Community Health Profile: Minnesota, Wisconsin & Michigan Tribal Communities, 2003

This report produced by
The Great Lakes EpiCenter

For additional copies please contact:
Nancy Miller-Korth, Project Coordinator
Great Lakes EpiCenter
Great Lakes Inter-Tribal Council, Inc.
P.O. Box 9
Lac du Flambeau, WI 54538
(800) 472-7207
Email: **nkorth@glitc.org**

Great Lakes
Epidemiology Project

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ABOUT THIS REPORT

This community report is intended to provide a snapshot of the health of the American Indian/Alaska Native people in the Indian Health Service Bemidji Area. This document includes indicators on demographics, mortality, diabetes, communicable diseases, and maternal & child health. The items chosen to report are not meant to be an exhaustive list, but serve as a starting point. By tracking these indicators over time, a community can measure its progress regarding various health issues. The information presented may be useful in health program planning, resource allocation, and supporting evidence for grant proposals.

This report comes to you from the Great Lakes Inter-Tribal Council's Epidemiology Center (EpiCenter), which is a project funded through a grant from the Indian Health Service. The purpose of the project is to assist Bemidji Area Tribes (Wisconsin, Michigan, and Minnesota) in the collection, interpretation, and analysis of health data. The EpiCenter offers further assistance for Tribal health personnel interested in using this profile to support assessment, planning, and evaluation activities.

Data sources for this Community Health Profile include: U.S. Census Bureau, Michigan Department of Community Health, Minnesota Department of Health, Wisconsin Department of Health & Family Services, state Women, Infants and Children (WIC) programs, Centers for Disease Control & Prevention (CDC), Tribal Health Centers, Indian Health Service (IHS), National Center for Health Statistics, and U.S. Department of Health & Human Services. Specific data sources are documented after all tables and graphs.

The population data included in this report define American Indian/Alaska Native people as those self-identifying as American Indian/Alaska Natives. Inclusion in the American Indian/Alaska Native population does not reflect Tribal affiliation. People may self-identify as American Indian/Alaska Native and not be enrolled in a Tribe; however, they would still be included as American Indian/Alaska Native in this report.

Please note that the document, *Bemidji Area Trends in Indian Health* from the Indian Health Service, only includes American Indian/Alaska Native people living within an Indian Health Service Health Service Delivery Area (IHS HSDA). The numbers cited in this report include all American Indian/Alaska Native people with county of residence within the boundaries of Michigan, Minnesota, and Wisconsin, regardless of that county being in an IHS HSDA. Therefore, direct comparisons between these two documents are not possible, but could be used together for the most complete information.

DEFINITIONS

Actual Deaths	Total deaths during defined time period among residents of defined area
Age-Adjusted Rates	Standardized death rates to control for the effects of age distribution differences and allow for valid comparisons of rates. The 2000 U.S. population was used as the standard.
AI/AN	Race self-identified as American Indian/ Alaska Native; does not reflect Tribal affiliation
All Races	Total population, including American Indians, in a defined area
Average Birth Weight	Birth weight between 2,500 grams (5.5 pounds) and 4,090 grams (9 pounds)
Bemidji Area	Indian Health Service area including American Indian/Alaska Native people living in Indiana, Michigan, Minnesota, and Wisconsin
Contract Health Service Delivery Area (CHSDA)	County or counties which includes all or part of a reservation and any county or counties which have a common boundary with the reservation, unless otherwise designated. Tribal health programs deliver services to AI/AN living in this area.
Crude Birth Rate (CBR)	$\frac{\text{Number of resident live births in a time period}}{\text{Total resident population in the same period}}$ (X 1,000)
Crude Mortality Rate	$\frac{\text{Number of resident deaths in a time period}}{\text{Total number of residents in the same time period}}$ (x100,000)
High Birth Weight	Weight greater than 4,090 grams (9 pounds)
IHS Total	Indian Health Service total American Indian/Alaska Native population living on or near reservations.
Infant Mortality Rate (IMR)	$\frac{\text{Number of resident infant deaths in a time period}}{\text{Total resident live births in the same time period}}$ (x 1,000)
Low Birth Weight	Weight less than 2,500 grams (5.5 pounds)
N/A	Data not available or not applicable

Obesity	Body Mass Index (BMI) greater than 30.0 for adults or greater than the 95th percentile for persons under 20 years of age
Overweight	For children less than 2 years of age: weight-for-length greater than or equal to the 95th percentile For children 2 to 19 years of age: BMI-for-Age greater than the 95th percentile For adults over 20: BMI between 25.0 and 29.9
Project Area	EpiCenter project services area which includes AI/AN Tribes in Michigan, Minnesota, and Wisconsin.
Socioeconomic Indicators	Involving both social and economic factors, such as race, education, employment, income, and household characteristics
Women, Infants, & Children (WIC) Program Participants	Those eligible for WIC services, including pregnant or postpartum women, infants, and children up to age five. They must meet income guidelines, have state residency, and determined to be at "nutritional risk" by a health professional. Income must be no more than 185% of the poverty level.

SECTION 1
DEMOGRAPHIC AND SOCIAL INDICATORS

Demographic and social indicators are important for understanding the health status of a community. These indicators can be used to identify population groups that may be at a higher risk for morbidity and mortality. They can also assist in identifying causal or contributing factors to a health condition. Race, gender and age, education, income, employment, and household characteristics are included in this section. Comparisons are made between Michigan, Minnesota, Wisconsin, the IHS Bemidji Area, and the United States. Where appropriate, numbers and percentages are listed by American Indian/Alaska Native (AI/AN) and all races (which includes AI/AN). U.S. Census data from 1990 and 2000 are the sole source of data for this section.

Race

Racial and ethnic differences in health status are often related more to differences in social and economic status than race. However, knowledge of the racial distributions in the population of a community is essential in interpreting gaps in health status, for identifying structural or cultural barriers for access to care among populations, and in developing strategies to address these problems.

Tables 1.1a-d display racial distribution data for the IHS Bemidji Area and the individual three states. The proportion of AI/AN people in the three state Bemidji Area has remained about the same (0.8%) as a percent of the total population from 1990 to 2000. This compares to the U.S. AI/AN population which comprised 0.9% of the total population. These calculations are based on persons selecting the 'AI/AN alone' category on the both censuses. It is important to remember that racial information reported by the U.S. Census Bureau is based on self-reported responses and does not reflect official tribal enrollment numbers.

Number of American Indian/Alaska Natives in the Bemidji Area:

1990 U.S. Census	148,568
2000 U.S. Census	160,674
Percent Growth	+8.1%

TABLE 1.1a - Race Distribution for Bemidji Area, 1990 & 2000

Race	1990		2000	
	#	%	#	%
White	16,433,951	88.4	17,136,192	84.7
African American	1,628,261	8.8	1,888,933	9.3
AI/AN	148,568	0.8	160,674	0.8
Asian	233,813	1.3	407,241	2.0
Other	147,572	0.8	286,505	1.4
2+Races			342,053	1.7
Total	**18,592,165**	**100.0**	**20,221,598**	**100.0**

Source: U.S. Census Bureau, 1990 & 2000

TABLE 1.1b - Race Distribution for Michigan, 1990 & 2000

Race	1990		2000	
	#	%	#	%
White	7,789,241	83.5	7,966,053	80.2
African American	1,289,012	13.8	1,412,742	14.2
AI/AN	58,934	0.6	58,479	0.6
Asian	102,869	1.1	176,510	1.8
Other	85,241	0.9	132,244	1.3
2+Races			192,416	1.9
Total	**9,325,297**	**100.0**	**9,938,444**	**100.0**

Source: U.S. Census Bureau, 1990 & 2000

TABLE 1.1c - Race Distribution for Minnesota, 1990 & 2000

Race	1990		2000	
	#	%	#	%
White	4,130,395	94.4	4,400,282	89.5
African American	94,944	2.2	171,731	3.5
AI/AN	49,909	1.1	54,967	1.1
Asian	77,886	1.8	141,968	2.9
Other	21,965	0.5	67,789	1.4
2+Races			82,742	1.7
Total	**4,375,099**	**100.0**	**4,919,479**	**100.0**

Source: U.S. Census Bureau, 1990 & 2000

TABLE 1.1d - Race Distribution for Wisconsin, 1990 & 2000

Race	1990		2000	
	#	%	#	%
White	451,4315	92.3	4,769,857	88.9
African American	244,305	5.0	304,460	5.7
AI/AN	39,725	0.8	47,228	0.9
Asian	53,058	1.1	88,763	1.7
Other	40,366	0.8	86,472	1.6
2+Races			66,895	1.2
Total	**4,891,769**	**100.0**	**5,363,675**	**100.0**

Source: U.S. Census Bureau, 1990 & 2000

Age and Gender

Both age and gender influence patterns of morbidity, mortality, and utilization of health services. Therefore, the analysis of the age-gender distribution of the population is important in assessing the health of a community. It also plays an important role in public health planning because age is a significant indicator of specific disease prevalence and the overall health of a community. See Appendix A for a listing of the most prevalent health problems associated with particular age groups. Current age distribution can be used as a predictor for how many people will be in the older age groups in the future.

Gender also plays an important role in the health of a community. For select diseases, males and females have different morbidity and mortality rates. Disease conditions or injuries can affect one gender more dramatically than the other or can affect one gender exclusively. Average life expectancy also differs by gender.

Tables 1.2a-d display the age and gender distribution for each of the three states in the Bemidji Area and the aggregate for the Bemidji Area. The AI/AN population in the Bemidji Area are much younger than that of all races in the Bemidji Area. Table 1.2a shows that almost half of the Bemidji Area AI/AN population (46.1%) is under 25 years as compared to all races in the Bemidji Area (35.6%). In addition, there is a large difference between AI/AN and all races aged 65 and above (4.8% and 12.3% respectively). This information is important because a younger population encounters different health issues than an older population. For example, injuries and infectious diseases tend to impact the health of younger groups as opposed to chronic diseases, which primarily affect older age groups.

TABLE 1.2a - Age and Gender Distribution for American Indian/Alaska Natives and All Races in Bemidji Area, 2000

Age	AI/AN						All Races					
	Males		Females		Total		Males		Females		Total	
	#	%	#	%	#	%	#	%	#	%	#	%
0-4	7,106	4.4	6,786	4.2	13,892	8.6	687,686	3.4	649,719	3.3	1,337,405	6.7
5-14	16,321	10.2	15,848	9.9	32,169	20.0	1,541,646	7.7	1,438,466	7.2	2,980,112	14.9
15-24	14,449	9.0	13,741	8.6	28,190	17.5	1,440,019	7.2	1,352,962	6.8	2,792,981	14.0
25-44	25,237	15.7	25,510	15.9	50,747	31.6	3,029,020	15.2	2,967,725	14.8	5,996,745	30.0
45-64	13,651	8.5	14,390	9.0	28,041	17.5	2,220,080	11.1	2,211,276	11.1	4,431,356	22.2
65-74	2,259	1.4	2,643	1.6	4,902	3.1	592,341	3.0	669,217	3.3	1,261,558	6.3
75 +	984	0.6	1,749	1.1	2,733	1.7	446,975	2.2	743,680	3.7	1,190,655	6.0
Total	**80,007**	**49.8**	**80,667**	**50.2**	**160,674**	**100.0**	**9,957,767**	**49.8**	**10,033,045**	**50.2**	**19,990,812**	**100.0**

Source: U.S. Census, 2000

TABLE 1.2b - Age and Gender Distribution for American Indian/Alaska Natives and All Races in Michigan, 2000

Age	AI/AN						All Races					
	Males		Females		Total		Males		Females		Total	
	#	%	#	%	#	%	#	%	#	%	#	%
0-4	2,338	4.0	2,228	3.8	4,566	7.8	343,816	3.5	328,189	3.3	672,005	6.8
5-14	5,389	9.2	5,283	9.0	10,672	18.2	765,445	7.7	726,748	7.3	1,492,193	15.0
15-24	5,048	8.6	4,811	8.2	9,859	16.9	693,290	7.0	670,416	6.7	1,363,706	13.7
25-44	9,593	16.4	9,447	16.2	19,040	32.6	1,475,557	14.8	1,484,987	14.9	2,960,544	29.8
45-64	5,506	9.4	5,740	9.8	11,246	19.2	1,094,028	11.0	1,136,950	11.4	2,230,978	22.4
65-74	917	1.6	1,056	1.8	1,973	3.4	290,607	2.9	352,273	3.5	642,880	6.5
75 +	400	0.7	723	1.2	1,123	1.9	210,352	2.1	365,786	3.7	576,138	5.8
Total	**29,191**	**49.9**	**29,288**	**50.1**	**58,479**	**100.0**	**4,873,095**	**49.0**	**5,065,349**	**51.0**	**9,938,444**	**100.0**

Source: U.S. Census, 2000

TABLE 1.2c - Age and Gender Distribution for American Indian/Alaska Natives and All Races in Minnesota, 2000

Age	AI/AN						All Races					
	Males		Females		Total		Males		Females		Total	
	#	%	#	%	#	%	#	%	#	%	#	%
0-4	2,675	4.9	2,538	4.6	5,213	9.5	168,829	3.4	160,765	3.3	329,594	6.7
5-14	5,941	10.8	5,851	10.6	11,792	21.5	375,030	7.6	355,859	7.2	730,889	14.9
15-24	5,180	9.4	4,901	8.9	10,081	18.3	355,572	7.2	341,273	7.0	696,845	14.2
25-44	8,241	15.0	8,494	15.5	16,735	30.4	755,951	15.4	741,369	15.1	1,497,320	30.4
45-64	4,315	7.9	4,580	8.3	8,895	16.2	533,402	10.8	537,163	11.0	1,070,565	21.8
65-74	715	1.3	768	1.4	1,483	2.7	137,353	2.8	158,472	3.2	295,825	6.0
75 +	287	0.5	481	0.9	768	1.4	109,494	2.2	188,947	3.8	298,441	6.1
Total	**27,354**	**49.8**	**27,613**	**50.2**	**54,967**	**100.0**	**2,435,631**	**49.4**	**2,483,848**	**50.6**	**4,919,479**	**100.0**

Source: U.S. Census, 2000

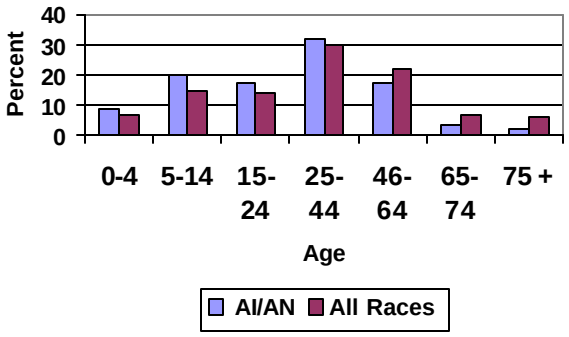
TABLE 1.2d - Age and Gender Distribution for American Indian/Alaska Natives and All Races in Wisconsin, 2000

Age	AI/AN						All Races					
	Males		Females		Total		Males		Females		Total	
	#	%	#	%	#	%	#	%	#	%	#	%
0-4	2093	4.4	2020	4.3	4113	8.7	175,041	3.3	167,299	3.1	342,340	6.4
5-14	4991	10.6	4714	10.0	9705	20.6	401,171	7.5	381,387	7.1	782,558	14.6
15-24	4221	8.9	4029	8.5	8250	17.5	391,157	7.3	373,330	7.0	764,487	14.3
25-44	7403	15.7	7569	16.0	14972	31.7	797,512	14.9	784,178	14.6	1,581,690	29.5
45-64	3830	8.1	4070	8.6	7900	16.7	592,650	11.0	597,397	11.1	1,190,047	22.2
65-74	627	1.3	819	1.7	1446	3.1	164,381	3.1	190,926	3.6	355,307	6.6
75 +	297	0.6	545	1.2	842	1.8	127,129	2.4	220,117	4.1	347,246	6.5
Total	**23,462**	**49.6**	**23,766**	**50.3**	**47,228**	**100.0**	**2,649,041**	**49.5**	**2,714,643**	**50.6**	**5,363,675**	**100.0**

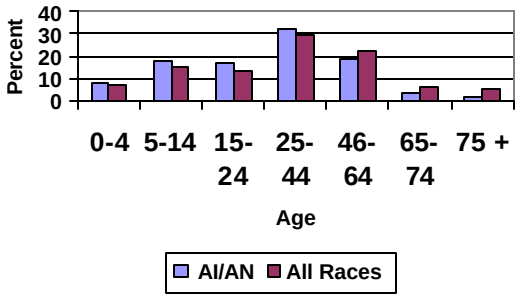
Source: U.S. Census, 2000

Graphs 1.1a-d illustrate the differences in age distribution between AI/AN and all races in each state and in the Bemidji Area.

