children
- Family Characteristics
-
- Fewer school years completed; 10.1 vs. 12.2 school years
 - A lower percentage of high school graduates; 32.4% vs. 57.6%
 - A much lower percentage of college graduates; 2.0% vs. 11.1%
- School Characteristics
-
- Families, males and females who made less money
- Income Characteristics
-
- About the same percentage of males and females in the labor force, but a much higher percentage of unemployment
- Employment Status
-
- A higher percentage of under the poverty level families headed by a female and all persons in poverty; 59.6% vs. 24.0% and 37.6% vs. 10.7% respectively
- Under Poverty Level
-
- A lower percentage of owner occupied households; 43.0% vs. 71.5%
 - A much higher percentage of households (not in urban area) which lacked some or all plumbing facilities; 29.1% vs. 8.6%
 - A lower median number of rooms per household; 4.4 vs. 5.4 rooms
 - A higher median number of persons per room per household; 3.6 vs. 2.7 persons
 - A much higher percent of households with 1.51 or more persons per room; 12.5% vs. 1.2%
 - Living quarters in older (30+ years) housing structures 57.2% vs. 48.9%
 - A much higher percentage of households with no automobile available; 37.7% vs. 12.8%
 - Housing units of lower value; \$9,400 vs. \$18,000
 - Housing units of lower monthly rent; \$80 vs. \$101
- Housing Characteristics

Table 3 Selected Demographic Characteristics 1970,
Selected All Races and Indian Populations

ITEM	CHARACTERISTIC	U.S. ALL RACES ^{1/}	MINNESOTA ALL RACES ^{1/6/}	U.S. ALL INDIANS ^{2/}	MINNESOTA ALL INDIANS ^{2/}	MINNESOTA URBAN INDIANS ^{2/3/}	MINNESOTA SERVICE UNIT INDIANS ^{2/4/}
POPULATION							
1	Percent of Population Under 20	38.0	40.0	49.2	55.3	55.1	59.4
2	Percent of Population 20 - 34	20.1	19.7	21.4	20.1	24.8	14.6
3	Percent of Population 35 - 64	32.0	29.6	23.6	19.7	17.1	19.4
4	Percent of Population 65 & Over	9.9	10.7	5.7	4.8	3.0	6.6
5	Median Age of Population	28.1	26.8	20.4	17.2	15-19	15-19
6	Males per 1000 Females	948	960	967	940	882	983
FAMILY							
7	Average Number of Persons per Family	3.57	3.69	4.46	4.61	NA	NA
8	Percent of Families with Children Under 6	26.1	28.9	37.3	46.4	56.1	41.6
9	Percent of Families with Children Under 18	55.3	57.9	65.8	73.9	82.2	71.2
10	Percent of Families with Female as Head	10.8	8.0	18.4	27.9	37.0	25.7
11	Children Born to 1000 Women, 35 - 44 Years Old, Ever Married	3,132	3,618	4,554	5,181	4,860	6,667 ^{5/}
STATE OF BIRTH (of Total Native Pop)							
12	Percent Born in State of Residence	64.8	76.4	71.7	80.4	73.6	94.8
13	Percent Born in Different State	24.9	19.9	20.1	13.8	17.5	2.7
SCHOOL							
14	Percent Enrolled in School 3 - 34 Years Old	54.3	57.2	52.9	55.1	47.8	64.2
15	Median School Years Completed, 25+	12.1	12.2	9.8	10.1	11.3	9.0*
16	Percent High School Graduates, 25+	52.3	57.6	33.3	32.4	42.7	22.3
17	Percent College Graduates, 25+	10.7	11.1	3.8	2.0	3.0	0.8
INCOME							
18	Median Family Income	\$ 9,590.00	\$ 9,931.00	\$5,832.00	\$5,391.00	\$ 5,871.00	\$4,426.00*
19	Percent Families with Income Less Than \$4,000	15.2	13.8	34.4	34.9	32.9	43.6
20	Percent Families with Income \$10,000 & Over	47.2	49.5	22.4	19.4	24.9	10.8
21	Median Income of Males 16+, With Income	\$ 7,609.00	\$ 6,526.00	\$3,509.00	\$3,486.00	\$ 5,260.00	\$2,612.00*
22	Median Income of Females 16+, With Income	\$ 3,649.00	\$ 2,006.00	\$1,697.00	\$1,829.00	\$ 2,156.00	\$1,782.00*
23	Percent of Males 16+, with Income Less Than \$4,000	21.3	35.4	54.8	56.9	40.3	73.5
24	Percent of Females 16+, With Income Less Than \$4,000	55.1	72.7	79.8	82.0	78.8	82.7
25	Percent of Males 16+, With Income \$10,000 & Over	29.6	24.3	8.5	7.2	12.3	2.1
26	Percent of Females 16+, With Income \$10,000 & Over	3.5	2.3	1.5	0.5	0.0	0.6
EMPLOYMENT STATUS							
27	Percent in Labor Force Males, 16 Years & Over	76.6	77.1	63.4	61.6	72.6	54.7
28	Females, 16 Years & Over	41.4	43.5	35.3	36.0	44.3	31.3
29	Percent of Civilian Labor Force Unemployed Males, 16 Years & Over	3.9	4.1	11.6	17.0	11.8	27.3
30	Females, 16 Years & Over	5.2	4.4	10.2	11.2	10.1	9.6
UNDER POVERTY LEVEL							
31	Percent of All Families	10.7	8.2	33.3	34.8	31.7	44.1
32	Percent of All Families Headed by Female	32.5	24.0	55.6	59.6	75.9	54.2
33	Percent of All Persons	13.7	10.7	38.3	37.6	31.1	47.8
HOUSING							
34	Occupied Housing Units (Households)						
35	Percent in Owner Occupied	62.9	71.5	49.8	43.0	21.6	65.7
36	Percent Lacks Some of All Plumbing Facilities	7.5	8.6	28.0	29.1	8.5	58.2
37	Median Number of Rooms per Occupied Housing Unit	5.0	5.4 ^{7/}	4.2	4.4	4.5	4.1*
38	Median Number of Persons per Occupied Housing Unit	2.7	2.7	3.4	3.6	3.6	4.2*
39	Percent 1.51 or More Persons per Room	2.2	1.2	17.4	12.5	2.8	30.6
40	Percent Structures Built 1939 or Earlier	40.6	48.9	40.6	57.2	73.2	45.8
41	Percent no Automobile Available	17.5	12.8	29.5	37.7	44.8	39.4
42	Median Value Household Unit	\$17,100.00	\$18,000.00	\$9,000.00	\$9,400.00	\$16,600.00	\$4,467.00 ^{8/}
	Median Contract Rent	89.00	101.00	73.00	80.00	92.00	52.00 ^{8/}

Sources: 1970 U.S. Census Volume 1 Characteristics of the Population: Part 25-Minnesota; Volume I Housing Characteristics for State, Cities and Counties: Part 25-Minnesota; PC (2) - 1F American Indians, U.S. Census, 1970 Population: Social, Economic and Housing Characteristics, Release No. 12, IHS Aberdeen Area, 1974, and unpublished data from the Office of Program Planning, Bemidji Program Office, Indian Health Service, 9/78.

* Information generated from data pertaining to the entire county.

1/ 100% and 20% sample data.

2/ 20% and 15% sample data.

3/ Hennepin County only (71% of the total Minnesota Urban Indian population).

4/ Becker, Beltrami, Cass and Itasca Counties only (62% of the total Minnesota Service Unit Indian population).

5/ Beltrami County only, due to other county data too small for reliable calculations.

6/ For Minnesota All Races items 21-26 presented for persons aged 14 years and over, 82% of males 14 and 15 years of age were either not in labor force or unemployed. 88% of females 14 and 15 years of age were either not in labor force or unemployed.

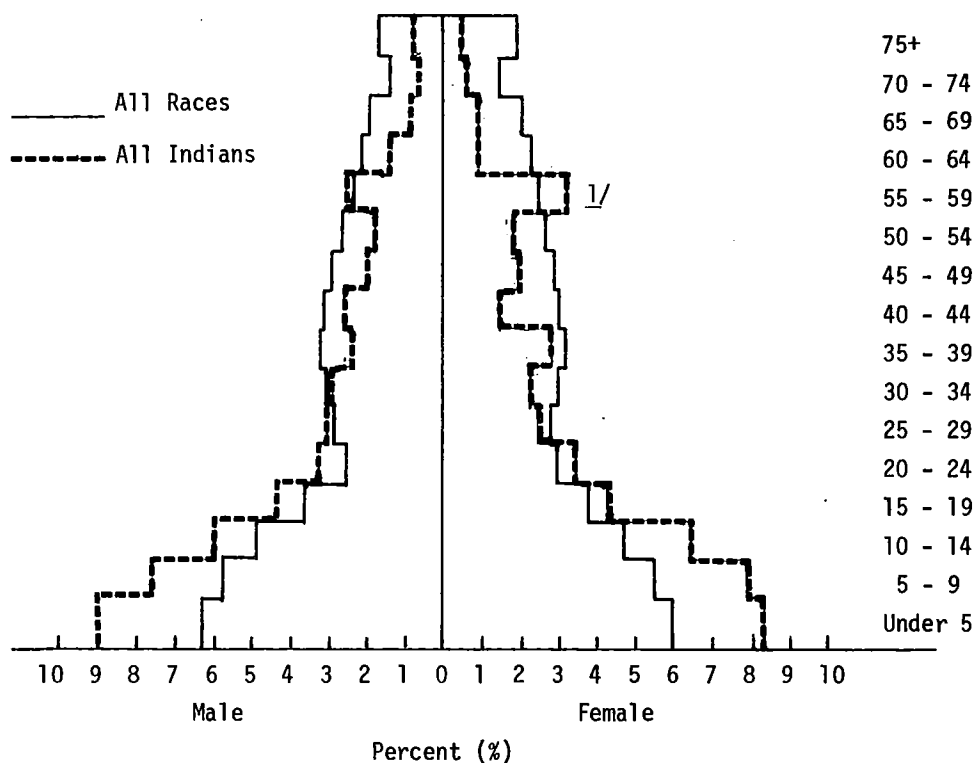
7/ Average of owner occupied and renter occupied of 5.1 and 5.6 respectively.

8/ Itasca county omitted because data frequency was too small for reliable calculation of statistic.

It can be seen in Table 3 that on most characteristics, the 23,128 Indian people residing in Minnesota in 1970 fared worse than the general "All Races" population. It is important to recognize that poverty, low educational levels, high unemployment, and poor housing are either contributing factors toward significant health problems, or characteristic of populations who also exhibit unusually high levels of ill health.

Age Distribution: Figure 1 further describes the Population Characteristics category of Table 3 and comparatively displays via a population pyramid the total 1960 Minnesota resident population with the total 1960 Minnesota Indian population. One can see three distinct regions within this pyramid:

Figure 1. Composite Population Distribution By Age and Sex, 1960 Minnesota Population, All Races vs. All Indians



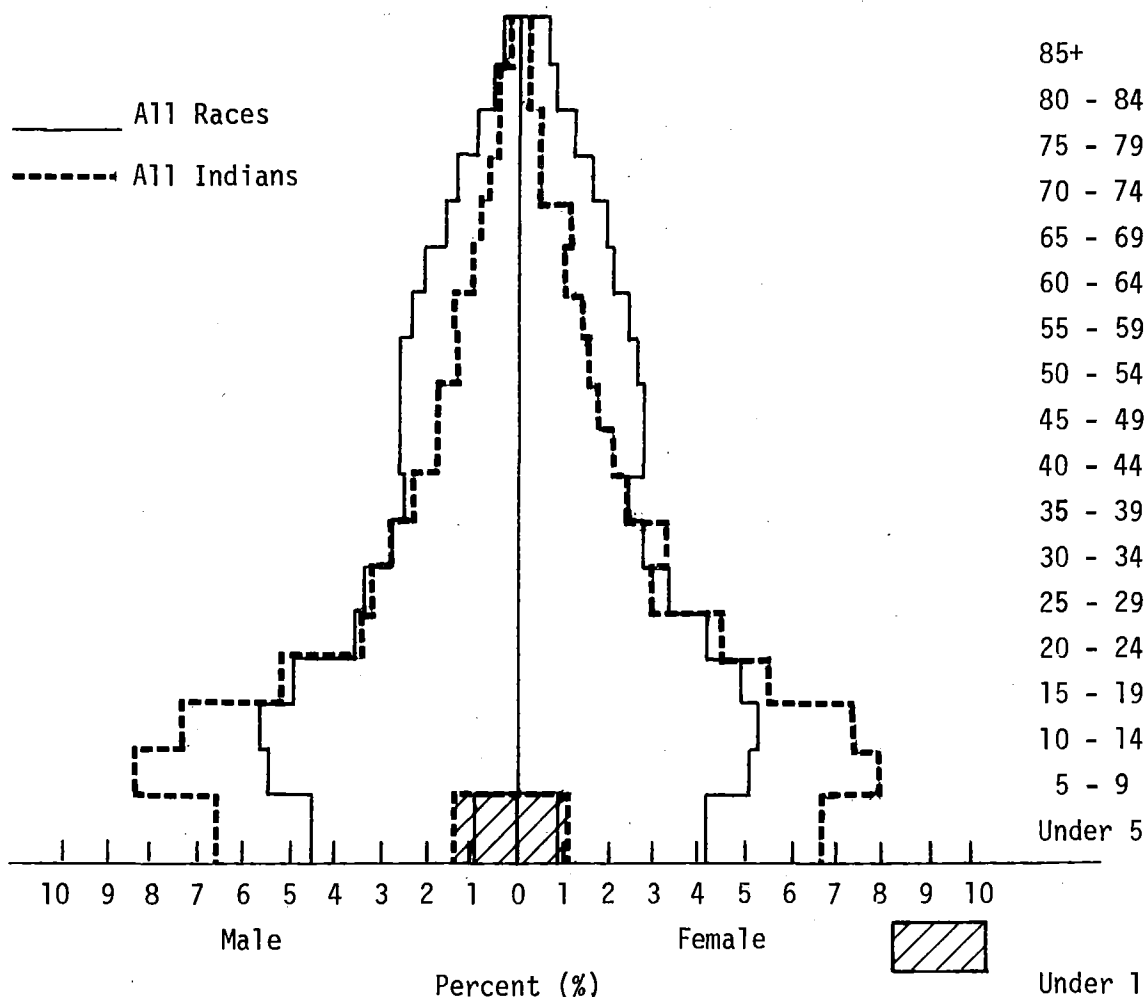
Source: All Races data from Census of Population: 1960 Volume I Characteristics of The Population, Part 25, Minnesota, 1960 U.S. Census, (Total All Races population = 3,413,864).
All Indian data from Sampler - Indian Health in Minnesota, 1974, by David Thompson, Minnesota Department of Health, Center for Health Statistics, and Indian Health Board of Minneapolis, (Total Indian population = 10,387).

1/ The spread within the Indian age cohort of 55-59 is a statistical artifact of an "overcount". For further information see Donald Ackers and Elizabeth Larmon, "Indians and Smudges on the Census Schedule", Proceedings of the Social Statistics Section of the American Statistical Association, 1967.

- 1) Under 20 years old: The Indian population has a greater percentage of people, of both sexes, than the general (All Races) population.
- 2) 20-34 years old: The two populations are approximately the same.
- 3) 35 years or older: The general population has a greater percentage of people, of both sexes, than the Indian population. (Caution: Note the footnote concerning the 55-59 age group for Indian People).

Figure 2 compares the Minnesota Indian population of 1970 with the total population for 1970. As in Figure 1 the pyramid documents the greater percentage of younger Indian people and a lower percentage of older Indian people than the general population.

Figure 2. Composite Population Distribution By Age and Sex, 1970 Minnesota Population, All Races vs. All Indians

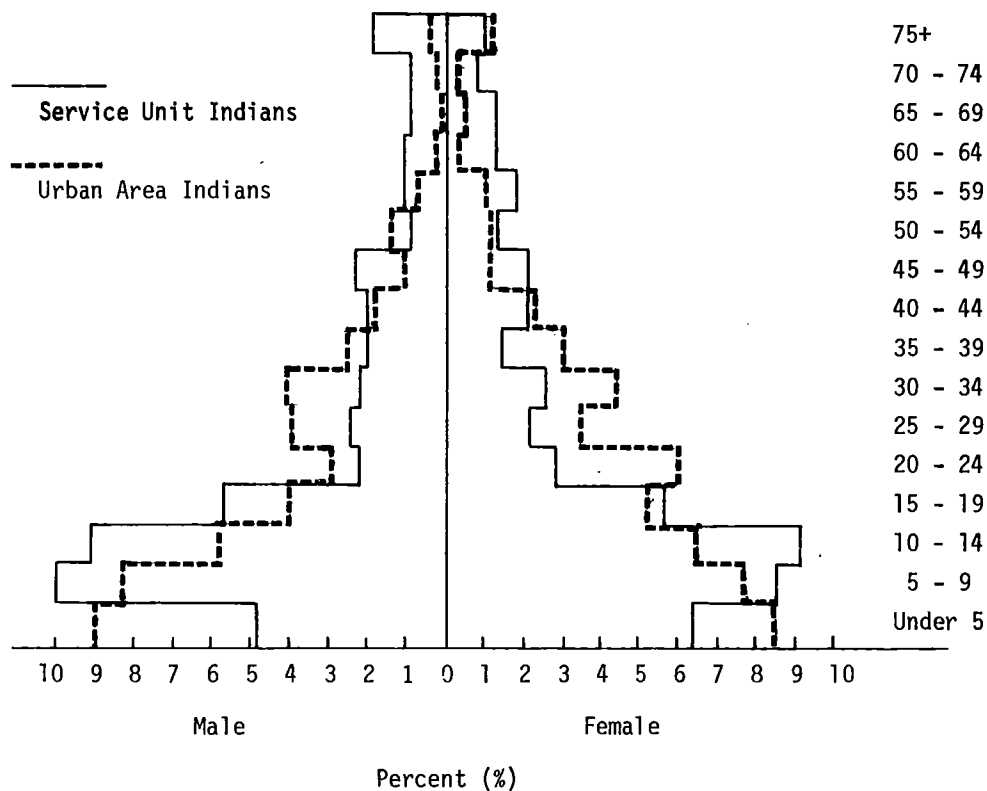


Source: All Races data from PC(1) - B25, Minnesota, 1970 U.S. Census, (Total All Races population = 3,804,971).
 All Indian data from PC(2) - 1F, American Indian, 1970 U.S. Census, (Total Indian population = 23,128).

Comparing Figure 1 with Figure 2 one can see that both populations are aging; bulges in the charts are moving up. Also, the percent of children under 10 and especially young children (under 5) for both populations is decreasing. As we shall see in the following chapter, Natality Experience, this decrease is due to declining fertility rates for both populations from 1960 to 1970.

Figure 3 compares for 1970 the Minnesota Service Unit Indians with the Minnesota Urban Indians.^{1/} It shows overall a slightly greater percentage of younger people (under 20), and double the percentage of older people (65+) for Service Unit Indian people compared to Urban Indian people.

Figure 3. Composite Population Distribution By Age and Sex, 1970 Minnesota Service Unit Indians vs. Urban Area Indians*



Source: Unpublished data of the 1970 U.S. Census, U.S. Bureau of the Census.

* Service Unit Indian population includes only Becker, Beltrami, Cass, and Itasca counties (population of 6,582); or 62% of the 1970 Minnesota Service Unit Indian population. Urban Area Indian population includes only Hennepin county (population of 8,402); or 71% of the 1970 Minnesota Urban Area Indian population.

^{1/} Samples are used to represent the total populations.

There is a greater percentage of young children (under 5) and those of the age group 20-34 for Urban Indians than for Service Unit Indian people. Studies have indicated migration from Service Units (reservations) to Urban Areas is mainly for young and middle age adults (20-34 age group) and their young children (under 5). This population is drawn to Urban Areas, mainly for employment reasons.

The following table briefly summarizes data from all three figures.