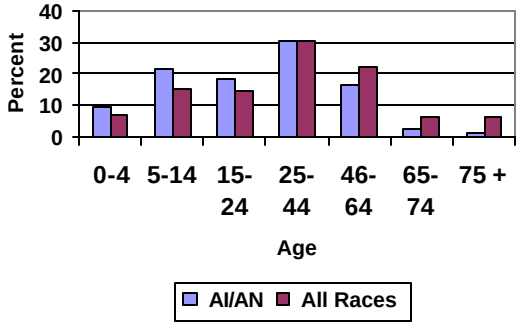
Graph 1.1a
Age Distribution for AI/AN and All Races in Bemidji Area, 2000



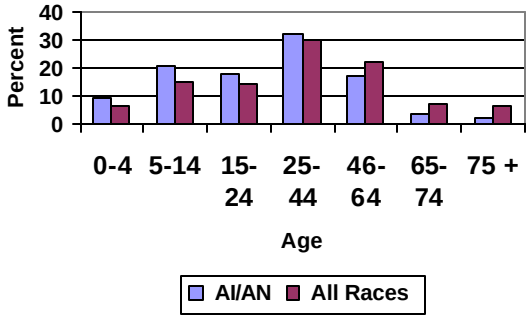
Graph 1.1b
Age Distribution for AI/AN and All Races in Michigan, 2000



Graph 1.1c
Age Distribution for AI/AN and All Races in Minnesota, 2000



Graph 1.1d
Age Distribution for AI/AN and All Races in Wisconsin, 2000



Source: U.S. Census, 2000

Socioeconomic Status

Differences in socioeconomic status can account for many patterns of morbidity and mortality. Because of the relationship between socioeconomic status and race, racial differences are often interpreted as explanations for patterns that are actually associated with socioeconomic position. Since there tends to be a disproportionately high number of minorities at the lower socioeconomic levels, minority populations seem to be affected with more health problems than the general population. Low socioeconomic status is related to social stressors such as poor access to health care, unhealthy or unsafe living conditions, and low education levels.

Education

Education has been shown to positively correlate with health status. Low levels of education are risk factors for a number of diseases because of its association with tobacco use, poor diet, lack of physical activity, and less appropriate medical care.

Tables 1.3a-d display the education levels attained by AI/AN and all races in the Bemidji Area and for each of the three states. The Bemidji Area data for 2000 in Table 1.3a shows high school or more completion was lower in the AI/AN population (76.1%) than the all races population (85.0%), but showed a 14.1% improvement from 1990. For the bachelor's degree or higher category, the AI/AN population in the Bemidji Area had a much lower completion percentage than the all races population (9.9% to 23.3% respectively), but showed a 39.4% improvement from 1990.

TABLE 1.3a - Educational Attainment (by Percent) for American Indian/Alaska Natives and All Races in Bemidji Area, Ages 25 and Older, 1990 & 2000

Educational Attainment	AI/AN			All Races		
	1990	2000	% Change	1990	2000	% Change
Less than 9th grade	9.8	6.6	-32.7	8.4	4.9	-41.7
9th to 12th, no diploma	23.5	17.4	-25.9	13.0	10.1	-22.3
High school diploma or GED	33.8	33.3	-1.5	33.7	31.6	-6.2
Some college, no degree	20.7	26.1	+26.1	25.3	22.8	-9.9
Associate's degree	14.1	6.8	-51.8	7.3	7.3	0.0
Bachelor's degree	4.7	6.9	+46.8	12.3	15.4	+25.2
Graduate or professional degree	2.4	3.0	+25.0	6.2	7.9	+27.4
High school diploma or higher	66.7	76.1	+14.1	78.6	85.0	+8.1
Bachelor's degree or higher	7.1	9.9	+39.4	18.5	23.3	+25.9

Source: U.S. Census Bureau, 1990 & 2000

TABLE 1.3b - Educational Attainment (by Percent) for American Indian/Alaska Natives and All Races in Michigan, Ages 25 and Older, 1990 & 2000

Educational Attainment	AI/AN			All Races		
	1990	2000	% Change	1990	2000	% Change
Less than 9th grade	9.5	6.6	-30.5	7.8	4.7	-39.7
9th to 12th, no diploma	22.7	17.0	-25.1	15.5	11.9	-23.2
High school diploma or GED	33.5	32.1	-4.2	32.3	31.3	-3.1
Some college, no degree	21.2	26.8	+26.4	20.4	23.3	+14.2
Associate's degree	5.5	7.1	+29.1	6.7	7.0	+4.5
Bachelor's degree	4.9	7.4	+51.0	10.9	13.7	+25.7
Graduate or professional degree	2.7	2.9	+7.4	6.4	8.1	+26.6
High school diploma or higher	67.8	76.3	+12.5	76.7	83.4	+8.7
Bachelor's degree or higher	7.6	10.3	+35.5	17.3	21.8	+26.0

Source: U.S. Census Bureau, 1990 & 2000

TABLE 1.3c - Educational Attainment (by Percent) for American Indian/Alaska Natives and All Races in Minnesota, Ages 25 and Older, 1990 & 2000

Educational Attainment	AI/AN			All Races		
	1990	2000	% Change	1990	2000	% Change
Less than 9th grade	9.3	7.4	-20.4	8.6	5.0	-41.9
9th to 12th, no diploma	22.6	18.1	-19.9	9.0	7.0	-22.2
High school diploma or GED	33.3	32.2	-3.3	33.0	28.8	-12.7
Some college, no degree	20.3	27.2	+34.0	19.0	24.0	+26.3
Associate's degree	6.9	6.3	-8.7	8.6	7.7	-10.5
Bachelor's degree	5.3	6.1	+15.1	15.6	19.1	+22.4
Graduate or professional degree	2.3	2.7	+17.4	6.2	8.3	+33.9
High school diploma or higher	68.1	74.5	+9.4	82.4	87.9	+6.7
Bachelor's degree or higher	7.6	8.8	+15.8	21.8	27.4	+25.7

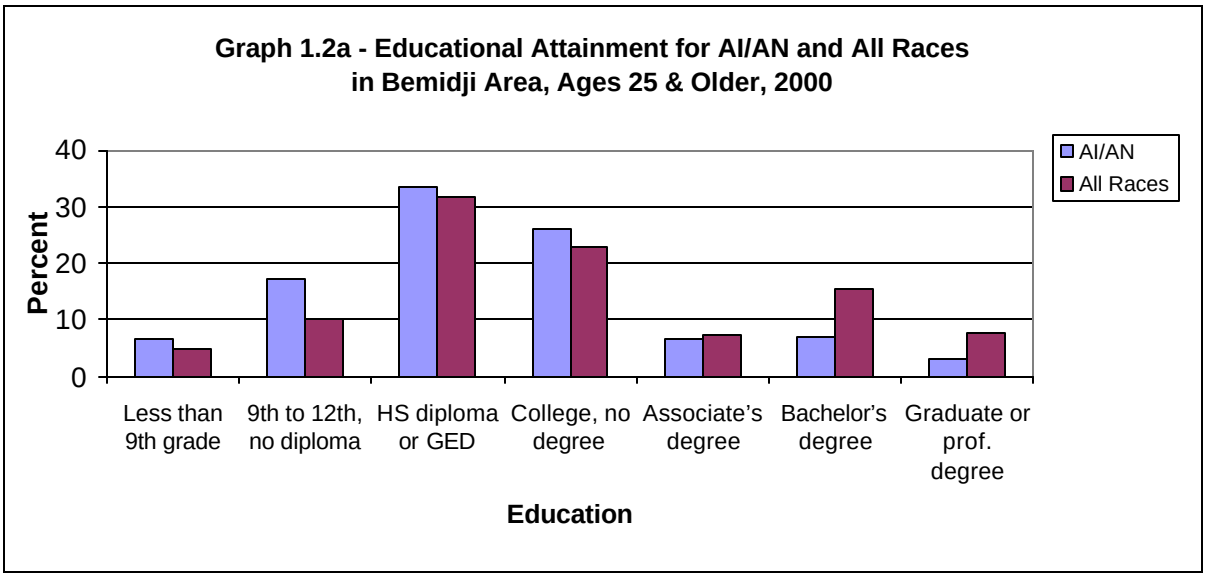
Source: U.S. Census Bureau, 1990 & 2000

TABLE 1.3d - Educational Attainment (by Percent) for American Indian/Alaska Natives and All Races in Wisconsin, Ages 25 and Older, 1990 & 2000

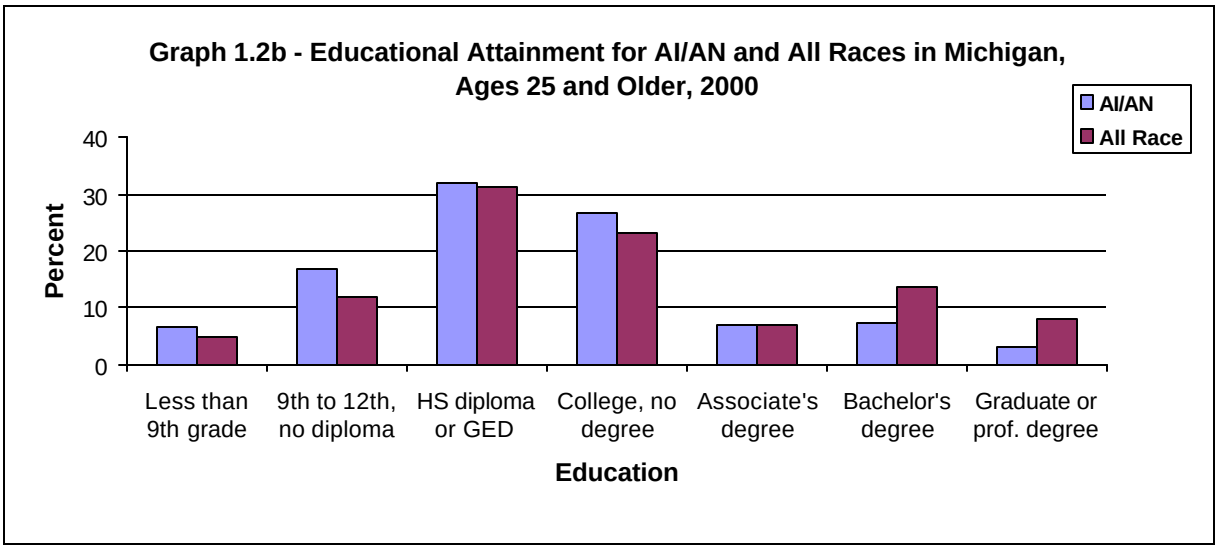
Educational Attainment	AI/AN			All Races		
	1990	2000	% Change	1990	2000	% Change
Less than 9th grade	8.5	5.6	-34.6	8.2	5.4	-34.7
9th to 12th, no diploma	35.0	17.1	-51.1	16.1	9.6	-40.6
High school diploma or GED	27.8	36.0	+29.4	31.9	34.6	+8.5
Some college, no degree	16.2	24.0	+48.3	14.3	20.6	+44.0
Associate's degree	4.7	6.9	+47.1	6.1	7.5	+23.0
Bachelor's degree	3.0	6.9	+131.2	10.4	15.3	+46.7
Graduate or professional degree	4.8	3.5	-27.6	2.1	7.2	+241.1
High school diploma or higher	56.5	77.3	+36.8	75.7	85.1	+12.4
Bachelor's degree or higher	7.8	10.4	+33.5	15.2	22.4	+47.5

Source: U.S. Census Bureau, 1990 & 2000

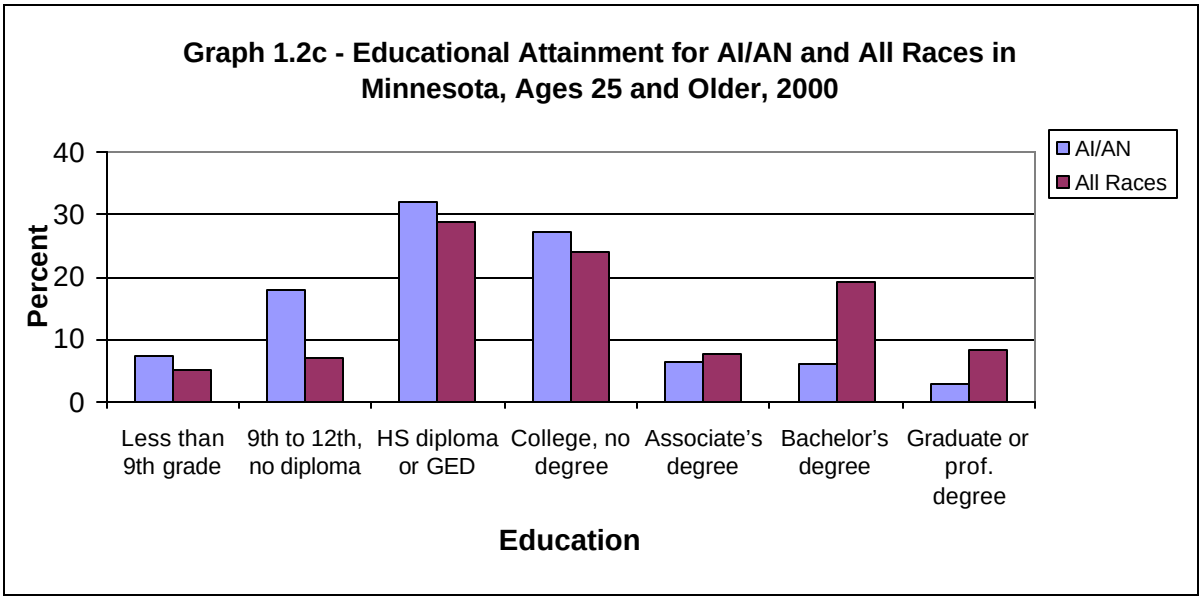
Graphs 1.2a-d illustrate the differences in educational attainment between AI/AN and all races in each state and in the Bemidji Area.



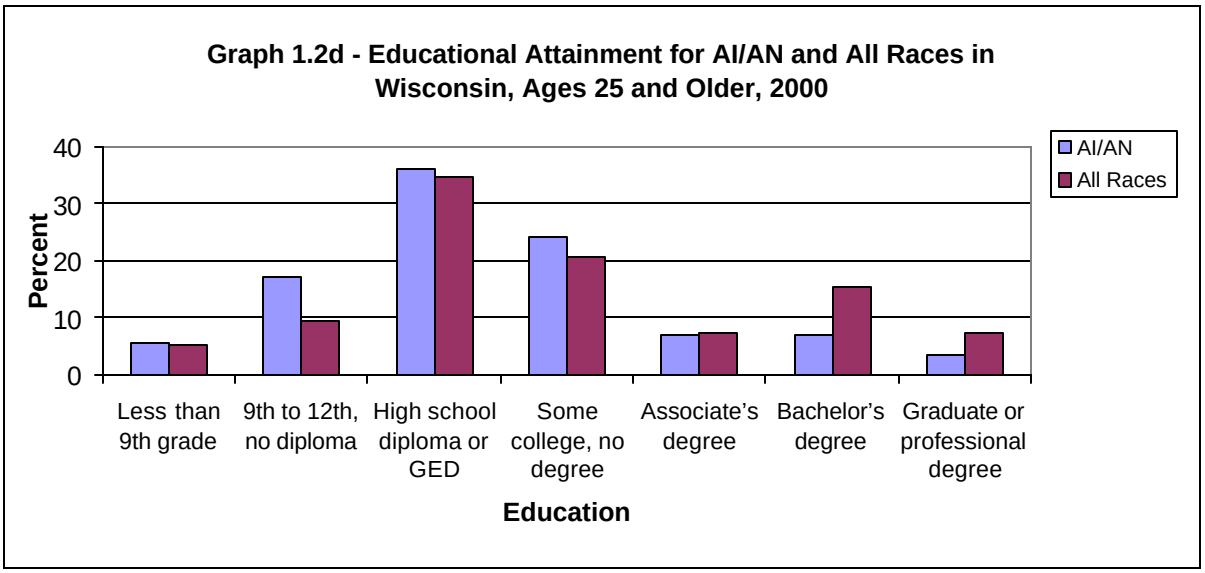
Source: U.S. Census, 2000



Source: U.S. Census, 2000



Source: U.S. Census, 2000



Source: U.S. Census, 2000

Income

Low income tends to be correlated with higher rates of chronic disease. This association is related to problems of access to care, obstacles in obtaining and using health insurance, and higher levels of risk behaviors. As with education, Table 1.4a shows that income levels for the Bemidji Area AI/AN population were lower than for the Bemidji Area all races population, but there is a shrinking disparity in household income over the same time. About twice as many AI/AN households (14.6%) had income under $10,000 than households of all races (7.6%). More AI/AN households (38.1%) had income under $25,000 compared to 25.5% of all races households in the Bemidji Area. Note that these income changes over time have not been adjusted for inflation.

TABLE 1.4a - Household Income for American Indian/Alaska Natives and All Races Bemidji Area, by Percent, 1989 & 1999

Household Income	AI/AN			All Races		
	1989	1999	Change	1989	1999	Change
Less than $10,000	30.1	14.6	-51.5	14.8	7.6	-48.6
$10,000 to $14,999	12.3	7.6	-38.0	8.8	5.7	-35.3
$15,000 to $24,999	20	15.9	-20.5	17.3	12.2	-29.3
$25,000 to $34,999	14.1	11.2	-20.8	16.2	12.6	-22.1
$35,000 to $49,999	12.8	17.1	+33.8	19.3	17.0	-11.7
$50,000 to $74,999	8	17.9	+123.8	15.5	21.6	+39.3
$75,000 or $99,999	1.9	7.6	+301.8	4.7	11.4	+143.1
$100,000 or more	0.9	5.1	+465.3	3.4	11.8	+246.9

Source: U.S. Census Bureau, 1990 & 2000

TABLE 1.4b - Household Income for American Indian/Alaska Natives and All Races Michigan, by Percent, 1989 & 1999

Household Income	AI/AN			All Races		
	1989	1999	Change	1989	1999	Change
Less than $10,000	26.0	12.1	-53.5	15.5	8.3	-46.5
$10,000 to $14,999	10.0	7.0	-30.0	8.6	5.8	-32.6
$15,000 to $24,999	19.8	13.9	-29.8	16.4	12.4	-24.4
$25,000 to $34,999	15.7	14.0	-10.8	15.3	12.4	-19.0
$35,000 to $49,999	14.7	17.8	+21.1	18.7	16.5	-11.8
$50,000 to $74,999	10.1	19.9	+97.0	16.3	20.6	+26.4
$75,000 or $99,999	2.7	9.3	+244.4	5.4	11.4	+111.1
$100,000 or more	1.1	5.9	+436.4	3.8	12.7	+234.2

Source: U.S. Census, 1990 and 2000

TABLE 1.4c - Household Income for American Indian/Alaska Natives and All Races Minnesota, by Percent, 1989 & 1999

Household Income	AI/AN			All Races		
	1989	1999	Change	1989	1999	Change
Less than $10,000	35.8	18.0	-49.7	13.9	6.7	-51.8
$10,000 to $14,999	13.2	8.7	-34.1	8.6	5.4	-37.2
$15,000 to $24,999	19.0	17.8	-6.3	17.5	11.4	-34.9
$25,000 to $34,999	11.9	13.4	+12.6	16.6	12.4	-25.3
$35,000 to $49,999	11.5	15.6	+35.7	19.7	17.0	-13.7
$50,000 to $74,999	6.2	15.5	+150.0	15.6	22.4	+43.6
$75,000 or $99,999	1.5	6.0	+300.0	4.5	12.1	+168.9
$100,000 or more	0.9	4.9	+444.4	3.6	12.6	+250.0

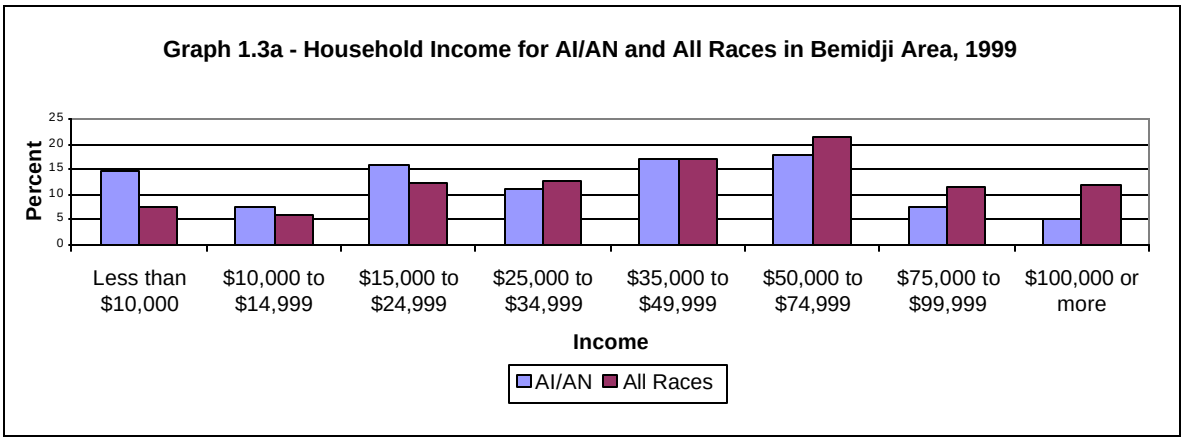
Source: U.S. Census, 1990 and 2000

TABLE 1.4d - Household Income for American Indian/Alaska Natives and All Races Wisconsin, by Percent, 1989 & 1999

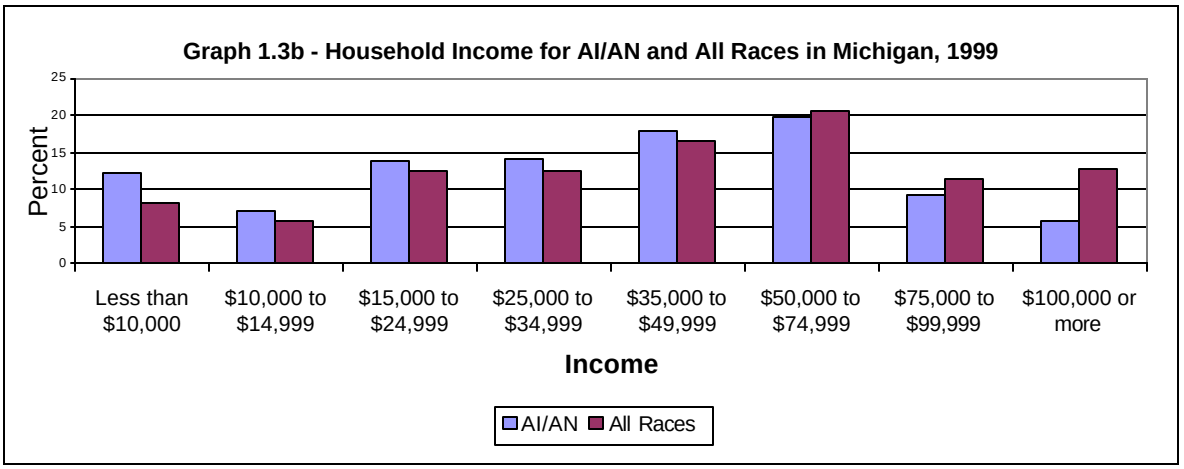
Household Income	AI/AN			All Races		
	1989	1999	Change	1990	2000	Change
Less than $10,000	29.6	14.2	-52.0	24.0	7.1	-70.2
$10,000 to $14,999	14.8	7.3	-50.9	9.4	5.8	-38.1
$15,000 to $24,999	21.7	16.4	-24.4	18.7	12.7	-32.1
$25,000 to $34,999	14.2	15.0	+5.7	17.4	13.2	-24.0
$35,000 to $49,999	11.2	17.9	+59.8	20.2	18.1	-10.4
$50,000 to $74,999	6.8	17.8	+161.8	14.1	22.7	+61.2
$75,000 or $99,999	1.1	7.2	+550.4	3.6	10.9	+201.4
$100,000 or more	0.6	4.2	+606.9	2.6	9.4	+262.5

Source: U.S. Census, 1990 and 2000

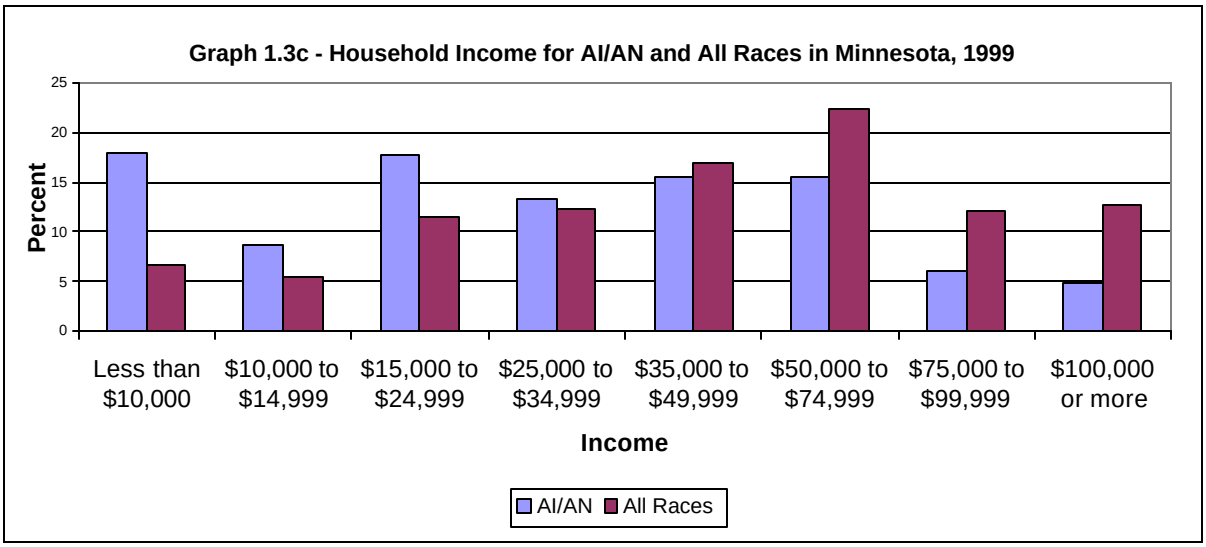
Graphs 1.3a-d illustrate the disparities in income levels between the AI/AN population and all races for 1999.



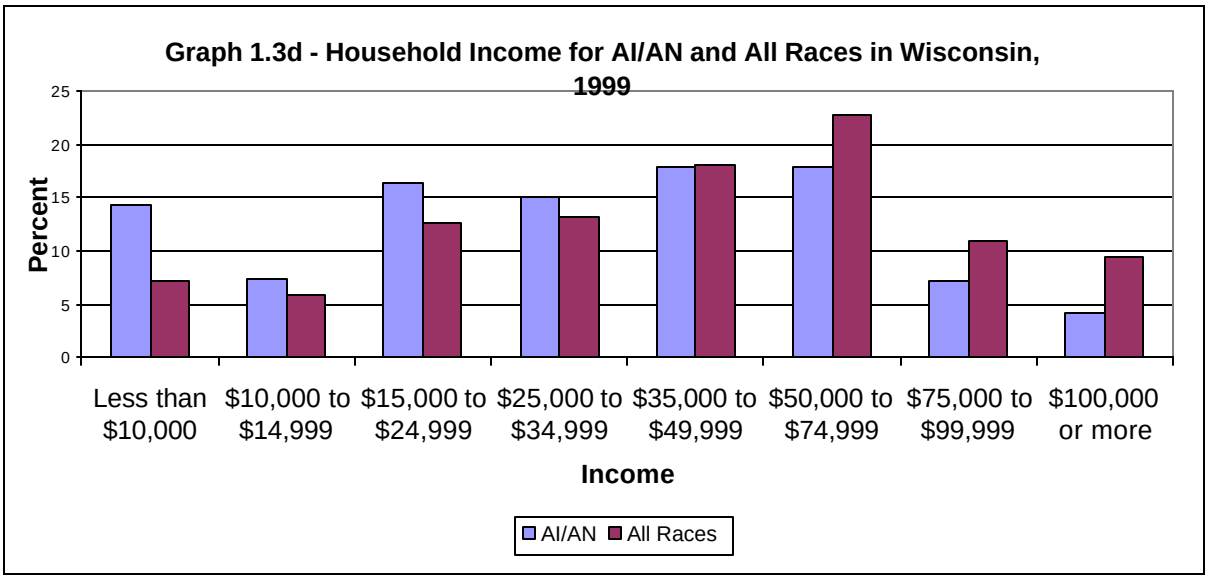
Source: U.S. Census, 2000



Source: U.S. Census Bureau, 2000



Source: U.S. Census Bureau, 2000



Source: U.S. Census, 2000

Employment

Employment status and occupation are important in that health care benefits are often tied to full-time employment. In addition, there is a general tendency for those with lower income to experience a lower health status than those with a higher income. Table 1.5a shows that unemployment for AI/AN in the Bemidji Area decreased from 17.3% in 1990 to 12.5% in 2000.

TABLE 1.5a – Employment Status for American Indian/Alaska Natives in the Bemidji Area, by Percent, 1990 and 2000

Employment	AI/AN			All Races		
	1990	2000	Change	1990	2000	Change
In Labor Force	62.8	65.5	+4.3	66.3	67.4	+1.7
In Armed Forces	0.3	0.1	-66.7	0.2	0.1	-50.0
Employed	82.5	87.4	+5.9	93.1	94.9	+1.9
Unemployed	17.3	12.5	-27.7	6.6	5.0	-24.2
Not in Labor Force	37.2	34.5	-7.3	33.7	32.6	-3.3

Source: U.S. Census Bureau, 1990 and 2000

TABLE 1.5b – Employment Status for American Indian/Alaska Natives in Michigan, by Percent, 1990 and 2000

Employment	AI/AN			All Races		
	1990	2000	Change	1990	2000	Change
In Labor Force	65.6	66.2	+0.8	64.1	64.6	+0.7
In Armed Forces	0.3	0.1	-53.5	0.3	0.1	-72.8
Employed	84.0	89.0	+6.0	91.5	94.1	+2.9
Unemployed	15.7	10.8	-31.1	8.2	5.8	-29.6
Not in Labor Force	34.4	33.8	-1.6	35.9	35.4	-1.2

Source: U.S. Census Bureau, 1990 and 2000

TABLE 1.5c – Employment Status for American Indian/Alaska Natives in Minnesota, by Percent, 1990 and 2000

Employment	AI/AN			All Races		
	1990	2000	Change	1990	2000	Change
In Labor Force	58.2	63.0	+8.2	69.7	71.2	+2.1
In Armed Forces	0.1	0.1	+0.7	0.2	0.1	-38.7
Employed	79.9	85.1	+6.4	94.7	95.9	+1.2
Unemployed	19.9	14.8	-25.7	5.1	4.1	-21.1
Not in Labor Force	41.8	37.0	-11.5	30.3	28.8	-4.9

Source: U.S. Census Bureau, 1990 and 2000

TABLE 1.5d – Employment Status for American Indian/Alaska Natives in Wisconsin, by Percent, 1990 and 2000

Employment	AI/AN			All Races		
	1990	2000	Change	1990	2000	Change
In Labor Force	63.9	67.2	+5.2	67.6	69.1	+2.2
In Armed Forces	0.3	0.0	-100.0	0.2	0.1	-50.1
Employed	82.7	87.6	+5.9	94.6	95.2	+0.7
Unemployed	17.0	12.4	-26.9	5.2	4.7	-10.1
Not in Labor Force	36.1	32.8	-9.2	32.4	30.9	-4.6

Source: U.S. Census Bureau, 1990 & 2000

Family Households

Family households are a measure of the makeup of families in terms of head(s) of households present and children present. Tables 1.6a-d shows that the percent of single parent households is approximately 2-3 times higher among AI/AN than in the general population, but with the exception of Michigan, the rate of increase is much lower than in the general population.

TABLE 1.6a - Family Households of American Indian/Alaska Natives, Ages 15-64, in Bemidji Area, by Percent, 1990 and 2000

Household Characteristics	AI/AN			All Races		
	1990	2000	Change	1990	2000	Change
Married couple family with own children under 18 years	25.1	24.2	-3.3	27.2	30.9	+13.7
Married couple family with no children under 18 years	16.8	15.3	-8.5	29.9	24.9	-16.9
Male householder (no wife) with children under 18 years	4.1	5.8	+41.5	1.3	2.6	+94.3
Female householder (no husband) with children under 18 years	19.3	18.5	-4.3	6.6	8.3	+24.9
Non-family households	25.7	27.5	+6.9	29.2	28.5	-2.4

Source: U.S. Census, 1990 & 2000
Note: Columns not meant to total 100%, since this sample excludes householders over 65 years of age.