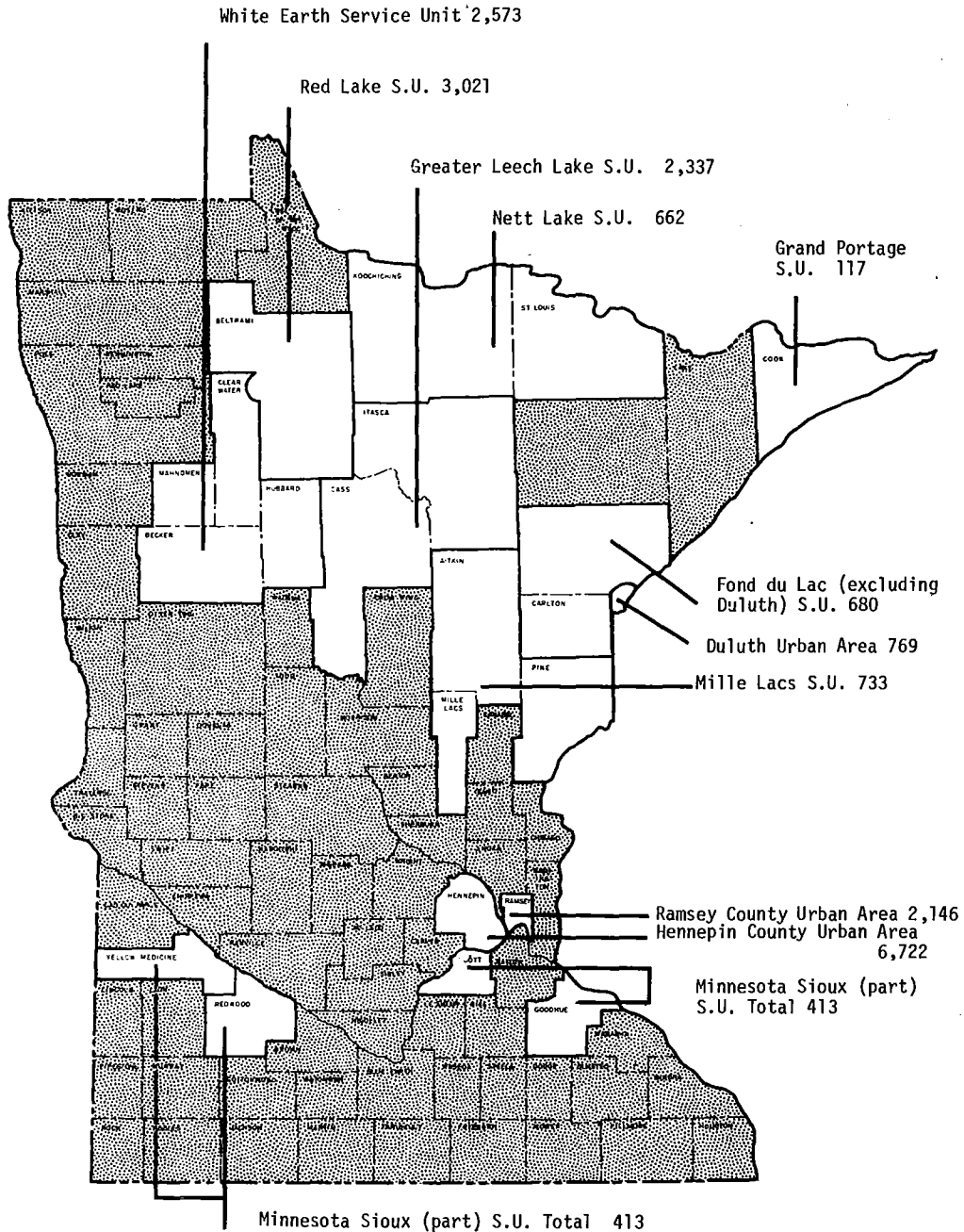
Table 4. Percentage Distribution by Age, Selected Populations, 1960 and 1970

Figure #	1 1960		2 1970		3 1970	
	Minnesota All Races	Minnesota All Indians	Minnesota All Races	Minnesota All Indians	Minnesota Service Unit Indians 1/	Minnesota Urban Indians 1/
Age						
Under 5	12.2%	17.2%	8.8%	13.4%	11.3%	17.5%
5-14 (school age)	20.7	27.8	21.5	31.1	36.7	28.3
Under 20	40.3	53.7	40.0	55.3	59.4	55.1
20-34	17.2	17.3	19.7	20.1	14.6	24.8
35-64	32.0	24.7	29.6	19.7	19.4	17.1
65+	10.3	4.4	10.7	4.8	6.6	3.0

Geographic Distribution: Figures 4 and 5 map the distribution of Minnesota Indian populations by county for Service Units and Urban Areas for 1970 and 1984 respectively. These maps indicate both (1) considerable Indian population growth in all counties, and (2) boundary changes in the Service Units (Note: In 1984 Duluth is also included within the Fond du Lac Service Unit, and is therefore represented twice).

1/ See Appendix Tables A-1 through A-3 for specific data.

Figure 4. Minnesota American Indians, 1970 U.S. Census
IHS Service Units and Urban Areas

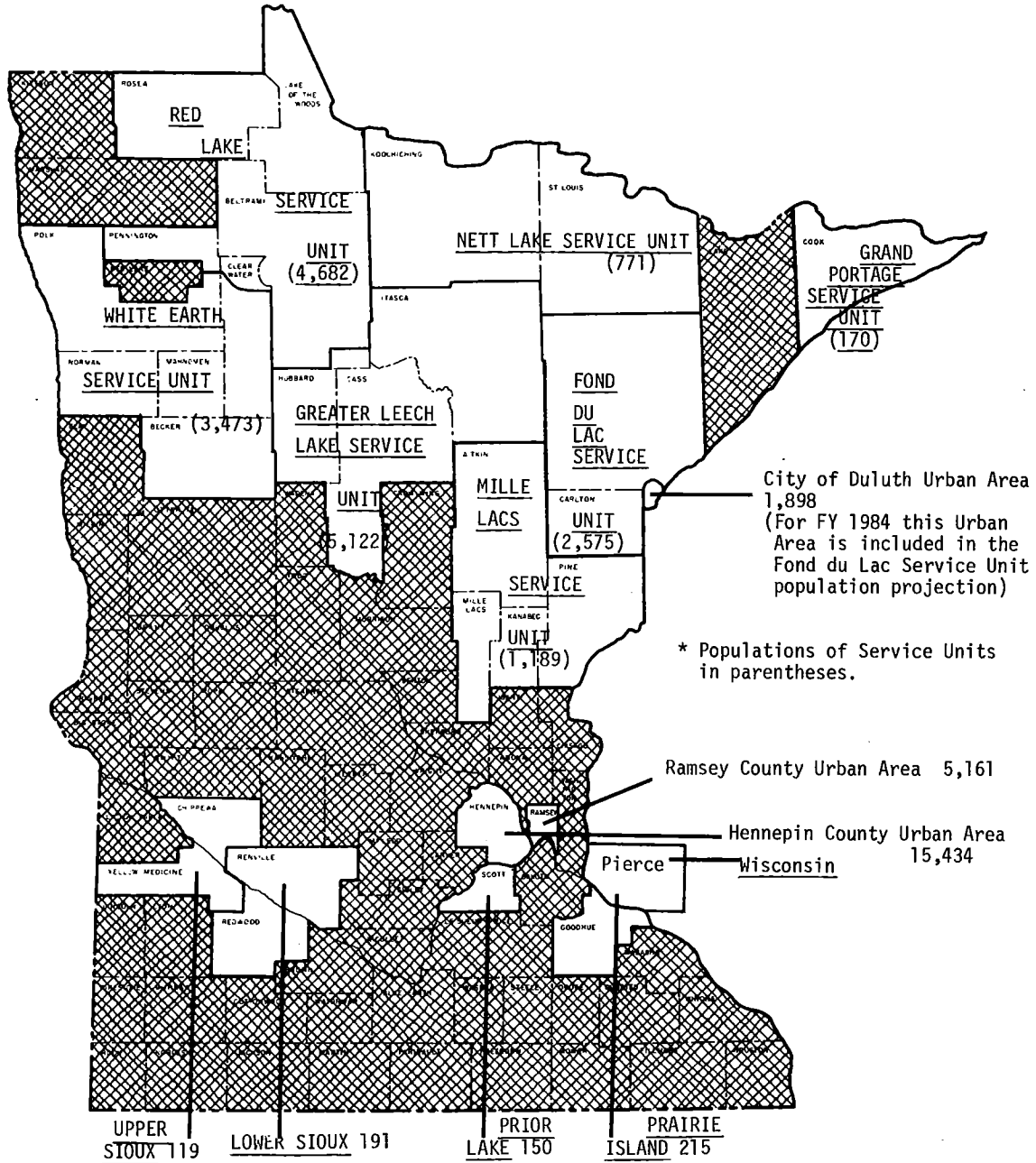


SOURCE: PC(1) - B25, Minnesota, 1970 U.S. Census

Indian Health Service,
Office of Program Planning
Bemidji Program Office 10/78

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Figure 5. Minnesota Indian Population Projections, Fiscal Year 1984;
Service Units^{1/}, Urban Areas^{2/}, and Counties



Sources: ^{1/} Population Branch, Indian Health Service - Headquarters, 10/78
^{2/} Special trend-analyses of available data

* See Section II Technical Notes for further information on population calculations.

TABLE 5

Minnesota Indian Populations, Service Units and Urban Areas, Calendar Years, 1960, 1970-1984

<u>SERVICE UNIT</u> ^{1/}	<u>1960</u>	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>
Fond du Lac	687	680	679	678	677	676	675	762	786	810	2,131	2,208	2,291	2,381	2,475	2,575
Grand Portage	144	117	114	111	108	105	102	133	136	140	149	153	159	162	166	170
Greater Leech Lake	2,312	2,337	2,340	2,343	2,346	2,345	2,347	3,003	3,163	3,330	4,066	4,279	4,500	4,693	4,900	5,122
Mille Lacs	695	733	737	741	745	745	748	927	957	985	1,051	1,084	1,116	1,138	1,163	1,189
Minnesota Sioux	412	413	413	413	413	413	413	461	475	490	598	615	631	645	660	675
Nett Lake	734	662	655	648	641	634	627	729	749	770	686	701	717	734	753	771
Red Lake	2,959	3,021	3,027	3,033	3,039	3,045	3,051	3,784	3,918	4,049	4,140	4,250	4,357	4,461	4,570	4,682
White Earth	2,444	2,573	2,586	2,599	2,612	2,625	2,638	3,004	3,046	3,077	3,110	3,190	3,271	3,337	3,404	3,473
TOTAL SERVICE UNITS	10,387	10,536	10,551	10,566	10,581	10,588	10,601	12,803	13,230	13,651	15,931	16,480	17,042	17,551	18,091	18,657
<u>URBAN AREA</u> ^{2/}																
Hennepin County	2,391	8,402	8,848	9,380	9,892	10,409	10,883	11,423	11,894	12,410	12,914	13,418	13,922	14,426	14,930	15,434
Ramsey County	585	2,682	2,863	3,046	3,217	3,387	3,564	3,749	3,925	4,100	4,277	4,454	4,630	4,807	4,984	5,161
City of Duluth ^{3/}	402	769	860	940	1,021	1,101	1,182	1,262	1,342	1,423	1,532	1,594	1,662	1,736	1,814	1,898
TOTAL URBAN AREAS	3,378	11,853	12,571	13,366	14,130	14,897	15,629	16,434	17,161	17,933	18,723	19,466	20,214	20,969	21,728	22,493
TOTAL MINNESOTA INDIAN ^{4/}	15,496	23,128	23,891	24,654	25,417	26,180	26,943	27,706	28,469	NA	NA	NA	NA	NA	NA	NA

Sources: 1/ 1972-1976 service unit data are from Selected Vital Statistics for Indian Health Service Areas and Service Units, 1972 to 1976, Vital Events Branch, Indian Health Service - Headquarters, 1978. Other Service unit data from the Population Branch, Indian Health Service - Headquarters, 1978.

2/ Hennepin and Ramsey County data are premised upon an analysis of the 1960 and 1970 U.S. Censuses, a 20% undercount of 1970 Census, births, deaths, and 1960-1970 migration factor. Duluth data are from an analysis of 1979-1984 Indian Health Service projections for southern half of St. Louis County (Part of Fond du Lac Service unit), and a 20% undercount of the 1970 U.S. Census.

3/ Beginning in 1979 Duluth is also included within the Fond du Lac Service Unit.

4/ Population Release No. 15, Indian Health Service, Aberdeen Area Office, January 1977.

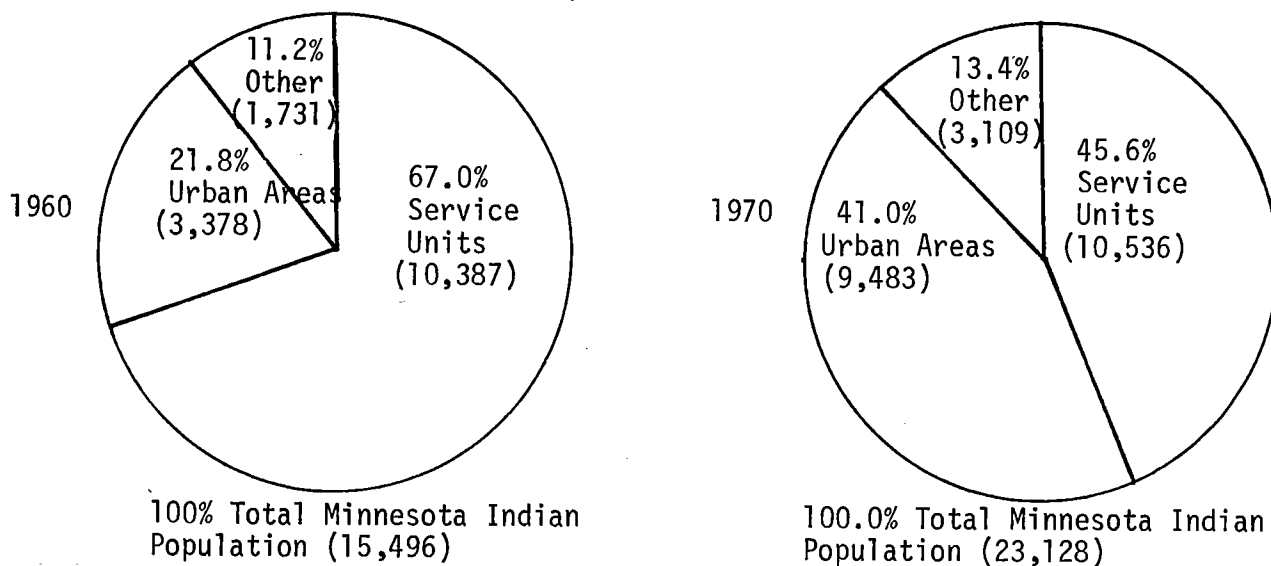
NOTE: See summary of Chapter II, "Technical Notes", for more information on the calculation of the above figures since Service Unit, Urban Area and Total Minnesota Indian population data are calculated differently.

Population Estimates and Projections: Table 5 shows estimated Indian populations from 1970 to 1976 and projections for 1977 to 1984 for Indian Health Service-Service Units, Urban Areas, and all of Minnesota. Two significant changes in population size are documented within the table. The increase between 1975 and 1976 is due to use of a different estimation procedure. The change in 1979 is attributed to more counties or parts of counties either added to or subtracted from some Service Units.^{1/} Due to a recent federal "On or Near" ruling now followed by the Indian Health Service (See Indian Health Guidelines, Minnesota Division of Community Health Services, for more information).

Figure 6 indicates that Minnesota Indian populations grew from 15,496 in 1960 to 23,128 in 1970. This was almost a 50% increase in 10 years. The Indian population in Minnesota also grew as a percentage of the total state population, from .45% in 1960 to .6% in 1970.

Figure 6

Selected Minnesota Indian Populations, 1960 and 1970 U.S. Census Counts



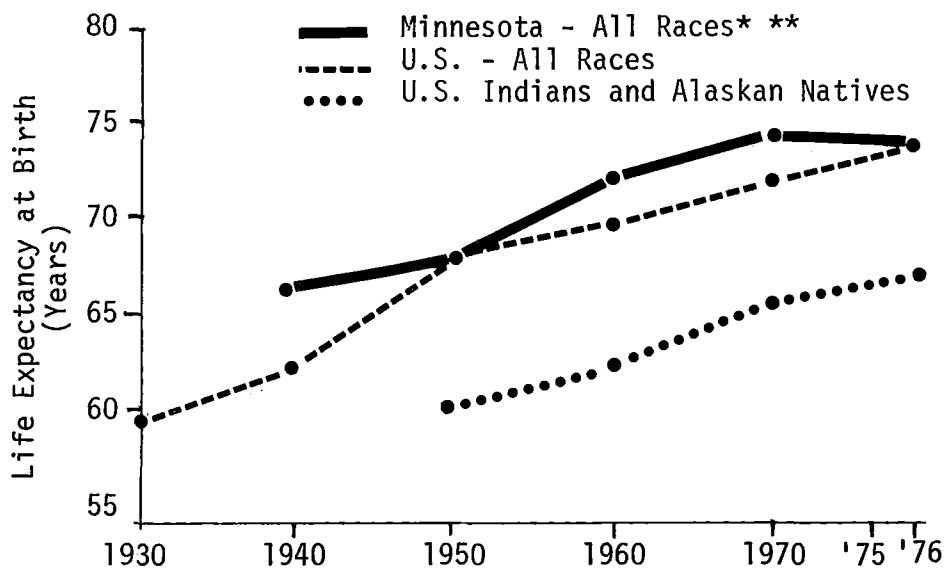
Sources: Urban Areas (see definitions) 1960 data from PC(1) Part 25 Minnesota, Characteristics of the Population, 1960 U.S. Census, Bureau of the Census, 1963.
Service Units (see definitions) data from Indian Health Service, Population Branch, 1978. Remainder of data from PC(1)-B25 Minnesota, General Population Characteristics, 1970 U.S. Census, Bureau of the Census, 1971.

^{1/} See Table 1 for any Service Unit designations from 1966 to 1978.

During this period a massive migration to the Urban Area containing Hennepin County, Ramsey County, and Duluth took place among Indian people. This population almost tripled during the decade, increasing from 3,378 in 1960 to 9,483 in 1970 and an increase from 21.8% in 1960 to 41.0% of the Minnesota Indian population in 1970. Concurrently the Minnesota Service Unit Indian population decreased as a percentage of the Minnesota Indian population; from 67.0% in 1960 to 45.6% in 1970.

Life Expectancy: Life expectancy at birth is the subject of Figure 7.^{1/} Expectation of life at birth is frequently used as a measure of comparative longevity. Due to small frequencies, this statistic is difficult to calculate for Minnesota Indian people.^{2/}

Figure 7. Life Expectancy at Birth, Selected Populations, 1930 - 1976



Source: See Table A-6.

* Calculated for 3 year period and plotted at mid-year.

** White males only for 1940 and 1950.

^{1/} See Table A-6 in the Appendix for specific data.

^{2/} The National Center for Health Statistics does not calculate life tables "for any color grouping (white or other than white) in any state...when the total number of deaths at all ages for either males or females is less than 1,600." The total number of deaths for Minnesota Indian people is usually less than 200 per year. See USDHEW, PHS, National Center for Health Statistics, U.S. Decennial Life Tables for 1969-71, State Life Tables, 1975.

The Indian Health Service has been calculating the life expectancy at birth for all United States Indians and Alaskan Natives since 1950. The life expectancy at birth for this population has risen from 60.0 in 1950 to 66.4 in 1976; a gain of 6.4 years. Correspondingly, the U.S. "All Races" life expectancy has risen from 68.2 in 1950 to 72.5 in 1975; a gain of 4.3 years. Therefore the Indian life expectancy at birth, while still 6.1 years less, is increasing faster than that of "All Races."

Summary: The Minnesota Indian population is growing as a segment of the Minnesota total population. Proportionately, there are more younger and less older Indian people compared to "All Races." Between 1960 and 1970 there has been a general migration of young Indian people from the reservations (Service Units) to Urban Areas. Finally, life expectancy at birth for all U.S. Indians and Alaskan Natives is currently years behind that of "All Races."