TABLE 1.6b - Family Households of American Indian/Alaska Natives, Ages 15-64, in Michigan, by Percent, 1990 and 2000

Household Characteristics	AI/AN			All Races		
	1990	2000	Change	1990	2000	Change
Married couple family with own children under 18 years	27.1	28.1	+3.6	30.0	26.3	-12.5
Married couple family with no children under 18 years	18.9	20.0	+5.6	24.7	29.7	+20.3
Male householder (no wife) with children under 18 years	4.8	2.9	-39.0	2.7	1.4	-48.2
Female householder (no husband) with children under 18 years	13.5	14.7	+8.6	9.2	7.7	-16.7
Non-family households	28.3	26.4	-6.7	27.7	28.2	+2.0

Source: U.S. Census, 1990 and 2000
Note: Columns not meant to total 100%, since this sample excludes householders over 65 years of age.

TABLE 1.6c – Family Households of American Indian/Alaska Natives, Ages 15-64, in Minnesota, by Percent, 1990 and 2000

Household Characteristics	AI/AN			All Races		
	1990	2000	Change	1990	2000	Change
Married couple family with own children under 18 years	21.2	21.3	+0.4	28.6	32.4	+13.5
Married couple family with no children under 18 years	12.9	12.2	-5.7	29.6	24.5	-17.1
Male householder (no wife) with children under 18 years	5.5	7.1	+28.9	1.3	2.4	+88.7
Female householder (no husband) with own children under 18 years	25.6	22.2	-13.2	5.3	7.1	+35.0
Non-family householders	24.7	27.7	+11.9	30.9	29.6	-4.2

Source: U.S. Census Bureau, 1990 & 2000
Note: Columns not meant to total 100%, since this sample excludes householders over 65 years of age.

TABLE 1.6d - Family Households of American Indian/Alaska Natives, Ages 15-64, in Wisconsin, by Percent, 1990 and 2000

Household Characteristics	AI/AN			All Races		
	1990	2000	Change	1990	2000	Change
Married couple family with own children under 18 years	24.8	23.7	-4.5	27.6	31.1	+12.4
Married couple family with no children under 18 years	16.1	14.1	-12.9	30.6	25.5	-16.9
Male householder (no wife) with children under 18 years	4.4	5.8	+32.2	1.3	2.5	+102.5
Female householder (no husband) with children under 18 years	19.5	21.0	+7.9	5.8	7.6	+29.8
Non-family households	25.8	26.3	+1.9	29.6	29.1	-1.8

Source: U.S. Census Bureau, 1990 & 2000

Note: Columns not meant to total 100%, since this sample excludes householders over 65 years of age.

SECTION 2
MORTALITY

This section contains mortality data for the leading causes of death in 2001 and age adjusted mortality for selected causes of death for each of the three states and the Bemidji Area. Graphs are also included, which depict crude mortality trends over time. American Indian/Alaska Native data presented in this section are from each state's mortality files which come from death certificates. It is important to note that the underlying cause of death reported on a death certificate does not necessarily reflect all contributing factors affecting a death. However, death certificate information is an important source of data because it is routinely collected following guidelines and connects cause of death, race, and county of residence. Appendix B lists the ICD-9 and ICD-10 codes used for categorizing the underlying causes of death.

Table 2.1a shows that for 2001, heart disease (23.9% of all causes) remained the highest cause of death for American Indian/Alaskan Native in the Bemidji Area. The proportion of deaths from diabetes has shown a steady decrease from 1999 (7.3%) to 2001 (5.2%). These are only for deaths in which diabetes was listed as the underlying cause of death on the death certificates. The proportion of deaths from heart disease has shown a steady rise from 1999 (22.4%) to 2001 (23.9%), however the more specific ischemic heart disease category has shown a steady decrease.

TABLE 2.1a - Leading Causes of Death for American Indian/Alaska Natives in Bemidji Area, 1999-2001

Cause of Death	2001		2000		1999	
	#	%	#	%	#	%
1. Heart Disease	**260**	**23.9**	**222**	**22.7**	**213**	**22.4**
Ischemic Heart Disease	*183*	*70.4*	*164*	*73.9*	*164*	*77.0*
2. Cancer	**212**	**19.5**	**181**	**18.5**	**183**	**19.3**
Lung Cancer	81	*38.2*	54	*29.8*	*68*	*37.2*
Breast Cancer	*6*	*2.8*	*12*	*6.6*	*18*	*9.8*
3. Unintentional Injury	**119**	**10.9**	**101**	**10.3**	**102**	**10.7**
Motor Vehicle Accidents	*72*	*60.5*	*57*	*56.4*	*48*	*47.1*
4. Chronic Lower Resp. Disease	**67**	**6.1**	**51**	**5.2**	**49**	**5.2**
5. Diabetes	**56**	**5.2**	**63**	**6.4**	**69**	**7.3**
Sub-total	**714**	**65.8**	**618**	**63.2**	**616**	**64.9**
TOTAL DEATHS	1085	100.0	978	100.0	949	100.0

Sources: 1999-2001 death files from the Michigan Department of Community Health, the Minnesota Center for Health Statistics, and the Wisconsin Bureau of Health Information.

Tables 2.1b-d display the leading causes of death for each state from 1999 to 2001.

TABLE 2.1b - Leading Causes of Death for American Indian/Alaska Natives in Michigan 1999-2001

Cause of Death	2001		2000		1999	
	#	%	#	%	#	%
1. Heart Disease	**149**	**33.6**	**114**	**29.2**	**107**	**27.2**
Ischemic Heart Disease	*97*	*65.1*	*91*	*79.8*	*87*	*81.3*
2. Cancer	**94**	**21.2**	**77**	**19.7**	**93**	**23.6**
Lung Cancer	*37*	*39.4*	*31*	*40.3*	*39*	*41.9*
Breast Cancer	*0*	*0.0*	*8*	*10.4*	*9*	*9.7*
3. Unintentional Injury	**30**	**6.8**	**22**	**5.6**	**33**	**8.4**
Motor Vehicle Accidents	*13*	*43.3*	*13*	*59.1*	*10*	*30.3*
4. Chronic Lower Resp. Disease	**26**	**5.8**	**27**	**6.9**	**25**	**6.3**
5. Diabetes	**20**	**4.5**	**25**	**6.4**	**24**	**6.1**
Sub-total	**319**	**71.8**	**265**	**67.9**	**282**	**71.6**
TOTAL DEATHS	444	100.0	390	100.0	394	100.0

Source: 1999-2001 Death Files from Michigan Department of Community Health

TABLE 2.1c - Leading Causes of Death for American Indian/Alaska Natives, Minnesota, 1999-2001

Cause of Death	2001		2000		1999	
	#	%	#	%	#	%
1. Cancers	**63**	**16.8**	**61**	**16.9**	**55**	**17.2**
Lung Cancer	*28*	*44.4*	*15*	*24.6*	*19*	*34.5*
Digestive Organs	*13*	*20.6*	*18*	*29.5*	*11*	*20.0*
Breast Cancer	*0*	*0.0*	*3*	*4.9*	*5*	*9.1*
2. Heart Diseases	**58**	**15.4**	**53**	**14.6**	**52**	**16.3**
Ischemic Heart Disease	*40*	*69.0*	*34*	*64.2*	*39*	*75.0*
3. Unintentional Injuries	**57**	**15.2**	**56**	**15.5**	**36**	**11.3**
Motor Vehicle Accidents	*39*	*68.4*	*30*	*53.6*	*18*	*50.0*
4. Respiratory Diseases	**32**	**8.5**	**28**	**7.7**	**27**	**8.4**
Chronic Lower Respiratory Disease	*17*	*53.1*	*17*	*60.7*	*13*	*48.1*
5. Diabetes	**22**	**5.9**	**24**	**6.6**	**23**	**7.2**
6. Chronic Liver Disease	**17**	**5.6**	**10**	**2.8**	**11**	**3.4**
7. Suicide	**16**	**4.3**	**13**	**3.6**	**5**	**1.6**
Sub-total	269	71.5	245	67.7	209	65.3
TOTAL DEATHS	376	100.0	362	100.0	320	100.0

Source: 1999-2001 Death Files, Minnesota Center for Health Statistics

TABLE 2.1d - Leading Causes of Death for American Indian/Alaska Natives in Wisconsin 1999-2001

Cause of Death	2001		2000		1999	
	#	%	#	%	#	%
1. Cancer	**55**	**20.7**	**43**	**19.0**	**35**	**14.9**
Lung Cancer	*16*	29.1	*8*	*18.6*	*10*	*28.6*
Breast Cancer	*6*	2.3	*1*	*2.3*	*4*	*11.4*
2. Heart Disease	**53**	**20.0**	**55**	**24.3**	**54**	**23.0**
Ischemic Heart Disease	*46*	86.8	*39*	*70.9*	*38*	*70.4*
3. Unintentional Injury	**32**	**12.1**	**23**	**10.2**	**33**	**14.0**
Motor Vehicle Accidents	*20*	62.5	*14*	*60.9*	*20*	*60.6*
4. Diabetes	**14**	**5.3**	**14**	**6.2**	**21**	**8.9**
5. Liver Disease	**11**	**4.2**	**11**	**4.9**	**17**	**7.2**
Sub-total	**165**	**62.3**	**146**	**64.6**	**160**	**68.1**
TOTAL DEATHS	265	100.0	226	100.0	235	100.0

Source: Death Files from Wisconsin Bureau of Health Information, 1999-2001

Tables 2.2-2.10 compare selected causes of death between populations. The mortality rates are all directly age-adjusted to a standard population based on the projected population of the United States in 2000 (See Appendix C, Table 1). Table 2.2 shows that AI/AN populations had higher overall mortality rates than All Races in each state for 2001.

TABLE 2.2 - All Causes Age-Adjusted Mortality Rates, 2001 (per 100,000)

AI/AN Michigan	1516.5	All Races Michigan	854.2
AI/AN Minnesota	1438.4	All Races Minnesota	757.1
AI/AN Wisconsin	1164.2	All Races Wisconsin	810.8
AI/AN Bemidji Area	1321.2	All Races U.S.	854.5
All Races HP 2010 Goal	N/A		

Data Sources: 2001 Mortality Files from Michigan Department of Community Health, Minnesota Center for Health Statistics, and Wisconsin Bureau of Health Information; National Data from National Center for Health Statistics; *Healthy People 2010* from DHHS.

TABLE 2.3 - All Heart Disease Age-Adjusted Mortality Rates, 2001 (per 100,000)

AI/AN Michigan	556.3	All Races Michigan	330.9
AI/AN Minnesota	247.0	All Races Minnesota	173.7
AI/AN Wisconsin	221.1	All Races Wisconsin	229.0
AI/AN Bemidji Area	364.7	All Races U.S.	247.8
All Races HP2010 Goal	N/A		

Data Sources: 2001 Death Files from Michigan Department of Community Health, Minnesota Center for Health Statistics, and Wisconsin Bureau of Health Information; National Data from National Center for Health Statistics; *Healthy People 2010* from DHHS.

TABLE 2.4 - Ischemic Heart Disease Age-Adjusted Mortality Rates, 2001 (per 100,000)

AI/AN Michigan	360.3	All Races Michigan	192.8
AI/AN Minnesota	171.0	All Races Minnesota	114.4
AI/AN Wisconsin	187.6	All Races Wisconsin	153.8
AI/AN Bemidji Area	248.3	All Races U.S.	187.0
All Races HP2010 Goal	166.0		

Data Sources: 2001 Death Files from Michigan Department of Community Health, Minnesota Center for Health Statistics, and Wisconsin Bureau of Health Information; National Data from National Center for Health Statistics; *Healthy People 2010* from DHHS.

TABLE 2.5 - All Cancer Age-Adjusted Mortality Rates, 2001 (per 100,000)

AI/AN Michigan	318.2	All Races Michigan	199.2
AI/AN Minnesota	266.3	All Races Minnesota	185.6
AI/AN Wisconsin	281.9	All Races Wisconsin	191.6
AI/AN Bemidji Area	275.1	All Races U.S.	196.0
All Races HP2010 Goal	159.9		

Data Sources: 2001 Death Files from Michigan Department of Community Health, Minnesota Center for Health Statistics, and Wisconsin Bureau of Health Information; National Data from National Center for Health Statistics; *Healthy People 2010* from DHHS.

TABLE 2.6 - Lung Cancer Age-adjusted Mortality Rates, 2001 (per 100,000)

AI/AN Michigan	140.1	All Races Michigan	57.1
AI/AN Minnesota	103.3	All Races Minnesota	47.9
AI/AN Wisconsin	74.4	All Races Wisconsin	49.0
AI/AN Bemidji Area	102.4	All Races U.S.	55.3
All Races HP2010 Goal	44.9		

Data Sources: 2001 Death Files from Michigan Department of Community Health, Minnesota Center for Health Statistics, and Wisconsin Bureau of Health Information; National Data from National Center for Health Statistics; *Healthy People 2010* from DHHS.

TABLE 2.7 - All Injury Age-adjusted Mortality Rates, 2001 (per 100,000)

AI/AN Michigan	63.2	All Races Michigan	40.2
AI/AN Minnesota	129.7	All Races Minnesota	35.5
AI/AN Wisconsin	80.1	All Races Wisconsin	37.0
AI/AN Bemidji Area	86.9	All Races U.S.	35.7
All Races HP2010 Goal	17.5		

Data Sources: 2001 Death Files from Michigan Department of Community Health, Minnesota Center for Health Statistics, and Wisconsin Bureau of Health Information; National Data from National Center for Health Statistics; *Healthy People 2010* from DHHS.

TABLE 2.8 - Motor Vehicle Crashes Age-adjusted Mortality Rates, 2001 (per 100,000)

AI/AN Michigan	27.6	All Races Michigan	15.3
AI/AN Minnesota	76.4	All Races Minnesota	12.4
AI/AN Wisconsin	34.8	All Races Wisconsin	14.7
AI/AN Bemidji Area	45.9	All Races U.S.	25.1
All Races HP2010 Goal	9.2		

Data Sources: 2000 Death Files from Michigan Department of Community Health, Minnesota Center for Health Statistics, and Wisconsin Bureau of Health Information; National Data from National Center for Health Statistics; *Healthy People 2010* from DHHS.

TABLE 2.9 - Chronic Lower Respiratory Disease Age-Adjusted Mortality Rates, 2001 (per 100,000)

AI/AN Michigan	96.4	All Races Michigan	41.3
AI/AN Minnesota	83.4	All Races Minnesota	39.2
AI/AN Wisconsin	56.2	All Races Wisconsin	41.3
AI/AN Bemidji Area	76.2	All Races U.S.	43.7
All Races HP2010 Goal	N/A*		

Data Sources: 2001 Death Files from Michigan Department of Community Health, Minnesota Center for Health Statistics, and Wisconsin Bureau of Health Information; National Data from National Center for Health Statistics; *Healthy People 2010* from DHHS.
*The goal given was for ages 45 and over and another goal was provided for asthma in younger persons, neither would be comparable to the data reported in the table.