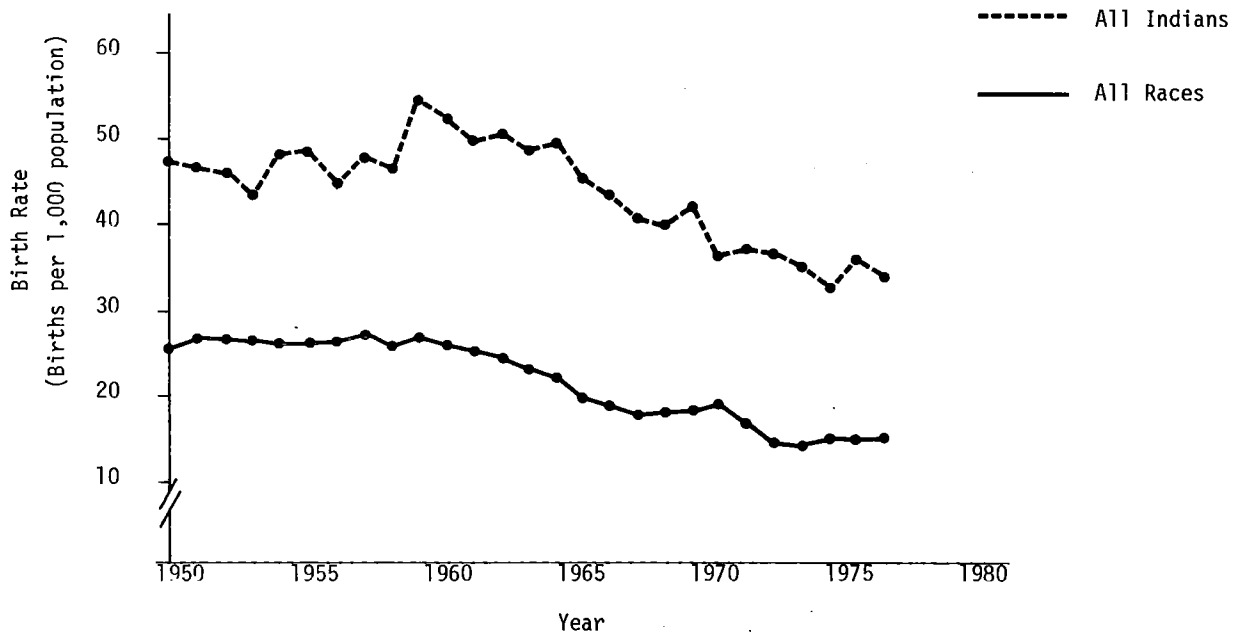
IV. NATALITY STATISTICS

This Chapter shows that Indian people compared to the general population have:

- higher birth rates
- higher fertility rates
- higher natural increase rates
- higher "risk" births

Birth Rates^{1/}: Figures 8 and 9 show birth rates (births per 1,000 population) for selected Minnesota populations between 1950-1976 and 1968-1976. Appendix Tables A-7 and A-8 show specific birth rate data. It is apparent from these figures:

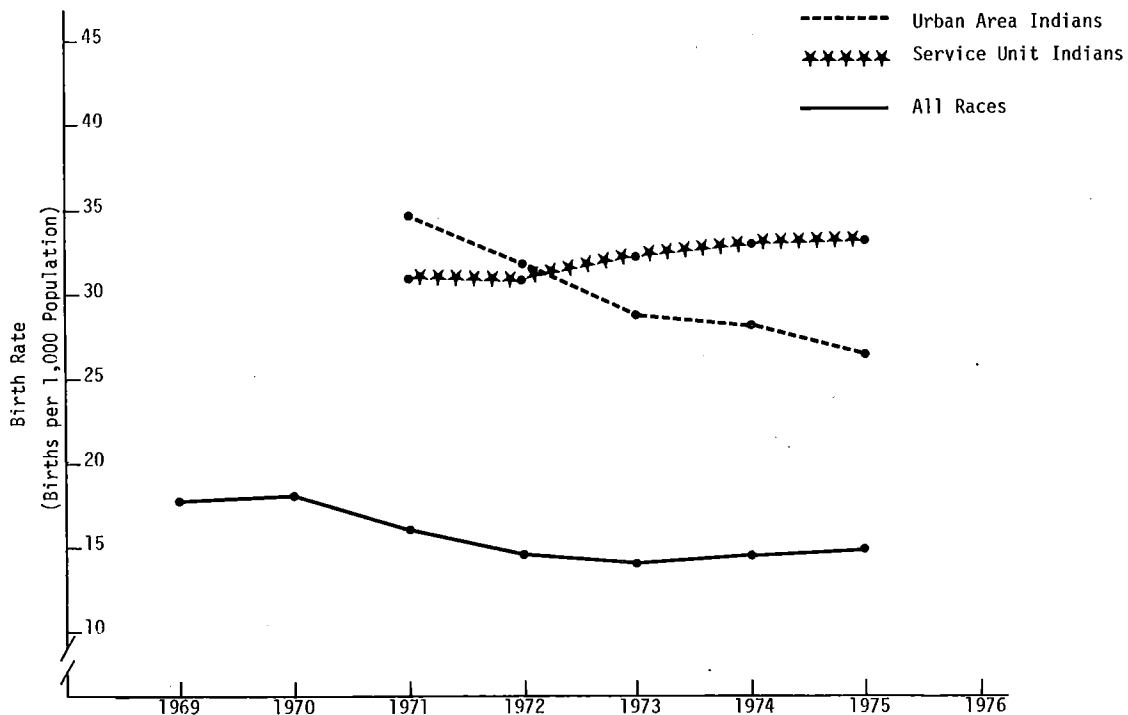
Figure 8. Minnesota Birth Rates, Indians and All Races, 1950 - 1976, Single Year Rates



Source: Minnesota Department of Health, Center for Health Statistics, 1978
1950-1970 data from Minnesota Vital Statistics, 1970.
1971-1976 birth data from annual reports, Minnesota Health Statistics.
1971-1976 population data from Center for Health Statistics and Table 4.

^{1/} This is also referred to as the crude birth rate.

Figure 9. Minnesota Birth Rates,* Selected Populations, 1968 - 1976



Source: See Appendix Tables A-7 and A-8.

* Note - All Races is a single year rate. All Indians, Urban, and Service Unit Indians are 3 year average rates.

- The birth rate of "All Indians" from 1950 has been higher than for the general population.
- The birth rates of selected Indian populations have been higher than for the general population.

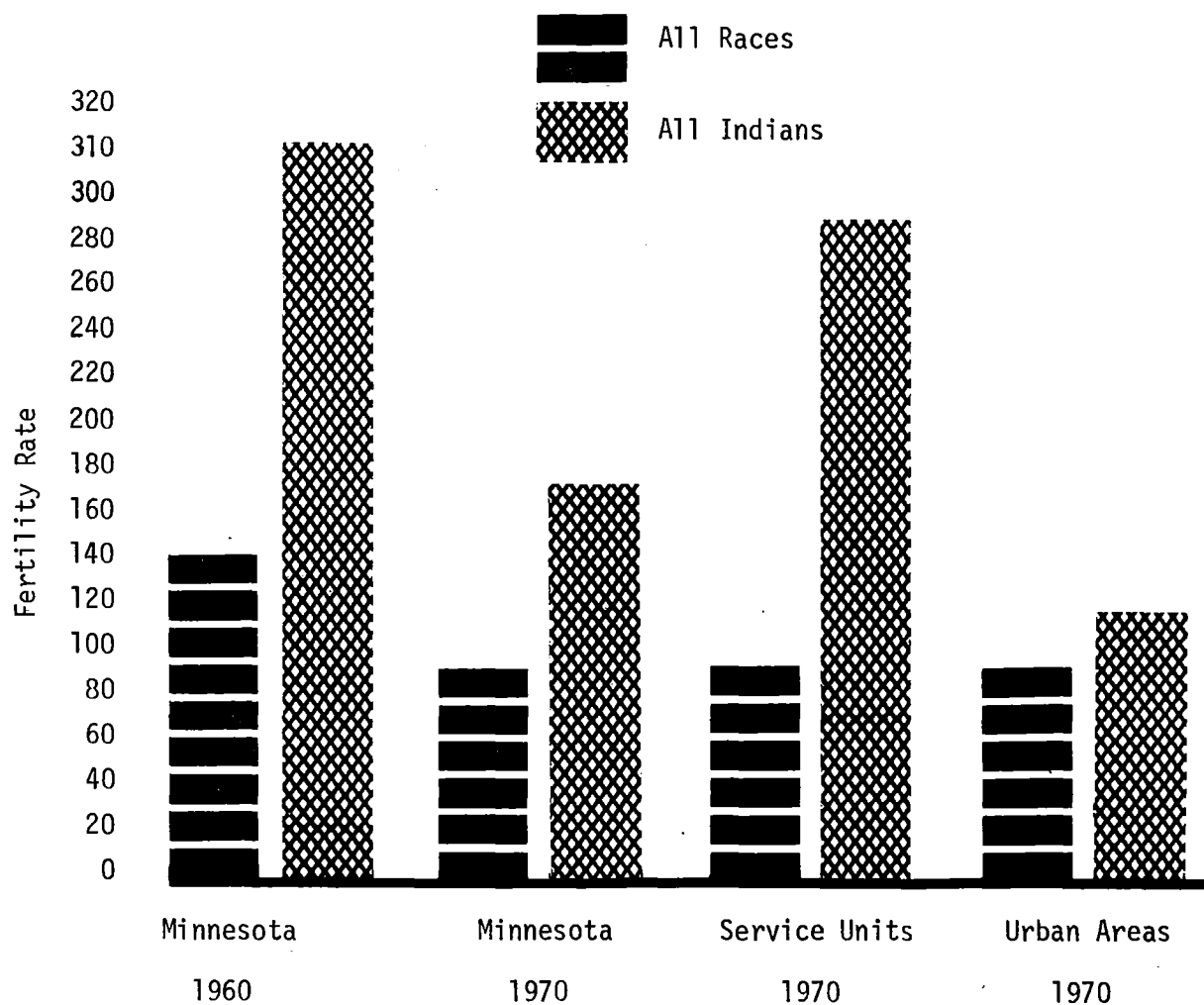
The birth rate is limited in its ability to detect a change of births in a population. It is defined as births per 1,000 population, and is responsive to changes in the number of women of child

bearing age in the population. A way of avoiding this problem is use of another indicator of natality; the fertility rate.

Fertility Rates: The fertility rate is a selected birth rate, defined as births per 1,000 women ages 15-44 (the childbearing age for most women). The fertility rate relates the number of births to that segment of the female population in the childbearing ages. This measure provides a control for the differences among various areas and times.

Figure 10 shows the fertility rates for Minnesota "All Races" and "All Indians" for 1960 and 1970. Appendix Tables A-9 and A-10 show the specific data of Figure 10.

Figure 10. Minnesota Fertility Rates, Selected Populations, 1960 & 1970



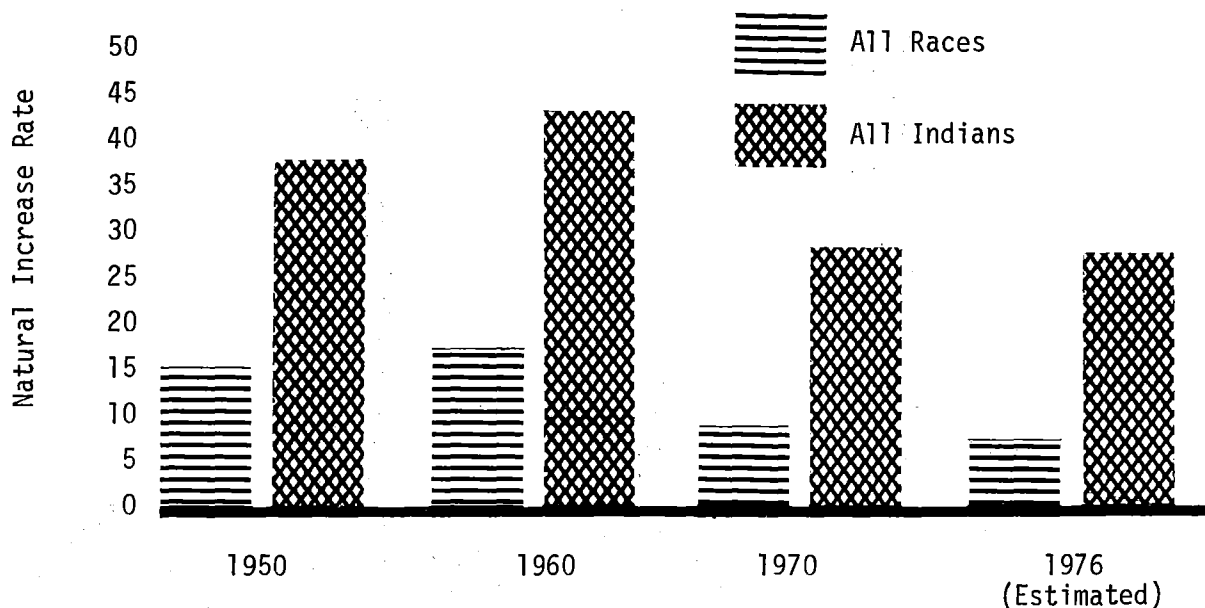
Source: See Tables A-9 and A-10

Over this period the Indian rate dropped more compared to the general population rate; 45.3% vs. 35.0% respectively. For Service Units the "All Indians" fertility rate is 3.1 times greater than for "All Races." The Urban Areas "All Indians" rate is 1.4 times or 40% greater than the "All Races" fertility rate. The fertility rate after 1970 has not been calculated due to unreliable age distribution data of Indian people. Indian fertility rates are higher for all three population groups.

Natural Increase: Natural increase^{1/} is a measure of the actual growth of a population. The natural increase rate^{2/} measures growth, in a standardized manner allowing comparison of populations. A population with a rate of 25 is growing faster than a population with a rate of 10. A population with a negative rate (i.e., -10) is decreasing in size.

Figure 11 shows the natural increase and natural increase rates for Minnesota "All Races" and "All Indians" from 1950-1976.^{2/}

Figure 11. Minnesota Natural Increase Rates, Selected Populations, 1950 - 1976



Source: See Table A-11

^{1/} Natural increase equals births minus deaths.

Natural increase rate equals $\frac{\text{births-deaths}}{\text{population}} \times 1,000$.

^{2/} The Minnesota Indian population can be estimated using natural increase data in Table A-11. This population, as discussed in Chapter II Technical Notes, is also estimated using a simpler method by the Indian Health Service. The two methods produce similar results; differing only by 1%.

The rate of growth (natural increase rate) for both populations has dropped considerably (almost in half) from 1960 to 1970. In 1950 the Indian rate of growth was 2.4 times greater than the "All Races" rate. This increased to 3.1 times greater in 1970, and 4.5 times greater (estimated) in 1976.

Presented in Table 6 is selected natality data of Minnesota "All Races" and Minnesota "All Indians" for three time periods from 1968 to 1976.

Selected findings of Table 6 are:

- The Indian birth rate is about twice the "All Races" birth rate. The Indian birth rate is decreasing.
- The Indian population has a greater percentage of young mothers (under 20, and a lower percentage of older mothers (35 and over) than "All Races." The percentage of young Indian mothers since 1968 has increased, while the percentage of older Indian mothers has decreased.
- The percent of Indian births of 6 or over birth order is about two times that of "All Races." The percent of births of 6th or over birth order for both populations is decreasing.
- The percent of Indian births with either no prenatal care or prenatal care beginning in the last trimester is about 4 times that of "All Races." For both of these groups this characteristic is dropping.
- The proportion of low weight (2,500 grams or less) Indian births is from 20% to 47% higher than for "All Races." The percent of low weight Indian and "All Races" births is decreasing.
- The percent of illegitimate (out-of-wedlock) Indian births is 4 times that of "All Races." For 1974-1976 almost 1/2 of all Indian births were illegitimate. This produces an illegitimate rate (illegitimate births per 1,000 live births) for Indians of 492 compared to 90.8 for "All Races."
- The Indian population has increased as a percentage of the total population of Minnesota; from .61% in 1970 to .68% in 1974-1976.

Presented in Table 7 are further details for the three years of 1974-1976. This table compares selected natality data of "All Indians" and "All Races" for the three geographical areas.

TABLE 6

Selected Natality Data of Minnesota-All Races and Minnesota-All Indians,
1968-1976, 5 and 3 Year Averages

CHARACTERISTICS	1968-1972				1973-1975				1974-1976			
	ALL RACES ^{1/}		ALL INDIANS ^{2/}		ALL RACES ^{1/}		ALL INDIANS ^{2/}		ALL RACES ^{1/}		ALL INDIANS ^{2/}	
	#	%	#	%	#	%	#	%	#	%	#	%
A. Total Number of Births(% of Total) Rate	63,612 16.7	100 NA	750.0 ^{5/} 32.4	1.2 NA	55,333 14.1	100 NA	853 32.5	1.5 NA	56,272 14.3	100 NA	896.0 33.2	1.6 NA
B. Age of Mother												
Under 20	7,727	12.1	218	29.1	7,173	13.0	283	33.2	7,121	12.6	291	32.5
35 and Over	4,768	7.5	40.6	5.4	2,860	5.2	37	4.3	2,684	4.8	31.7	3.5
C. Birth Order												
6th and Over	4,186	6.6	NA	NA	1,854	3.4	54.7	6.4	1,558	2.8	48.7	5.4
D. Month Prenatal Care Began												
3rd Trimester or None	4,251	6.7	NA	NA	2,465	4.8	162.0	19.0	2,401	4.3	162.7	18.2
E. Birthweight												
2,500 grams or less	3,900	6.1	67.2	9.0	3,082	5.6	57.3	6.7	3,110	5.5	65.3	7.3
F. Wedlock Status												
Out-of-Wedlock	5,068	8.0	326.2 ^{3/}	38.8	4,834	8.7	412 ^{3/}	45.9	5,111	9.1	441	48.2 ^{3/}
G. Population ^{4/} (% of Total)	3,804,971	100	23,128	.61	3,913,257	100	26,180	.67	3,935,932	100	26,943	.68

NA - Not Applicable or Not Available at this time.

Sources: ^{1/} All Races data from Minnesota Department of Health, Center for Health Statistics Annual reports, Minnesota (Vital) Health Statistics, 1968-1976.

^{2/} A through E data for All Indians from Indian Health Service, Vital Events Branch.

^{3/} F data for All Indians from Minnesota Center for Health Statistics; See ^{5/} below.

^{4/} 1968-1972 population was 1970 U.S. Census. See Population Pyramid 2 for source. Other All Races population estimates from ^{1/} above. Other All Indians population estimates from Population Release No. 15, Indian Health Service, Aberdeen Area Office.

^{5/} These are underestimations of true Indian Births and Indian Birth rates. The source of this data was a 50% sample from The National Center for Health Statistics. Minnesota Department of Health data is for the entire population.

See Chapter IV Natality Experience for more
information

TABLE 7

Selected Natality Data of Minnesota, Service Units, and Urban Areas, All Races and All Indians,
1974-1976, 3 Year Average

CHARACTERISTICS	MINNESOTA-STATE				SERVICE UNITS				URBAN AREAS			
	ALL RACES ^{1/}		ALL INDIANS ^{2/}		ALL RACES ^{1/}		ALL INDIANS ^{3/}		ALL RACES ^{1/}		ALL INDIANS ^{5/}	
	#	%	#	%	#	%	#	%	#	%	#	%
A. <u>Total Number of Births</u> (% of Total) Rate	56,272 14.3	100.0 NA	896.0 ^{4/} 33.2	1.6 NA	6424.3 13.6	11.4 NA	373.7 33.0	.7 NA	19771.7 13.4	35.1 NA	415.3 26.5	.7 NA
B. <u>Age of Mother</u> Under 20 35 and Over	7,121 2,684	12.6 4.8	291.0 31.7	32.5 3.5	1133.0 343.3	17.6 5.3	127.3 12.7	34.1 3.4	2388.0 805.0	12.1 4.1	134 ^{6/} 14.3 ^{6/}	32.3 3.8 ^{6/}
C. <u>Birth Order</u> 6th and Over	1,558	2.8	48.7	5.4	239.0	3.7	22.7	6.1	335.3	1.7	19	4.6
D. <u>Month Prenatal Care Began</u> 3rd Trimester or None	2,401	4.3	162.7	18.2	352.0	5.5	65.3	17.5	876.3	4.4	86	20.7
E. <u>Birthweight</u> 2,500 grams or less	3,110	5.5	65.3	7.3	345.3	5.4	24.0	6.4	1250.7	6.3	34	8.2
F. <u>Wedlock Status</u> Out-of-Wedlock	5,111	9.1	441.0	48.2	612.3	9.5	149.7	40.0	2705.7	13.7	249.7	60.1
G. <u>Population</u> (% of Total)	3,935,932	100.0	26,943	.68	473,223	12.0	11,331	.29	1,477,341	37.5	15,653	.40

NA - Not Applicable or not available.

Sources: 1/ Data from Annual reports Minnesota Health Statistics, 1974-1976, Minnesota Department of Health.

2/ A-E and G data from Vital Events Branch, Indian Health Service Headquarters. F data from 1/ above.

3/ Data from Vital Events Branch, Indian Health Service Headquarters.

4/ Minnesota Department of Health data for 1974-1976 gives the 3 year average total Indian births of 915.7. The birth rate calculated from this would be 34.0.

5/ Data from the Minnesota Center for Health Statistics.

6/ Data only for Ramsey and Hennepin counties. Source of data was Vital Events Branch, Indian Health Service, Headquarters, 1979. Percent calculated on total Indian births of 1,146 for Ramsey and Hennepin counties from the above data source.

Figures 12 through 17 present the major findings of selected natality data. (Birth rates were presented in Figure 9). The major findings for the 1974-1976 period are:

- The birth rates for the "All Indian" group is over 2 times greater than the general population.
- There are, in most cases, over 2 times the percentage of Indian mothers under 20 years of age than in the general population.
- There is a lower percentage of Indian mothers over 35 compared to the general population.