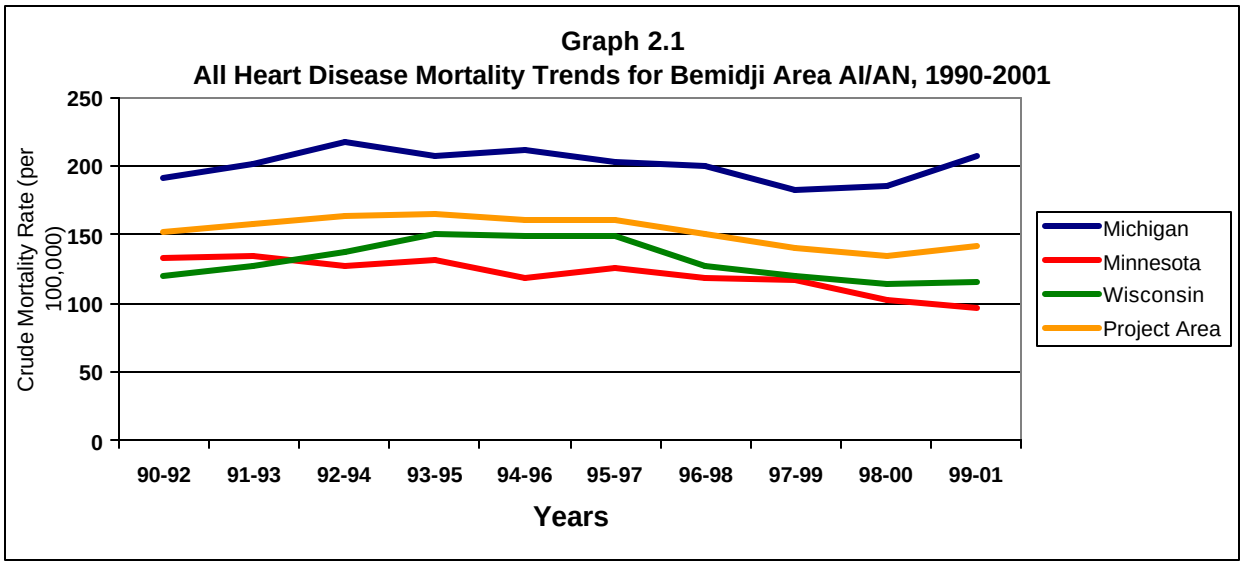
TABLE 2.10 - Diabetes Age-Adjusted Mortality Rates, 2001 (per 100,000)

AI/AN Michigan	71.7	All Races Michigan	26.7
AI/AN Minnesota	88.6	All Races Minnesota	24.7
AI/AN Wisconsin	52.1	All Races Wisconsin	23.4
AI/AN Bemidji Area	70.5	All Races U.S.	25.3
All Races HP2010 Goal	N/A*		

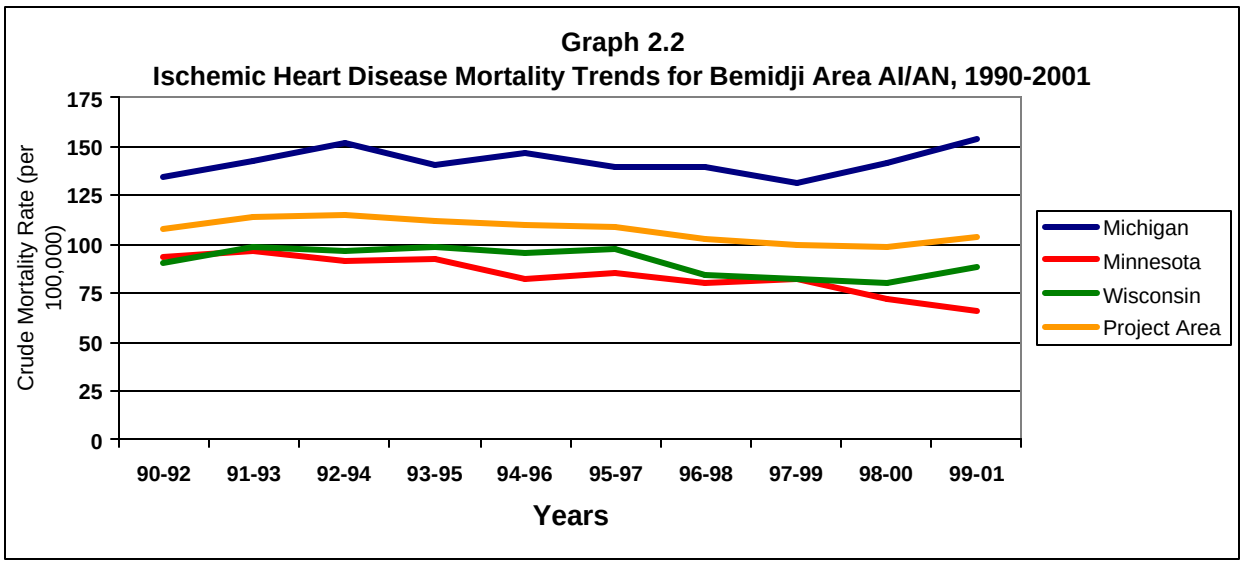
Data Sources: 2001 Death Files from Michigan Department of Community Health, Minnesota Center for Health Statistics, and Wisconsin Bureau of Health Information; National Data from National Center for Health Statistics; *Healthy People 2010* from DHHS.
*HP2010 goal given is for all diabetes-**related** deaths, which would not be comparable to the data reported in the table.

Mortality Trends for Selected Causes of Death

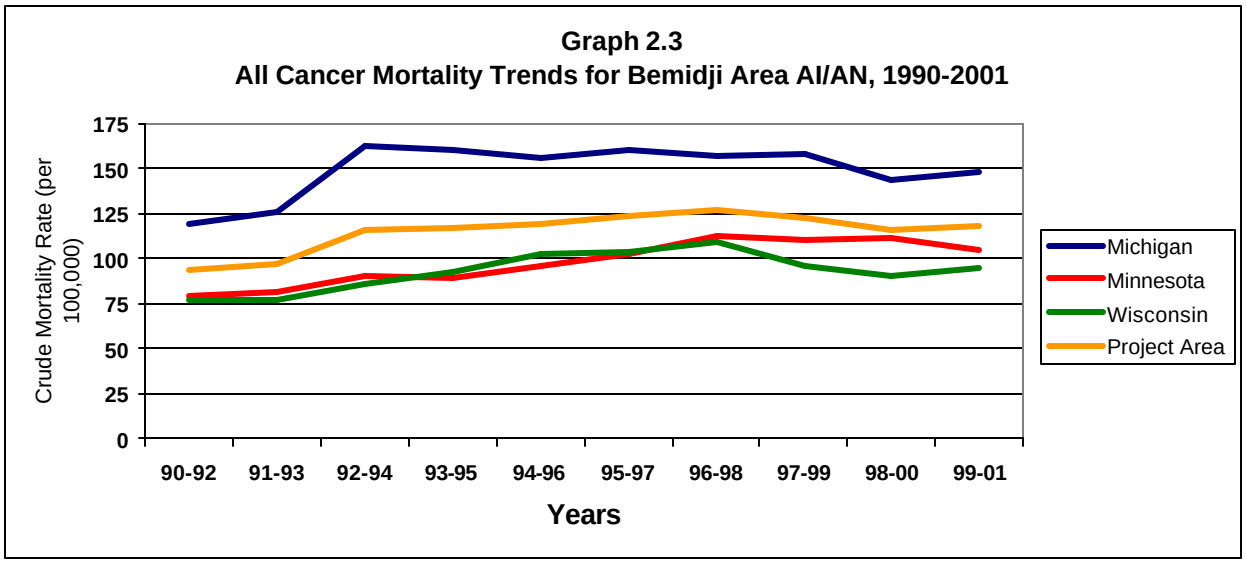
Graphs 2.1-2.8 display crude mortality rate trends for the AI/AN population for selected causes of death from 1990-2001. Following death rates over time allows one to track changes in death rates for a population. However, using crude rates, one can only look at trends within each designated population from year to year. Comparisons from state to state cannot be made since these rates are not age-adjusted. Three-year age groups are formed to provide larger counts.



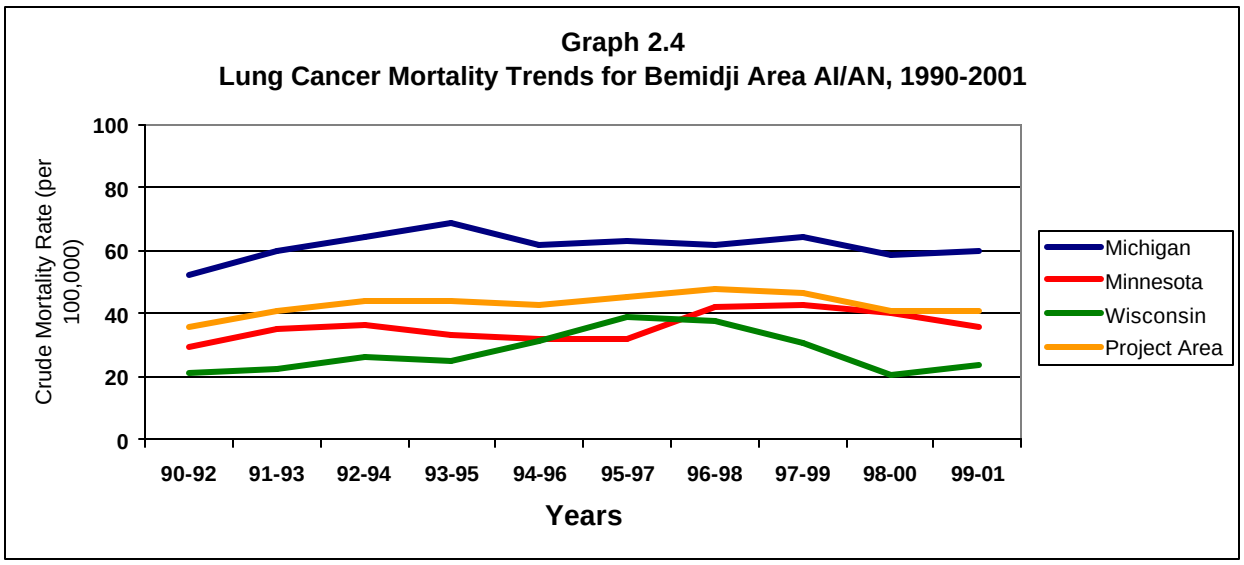
Data Sources: 1990-2001 Death files from Michigan Department of Community Health, Minnesota Center for Health Statistics, and Wisconsin Bureau of Health Information



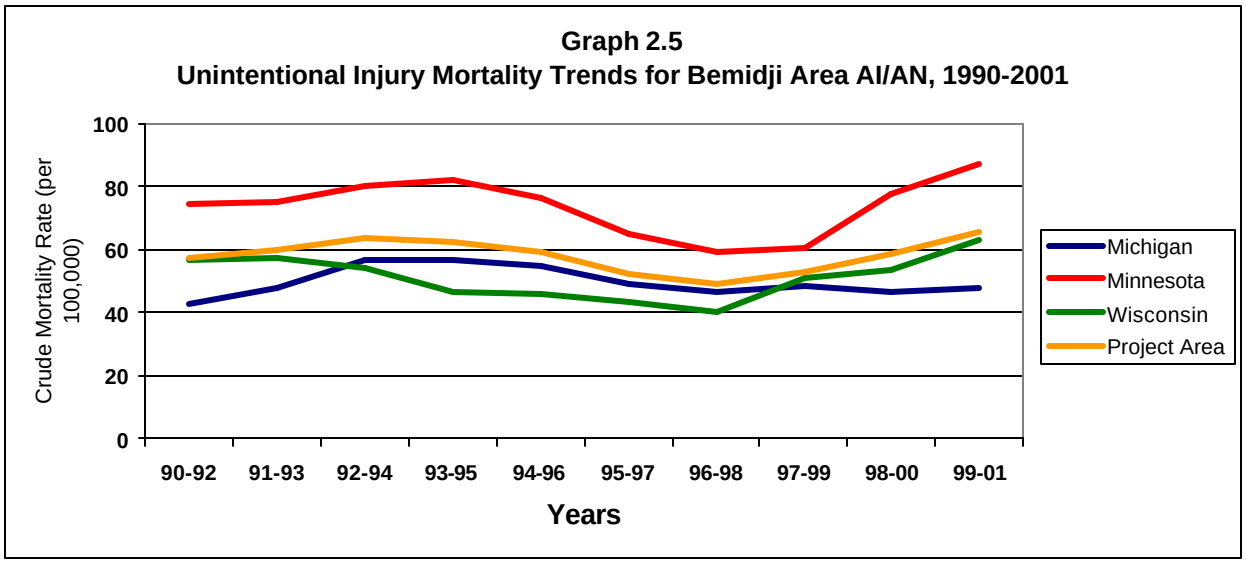
Data Sources: 1990-2001 Death files from Michigan Department of Community Health, Minnesota Center for Health Statistics, and Wisconsin Bureau of Health Information



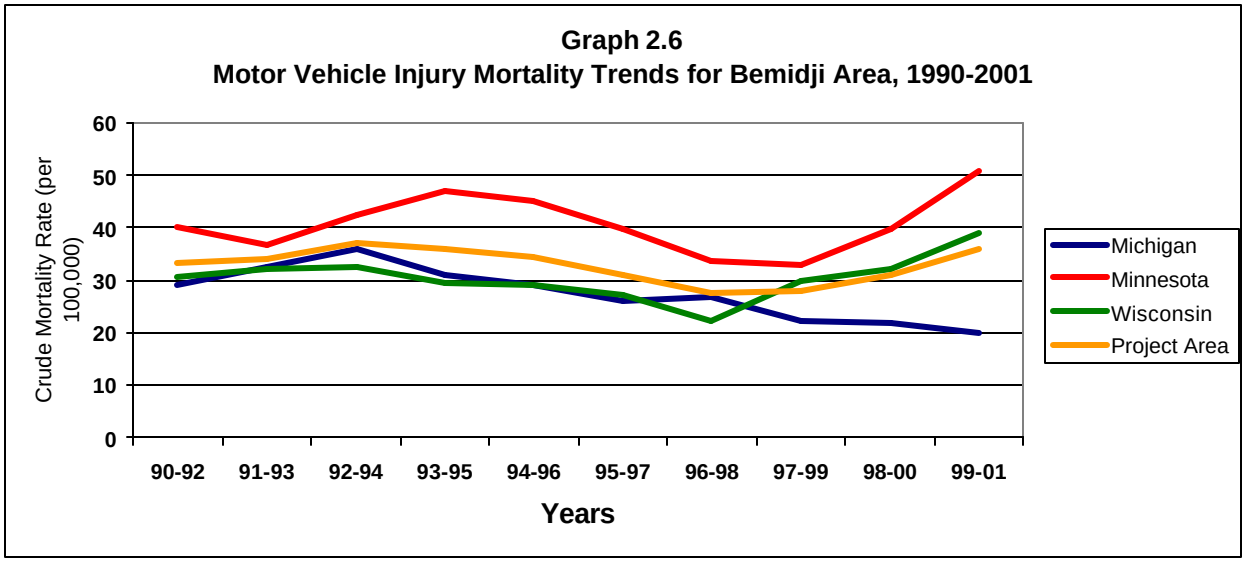
Data Sources: 1990-2001 Death files from Michigan Department of Community Health, Minnesota Center for Health Statistics, and Wisconsin Bureau of Health Information



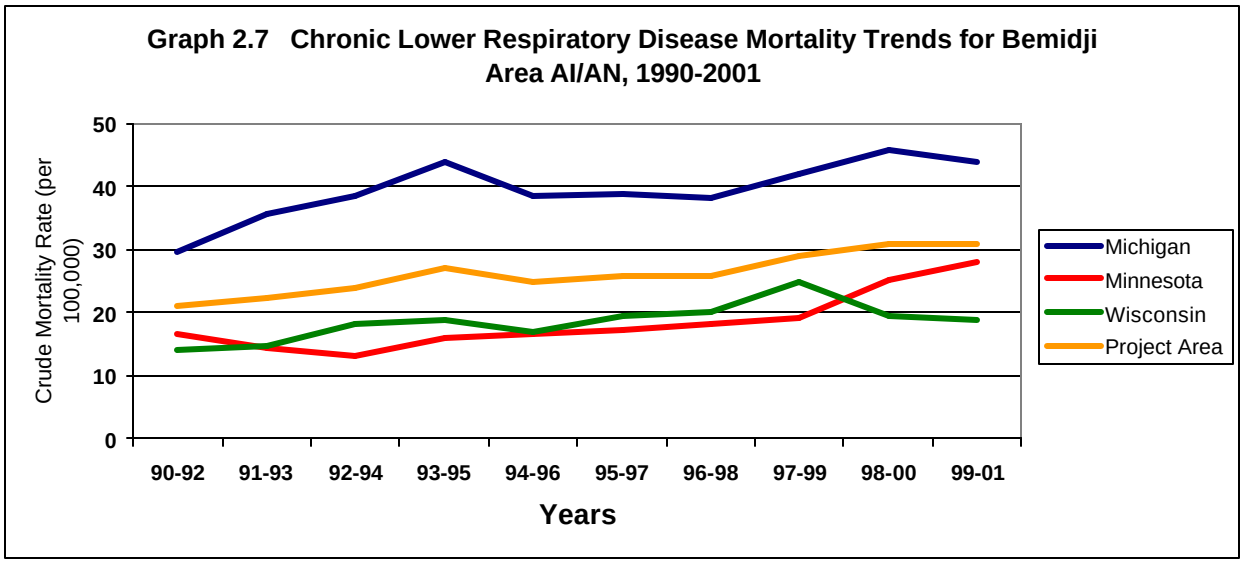
Data Sources: 1990-2001 Death files from Michigan Department of Community Health, Minnesota Center for Health Statistics, and Wisconsin Bureau of Health Information



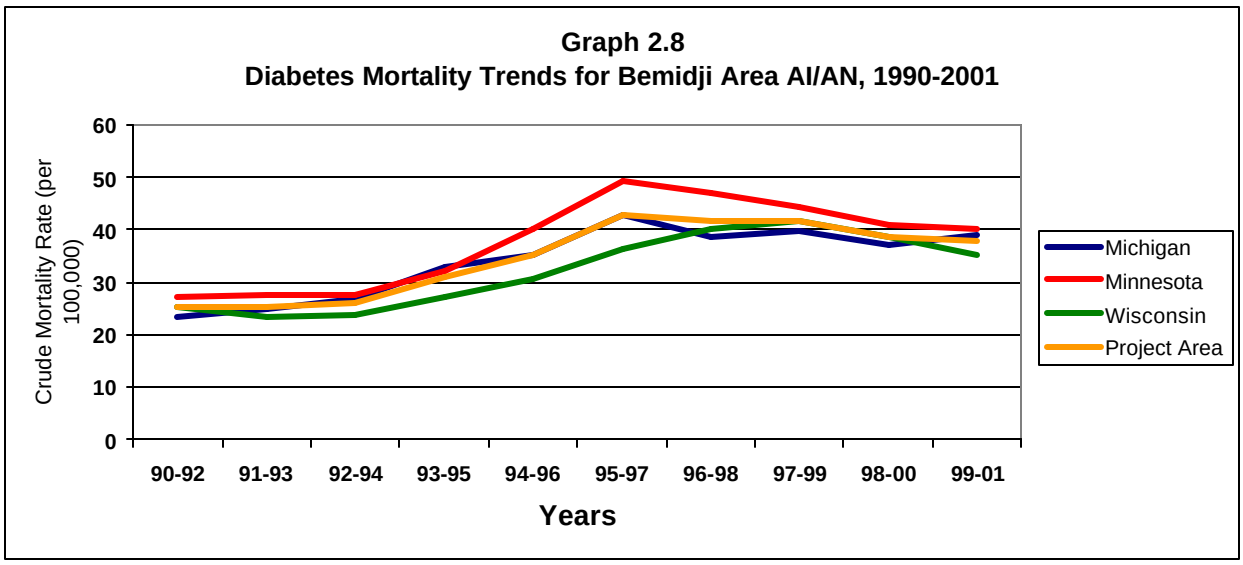
Data Sources: 1990-2001 Death files from Michigan Department of Community Health, Minnesota Center for Health Statistics, and Wisconsin Bureau of Health Information



Data Sources: 1990-2001 Death files from Michigan Department of Community Health, Minnesota Center for Health Statistics, and Wisconsin Bureau of Health Information



Data Sources: 1990-2001 Death files from Michigan Department of Community Health, Minnesota Center for Health Statistics, and Wisconsin Bureau of Health Information

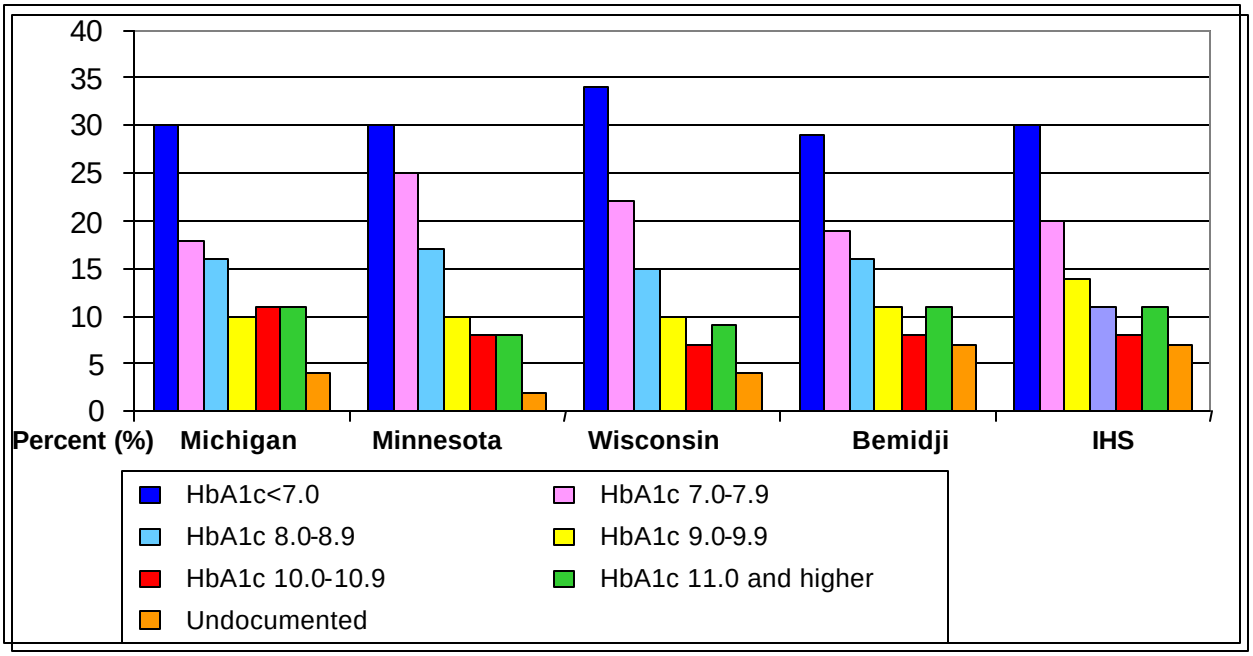


Data Sources: 1990-2001 Death files from Michigan Department of Community Health, Minnesota Center for Health Statistics, and Wisconsin Bureau of Health Information

SECTION 3
DIABETES

Diabetes is a disease that is disproportionately affecting American Indian/Alaska Native communities. Diabetes health information is collected from 1) the diabetes registry and 2) diabetes chart audits. Various health indicators tracked in the diabetes audits are compiled in an annual chart review. This information can be used to target health resources, support those in the community with diabetes, and prevent diabetes in future generations. The following report describes the 2002 fiscal year (FY) diabetes audit outcome comparisons among Michigan, Minnesota, Wisconsin, Bemidji Area and Indian Health Service (IHS).

Graph 3.1 - Percent of Glucose Control in AI/AN Diabetes Patients in Michigan, Minnesota, Wisconsin, Bemidji Area, and IHS, FY 2002

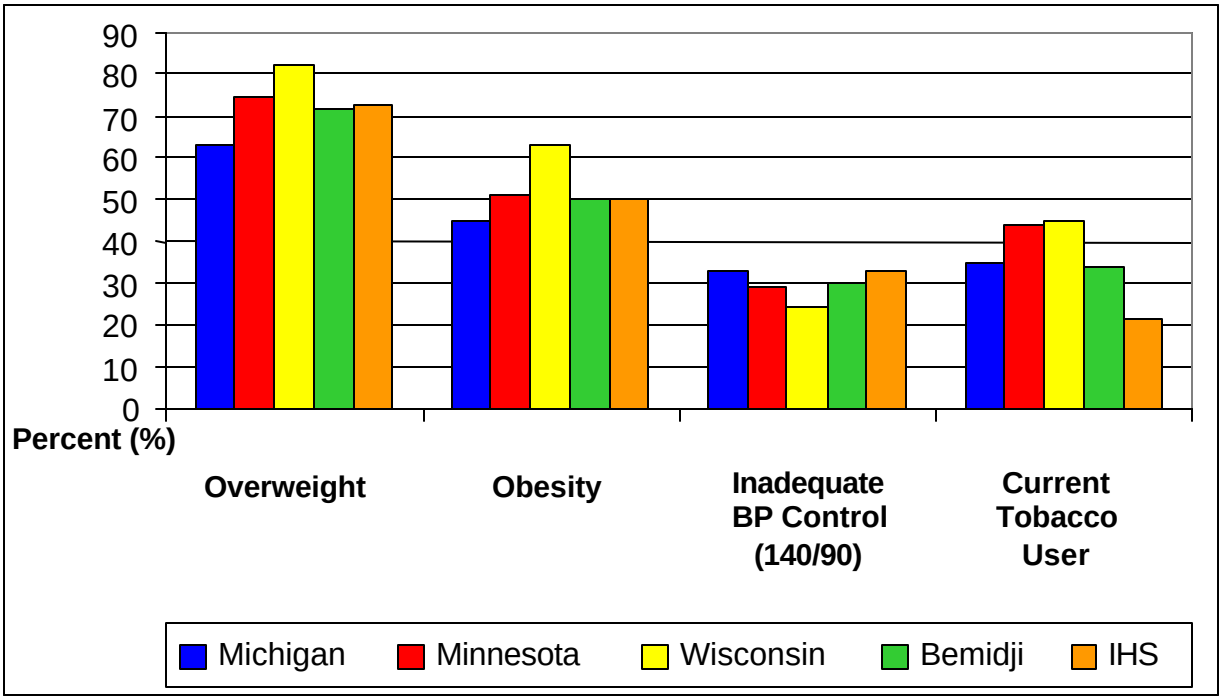


Source: Three State Tribal, Bemidji Area and IHS Diabetes Audit, 2002

Hemoglobin A1c estimates the average degree of glycemic control over a period of time. IHS standards of diabetes care indicates it should be monitored at 3-4 month intervals for those with elevated levels (HbA1C > 7.0%). As a patient's HbA1c gets higher, the risk of macro and micro vascular complications increases. Graph 3.1 shows the percentage of people with HbA1c 11.0 or greater in Michigan (11%), Minnesota (8%), Wisconsin (9%), Bemidji Area (11%), and IHS (11%). The diabetes teams in the Bemidji Area may need to focus on improving the blood glucose control among their diabetic communities.

Obesity and physical inactivity are associated with the development of type 2 Diabetes. Adopting habits that control weight and increasing exercise have been shown to significantly reduce the risk of developing diabetes. Weight loss of 10-20 pounds can improve blood glucose levels, blood pressure and cholesterol levels in patients with type 2 Diabetes. Graph 3.2 shows the percentage of people with obesity in Michigan (45%), Minnesota (51%), Wisconsin (63%), Bemidji Area (50%), and IHS service areas (50%). The target blood pressure (BP) for patients with diabetes is = 130/80. High blood pressure increases the risk of heart disease and renal failure in Type 2 diabetics. Graph 3.2 reports the percentages of people with inadequate control for blood pressure in Michigan (33%), Minnesota (29%), Wisconsin (24%), Bemidji Area (30%), and IHS service area (33%). Tobacco abuse is the primary preventable risk factor for cardiovascular disease, which is the leading cause of death in persons with diabetes. In Graph 3.2, the percentage of people with current tobacco use was 35% in Michigan, 44% in Minnesota, 45% in Wisconsin, 34% in Bemidji Area, and 21% in IHS.

Graph 3.2 - Percent of Adults with Traditional Cardio-Vascular Risk Factors in Diabetes for Michigan, Minnesota, Wisconsin, Bemidji Area and HIS, 2002



Source: Three State Tribal, Bemidji Area, and IHS Diabetes Audit, 2002
Overweight defined as Body Mass Index (BMI) = 25
Obesity defined as Body Mass Index (BMI) = 30

Screening for foot, vision, and dental problems occur more frequently for patients with diabetes. Persons with diabetes need their exams at least once a year. According to the Table 3.1, the percentage of people receiving eye exams was 45% in Michigan, 48% in Minnesota, 35% in Wisconsin, 41% in Bemidji Area, and 53% in HIS total population.

Table 3.1 - Comparison of Selected Diabetes Health Status Indicators (by Percent) for AI/AN in Michigan, Minnesota, Wisconsin, Bemidji Area, and IHS, FY 2002

Indicators	Michigan	Minnesota	Wisconsin	Bemidji Area*	IHS*
Gender					
Female	57	60	55	56	59
Male	43	40	45	44	41
Age					
<15 years	0	1	0	1	0
15-44 years	21	25	28	26	23
45-64 years	58	52	54	50	51
65 years and older	20	22	17	23	25
Duration of Diabetes					
Less than 10 years	56	56	64	54	57
10 years or more	24	26	22	24	30
Diagnosis date not recorded	21	18	14	22	14
Weight Control					
Overweight (BMI >25)	63	75	82	72	73
Obese (BMI >30)	45	51	63	50	50
Height or weight missing	21	13	5	14	8
Blood Sugar Control					
HbA1c < 7.0	30	30	34	29	30
HbA1c 7.0-7.9	18	25	22	19	20
HbA1c 8.0-8.9	16	17	15	16	14
HbA1c 9.0-9.9	10	10	10	11	11
HbA1c 10.0-10.9	11	8	7	8	8
HbA1c 11.0 and higher	11	8	9	11	11
Undocumented	4	2	4	7	7
Blood Pressure Control					
Ideal BP Control (= 120/80)	13	16	9	14	15
Target (121/81 - = 130/85)	24	25	35	21	21
Adequate (131/86 - = 140/90)	25	26	24	24	23
Inadequate (141/91 - 160/95)	25	22	18	23	26
Markedly Poor (= 161/96)	8	7	6	7	7
BP control undetermined	6	3	8	11	8
Annual Exams					
Foot exams	58	71	60	56	55
Dilated eye exam	45	48	35	41	53
Dental exam	18	29	36	25	36
PAP Smear (females only)	40	42	36	32	36
Diabetes Education					
Diet instruction	46	55	62	49	56
Exercise instruction	34	52	57	41	48
Other diabetes education	40	68	57	55	63
Immunizations					
Flu vaccine-yearly	60	48	51	48	53
Pneumovax-once	44	69	58	50	68

Source: Three State Tribal, Bemidji and IHS Diabetes Audit Data, 2002.

*****Data is weighted according to population sizes

Prevention of Type 2 Diabetes

The best way to prevent Type 2 diabetes is to reduce or prevent risk factors that can be changed, including:

Weight Control:

Recommendation: Maintain a healthy body weight by eating a healthy, low-fat, high-fiber diet that includes 5 servings of fruits and vegetables per day.

Physical Inactivity (Lack of Exercise):

Recommendation: Incorporate a total of at least 30 minutes of accumulated moderate physical activity (for example, walking, housework, or gardening) on most days. More vigorous activities (swimming and biking) will provide more benefits.

Heart (Cardiovascular) Health:

Recommendation 1: Have your blood pressure measured every two years. An optimal blood pressure is 120/80 mmHg or lower.

Recommendation 2: Have your cholesterol level measured every 5 years; aim for a HDL (good cholesterol) level of at least 40 mg/dl, a LDL (bad cholesterol) level of less than 100 mg/dl, and a triglyceride level of less than 150 mg/dl.

What a Community Can Do to Reduce Risk of Diabetes

1. Ask restaurants, school lunch programs, vending companies, and work cafeterias to offer healthy food choices.

2. Work with grocery stores and markets to increase fruit and vegetable consumption.

3. Promote programs to expand community physical activity opportunities (for example, the construction of new biking/walking paths or opening school gyms and pools for community use).

4. Encourage all persons to know the risk factors for developing diabetes.

5. Join and encourage others to take part in diabetes awareness and community events.

SECTION 4
COMMUNICABLE DISEASES

Section 4 contains data on sexually transmitted diseases (STDs) for AI/AN in the three states and Bemidji Area. Please note that these data only represent cases reported by local health departments and that the degree and completeness of reporting by physicians, hospitals, and clinical laboratories to local health departments varies significantly. Racial non- and misclassification is also prevalent, so AI/AN cases may not be identified accurately. It is likely that the number of cases reported severely under-represents the true prevalence of disease.

Some communicable diseases besides STDs are also reported to health departments. These diseases are usually vaccine-preventable, highly infectious, and/or can cause severe conditions, including death. The attack rates of many of these diseases are very low and may occur in a cluster at a specific time in a specific place as opposed to being an ongoing health problem. For example, the majority of salmonellosis cases in a given year could be from a single outbreak at one community dinner. Therefore, determining a trend over time would be extremely difficult and may not accurately reflect the general health of the AI/AN population in the three-state region.

Table 4.2a-d displays information on four sexually transmitted diseases: chlamydia; gonorrhea; herpes type 1 & 2; and syphilis. Table 4.2a shows that in 2001, the numbers and rates are highest for chlamydia in the Bemidji Area with the next highest being gonorrhea. The numbers of cases vary greatly by year and it is not clear if this represents fluctuation in burden of disease or changes related to reporting. The upward trend in chlamydia may be due to increased screening rather than an increase in the numbers of infected persons.