Figure 12
Percent of Mothers Under
20 Years of Age, Selected
MN Populations, 1974-1976,
3 Year Average

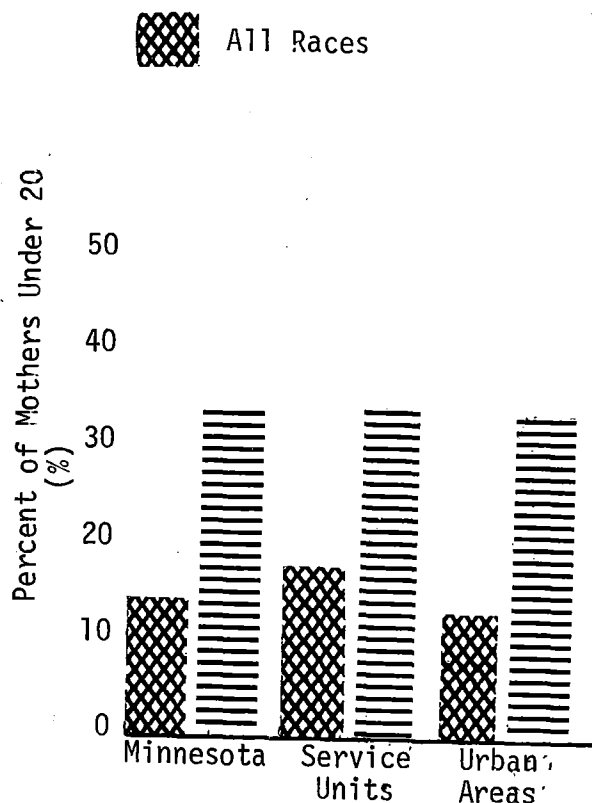
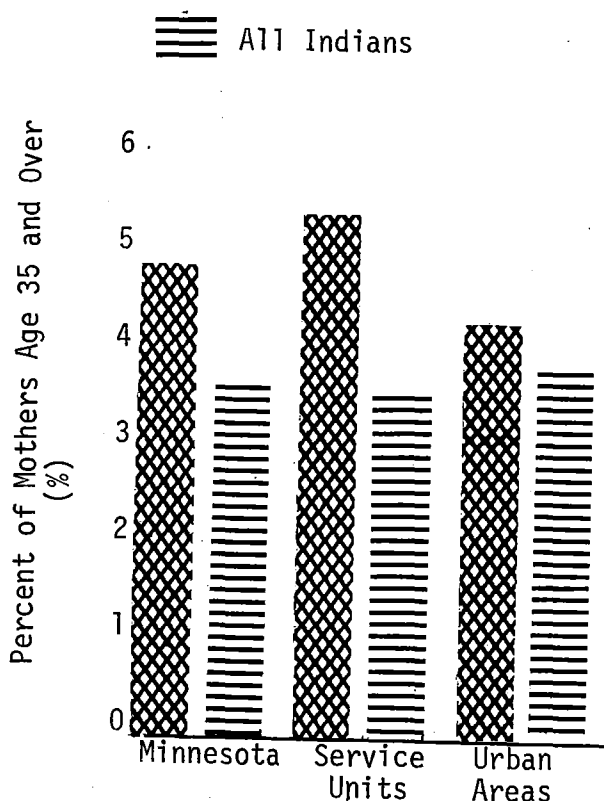


Figure 13
Percent of Mothers Age 35 and
Over, Selected MN Populations,
1974 - 1976, 3 Year Average



- There is a greater percentage of Indian births of 6th or over birth order compared to the general population.
- A greater percentage (3 to almost 5 times greater) of pregnant Indian women either receive no prenatal care or receive it late (3rd trimester).

Figure 14
Percent Births of Birth Order
6th and Over, Selected MN
Populations, 1974-1976, 3
Year Average

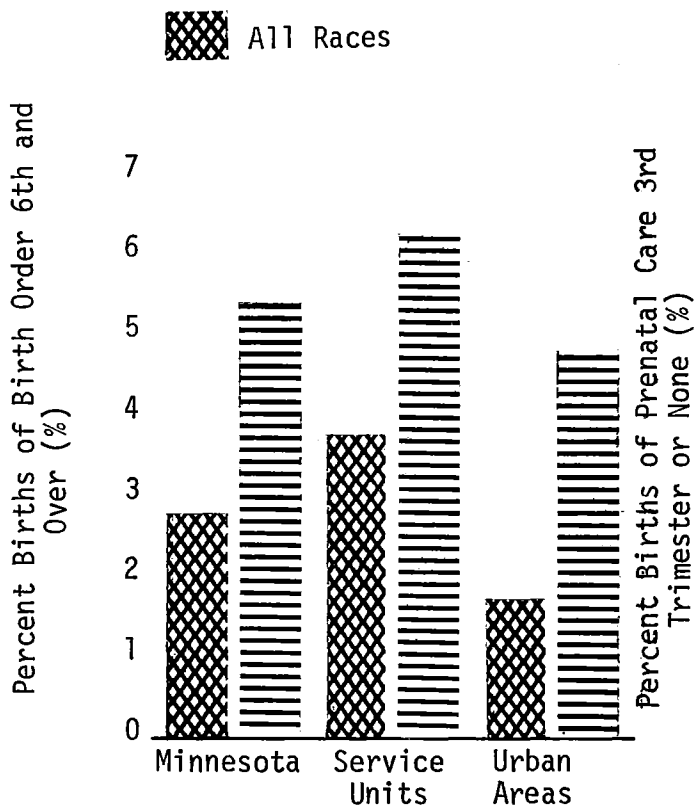
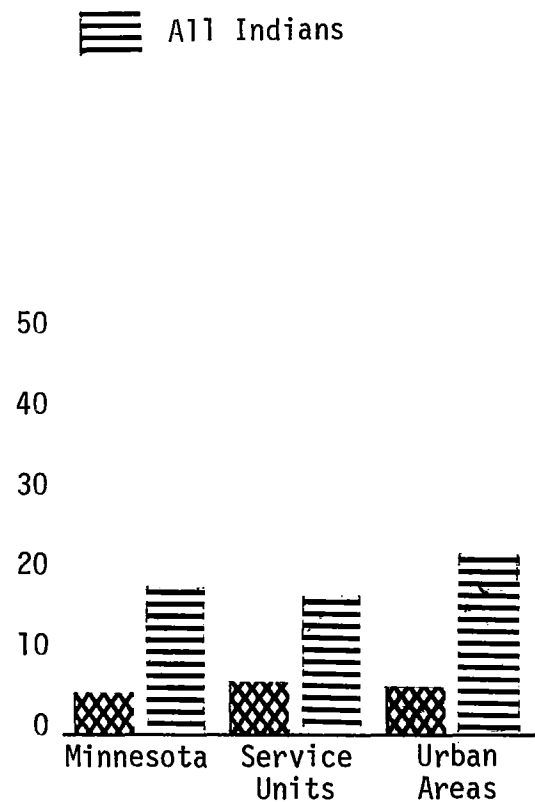


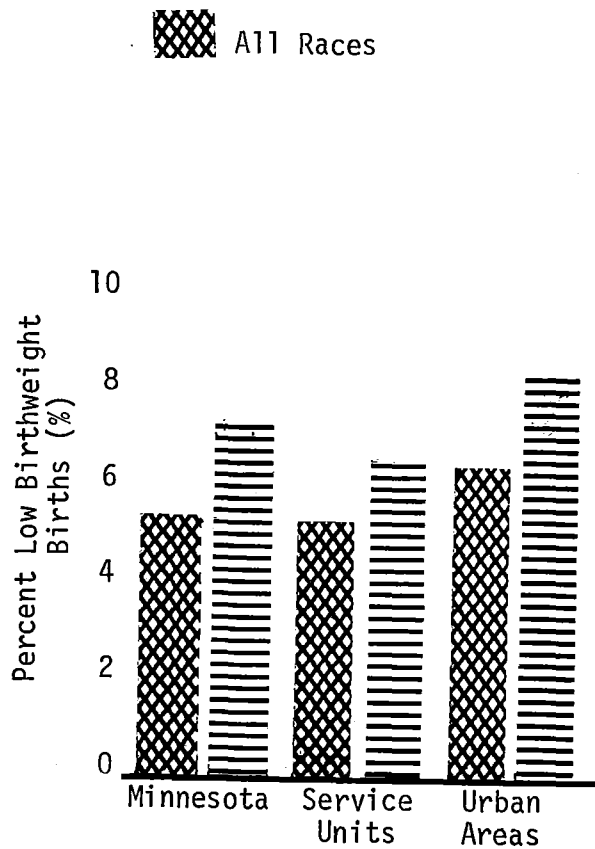
Figure 15
Percent Births of Prenatal
Care 3rd Trimester or None,
Selected MN Populations,
1974 - 1976, 3 Year Average



Source: Data for all four figures from Table 7.

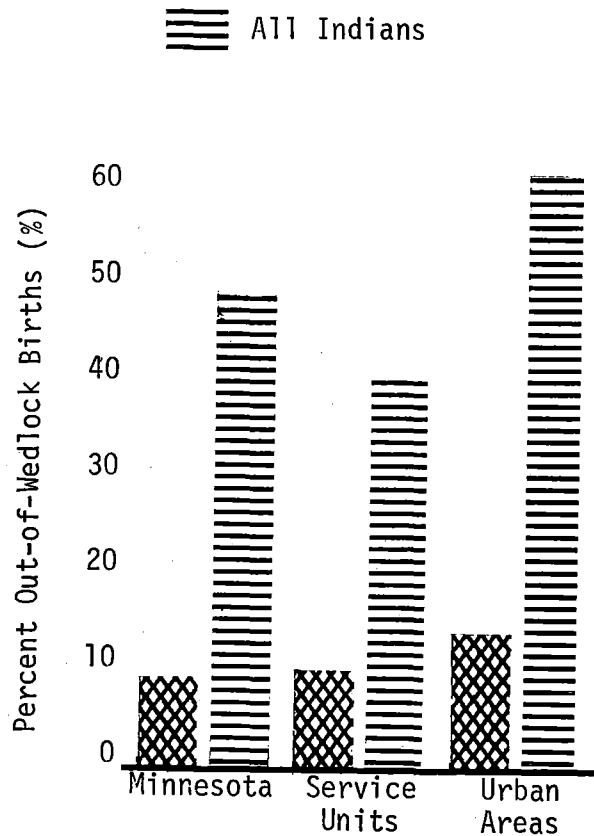
- A greater percentage of Indian births are of low birthweight compared to the general population.
- The percent of Indian out-of-wedlock births is around 4 times greater than that of the general population. 60% of the Urban Indian births are out-of-wedlock.

Figure 16
Percent Low Birthweight Births,
Selected Minnesota Populations,
1974 - 1976, 3 Year Average



Sources: See Table 7.

Figure 17
Percent Out-of-Wedlock Births,
Selected MN Populations, 1974 -
1976, 3 Year Average



Sources: See Table 7.

Selected natality data for individual Service Units and Urban Areas for 1974 - 1976 are in Tables A-12 through A-14.

Early prenatal care has been recommended by a number of sources to help prevent early childhood morbidity and mortality.^{1/} Figure 18 displays in detail the percent of "All Indians" and "All Races" births which had no prenatal care. Major observations are:

- The percent of births with no prenatal care for both "All Indians" and "All Races" since 1967 is decreasing.
- The percent of Indian births with no prenatal care is almost 13 times greater in 1967 - 1971, and 6 times greater in 1974 - 1976.

High Risk Births: This section of Natality Experience presents the percentage of births which are high risk (percent high risk births) among "All Races" and "All Indians" of Minnesota.^{2/} The three year period (1974 - 1976) average, is represented in Figure 19. Tables A-15 and A-16 show the 1974 - 1976 percent high risk births for individual Service Units, Urban Areas, and the State of Minnesota.

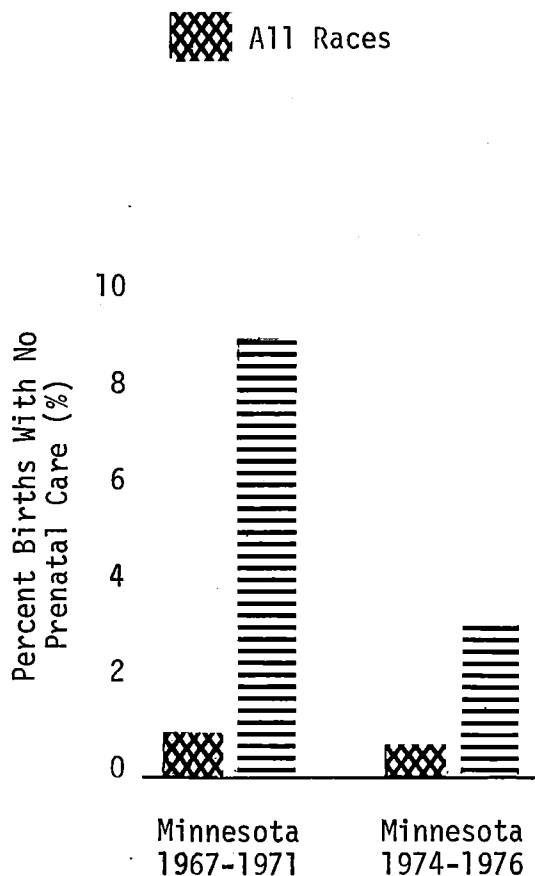
The major observation from the high risk data is:

- During the 1974 - 1976 three year period, for all geographical areas described, the proportion of Indian births which were high risk was greater than for the general population. This ranged from 25% to 90% greater.

^{1/} U.S. DHEW, PHS, Health, United States, 1976 - 1977, DHEW (HRA) 77-1232, 1977, and Minnesota Department of Health, Minnesota Center for Health Statistics, Infant Mortality in Minnesota, 1974.

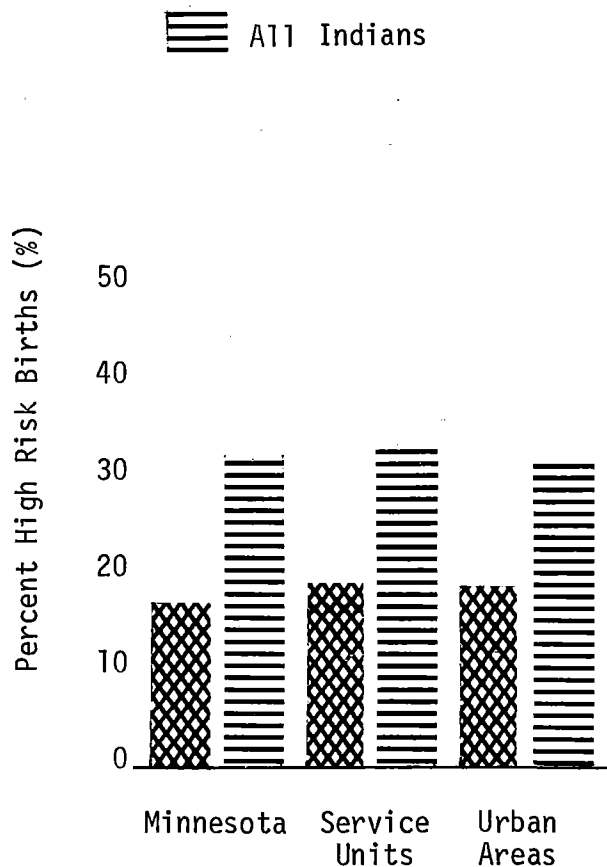
^{2/} See Glossary for definition of a high risk birth.

Figure 18
Percent Births With No Prenatal
Care, Selected Minnesota
Populations, 1967 - 1976



Sources: 1967 - 1971 data from
Sampler-Indian Health
in Minnesota. 1974 -
1976 data from Minnesota
Center for Health
Statistics.

Figure 19
High Risk Births, Selected
Minnesota Populations, 1974 -
1976, 3 Year Average



Sources: Minnesota Center for
Health Statistics.

V. MORTALITY STATISTICS

Mortality Statistics contains four parts; infant mortality, cause of infant deaths, age at death, and age-sex adjusted death rates. Where possible, data has been divided into Minnesota (statewide), Urban Areas and Service Unit components.

Summary: The general findings of this section are:

Infant Mortality^{1/}

- During 1974-1976, Minnesota All Indians compared to Minnesota All Races had:
 - A greater infant (under 1 year) mortality rate
 - No difference in neonatal (under 28 days) mortality rate
 - A greater postneonatal (28 days to 1 year) mortality rate
 - No difference in perinatal (neonatal plus fetal) mortality rate
- During 1970-1976, Service Units All Indians compared to Service Units All Races had:
 - A lower infant mortality rate
 - A lower neonatal mortality rate
 - No difference in postneonatal mortality rate
 - A lower perinatal mortality rate.
- During 1970-1976, Urban Areas All Indians compared to Urban Areas All Races had:
 - A higher infant mortality rate
 - No difference in neonatal mortality rate
 - A greater postneonatal mortality rate
 - No difference in perinatal mortality rate.

^{1/} Consult Glossary for definitions of infant, neonatal, postneonatal, and perinatal mortality.

Cause of Infant Deaths

- Since 1967 the rates of neonatal and postneonatal death have decreased for both Minnesota All Races and All Indians.
- Since 1967 Minnesota All Indians postneonatal mortality rates from Ill-Defined causes (mainly Sudden Death Syndrome), and Diseases of the Respiratory System have been greater than for All Races.

Age at Death

- The median age at death for Minnesota Indians is from 26 to 30 years lower than the general population.

Age-Sex Adjusted Death Rates

For the 6 year period, 1968-1973:

- The Indian people of Minnesota had a greater Cirrhosis of the Liver, Diabetes Mellitus, Accident, and Total - All Causes death rates than Minnesota All Races.
- The All Races of Minnesota had a greater cancer death rate than Minnesota All Indians.
- The Indian people of Minnesota Urban Areas had a greater Accident and Cirrhosis of the Liver death rate and a lower Heart Disease rate than Urban Areas All Races.
- The Indian people of Minnesota Service Units had a greater Accident and Total - All Causes death rate than Service Units All Races.

Infant Mortality: Infant Mortality is often cited as one of the better indices of a population's health. Yet as infant mortality and its components (neonatal and postneonatal mortality) decrease in populations, the usefulness of such an index is lessened.

Figures 20-22 give a general picture of infant mortality.^{1/} The White population represents over 98% of the total population, and thus can also be considered the general "All Races" rates. Aspects of these figures to note:

^{1/} The three-year averages shown in these figures are plotted in the mid-year.

Figure 20 Three-Year-Average Neonatal Mortality Rates By Race - Minnesota Residents (1950-1975)

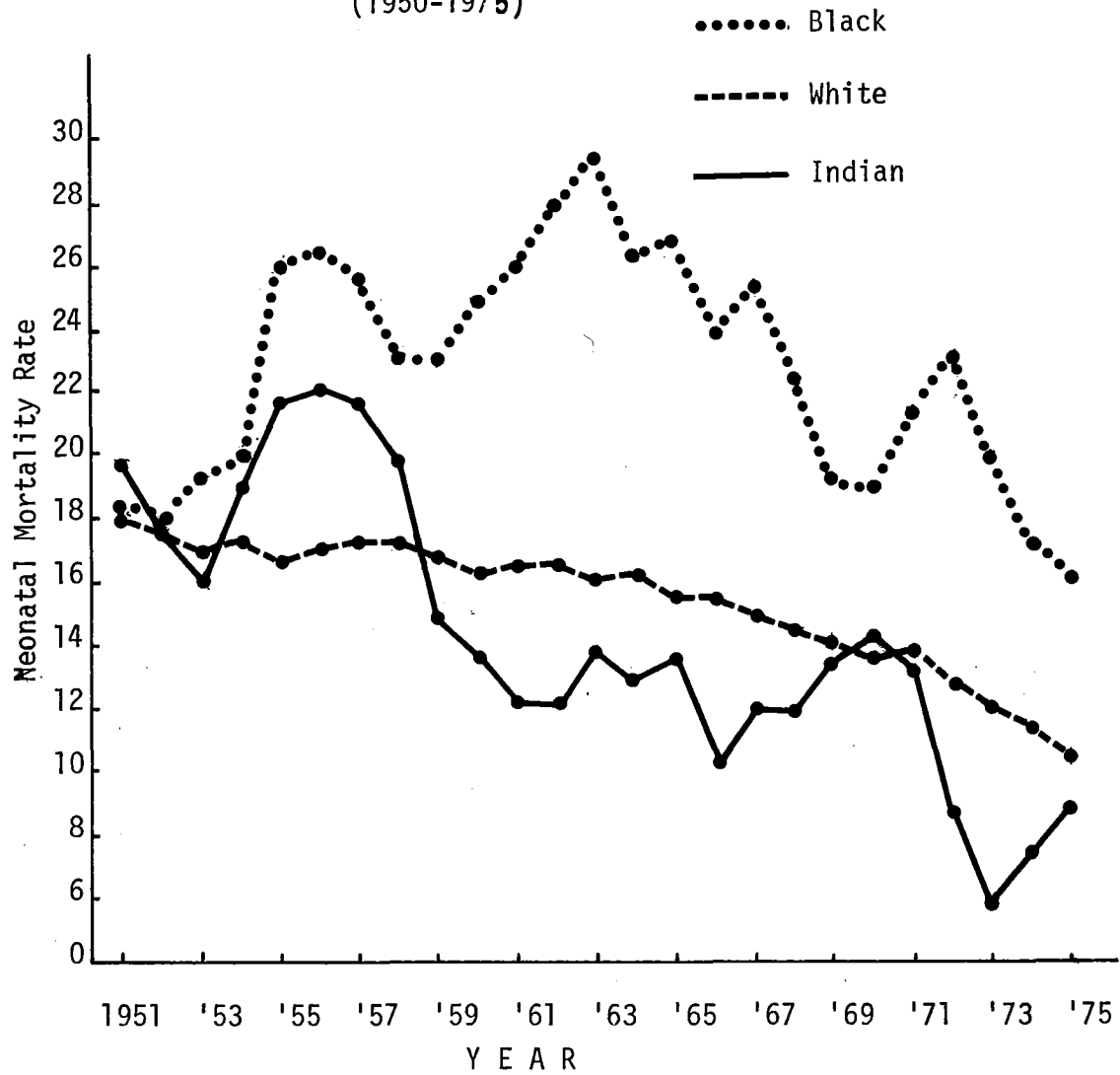
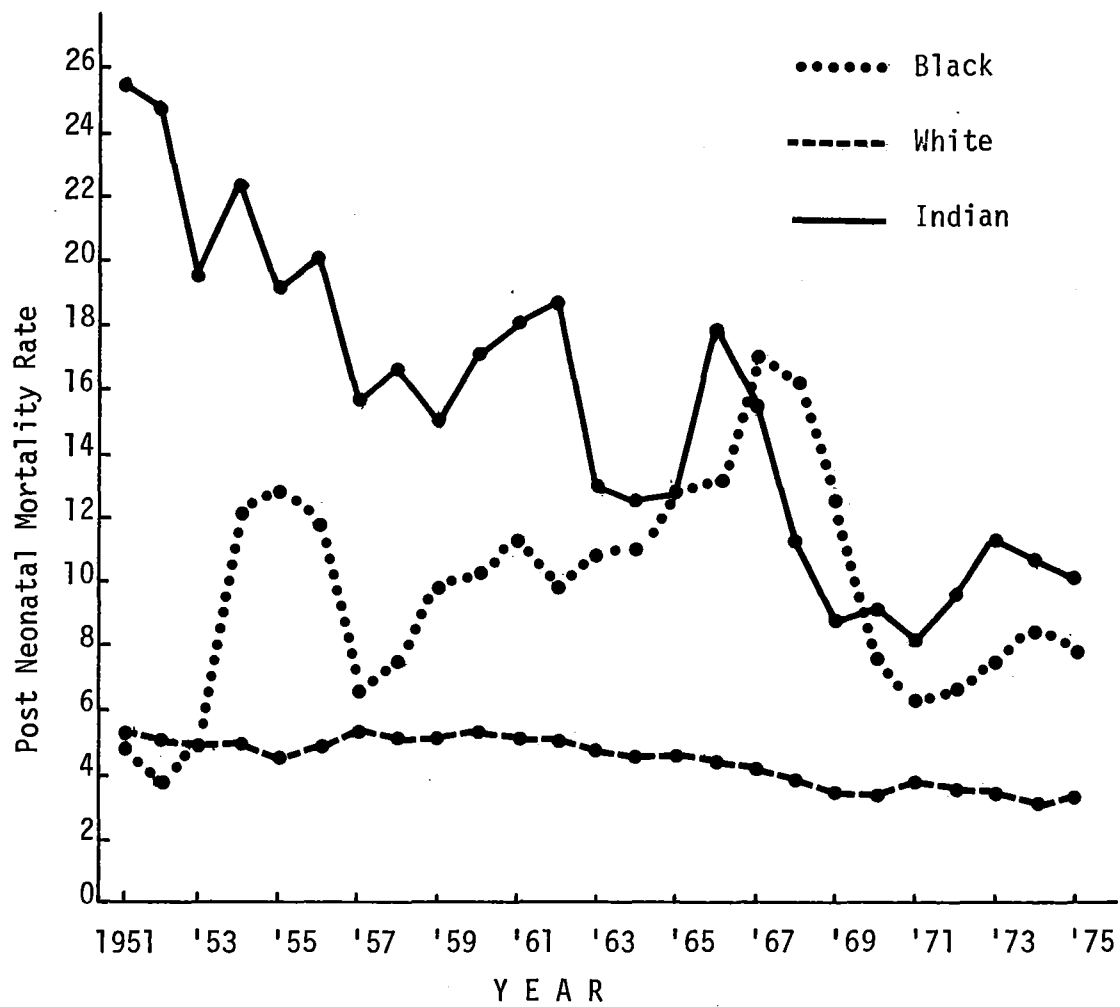
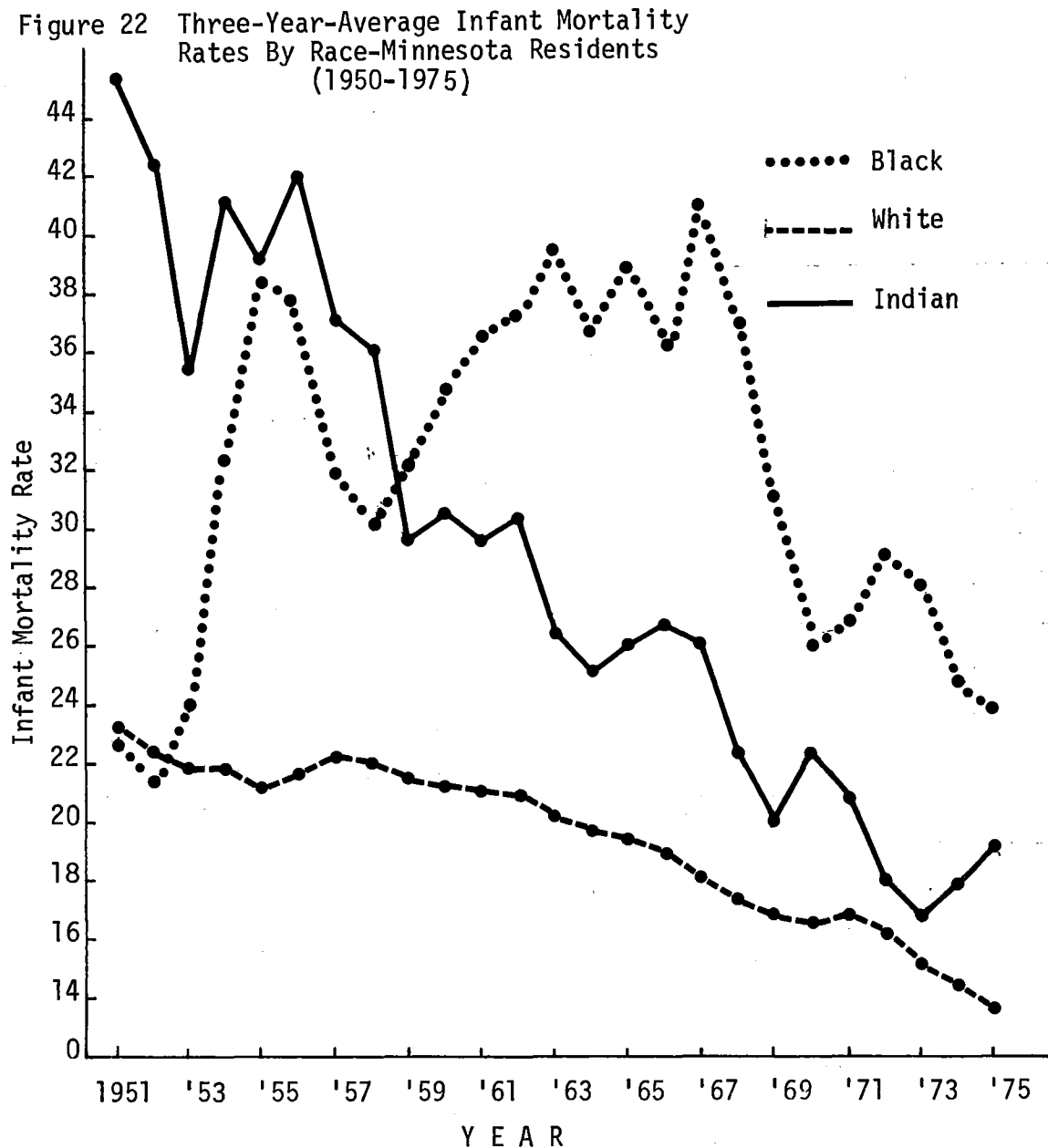


Figure 21 Three-year-Average Postneonatal Mortality Rates By Race-Minnesota Residents (1950-1975)



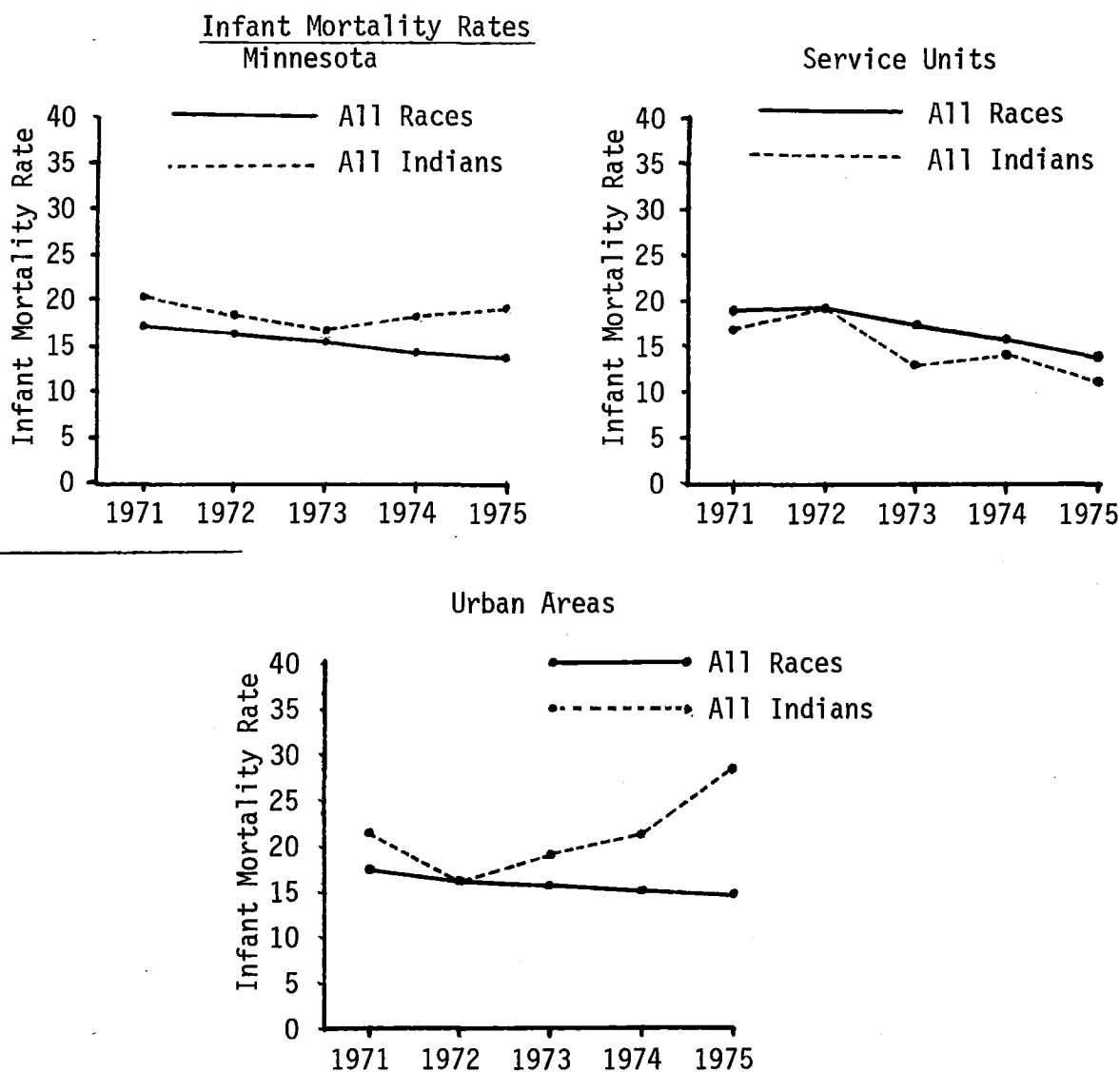


Source: 1950 - 1972 data from Infant Mortality in Minnesota, Minnesota Department of Health, 1974.
 1973 - 1976 data from Annual Reports, Minnesota Health Statistics, 1973 - 1976 from the Minnesota Department of Health.

- The Indian infant mortality rates (including neonatal and postneonatal rates) have decreased since 1950.
- The Indian neonatal mortality rate has in most cases been lower than for the general population.
- The Indian postneonatal mortality rate has always been greater than for the general population.
- The Indian infant mortality rate is still slightly greater than the general population.

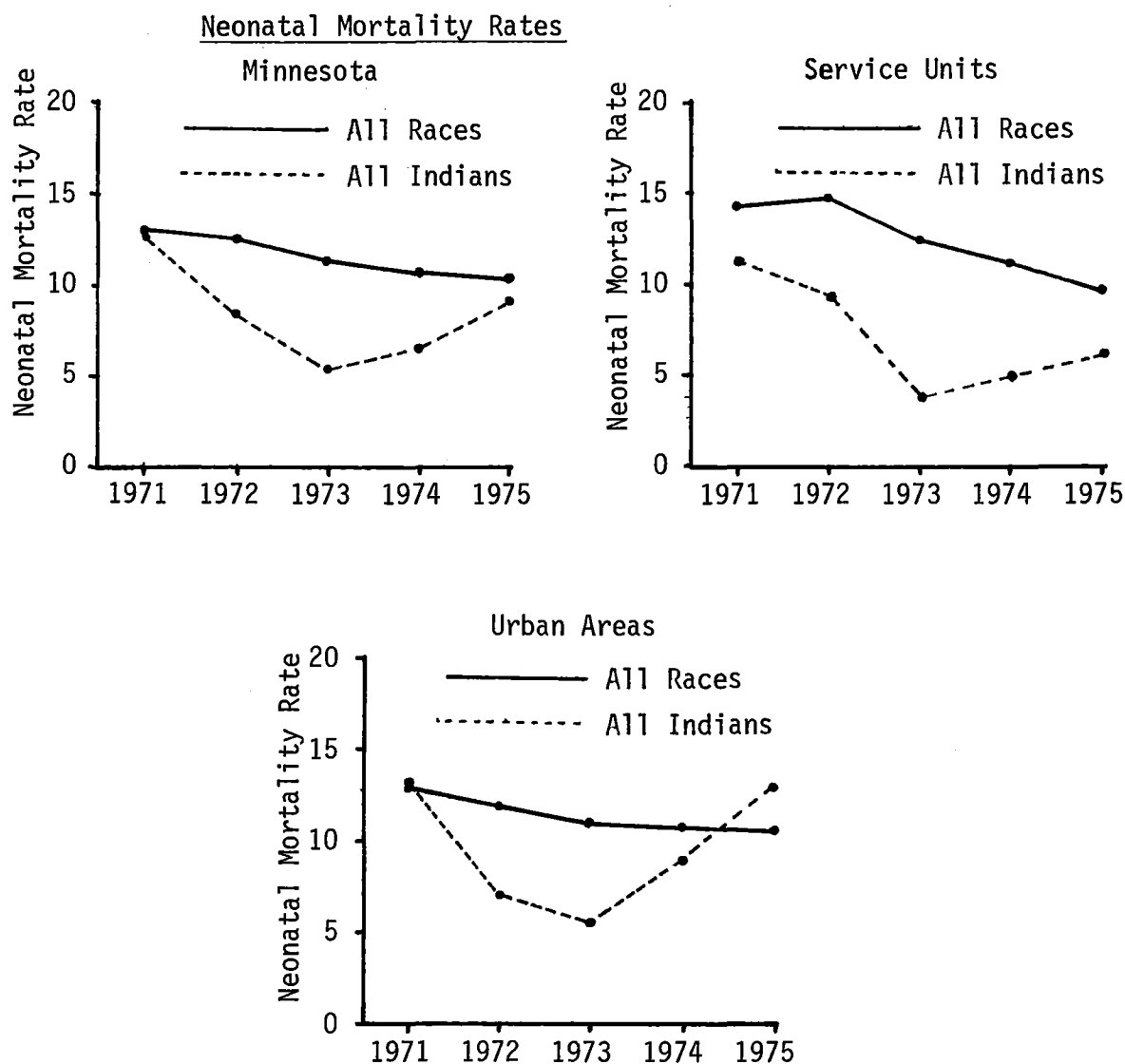
Figures 23 through 26 show more specific infant mortality information

Figure 23 Infant Mortality, Minnesota(State-wide), Service Units, and Urban Areas, 1970 - 1975, Three Year Averages^{1/}



^{1/} Rates calculated over three year period and plotted at mid-year.

Figure 24 Neonatal Mortality, Minnesota(State-wide), Service Units, and Urban Areas, 1970 - 1975, Three Year Averages^{1/}



Sources for Figures 23 and 24:

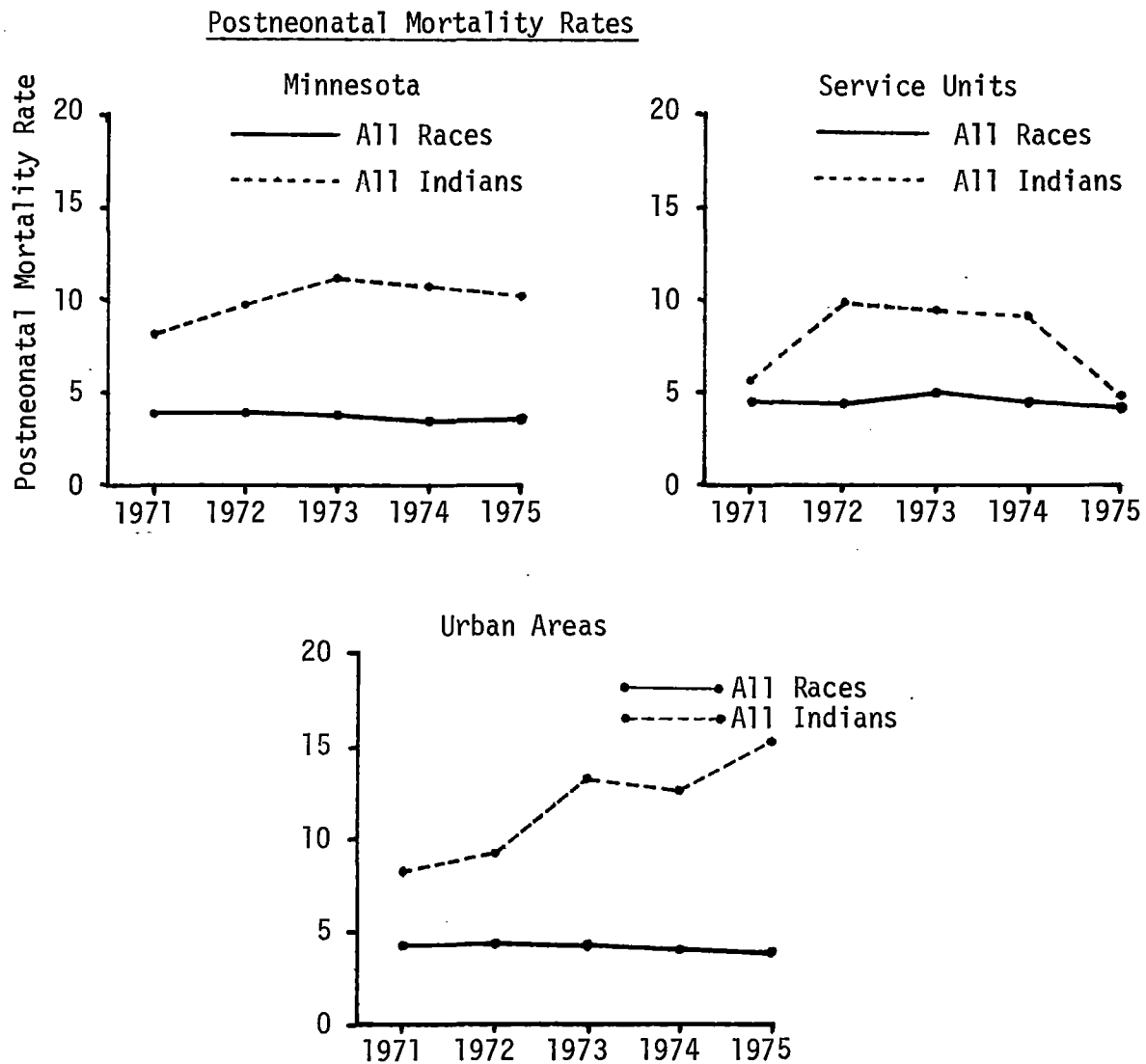
Data for infant deaths from annual reports Minnesota Health Statistics, 1970 - 1975, Minnesota Department of Health, Center for Health Statistics.