TABLE 4.2a - Numbers and Rates (per 100,000) for Selected Sexually Transmitted Diseases in American Indian/Alaska Natives in Bemidji Area, 1997-2001

Disease	1997		1998		1999		2000		2001	
	#	Rate	#	Rate	#	Rate	#	Rate	#	Rate
Chlamydia	308	193.8	450	281.7	604	375.3	623	387.7	664	397.9
Gonorrhea	85	53.5	78	48.8	129	80.1	113	70.3	121	72.5
Syphilis: Primary and Secondary	1	0.6	2	1.3	0	0.0	4	2.5	1	59.9

Source: Michigan Department of Community Health, Minnesota Center for Health Statistics, and Wisconsin Department of Health and Family Services, Bureau of Communicable Disease

TABLE 4.2b - Numbers and Rates (per 100,000) for Selected Sexually Transmitted Diseases in American Indian/Alaska Natives in Michigan, 1997-2001

Disease	1997		1998		1999		2000		2001	
	#	rate	#	rate	#	rate	#	rate	#	rate
Chlamydia	19	31.9	12	20.1	34	56.8	39	66.7	40	66.1
Gonorrhea	6	10.1	8	13.4	8	13.4	10	17.1	10	16.5
Syphilis (primary and secondary)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

Source: Michigan Department of Community Health

TABLE 4.2c - Numbers and Rates (per 100,000) for Selected Sexually Transmitted Diseases in American Indian/Alaska Natives in Minnesota, 1997-2001

Disease	1997		1998		1999		2000		2001	
	#	rate	#	rate	#	rate	#	rate	#	Rate
Chlamydia	249	441.3	269	471.6	350	608.5	316	574.8	347	609.7
Gonorrhea	69	122.3	46	80.6	82	142.6	72	131.0	70	123.0
Syphilis (primary and secondary)	0	0.0	1	1.8	0	0.0	1	1.8	1	1.8

Source: Minnesota Center for Health Statistics, STD & HIV Division

TABLE 4.2d - Numbers and Rates (per 100,000) for Selected Sexually Transmitted Diseases in American Indian/Alaska Natives in Wisconsin 1997-2001

Disease	1997		1998		1999		2000		2001	
	#	rate	#	rate	#	rate	#	rate	#	rate
Chlamydia	40	93.3	169	323.3	220	505.4	268	567.5	277	560.7
Gonorrhea	10	23.3	24	55.8	39	89.6	31	65.6	41	82.9
Syphilis (primary and secondary)	1	2.3	1	2.3	0	0.0	3	6.4	0	0.0

Source: Wisconsin Department of Health and Family Services, Bureau of Communicable Disease

SECTION 5
MATERNAL AND CHILD HEALTH

Section 5 contains information regarding maternal and child health in AI/AN populations and all races in the Bemidji Area, as well as all races in the U.S. For the purposes of this report, total AI/AN births in the Bemidji Area consider the race of the mother OR the race of the father, if American Indian. Normally, state and national data report the race of a child as the race of the mother, so care needs to be taken when comparing numbers. The data included is primarily from birth certificates but also includes information from the Women, Infants, and Children (WIC) program.

Infant Mortality Rates

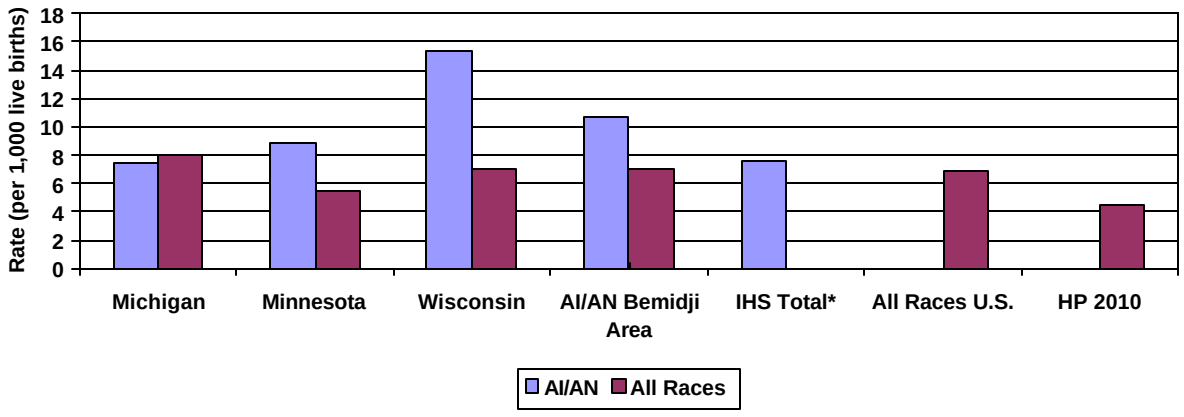
Infant Mortality Rates (IMR) measure the number of deaths to children less than one year of age divided by the number of live births in a given year, and then multiplied by 1,000. IMR are commonly used as an indicator of community health status, since children under one year of age are highly susceptible to disease. Table 5.1 and Graph 5.1 show that the IMR for the Bemidji Area AI/AN in 2001 was 10.7 deaths per 1,000 live births, up from a rate of 7.3 in 2000. This increase was due to the large rise in Wisconsin AI/AN infant mortality rate from 2000 to 2001.

TABLE 5.1 - Comparison of Infant Mortality Rates (per 1,000 live births), 2001 & 2000

	2001	2000		2001	2000
AI/AN Michigan	7.5	7.7	All Races Michigan	8.0	8.2
AI/AN Minnesota	8.9	9.8	All Races Minnesota	5.4	5.6
AI/AN Wisconsin	17.5	4.5	All Races Wisconsin	7.1	6.0
AI/AN Bemidji Area	**10.7**	**7.3**	All Races Bemidji Area	7.1	7.1
IHS Total	7.6*	7.6**	All Races U.S.***	6.8	6.9
HP 2010	4.5	4.5			

Data Sources: 2001 & 2000 Birth and Death Files from Michigan Department of Community Health, Minnesota Center for Health Statistics, and Wisconsin Bureau of Health Information.
*Data from Trends in Indian Health, IHS, 2000-2001 (1996-1998 data)
**Data from Regional Differences in Indian Health, IHS, 1998-1999 (1994-1996 data)
***National Center for Health Statistics

Graph 5.1
Infant Mortality Rate Comparisons, 2001



Sources: 2001 Birth and Death Files from Michigan Department of Community Health, Minnesota Center for Health Statistics, and Wisconsin Bureau of Health Information; *Trends in Indian Health, IHS, 2000-2001 (1996-1998 data); National Center for Health Statistics

Birth Weight

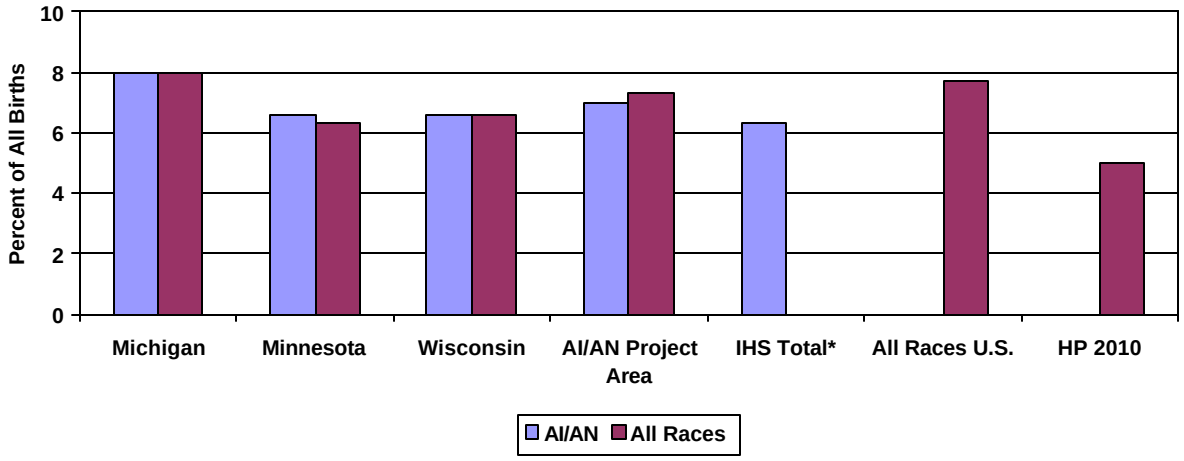
Birth weight is a valuable indicator of health for both the infant and mother. Low birth weight babies are at a higher risk of death within the first year of life, since they may be more susceptible to illness due to lack of physical development. Table 5.2 and Graph 5.2 shows that the AI/AN Bemidji Area population had a higher percent of low birth weight babies compared to the total IHS population in 2001 (7.0 to 6.3, respectively). The low birth weight rates were lower for AI/AN Bemidji Area babies (7.0%) than for all races in the Bemidji Area (7.3%). Both AI/AN and all races low birth weight rates failed to reach the HP2010 goal of 5.0%.

TABLE 5.2 - Percent of Low Birth Weight Births (less than 2,500 grams), 2001 & 2000

	2001	2000		2001	2000
AI/AN Michigan	8.0	7.1	All Races Michigan	8.1	7.9
AI/AN Minnesota	6.6	7.3	All Races Minnesota	6.3	6.1
AI/AN Wisconsin	6.6	4.4	All Races Wisconsin	6.6	6.5
AI/AN Bemidji Area	**7.0**	**6.3**	All Races Bemidji Area	7.3	7.1
IHS Total	6.3*	6.0**	All Races U.S.***	7.7	7.6
HP 2010	5.0	5.0			

Data Sources: 2001 & 2000 Birth Files from Michigan Department of Community Health, Minnesota Center for Health Statistics, and Wisconsin Bureau of Health Information.
*Trends in Indian Health, IHS, 2000-2001 (1996-1998 data)
**Regional Differences in Indian Health 1998-1999 (1994-1996 data)
***National Center for Health Statistics

Graph 5.2
Percent of Births with Low Birth Weight (less than 2,500 grams), 2001



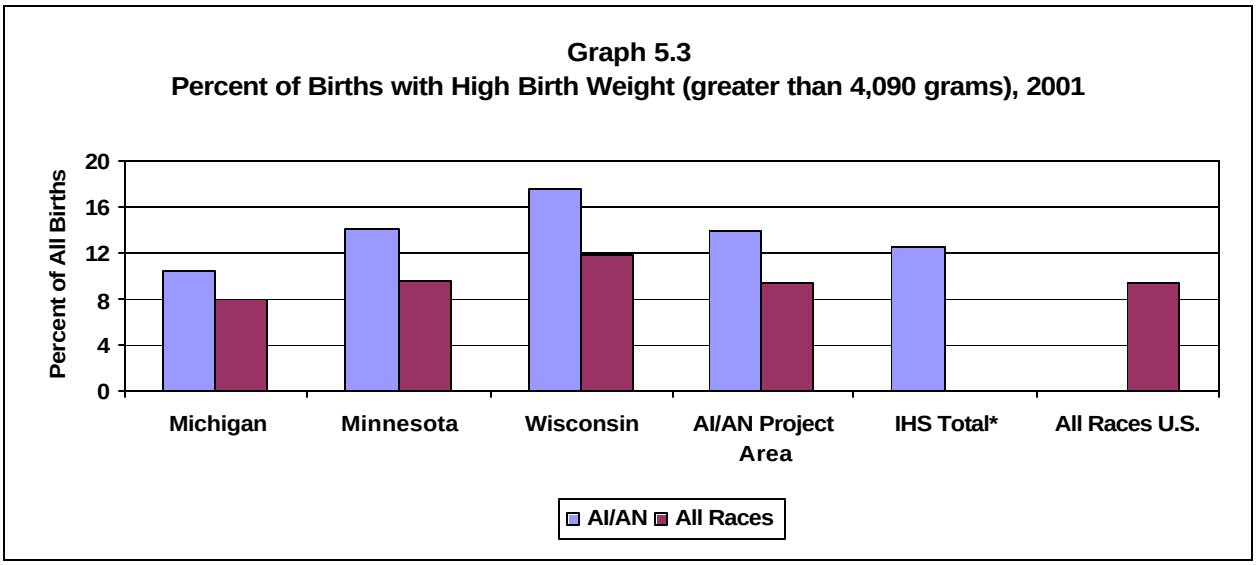
Sources: 2001 Birth Files from Michigan Department of Community Health, Minnesota Center for Health Statistics, Wisconsin Bureau of Health Information, and National Center for Health Statistics
*Trends in Indian Health, IHS, 2000-2001 (1996-1998 data)

High birth weight is an important indicator because these babies may have increased risk of developing diabetes, metabolic problems, or obesity throughout their lifetime. The high birth weight of a baby can also cause problems for mothers during delivery and may be an indicator that the mother has diabetes or other metabolic disorders. Table 5.3 and Graph 5.3 display the comparison of high birth weight babies for different populations. The AI/AN Bemidji Area had a higher percentage of high birth weight babies (13.9%) than the IHS population (12.6%) and All Races in the U.S. (9.4%) for 2001 births. High birth weights for the AI/AN population in Bemidji Area increased to 13.9% from 11.3% in 2000.

TABLE 5.3 - Percent of High Birth Weight Births (greater than 4,090 grams), 2001 & 2000

	2001	2000		2001	2000
AI/AN Michigan	10.5	9.6	All Races Michigan	8.0	8.4
AI/AN Minnesota	14.1	11.4	All Races Minnesota	9.6	9.8
AI/AN Wisconsin	17.6^	12.9	All Races Wisconsin	11.9^	NA
AI/AN Bemidji Area	**13.9**	**11.3**	All Races Bemidji Area	9.4	NA
IHS Total	12.6*	12.7**	All Races U.S.***	9.4^	9.9^
HP 2010	--	--			

Sources: 2001 & 2000 Birth Files from Michigan Department of Community Health, Minnesota Center for Health Statistics, and Wisconsin Bureau of Health Information.
^ Birth weight is greater than 4,000 grams.
*Trends in Indian Health, IHS, 2000-2001 (1996-1998 data)
**Regional Differences in Indian Health, IHS, 1998-1999 (1994-1996 data)
***National Center for Health Statistics



Sources: 2001 Birth Files from Michigan Department of Community Health, Minnesota Center for Health Statistics, Wisconsin Bureau of Health Information, and National Center for Health Statistics
*Trends in Indian Health, IHS, 2000-2001 (1996-1998 data)

Prenatal Care

The trimester prenatal care began has traditionally been used as an indicator of birth outcomes. Receiving prenatal care in the first trimester could assist with the detection of potential health problems early in a pregnancy. Early care during pregnancy allows for early education and consultation about nutrition, exercise and basic care during pregnancy and birth for both parents.

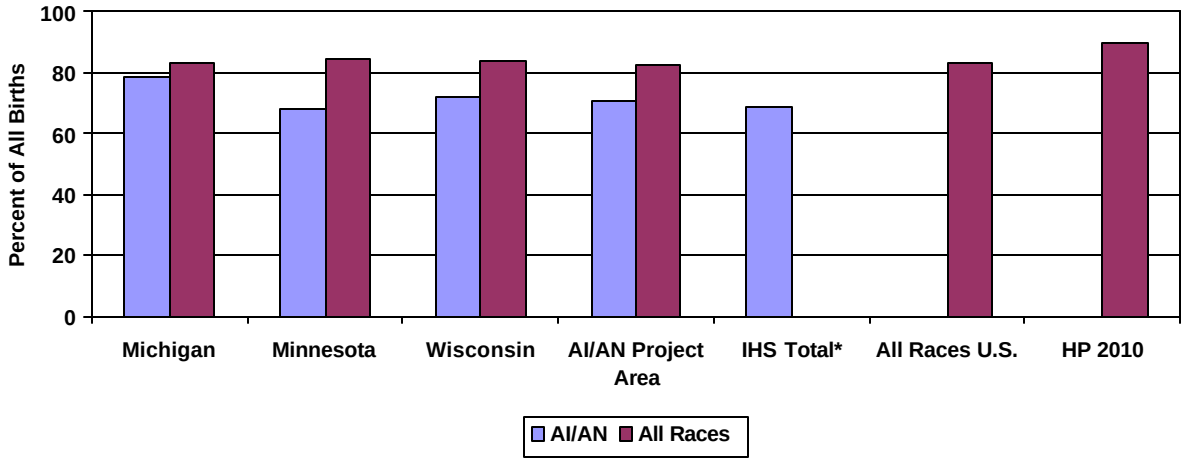
Table 5.4 and Graph 5.4 display information on the percentage of births in which the mother began prenatal care in the first trimester. Of AI/AN births in the Bemidji Area, 70.7% began prenatal care in the first trimester compared to 82.6% of all races in the Bemidji Area. The AI/AN population percentages remain well below the HP2010 goal of 90%.