Data on population of All Races from above source.

Data on population of All Indians from Table 4.

^{1/} Rates calculated over three year period and plotted at mid-year.

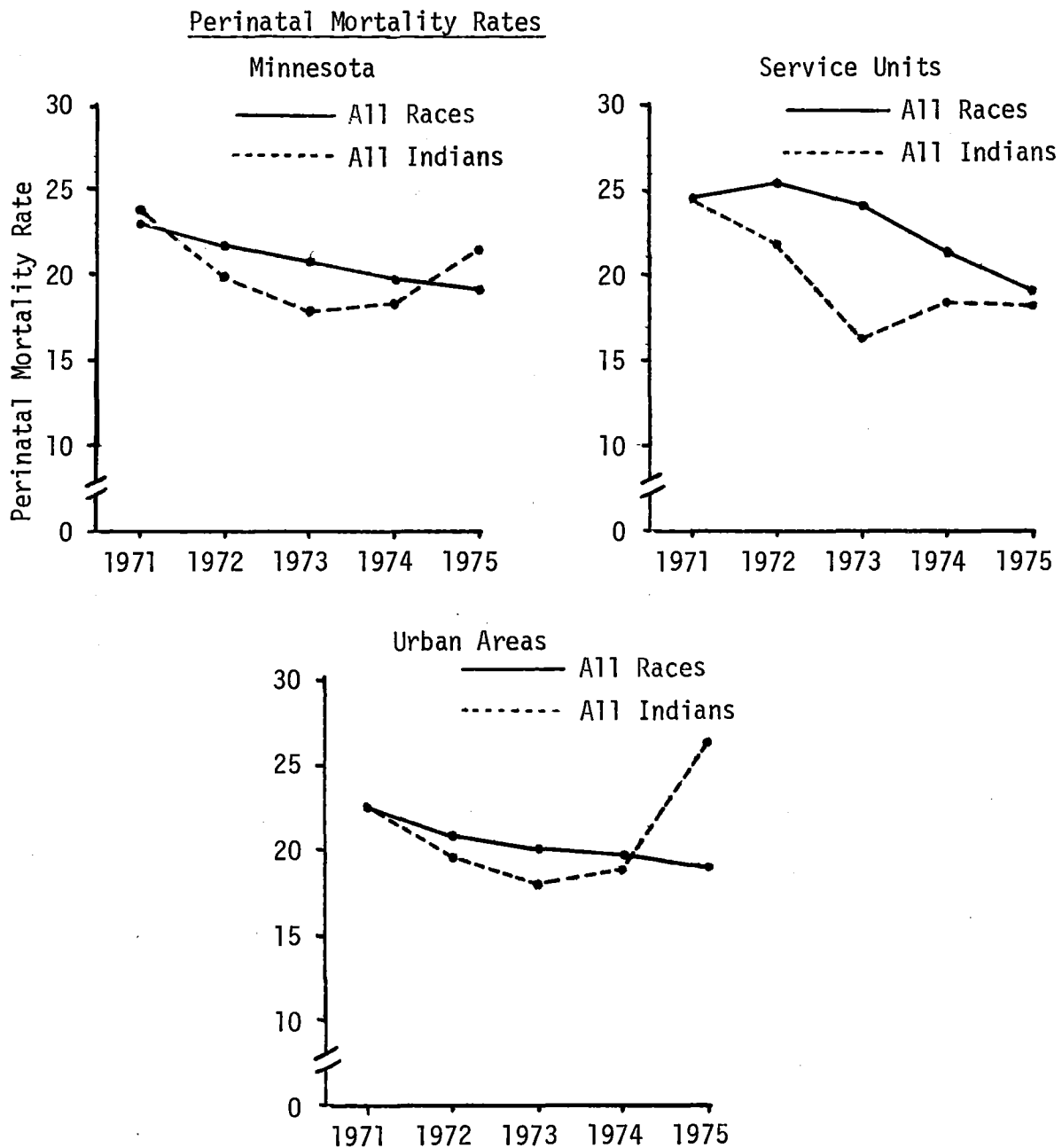
Figure 25 Postneonatal Mortality, Minnesota, Service Units, and Urban Areas,
1970 - 1975, Three Year Averages^{1/}



Sources: Data for infant deaths from annual reports Minnesota Health Statistics, 1970 - 1975, Minnesota Department of Health, Center for Health Statistics.

^{1/} Rates calculated over three year period and plotted at mid-year.

Figure 26 Perinatal Mortality, Minnesota, Service Units, and Urban Areas, 1970 - 1975, Three Year Averages^{1/}



Sources: Data for infant deaths from annual reports Minnesota Health Statistics, 1970 - 1975, Minnesota Department of Health Center for Health Statistics.

^{1/} Rates calculated over three year period and plotted at mid-year.

from 1970-1976 (in 3 year averages) for Indians and All Races of the State, Service Units, and Urban Areas. The specific information for these figures is in Table A-17. Aspects of these figures to note:

- Urban Indian infant mortality, particularly postneonatal mortality, is still significantly greater than for Urban All Races.
- Neonatal mortality for Indian people of both Urban and Service Unit Areas is, in most cases, slightly lower or similar to that for "All Races".

To obtain enough data for reliable estimates infant, neonatal, post-neonatal and perinatal mortality data were aggregated for the 7 year period 1970-1976. Results are shown in Table 8. Points of interest presented in this table are:

TABLE 8

Infant, Neonatal, Postneonatal, and Perinatal Mortality Rates,
Selected Minnesota Populations,
1970-1976, 7 Year Average

	Infant Mortality Rate	Neonatal Mortality Rate	Postneonatal Mortality Rate	Perinatal Mortality Rate
Minnesota--All Races	15.7	11.8	3.8	21.1
Minnesota--All Indians	19.3	9.5	9.8	21.2
Service Units--All Races	16.8	12.5	4.3	22.5
Service Units--All Indians	15.0	7.9	7.1	20.6
Urban Areas--All Races	16.2	11.9	4.3	20.8
Urban Areas--All Indians	22.6	11.1	11.5*	23.3

Source: See Table A-17.

- For Minnesota All Indians, infant, neonatal, and postneonatal mortality rates are greater than Minnesota All Races.
- For Service Units All Indians the neonatal mortality rate is less than Service Units All Races.
- For Service Units All Indians, the infant and postneonatal mortality rates are greater than for Service Units All Races.

Causes of Infant Deaths:

Causes of infant deaths were aggregated for the years 1967-1970 and 1970-1976, and compared for Minnesota All Races and Minnesota All Indians. The aggregation was due to the small number of Indian infant deaths. Table 9 shows the number and rate for selected major causes of neonatal and postneonatal deaths. U.S. All Indians (including Alaskan Natives) rates are also shown for comparison.

TABLE 9

Selected Causes of Neonatal and Postneonatal Infant Deaths, Numbers and Rates, Selected Minnesota Populations, 1967-1970 and 1970-1976

	1967-1970				1969-70	1970-1976				1973-75
	Minnesota All Races		Minnesota All Indians		U.S. All Indians	Minnesota All Races		Minnesota All Indians		U.S. All Indians
	#	Rate	#	Rate	Rate	#	Rate	#	Rate	Rate
<u>Neonatal Causes</u>										
Certain Causes of Perinatal Mortality	2,422	9.4	33	10.5	6.6 ^{3/}	3,576	8.7	42	6.7	3.9 ^{3/}
Congenital Anomalies	562	2.2	5	1.6	1.4	855	2.1	8	1.3	1.2
Diseases of the Respiratory System	85	.3	5	1.6	.8 ^{4/}	93	.2	-	-	.2 ^{4/}
Total Neonatal - All Causes	3,227	12.5	47	15.0	13.0	4,854	11.8	56	9.0 ^{2/}	9.2
<u>Postneonatal Causes</u>										
Congenital Anomalies	267	1.0	6	1.9	1.0	370	.9	3	*	1.1
Ill Defined Causes	219	.8	10	3.2	2.3	450	1.1	17	2.7	1.3
Diseases of the Respiratory System	216	.8	16	5.1	3.8 ^{5/}	258	.6	14	2.2	1.8 ^{5/}
Accidents	93	.4	5	1.6	1.5	159	.4	7	1.1	.9
Total Postneonatal - All Causes	1,030	4.0	42	13.4	14.1	1,576	3.8	60	9.6 ^{2/}	9.6
Total Infant Deaths	4,257	16.5	89	28.4	27.1	6,430	15.7	116	18.6 ^{2/}	18.8
Total Births ^{1/}	258,580	NA	3,131	NA	NA	409,940	NA	6,229	NA	NA

- No deaths and therefore no rate calculated.

* Too few deaths (under 5) for reliable calculations.

NA Not applicable to this table.

- Sources: - 1967-1970 Minnesota data from Infant Mortality in Minnesota, Minnesota Department of Health, Center for Health Statistics.
 - 1970-1976 Minnesota All Races data from annual reports, Minnesota Health Statistics, 1970-1976, Minnesota Department of Health, Center for Health Statistics.
 - 1970-1976 Minnesota All Indians data from Vital Events Branch, Indian Health Service, 1978.
 - U.S. All Indian data from Indian Health Trends and Services, 1978 Edition, Indian Health Service, 1979.

1/ 1967-1970 Minnesota data is for single births only (no twins, triplets, etc.); 1970-1976 data is for all births.

2/ This differs from rate calculated in Table 8 due to different sources of data.

3/ Includes 70% of all neonatal deaths due to "Certain Causes of Perinatal Mortality."

4/ Includes only neonatal deaths due to "Pneumonia" or 77% of all infant deaths due to "Diseases of the Respiratory System."

5/ Includes only postneonatal deaths due to "Pneumonia" and "Bronchitis and Bronchiolitis" or 84% of all infant deaths due to "Diseases of the Respiratory System."

The mortality rates of both "All Races" and "All Indians" have declined over time. The Indian neonatal mortality from selected causes has declined over time to a point where they are less than or not different from "All Races." Most of the postneonatal mortality for Ill-Defined causes (mainly Sudden Deaths Syndrome), Diseases of the Respiratory System, and Total postneonatal - All Causes are still greater than comparable "All Races" rates. Only for postneonatal accidents has the Indian rate dropped to a level of no difference.

Age at Death: Most Indian deaths occur at younger ages than the general "All Races" population. Over 65.4% of Minnesota All Indian deaths occurred below age 65. The median age at death during this period was 75 for Minnesota "All Races," but only between 45 and 49 for Minnesota "All Indians." (The data of Table 10 is also shown in Figures 27 and 28).

TABLE 10

Percentage Distribution of Deaths by Age,
Selected Minnesota Populations, 1974-1976

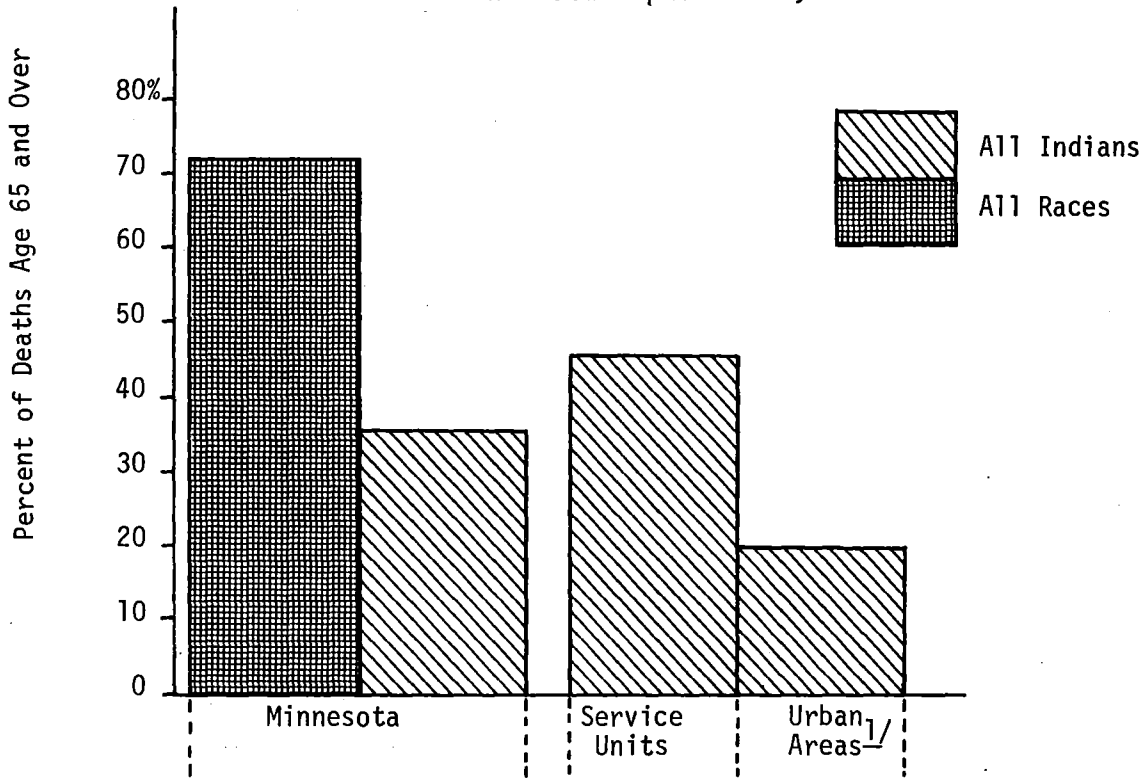
Population	All Ages	Under 1	1-4	5-24	25-44	45-64	65 and Over	Below 65	Median Age At Death
Minnesota-All Races	100.0	2.4	.4	3.2	3.7	19.0	71.3	28.7	75
Minnesota-All Indians	100.0	9.9	1.6*	13.4	17.3	23.2	34.6	65.4	45-49
Service Units-All Indians	100.0	5.0	1.4*	14.0	11.1	24.0	44.4	55.6	NA
Urban Area-All Indians ^{1/}	100.0	19.6	3.0*	10.7	26.2	20.2	19.6	80.4	NA

* Based on less than 10 events. Therefore percentage calculated is subject to large random fluctuations.

Source: "All Races" data from Annual reports, Minnesota Health Statistics, 1974-1976, Minnesota Center for Health Statistics, Minnesota Department of Health.
"All Indians" data from Vital Event Branch, Indian Health Service, Headquarters, 1978.

^{1/} Includes only Hennepin and Ramsey counties.

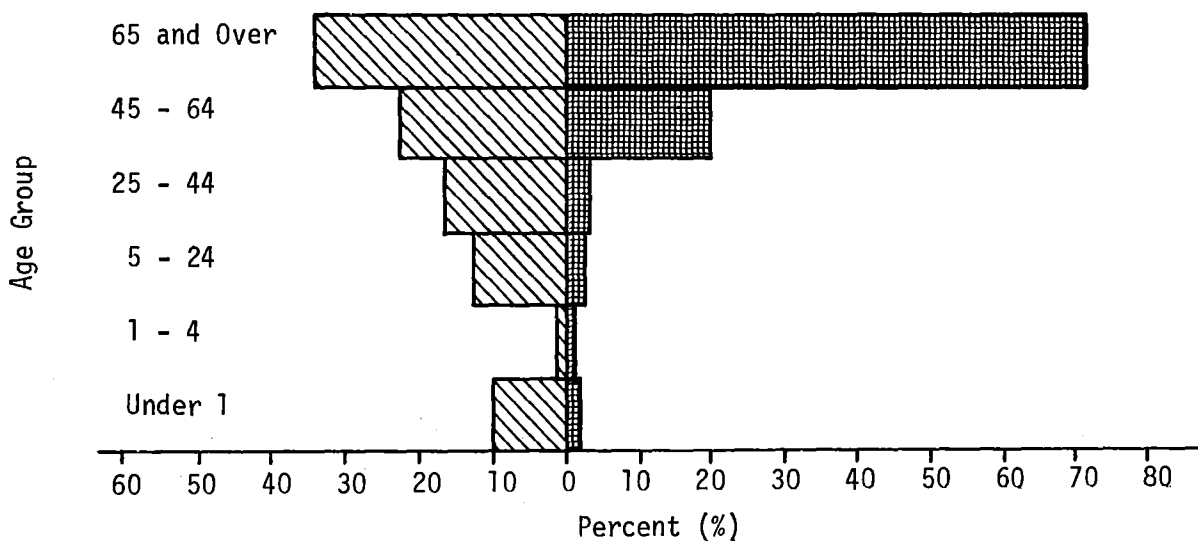
Figure 27 Percentage Distribution of Deaths Ages 65 and Over, Selected Minnesota Populations, 1974 - 1976



^{1/} Includes only Indian people of Hennepin and Ramsey counties; Duluth not included.

Source: See Table 10.

Figure 28 Percentage Distribution of Minnesota Deaths By Age, Indians and All Races, 1974 - 1976



Source: See Table 10.

The percentages of deaths by age is dependent upon the age distribution of a population. A generally older population will have more deaths at older ages than a younger population. The reason less Urban Indian deaths occur to people 65 and over (19.6%) compared to Service Unit Indians (44.4%), may be the age distribution of these two populations. The Urban Indian population is considered to be a younger population than the Service Unit Indian population (See Demographic Data). Many Urban Indian people move back to the reservation when they get old. Conversely, many young Indian people move into urban centers.

Age-Sex Adjusted Death Rates: The major weakness of crude death rates is that differences between rates can often be attributed to age and sex differences between populations. This can be controlled by using age and sex adjustment.

The death rate data in this booklet are from 1968 to 1973, and is age and sex adjusted using the Minnesota 1970 U. S. Census population as the standard. This means that all rates are comparable to one another. Without the factors of sex and age, the effects of other factors can be measured. The death rates in this booklet may be compared to those of the book Leading Causes of Death in Minnesota, 1968-1973 by the Minnesota Center for Health Statistics (Forthcoming 1980).

The death data appear in Tables 11-13. The Indian data is divided between Service Unit, Urban Area, and State.^{1/} When the number of events (deaths) is less than 30, one should be careful in making comparisons. To rectify this problem U.S. All Indians (including Alaskan Natives) data are also presented for comparison.

^{1/} Urban Area includes Hennepin and Ramsey Counties, and Duluth. Service Units include the counties of Becker, Beltrami, Carlton, Cass, Clearwater, Itasca and Mille Lacs; or 75% of the 1970 All Indians Service Units population.

TABLE 11
Age-Adjusted Death Rates by Leading Causes, Selected Minnesota
Populations, 1968-1973

<u>Age-Adjusted Rates</u>	Minnesota 1968-1973	
	<u>All Races</u>	<u>All Indians</u>
1. Heart Disease	339.9	351.5
2. Malignant Neoplasms (Cancer)	160.8	123.2
3. Cerebrovascular Disease (Stroke)	115.3	97.2
4. Accidents	56.6	239.4
5. Influenza/Pneumonia	30.7	74.6
6. Arteriosclerosis	16.3	NA
7. Diabetes Mellitus	15.9	55.6
8. Suicide	10.0	NA
9. Bronchitis/Emphysema/Asthma	13.5	NA
10. Cirrhosis of the Liver	9.9	32.4
11. Homicide	2.4	NA
TOTAL - All Causes	893.1	1302.2

<u>Numbers</u>		
1. Heart Disease	77,591	230
2. Malignant Neoplasms (Cancer)	36,719	88
3. Cerebrovascular Disease (Stroke)	26,333	63
4. Accidents	12,918	272
5. Influenza/Pneumonia	7,014	59
6. Arteriosclerosis	3,711	12
7. Diabetes Mellitus	3,635	39
8. Suicide	2,282	25
9. Bronchitis, Emphysema/Asthma	3,071	3
10. Cirrhosis of the Liver	2,261	53
11. Homicide	541	13
TOTAL - All Causes	203,890	1,110

NA - Not applicable.

Sources: Minnesota All Indians data from Age-Sex Adjusted Indian Death Rates, 1968-1973, Minnesota Center for Health Statistics, Minnesota Department of Health, 1979.
Minnesota All Races data from Leading Causes of Death, Minnesota, 1968-1973, Minnesota Center for Health Statistics, Minnesota Department of Health, 1979.
U.S. All Indians (and Alaskan Natives) data from Indian Health Trends and Services, 1978 Edition, Indian Health Service, HSA, PHS, DHEW, 1979.

TABLE 12

Age-Adjusted Death Rates by Leading Causes, Selected Minnesota
Service Units Populations, 1968-1973, Both Sexes

<u>Age-Adjusted Rates</u>	Minnesota Service Units 1968-1973	
	<u>All Races</u>	<u>All Indians</u>
1. Heart Disease	371	429
2. Malignant Neoplasms (Cancer)	159	136
3. Cerebrovascular Disease (Stroke)	132	109
4. Accidents	84	382
5. Influenza/Pneumonia	31	NA
6. Arteriosclerosis	15	NA
7. Diabetes Mellitus	17	NA
8. Suicide	12	NA
9. Bronchitis/Emphysema/Asthma	16	NA
10. Cirrhosis of the Liver	9	NA
11. Homicide	2.4	NA
TOTAL - All Causes	974	1,602
 <u>Numbers</u>		
1. Heart Disease	4,061	122
2. Malignant Neoplasms (Cancer)	1,727	40
3. Cerebrovascular Disease (Stroke)	1,434	32
4. Accidents	781	149
5. Influenza/Pneumonia	330	29
6. Arteriosclerosis	157	5
7. Diabetes Mellitus	187	25
8. Suicide	114	9
9. Bronchitis/Emphysema/Asthma	172	2
10. Cirrhosis of the Liver	98	10
11. Homicide	22	11
TOTAL - All Causes	10,350	525

NA - Not applicable.

Sources: Minnesota All Indians and All Races data from Age-Sex Adjusted Indian Death Rates, 1968-73, Minnesota Center for Health Statistics, Minnesota Department of Health. U.S. All Indians (and Alaskan Natives) data from Indian Health Trends and Services, 1978 Edition, Indian Health Service, HSA, PHS, DHEW, 1979.

TABLE 13

Age-Adjusted Death Rate by Leading Causes, Selected Minnesota-
Urban Areas Populations, 1968-73

<u>Age-Adjusted Rates</u>	Minnesota Urban Areas 1968-1973	
	<u>All Races</u>	<u>All Indians</u>
1. Heart Disease	349	211
2. Malignant Neoplasms (Cancer)	170	NA
3. Cerebrovascular Disease (Stroke)	111	NA
4. Accidents	45	168
5. Influenza/Pneumonia	29	NA
6. Arteriosclerosis	16	NA
7. Diabetes Mellitus	16	NA
8. Suicide	10	NA
9. Bronchitis/Emphysema/Asthma	13	NA
10. Cirrhosis of the Liver	13	120
11. Homicide	4	NA
TOTAL - All Causes	909	1,004
<u>Numbers</u>		
1. Heart Disease	30,454	47
2. Malignant Neoplasms (Cancer)	14,978	22
3. Cerebrovascular Disease (Stroke)	9,689	14
4. Accidents	4,107	75
5. Influenza/Pneumonia	2,536	18
6. Arteriosclerosis	1,384	1
7. Diabetes Mellitus	1,356	7
8. Suicide	990	7
9. Bronchitis/Emphysema/Asthma	1,163	0
10. Cirrhosis of the Liver	1,192	38
11. Homicide	362	12
TOTAL - All Causes	79,949	337

NA - Not applicable.

Sources: Minnesota All Indians and All Races data from Age-Sex Adjusted Indian Death Rates, 1968-73, Minnesota Center for Health Statistics, Minnesota Department of Health. U.S. All Indians (and Alaskan Natives) data from Indian Health Trends and Services, 1978 Edition, Indian Health Service, HSA, PHS, DHEW, 1979.

The major causes of the deaths of Minnesota Indian people are Accidents, Influenza/Pneumonia, Diabetes Mellitus, and Cirrhosis of the Liver. If one visually compares "All Races" with U.S. All Indians, Homicide and Suicide are also major causes of Indian mortality. Causes of death where the Indian rate is less than the "All Races" rate are Cancer, Arteriosclerosis (U.S. All Indians), and Bronchitis/Emphysema/Asthma (U.S. All Indians). The Minnesota All Indians Heart Disease rate is greater than the U.S. All Indians rate. The causes of deaths which have historically plagued Indian people (Accidents, Diabetes Mellitus, and Influenza/Pneumonia) are also elevated in Minnesota.

VI. CONCLUSION

Currently, there are between 30,000 and 40,000 Indian people in Minnesota, making them Minnesota's third largest minority.^{1/}

Almost all health indices presented here show Minnesota Indian people to be of a lower health status when compared to the general population. Such indices have shown for Indian people: higher infant mortality rates (especially postneonatal mortality), higher proportions of high risk births, lower proportions of mothers with prenatal care, higher proportions of young, unmarried mothers, and higher death rates for causes such as accidents, cirrhosis of the liver, and diabetes.

^{1/} Ranking is 1) Blacks, 2) Hispanic, and 3) American Indians

- c) Death rates may be specific for any sub-group, such as Indian, of the population:

$$D.R. = \frac{\text{number of deaths in the population sub-group in a calendar year}}{\text{population of the sub-group on July 1 of that year}} \times 100,000$$

This rate is expressed in deaths per 100,000 population

Example: Age-race-sex specific death rate: U.S., 1970

Population: 6,832,641 Deaths: 13,812 White males of age 20-24 years.

$$D.R. = \frac{13,812 \times 100,000}{6,832,641} = 202.1 \text{ deaths per 100,000 males age 20-24 years.}$$

- 6) High Risk Birth: A birth is classified as high risk if any of the following conditions exist:

<u>Mother's age:</u>	Less than 17 years or over 39 years.
<u>Prenatal care:</u>	Less than 3 visits.
<u>Condition not related to pregnancy:</u>	Tuberculosis, rubella, diabetes, or cardiac condition.
<u>Condition related to pregnancy:</u>	Hydramnios, urinary tract infection, or toxemia.
<u>Condition of labor:</u>	Prolonged labor.
<u>Birth weight:</u>	2,500 grams or less (5 lb. 8 oz.)
<u>Birth injury:</u>	To brain, spinal cord, fractures, other bone injury, paralysis, or nerve injuries.
<u>Birth condition:</u>	Hemolytic diseases of newborn, hyaline membrane D, respiration distress syndrome, or atelectasis.
<u>Congenital anomaly.</u>	

- 7) Incidence rate = $\frac{\text{number of newly reported cases of stated disease in a calendar year}}{\text{population on July 1 of that year}} \times \begin{matrix} 1,000 \text{ or} \\ 10,000 \text{ or} \\ 100,000 \end{matrix}$

Example: In Minnesota in 1970, 339 new cases of tuberculosis were reported to the State Health Department. The incidence rate was:

$$I.R. = \frac{339}{3,804,971} \times 100,000 = 8.9 \text{ new cases of tuberculosis per 100,000 population.}$$

8) Indian: For the purpose of this publication, an Indian is any person who:

- 1) Was enumerated as American Indian in a decennial Census, or
- 2) Is a member of a federally recognized tribe or band, regardless of residence, or
- 3) Was coded as Indian at time of birth (See 14 below), or
- 4) Was coded as Indian at time of death (See 15 below).

9) Live birth: Live birth means 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 umbilical cord, or definite movement of voluntary muscles, whether or not the umbilical cord has been cut or the placenta is attached; each product of such a birth is considered live born.

10) Mortality Rates Based on the Number of Live Births:

$$a) \text{ Infant mortality rate} = \frac{\text{number of deaths of infant (under one year of age) in a calendar year}}{\text{number of live births in that year}} \times 1,000$$

Example: Minnesota. 1970

Live Births: 68,456
Total infant deaths: 1,194

$$I.M.R. = \frac{1,194}{68,456} \times 1,000 = 17.4 \text{ infant deaths per 1,000 L.B.}$$

$$b) \text{ Neonatal mortality rate} = \frac{\text{number of deaths of infants less than 28 days of age in a calendar year}}{\text{number of live births in that year}} \times 1,000$$

Example: Minnesota. 1970

Deaths at age less than 1 year: 1,194
Deaths at age less than 28 days: 938
Live births: 68,456

$$N.M.R. = \frac{938}{68,456} \times 1,000 = 13.7 \text{ neonatal deaths per 1,000 live births.}$$

In Minnesota in 1970, 78.6 percent of the infant deaths were of infants less than 28 days of age.

$$c) \text{ Postneonatal mortality rate} = \frac{\text{number of deaths of infants between the age of 29 days and one year}}{\text{number of live births in that year}} \times 1,000$$

$$d) \text{ Perinatal mortality rate} = \frac{\text{number of fetal deaths (20 or more weeks) + neonatal deaths}}{\text{number of live births in that year}} \times 1,000$$

11) Natural Increase: Births minus deaths.

12) Population Estimates: Estimates address the present or a very recent past date and employ data symptomatic of population change (e.g., births, deaths, school enrollments, motor vehicles). Estimates are a reasonable alternative to the expensive method of complete enumeration undertaken every ten years by the U.S. Bureau of the Census.

13) Population Projections: Projections address future dates. Projections are based on assumptions about the major components of population change--births, deaths, and migration. Each of these assumptions is age-sex specific.

Since projections are based on assumptions about the future, they are no longer useful once estimates, based on current data, are available for the same date. Thus, 1975 estimates should be used in place of 1975 projections.

14) Race at Birth or Fetal Death: The concept of race used by the Bureau of the Census has been followed.

The white race includes all except Blacks, American Indians, Japanese, Chinese, Filipino, Korean, Asian Indians and Malayan races. Persons of Mexican birth or ancestry not definitely of Indian or other nonwhite race are classified as white.

Persons of mixed white and nonwhite race are classified as nonwhite.

The Blacks in addition to persons of Black and of mixed Black and white descent includes persons of mixed Indian and Black descent unless the Indian ancestry very definitely predominates or unless the individual is regarded as Indian in the community.

15) Race at Death (excluding fetal death): Indication of racial origin on the death certificate. Sources for this information include the medical record, opinion of attendant at death, friends, or relatives.

16) Rates: Rates are the number of incidents expected in a standard unit of population (the units usually chosen are 100's, 1,000's, 100,000's or 1,000,000's), in a given period of time.

$$\frac{\text{Number of events during 3 (or 5) consecutive years}}{\text{Sum of population over years covered}} \times \begin{matrix} 100 \\ 1,000 \\ 100,000 \end{matrix}$$

17) Residence: This is the geographic area of the usual place of abode of the deceased at the time of death or of the mother in the case of live births or fetal deaths. This means, in general, the place where one lives and sleeps most of the time. However, when usual residence is in a nursing home or other institution, where the patient resided for the purpose of **receiving** care, residence is coded to the place where the patient lived prior to admission to the institution.

TABLE A-1

Figure 1

Percentage Distributions by Age and Sex,
Minnesota All Races vs Minnesota All Indians, 1960 U.S. Census

<u>Age Group</u>	<u>ALL RACES</u>			<u>ALL INDIANS</u>		
	<u>Total</u>	<u>Males</u>	<u>Females</u>	<u>Total</u>	<u>Males</u>	<u>Females</u>
75+	3.5	1.6	1.9	1.3	.8	.5
70-74	2.9	1.4	1.5	1.3	.7	.6
65-69	3.9	1.9	2.0	1.8	.9	.9
60-64	4.3	2.1	2.2	2.3	1.4	.9
55-59	4.7	2.3	2.4	5.7	2.5	3.2
50-54	5.2	2.6	2.6	3.6	1.8	1.8
45-49	5.6	2.8	2.8	3.9	2.0	1.9
40-44	6.0	3.0	3.0	4.0	2.5	1.5
35-39	6.2	3.1	3.1	5.2	2.4	2.8
30-34	6.0	3.0	3.0	5.1	2.8	2.3
25-29	5.6	2.8	2.8	5.5	3.0	2.5
20-24	5.6	2.6	3.0	6.7	3.2	3.5
15-19	7.4	3.6	3.8	8.7	4.4	4.3
10-14	9.5	4.8	4.7	12.3	5.9	6.4
5-9	11.2	5.7	5.5	15.5	7.6	7.9
Under 5	12.2	6.2	6.0	17.2	8.9	8.3
Total ^{1/}	99.8	49.5	50.3	100.1	50.8	49.3

Sources: Census Population: 1960 Volume I Characteristics of the Population, Part 25 Minnesota, 1960 U.S. Census, 100% Sample, Table 16. Total population 3,413,864 for All Races.

Sampler, Indian Health in Minnesota, 1974, Indian Health Board of Minneapolis, Charles Deegan and David Thompson. Total population 10,387 for All Indians.

^{1/} Total may be slightly greater or less than 100.0% due to rounding.

TABLE A-2

Figure 2

Percentage Distributions by Age and Sex,
Minnesota All Races vs Minnesota All Indians, 1970 U.S. Census

Age Group	ALL RACES			ALL INDIANS		
	Total	Males	Females	Total	Males	Females
85+	.9	.3	.6	.4	.2	.2
80-84	1.3	.5	.8	.6	.4	.2
75-79	2.1	.9	1.2	.9	.4	.5
70-74	2.9	1.3	1.6	1.1	.6	.5
65-69	3.5	1.6	1.9	1.9	.8	1.1
60-64	4.1	2.0	2.1	1.9	.9	1.0
55-59	4.7	2.3	2.4	2.8	1.4	1.4
50-54	5.1	2.5	2.6	2.9	1.3	1.6
45-49	5.3	2.6	2.7	3.6	1.8	1.8
40-44	5.3	2.6	2.7	3.9	1.8	2.1
35-39	5.0	2.5	2.5	4.7	2.3	2.4
30-34	5.4	2.7	2.7	6.0	2.7	3.3
25-29	6.6	3.3	3.3	6.2	3.2	3.0
20-24	7.7	3.5	4.2	8.0	3.4	4.6
15-19	9.8	4.9	4.9	10.8	5.2	5.6
10-14	10.9	5.6	5.3	14.8	7.3	7.5
5-9	10.6	5.4	5.2	16.3	8.3	8.0
Under 5	8.8	4.5	4.3	13.4	6.6	6.8
Under 1 () ^{1/}	(1.8)	(.9)	(.9)	(2.5)	(1.4)	(1.1)
Total ^{2/}	100.0	49.0	51.0	100.2	48.6	51.6

Sources: PC(1) - B25, Minnesota, Table 20, 1970 U.S. Census, 100% Sample. Total population 3,804,971 for All Races.

PC(2) - 1F, American Indians, Table 2, 1970 U.S. Census, 20% Sample. Total population 23,128 for All Indians.

^{1/} "Under 1" included in "Under 5" when totaled.

^{2/} "Total" may be greater or less than 100.0% due to rounding.

TABLE A-3

Figure 3

Percentage Distributions by Age and Sex,
Minnesota Service Unit Indians vs Minnesota Urban Indians,
1970 U.S. Census

<u>Age Group</u>	<u>SERVICE UNIT INDIANS^{1/}</u>			<u>URBAN INDIANS^{2/}</u>		
	<u>Total</u>	<u>Males</u>	<u>Females</u>	<u>Total</u>	<u>Males</u>	<u>Females</u>
75+	2.8	1.9	.9	1.6	.4	1.2
70-74	1.6	.9	.7	.6	.3	.3
65-69	2.2	.9	1.3	.8	.2	.6
60-64	2.4	1.1	1.3	.6	.3	.3
55-59	2.8	1.1	1.7	1.8	.8	1.0
50-54	2.2	.9	1.3	2.6	1.4	1.2
45-49	4.4	2.3	2.1	2.3	1.1	1.2
40-44	4.1	2.0	2.1	4.2	1.9	2.3
35-39	3.5	2.0	1.5	5.6	2.6	3.0
30-34	4.8	2.2	2.6	8.5	4.1	4.4
25-29	4.7	2.4	2.3	7.4	3.9	3.5
20-24	5.1	2.3	2.8	8.9	2.9	6.0
15-19	11.4	5.7	5.7	9.3	4.0	5.3
10-14	18.2	9.1	9.1	12.3	5.8	6.5
5-9	18.5	9.9	8.6	16.0	8.3	7.7
Under 5	11.3	4.9	6.4	17.5	8.9	8.6
Total	100.0	49.6	50.4	100.0	46.9	53.1

Source: Unpublished 1970 Census data, U.S. Bureau of Census, 1978.

^{1/} This table includes only Becker, Beltrami, Cass and Itasca counties; (Indian population of 6,582) representative of 62% of the total Minnesota Service Unit Indian population.

^{2/} This table includes only Hennepin county; (Indian population of 8,402) representative of 71% of the total Minnesota Urban Indian population.

TABLE A-4.

Indian Health Service-Service Unit, and
Urban Area Population Projections by County, FY1979 to FY1984*

SERVICE UNIT^{1/}

County	Service Population					
	FY'79	FY'80	FY'81	FY'82	FY'83	FY'84
<u>Fond du Lac</u>						
Carlton	599	614	629	645	661	677
St. Louis (Part)	1,532	1,594	1,662	1,736	1,814	1,898
TOTAL	2,131	2,208	2,291	2,381	2,475	2,575
<u>Grand Portage</u>						
Cook	149	153	159	162	166	170
TOTAL	149	153	159	162	166	170
<u>Greater Leech Lake</u>						
Beltrami (Part)	236	243	249	255	261	268
Cass	2,097	2,154	2,208	2,245	2,283	2,322
Hubbard	260	264	266	266	266	265
Itasca	1,473	1,618	1,777	1,927	2,090	2,267
TOTAL	4,066	4,279	4,500	4,693	4,900	5,122
<u>Mille Lacs</u>						
Aitkin	138	143	148	152	157	163
Kanabec	16	16	15	14	13	12
Mille Lacs	580	595	609	615	621	626
Pine	317	330	344	357	372	388
TOTAL	1,051	1,084	1,116	1,138	1,163	1,189
<u>Nett Lake</u>						
Koochiching	301	300	299	298	297	294
St. Louis (Part)	385	401	418	436	456	477
TOTAL	686	701	717	734	753	771
<u>Red Lake</u>						
Beltrami (Part)	3,853	3,957	4,059	4,157	4,260	4,366
Clearwater (Part)	102	105	108	111	114	117
Lake of the Woods	33	33	32	32	32	32
Pennington	54	56	58	60	62	64
Roseau	98	99	100	101	102	103
TOTAL	4,140	4,250	4,357	4,461	4,570	4,682
<u>White Earth</u>						
Becker	1,694	1,768	1,848	1,896	1,946	1,999
Clearwater (Part)	522	536	551	566	582	598
Mahnomen	745	732	714	714	713	711
Norman	23	25	27	29	31	33
Polk	126	129	131	132	132	132
TOTAL	3,110	3,190	3,271	3,337	3,404	3,473
<u>Minnesota Sioux</u>						
Chippewa	16	16	16	17	18	19
Goodhue	164	168	172	175	179	183
Pierce(WI)	32	32	32	32	32	32
Redwood	123	123	123	124	124	124
Renville	45	49	53	57	62	67
Scott	124	131	138	142	146	150
Yellow Medicine	94	96	97	98	99	100
TOTAL	598	615	631	645	660	675
<u>TOTAL SERVICE UNITS</u>	15,931	16,400	17,042	17,551	18,091	18,657
<u>URBAN AREA^{2/}</u>						
Hennepin County	12,914	13,418	13,922	14,426	14,930	15,434
Ramsey County	4,277	4,454	4,630	4,807	4,984	5,161
City of Duluth	1,532	1,594	1,662	1,736	1,814	1,898
<u>TOTAL URBAN AREAS</u>	18,723	19,466	20,214	20,969	21,728	22,493

Sources: 1/ Service Unit data from Population Branch, Indian Health Service Headquarters.
2/ Urban Area data from trend analyses of available data.

* See Chapter II (Technical Notes) for population projection procedures.

TABLE A-5

Minnesota Total Resident Population Estimates,
1960, 1968-1976

<u>Year</u>	<u>Minnesota Center for Health Statistics Estimate</u>
1960	3,413,864
1968	3,703,000
1969	3,758,000
1970	3,804,971
1971	3,859,905
1972	3,896,479
1968-1972 Average (1970 U.S. Census)	3,804,971
1973	3,896,988
1974	3,917,390
1975	3,925,394
1973-1975 Average	3,913,257
1976	3,965,011
1974-1976 Average	3,935,932

Source: Minnesota Department of Health, Center for Health
Statistics.

TABLE A-6

Life Expectancy at Birth, Selected Population Groups,
1930-1976

<u>Population Group</u>	<u>Year</u>					
	<u>1930</u>	<u>1940</u>	<u>1950</u>	<u>1960</u>	<u>1970</u>	<u>1975</u>
A. U.S. Indians and Alaskan Natives	NA	NA	60.0	61.7	65.1	66.4 ^{3/}
B. U.S. All Races	59.7	62.9	68.2	69.7	70.9	72.5
C. U.S. White	61.4	64.2	69.1	70.6	71.7	73.2
D. U.S. Non-White	48.1	53.1	60.8	63.6	65.3	67.9
E. Minnesota - All Races	NA	66.0 ^{1/2/}	68.2 ^{1/2/}	71.8 ^{1/}	73.0 ^{1/}	NA
F. Minnesota - White	NA	66.0 ^{1/2/}	68.2 ^{1/2/}	68.9 ^{1/}	73.0 ^{1/}	NA

NA - Not Available

Sources: A. Data from Indian Health Service Monthly Report, Office of Program Statistics, Indian Health Service Headquarters, June 11, 1974 and communication with the IHS.
B.-D. Data from Vital Statistics of the United States 1975, Volume II-Section 5 Life Tables, DHEW, PHS, National Center for Health Statistics, 1977.
E.-F. Data for 1970 and 1960 from U.S. Decennial Life Tables for 1969-71, Volume I, Number 4, Some Trends and Comparisons of United States Life-Table Data: 1900-1971, DHEW, PHS, National Center for Health Statistics, 1975 and
F. Data for 1950 from Vital Statistics - Special Reports, Life Tables for 1949-51, Minnesota - State Life Tables: 1949-51, Volume 41, Supplement 22, DHEW, PHS, National Office of Vital Statistics, 1956. F data for 1940 from State and Regional Life Tables, 1939-1941, Federal Security Agency, PHS, National Office of Vital Statistics, 1948.

1/ Based on resident deaths during 3-year period and census population of midyear. E.g., Minnesota All Races for 1970 = 73.0. This was computed using deaths during the years 1969-1971 and the 1970 U.S. Census population of Minnesota.

2/ White males only.

3/ 1976 data.

TABLE A-7

Birth Rates, Selected Minnesota
Populations, 1950-1976

Year	Single Year Rates	
	Minnesota All Races ^{1/}	Minnesota All Indians ^{2/}
1950	25.2	47.3
1951	26.5	46.3
1952	26.1	45.7
1953	26.0	43.6
1954	26.0	47.8
1955	25.7	49.0
1956	25.6	44.5
1957	26.3	48.4
1958	25.6	45.9
1959	26.2	54.0
1960	25.6	52.9
1961	24.9	49.8
1962	24.1	50.0
1963	22.7	48.2
1964	21.6	48.9
1965	19.7	46.4
1966	18.5	43.2
1967	17.6	40.5
1968	17.5	39.7
1969	17.6	41.9
1970	18.0	36.0
1971	16.2	36.8
1972	14.5	36.3
1973	13.8	34.5
1974	14.2	32.4
1975	14.4	35.8
1976	14.3	33.7

Year	3 Year Rates		
	Minnesota All Indians ^{3/}	Service Unit Indians ^{4/}	Urban Indians ^{4/}
1968-70	36.2		
1969-71	36.6		
1970-72	36.3	30.7	34.4
1971-73	35.8	30.6	31.7
1972-74	34.4	32.5	28.6
1973-75	34.3	32.9	28.2
1974-76	34.0	33.0	26.5

Birth Rates = Births per 1,000 population.

Sources: ^{1/} Data from Annual reports Minnesota Vital (Health) Statistics, 1950. . . 1976, Minnesota Center for Health Statistics, Minnesota Department of Health

^{2/} 1950-1970 data from Minnesota Vital Statistics, 1970, Minnesota Department of Health. 1971-1976 data from annual reports Minnesota (Vital) Health Statistics, Minnesota Department of Health. Population data from Population Branch, Indian Health Service-Headquarters (See Table 4 for actual populations).

^{3/} 1968-1976 3 year average data. birth and population data. calculated from same as ^{2/} above.

^{4/} See Table 6 for sources of Service Unit and Urban (area) data.

Minnesota Indian Birth Rates, Service Units and Urban Areas,
and State 3 Year Totals and Rates 1970-1976*

NOTE: Due to Indian people living in areas other than Service Units or Urban Areas, Total Minnesota Indian does not equal Total Service Units plus Total Urban Areas. Due to an undercount, the Minnesota Indian birth rate is slightly overestimated.

TABLE A-9

Minnesota Fertility Rates, Selected Populations, 1960 and 1970

	ALL INDIANS			ALL RACES			Ratio of Indian Rate to All Races Rate
	Number of Births (A)	Number of Women Age 15-44 (B)	Fertility Rate $\frac{A}{B} \times 1000$	Number of Births (A)	Number of Women Age 15-44 (B)	Fertility Rate $\frac{A}{B} \times 1000$	
1960	820	2,624	312.5	87,523	643,748	136.0	2.3
1970	831	4,861	171.0	68,449	774,632	88.4	1.9
% change 1960 to 1970	+1.3%	+85.2%	-45.3%	-21.8%	+20.3%	-35.0%	NA

Sources: Birth data from Annual Reports Minnesota Vital Statistics 1960 and 1970, Minnesota Department of Health.
Population of women age 15-44 for All Races from PC(1)-B25 Minnesota, 1970 U.S. Census.
Population of women age 15-44 for All Indians calculated from PC(2)-1B and PC(1)-25B Minnesota
1960 U.S. Census and PC(2)-1F American Indians, 1970 U.S. Census.

TABLE A-10

Minnesota Fertility Rates, Selected Populations, 1970

	MINNESOTA		SERVICE UNITS ^{1/}		URBAN AREA ^{2/}	
	All Races	All Indians	All Races	All Indians	All Races	All Indians
Number of Births (A)	68,449	831	1,720	320	17,948	191
Number of Women Age 15-44 (B)	774,632	4,861	18,728	1,124	217,516	1,650
Fertility Rate $\frac{A}{B} \times 1000$	88.4	171.0	91.8	284.7	82.5	115.8
Ratio of Indian Rate to All Races Rate	1.9		3.1		1.4	

Sources: Birth data for All Races and All Indians from Annual Report Minnesota Vital Statistics, 1970, Minnesota Department of Health.
Population of women age 15-44 for All Races from PC(1)-B25, Minnesota, 1970 U.S. Census.
Population data for All Indians from PC(2)-1F American Indians, 1970 U.S. Census and unpublished data, U.S. Bureau of the Census.

^{1/} Includes only Becker, Beltrami, Cass, and Itasca Counties. This was 62% of the 1970 Minnesota Service Unit Indian population.

^{2/} Includes only Hennepin County. This was 71% of the 1970 Minnesota Urban Indian population.

TABLE A-11

Natural Increase, Selected Populations, 1950-1970

Year	Minnesota - All Indians				MN All Races Natural Increase Rate Per 1,000 Population (F)	Ratio of Indians to All Races, Natural Increase Rate (G)
	# Births (A)	# Deaths (B)	Natural Increase (C)	Population (Census Figures) (D)	Natural Increase Rate Per 1,000 Population (E)	
1950	599	127	472	12,533	37.7	15.8
1951	592	151	441			
1952	598	132	466			
1953	579	132	447			
1954	651	120	531			
1955	684	134	550			
1956	633	134	499			
1957	708	157	551			
1958	682	142	540			
1959	828	143	685			
1960	820	141	679	15,496	43.8	16.4
1961	808	151	657			
1962	833	140	693			
1963	824	135	689			
1964	865	130	735			
1965	842	131	711			
1966	804	160	644			
1967	767	174	593			
1968	768	187	581			
1969	831	161	670			
1970	831	170	661	23,128	28.6	9.1
1971	878	180	698			
1972	895	210	685			
1973	878	205	673			
1974	849	174	675			
1975 ^{1/}	966	165	801	27,706(est.)	26.8	6.0
1976 ^{1/}	935	191	744			

^{1/} Columns E, F and G estimated for 1976.

TABLE A-12

Selected Natality Data of the Minnesota Service Unit - All Races Population,
1974-1976, 3 Year Average

Characteristics	Fond du Lac		Grand Portage		Greater Leech Lake		Mille Lacs		Minnesota Sioux		Nett Lake		Red Lake		White Earth		Minnesota All Service Units All Races	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
A. <u>Total Number of Births</u> (% of total) Rate	391.3 13.6	6.1 NA	42.0 11.5	.6 NA	345.7 14.4	13.2 NA	664.0 13.4	10.3 NA	1601.0 14.4	24.9 NA	1629.3 11.8	25.4 NA	449.3 15.2	7.0 NA	801.7 14.9	12.5 NA	6424.3 13.6	100.0 NA
B. <u>Age of Mother</u> Under 20 35 and Over	67 18	17.1 4.6	7.0 1.3	16.7 3.1*	171.7 33.0	20.3 3.9	119.7 42.7	18.0 6.4	205.3 92.7	12.8 5.8	326.7 76.3	20.0 4.7	88.7 18.3	19.7 4.1	147.0 60.7	18.3 7.6	1133.0 343.3	17.6 5.3
C. <u>Birth Order</u> 6th and Over	10.3	2.6	.7	1.7*	27	3.2	30	4.5	69.7	4.4	36.3	2.2	19.3	4.3	45.7	5.7	239.0	3.7
D. <u>Month Prenatal Care Began</u> 3rd Trimester or None	13.7	3.5	3.3	7.8*	53.3	6.3	30	4.5	60	3.7	96.3	5.9	44.0	9.8	51.3	6.4	352.0	5.5
E. <u>Birthweight</u> 2,500 grams or less	17	4.3	1.7	4.0*	47	5.5	30.7	4.6	75.3	4.7	107.7	6.6	23.0	5.1	43.0	5.4	345.3	5.4
F. <u>Wedlock Status</u> Out-of-wedlock	37.3	9.5	5.7	13.6	107.7	12.7	59.3	8.9	83.7	5.2	136.7	8.4	92.0	20.5	90.0	11.2	612.3	9.5
G. <u>Population</u> (% of Total)	28,837	6.1	3,662	.8	58,572	12.4	49,336	10.4	111,130	23.5	138,407	29.2	29,637	6.3	53,642	11.3	473,223	100.0

NA - Not applicable

Source: The Minnesota Center for Health Statistics, Minnesota Department of Health.

* Due to small frequencies percent calculated is subject to large random fluctuations.

TABLE A-13

Selected Natality Data of the Minnesota Service Units Indians Population,
1974-1976, 3 Year Average

Characteristics	Fond du Lac		Grand Portage		Greater Leech Lake		Mille Lacs		Minnesota Sioux		Nett Lake		Red Lake		White Earth		Minnesota All Service Units All Indians	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
A. <u>Total Number of Births</u> (% of Total) Rate	19 27.0	5.1 NA	3 26.5*	.8* NA	128 49.9	34.2 NA	26.7 33.1	7.1 NA	9.3 21.8	2.5 NA	10.3 15.6	2.8 NA	100.7 30.6	26.9 NA	76.7 27.8	20.5 NA	373.7 33.0	100.0 NA
B. <u>Age of Mother</u> Under 20 35 and Over	7.7 1.3	40.5 6.8*	.7 0	23.3* --	41 2.7	32.0 2.1*	9 1.7	33.7 6.4*	3 0	32.2* --	4 .3	38.8 2.9*	35.3 3.7	35.0 3.7	26.7 3	34.8 3.9*	127.3 12.7	34.1 3.4
C. <u>Birth Order</u> 6th and Over	1	5.3*	0	--	4.7	3.7	1.7	6.4*	.3	3.2*	1.3	12.6*	8.7	8.6	5	6.5	22.7	6.1
D. <u>Month Prenatal Care Began</u> 3rd Trimester or None	3.7	19.5	0	--	14.3	11.2	6.7	25.1	.6	6.4*	2.7	26.2*	21.3	21.2	16	20.9	65.3	17.5
E. <u>Birthweight</u> 2,500 grams or less	.7	3.7*	.3	10.0*	14	8.6	1.3	4.9*	.3	3.2*	.6	5.8*	5	5.0	4.7	6.1	24.0	6.4
F. <u>Wedlock Status</u> Out-of-Wedlock	7	36.8	.6	20.0*	39.3	30.7	5	18.7	2.3	24.7*	5	48.5	56	55.6	34.3	44.7	149.7	40.0
G. <u>Population</u> (3 Year Average) (% of MN Service Unit Total)	704	6.2	113	1.0	2,565	22.6	807	7.1	429	3.8	663	5.8	3,293	29.1	2,756	24.3	11,331	100.0

NA - Not Applicable

Source: Vital Events Branch, Office of Program Statistics, Indian Health Service, Headquarters 10/78.
Office of Program Planning, Bemidji Program Office, Indian Health Service, 10/78.

* Due to small frequencies, calculated percent or rate is subject to large random fluctuations.

TABLE A-14

Selected Natality Data of the Urban Areas, All Races and All Indians
1974-1976 3 Year Average

CHARACTERISTICS	HENNEPIN COUNTY				RAMSEY COUNTY				DULUTH				TOTAL URBAN AREAS			
	ALL RACES		ALL INDIANS		ALL RACES		ALL INDIANS		ALL RACES		ALL INDIANS		ALL RACES		ALL INDIANS	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
A. <u>Total Number of Births (% of Total)</u> <u>Rate</u>	11802.0 12.8	59.7 NA	305.7 28.0	73.6 NA	6516.0 14.2	33.0 NA	82.0 22.9	19.7 NA	1453.7 15.1	7.4 NA	26.7 23.4	6.4 NA	19771.7 13.4	100.0 NA	415.3 26.5	100.0 NA
B. <u>Age of Mother</u> <u>Under 20</u> <u>35 and Over</u>	1312.0 486.0	11.1 4.1	98 NA	32.0 NA	875.3 282.0	13.4 4.3	29.0 NA	35.4 NA	200.7 37.0	13.8 2.5	7.0* NA	26.2* NA	2388.0 805.0	12.1 4.1	134 NA	32.3 NA
C. <u>Birth Order</u> <u>6th and Over</u>	186.7	1.6	14.7	4.8	127.0	1.9	4.0	4.9	21.7	1.5	.3*	1.1*	335.3	1.7	19.0	4.6
D. <u>Month Prenatal Care Began</u> <u>3rd Trimester or None</u>	538.7	4.6	71.3	23.3	278.3	4.3	11.0	13.4	59.3	4.1	3.7	13.8	876.3	4.4	86.0	20.7
E. <u>Birthweight</u> <u>2,500 grams or less</u>	740.7	6.3	23.7	7.8	425.3	6.5	7.7	9.4	84.7	5.8	2.7*	10.1*	1250.7	6.3	34.1	8.2
F. <u>Wedlock Status</u> <u>Out-of-Wedlock</u>	1662	14.1	194.7	63.7	900.3	13.8	42.3	51.6	163.3	11.2	12.7	47.6	2705.7	13.7	249.7	60.1
G. <u>Population</u> <u>(% of Total)</u>	922,453	62.4	10,905	69.7	458,642	31.0	3,568	22.8	96,245	6.5	1,182	7.6	1,477,340	100.0	15,653	100.0

NA - Not Applicable or Not Available

Sources: All Races data A-F from The Minnesota Department of Health, Center for Health Statistics.

All Races G data from Annual reports Minnesota Health Statistics, 1974-1976, Minnesota Department of Health, Minnesota Center for Health Statistics.

All Indians data A-F from The Minnesota Department of Health, Minnesota Center for Health Statistics.

All Indian data G from trend analysis of available data. See table II.

* Due to small frequencies, percent calculated is subject to large random fluctuations.

TABLE A-15
Minnesota High Risk Births,
Selected Populations, 1974-1976, 3 Year Average

Location	ALL RACES		ALL INDIANS		Percent Difference of Indian to All Races
	Total Number of Births	Percent of Births which were High Risk	Total Number of Births ^{1/}	Percent of Births which were High Risk	
Minnesota	28,359	16.8 %	916.7	31.9 %	+89.9%
Service Units					
Mille Lacs	368	18.5	26.7	28.8	+55.7
White Earth	478	19.9	76.3	38.4	+93.0
Red Lake	322	23.9	104.3	38.3	+60.2
Fond du Lac ^{2/}	226	19.2	16.7	24.0	+25.0
Greater Leech Lake	480	18.9	130.0	31.5	+66.7
Nett Lake ^{2/}	1,037	19.0	44.0	35.6	+87.4
Minnesota Sioux	765	15.9	10.0	16.7*	+ 5.3*
Grand Portage	30	23.8	3.0	44.4*	+86.6*
Total Service Units	3,706	18.7	407.7	33.6	+79.7
Urban Areas					
Hennepin County	6,384	18.0	305.7	29.2	+62.2
Ramsey County	3,629	18.6	82.0	35.0	+88.2
City of Duluth	690	15.8	26.7	31.3	+98.1
Total Urban Areas	10,703	18.0	415.3	30.5	+69.4

Source: Data for "All Indians" from the Minnesota Center for Health Statistics, 2/79.
Data for "All Races" calculated from Annual Reports, Minnesota Health Statistics, 1974-1976, Minnesota Department of Health, Center for Health Statistics.

* Due to small frequencies, calculated percent is subject to large random fluctuations.

^{1/} These figures may differ from Table A-2 due to different sources of data. See ^{2/} below.

^{2/} Fond du Lac includes only Carlton county. Nett Lake includes Koochiching county and St. Louis county except Duluth. These boundaries differ from those designated by the Indian Health Service.

TABLE A-16

Percent, High Risk Births, Selected Minnesota
Populations 1974 to 1976, and 1974-1976, 3 Year Average

	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1974-1976 3 Yr. Average</u>
State - Minnesota				
All Races	17.0%	17.2%	16.2%	16.8%
All Indians	32.2	30.7	32.8	31.9
% Difference of Indians to All Races	+89.4	+78.5	+102.5	+89.9
Service Units				
All Races	22.6	19.0	17.4	18.7
All Indians	34.4	33.5	33.6	33.6
% Difference of Indians to All Races	+52.2	+76.3	+93.1	+79.7
Urban Areas				
All Races	17.9	18.6	17.6	18.0
All Indians	30.6	24.8	31.8	30.5
% Difference of Indians to All Races	+70.9	+33.3	+80.7	+69.4

Source: All Races data from Annual Reports Minnesota Health Statistics, 1974-1976, Minnesota Department of Health. All Indian data from the Minnesota Department of Health.

TABLE A-17

Infant, Neonatal, Postneonatal, and
Perinatal Mortality Rates, Selected Minnesota
Populations, 3-Year Averages 1970-1976

	Three Year Period (Mid-Year) Rate				
	1970-1972 (1971)	1971-1973 (1972)	1972-1974 (1973)	1973-1975 (1974)	1974-1976 (1975)
Mortality Rate					
Infant Mortality Rates					
Minnesota-All Races	17.2	16.6	15.6	14.5	14.0
All Indians	20.7	18.1	16.8	17.8	19.3
Service Unit Indians	16.9	19.0	13.1	14.4	11.3
Service Unit All Races	19.0	19.2	17.4	15.9	14.0
Urban Indians	21.5	16.5	13.9	21.5	28.2
Urban All Races	17.4	16.4	15.8	15.1	14.9
Neonatal Mortality Rates					
Minnesota-All Races	13.2	12.5	11.6	10.9	10.3
All Indians	12.7	8.3	5.3	6.7	9.1
Service Unit Indians	11.3	9.0	3.5	5.1	6.4
Service Unit All Races	14.4	14.8	12.4	11.3	9.7
Urban Indians	13.1	7.1	5.8	8.7	12.9
Urban All Races	12.9	11.9	11.3	11.1	10.9
Postneonatal Mortality Rates					
Minnesota-All Races	4.0	4.0	3.9	3.6	3.7
All Indians	8.1	9.8	11.4	11.1	10.2
Service Unit Indians	5.6	9.9	9.6	9.3	4.8
Service Unit All Races	4.6	4.4	5.0	4.6	4.3
Urban Indians	8.4	9.4	13.2	12.7	15.3
Urban All Races	4.4	4.6	4.4	4.1	4.0
Perinatal Mortality Rate					
Minnesota-All Races	23.0	21.8	20.9	19.8	19.1
All Indians	23.8	19.9	17.9	18.6	21.5
Service Unit Indians	24.5	21.7	16.6	18.6	18.5
Service Unit All Races	24.7	25.3	24.0	21.6	19.1
Urban Indians	24.6	19.6	18.1	19.1	26.5
Urban All Races	22.5	20.9	20.1	19.7	19.0

Sources: Data for table from Annual reports, Minnesota Vital (Health) Statistics, 1970-1976, Minnesota Department of Health, Minnesota Center for Health Statistics.

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