TABLE 5.4 - Percent of Births with Prenatal Care Beginning in the First Trimester, 2001 & 2000

	2001	2000		2001	2000
AI/AN Michigan	78.8	76.3	All Races Michigan	82.9	80.5
AI/AN Minnesota	68.3	62.6	All Races Minnesota	84.6	84.9
AI/AN Wisconsin	72.2	74.8	All Races Wisconsin	83.7	83.9
AI/AN Bemidji Area	**70.7**	**72.0**	All Races Bemidji Area	82.6	84.3
IHS Total	68.5*	66.5**	All Races U.S.***	83.4	83.2
HP 2010	90.0	90.0			

Data Sources: 2001 & 2000 Birth Files from Michigan Department of Community Health, Minnesota Center for Health Statistics, and Wisconsin Bureau of Health Information.
*Regional Differences in Indian Health, IHS, 2000-2001 (1996-1998 data)
**Regional Differences in Indian Health, IHS, 1998-1999 (1994-1996 data)
***National Center for Health Statistics

Graph 5.4
Percent of Births with Prenatal Care Beginning in the First Trimester, 2001



Data Sources: 2001 Birth Files from Michigan Department of Community Health, Minnesota Center for Health Statistics, Wisconsin Bureau of Health Information, and National Center for Health Statistics
*Regional Differences in Indian Health, IHS, 2000-2001 (1996-1998 data)

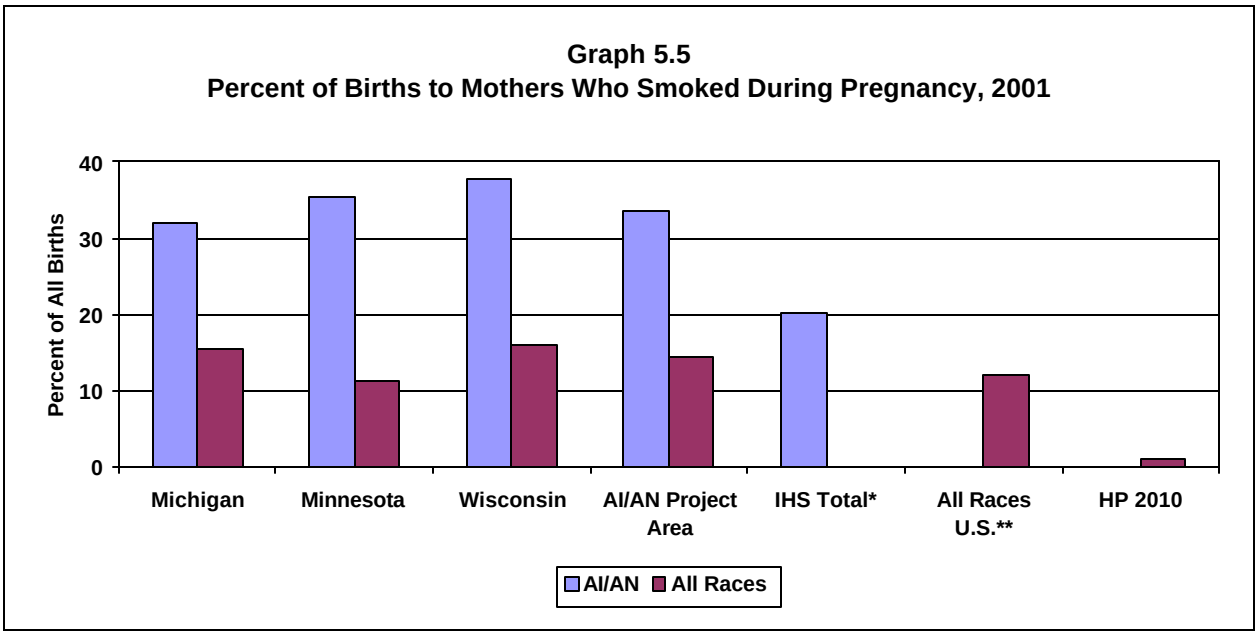
Smoking During Pregnancy

Smoking during pregnancy is an important indicator of both child and maternal health outcomes. Mothers who smoke during pregnancy are at personal risk for smoking related illness and their babies are at risk as infants and children for a host of problems. Smoking during pregnancy has been linked to prematurity, low birth weight in infants, asthma, and chronic ear infections in children. Table 5.5 and Graph 5.5 show that in 2001, 33.6% of Bemidji Area AI/AN babies were born to mothers who smoked during pregnancy, which is higher than the IHS population (20.2%), all races in the Bemidji Area (14.3%), and all races in the U.S. (12.0%).

TABLE 5.5 - Percent Births to Mothers Who Smoked During Pregnancy, 2001 & 2000

	2001	2000		2001	2000
AI/AN Michigan	31.9	31.6	All Races Michigan	15.5	15.4
AI/AN Minnesota	35.3	41.6	All Races Minnesota	11.2	11.1
AI/AN Wisconsin	37.7	36.2	All Races Wisconsin	15.8	16.5
AI/AN Bemidji Area	**33.6**	**36.7**	All Races Bemidji Area	14.3	16.9
IHS Total	20.2*	20.4**	All Races U.S. ***	12.0	12.6
HP 2010	1.0	1.0			

Data Sources: 2001 & 2000 Birth Files from Michigan Department of Community Health, Minnesota Center for Health Statistics, and Wisconsin Bureau of Health Information.
*Regional Differences in Indian Health, IHS, 2000-2001 (1996-1998 data)
**Regional Differences in Indian Health, IHS, 1998-1999 (1994-1996 data)
***National Center for Health Statistics



Data Sources: 2001 Birth Files from Michigan Department of Community Health, Minnesota Center for Health Statistics, Wisconsin Bureau of Health Information, and National Center for Health Statistics
*Regional Differences in Indian Health, IHS, 2000-2001 (1996-1998 data)

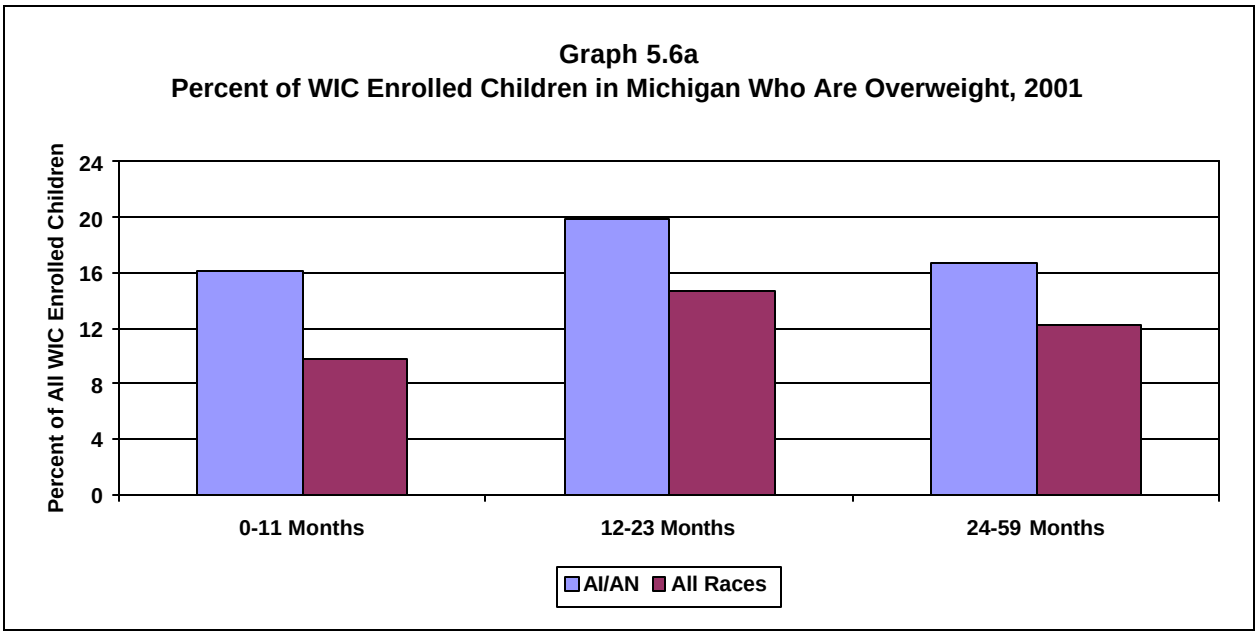
Childhood Weights

Overweight children are defined as those with a weight for height greater than the 95th percentile. Table 5.6 displays data from each state's WIC Program. Overweight levels for AI/AN children in all three states within the Bemidji Area are higher than for all races. These data only include children who qualify and receive services from the WIC Program.

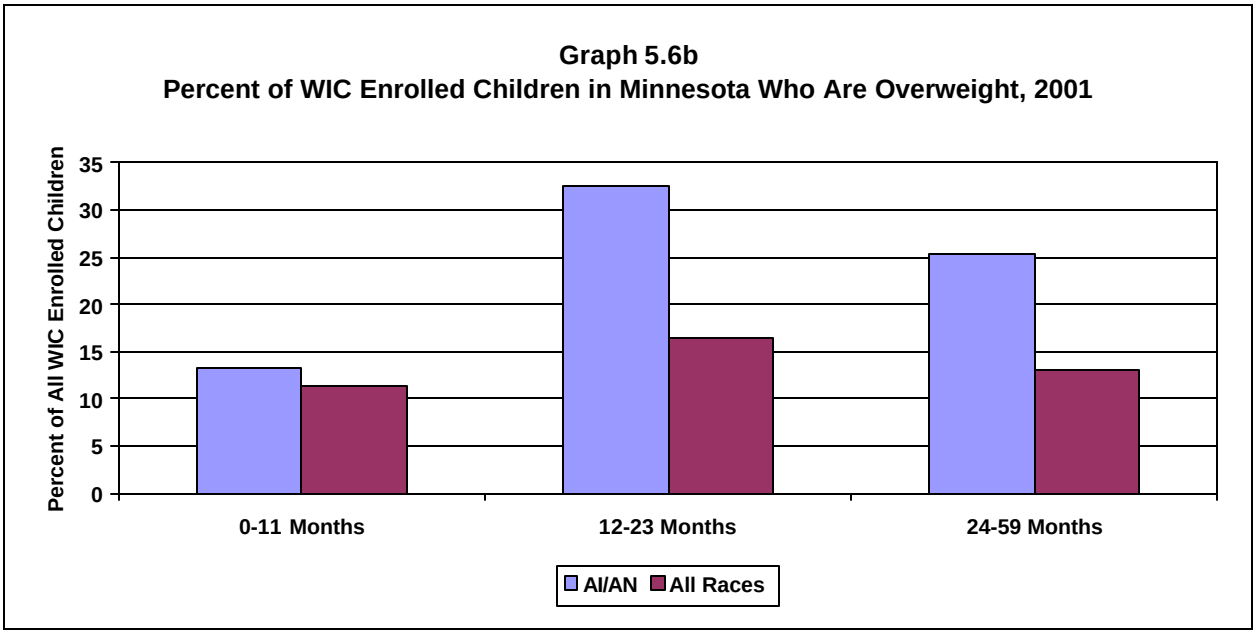
TABLE 5.6 - Percent of WIC Enrolled Children Who Are Overweight, 2001

Age	Michigan		Minnesota		Wisconsin	
	AI/AN	All Races	AI/AN	All Races	AI/AN	All Races
0-11 months	16.1	9.7	13.3	11.4	11.3	8.7
12-23 months	19.9	14.7	32.6	16.4	23.8	15.0
24-59 months	16.7	12.2	25.4	13.1	20.9	11.3

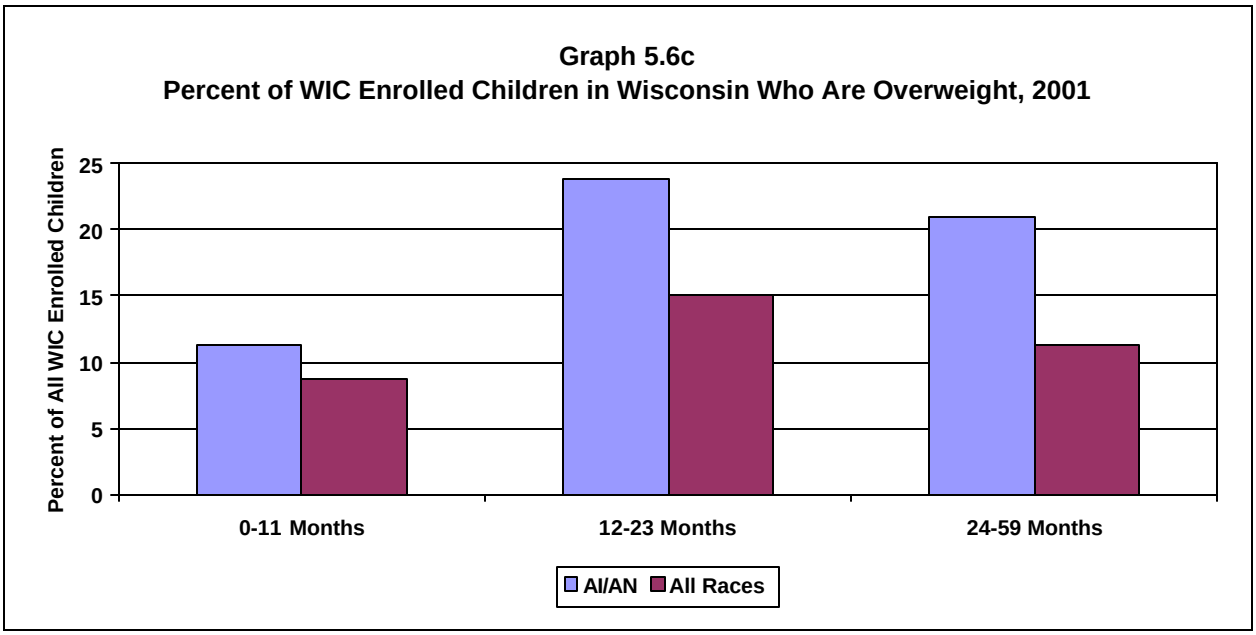
Source: CDC Pediatric Nutrition Surveillance, Table 16C, 2001 Annual Summaries for Michigan, Minnesota, and Wisconsin.



Source: Pediatric Nutrition Surveillance, Table 16C, 2001 Annual Summary for Michigan



Source: CDC Pediatric Nutrition Surveillance, Table 16C, Annual Summary for Minnesota, 2001



Source: Pediatric Nutrition Surveillance, Table 16C, 2001 Annual Summary for Wisconsin.

SECTION 6
CONCLUSION

The data included in this report comes from a variety of local, state, and national sources. Although limited, the health information in this report shows some areas of accomplishment as well as areas needing improvement. The following discusses some of the health indicators from different sections of this report. Appendix D contains resources for additional information.

The mortality section displays information on death by ranking the causes of death and comparing death rates between different populations. Ranking by American Indian/Alaska Native number of deaths shows the top five causes of death in the Bemidji Area for 2001 were: 1) heart diseases, 2) cancers, 3) unintentional injury, 4) chronic lower respiratory disease, and 5) diabetes. Age-adjusted mortality rates for all total deaths are much higher in AI/AN populations than for all races in each state, almost twice as high in Michigan and Minnesota. Crude mortality trends for different causes of death are also presented in Section 2. These graphs should be interpreted within each state, not compared to each other, since they are not age-adjusted.

Health information on risk factors associated with chronic disease and the top causes of AI/AN mortality such as smoking, obesity, level of exercise, drug and alcohol use, and hypertension, among others, is not yet available to the EpiCenter on a state or Bemidji Area level. However, some small projects have provided information that provides some insight as to the levels of risk factors for AI/AN people. One in particular, the Inter-Tribal Heart Project, was a comprehensive assessment of cardiovascular disease risk factors for Tribes in Minnesota and Wisconsin. Youth Tobacco Surveys, health needs assessments, youth obesity studies, and program evaluations at the state and tribal level serve as a source of information. Determination of risk factor prevalence is extremely important for AI/AN communities because many of the top causes of death and chronic disease directly result from risk factors which can be modified or prevented through a targeted approach to programming for community health.

The diabetes section in this report contains locally collected Tribal diabetes outcome audit information from the Bemidji Area diabetes programs reported to the IHS. The various IHS standards of diabetes care indicators from FY2002 are displayed in this section. The glucose control levels HbA1c <7.0 were 34% for Wisconsin AI/AN, which was higher than IHS (30%). Foot exams were documented for 71% of Minnesota AI/AN, higher than IHS (55%). Flu immunizations were administered for 60% of Michigan AI/AN, which was higher than IHS (53%). Some indicators are more difficult to track than others, especially when the services are not provided directly by Tribal Health facilities.

Data in the communicable disease section of this report show numbers and rates of the sexually transmitted diseases reported. Chlamydia has the highest rates from year to year. The change in rates for chlamydia over time may be partially attributable to increased testing and improved surveillance systems than an actual increase in

prevalence; however, these increases should be taken seriously with proper prevention programs. This information helps target groups most affected by preventable diseases, such as HIV and STDs.

Although some improvement was shown for the Bemidji Area, the average rate of AI/AN newborns with mother who smoked was about 34% in 2001, down from 37% in 2000. However, for some Tribal communities, nearly half of the AI/AN babies had mothers who smoked during their pregnancy. The 2001 percentages for AI/AN babies is higher compared to all races in the Bemidji Area (34% to 14%), in Michigan (32% to 16%), in Minnesota (35% to 11%), and in Wisconsin (38% to 16%). Smoking can cause many health problems for both the mothers and their babies. This may be an issue that can be addressed by increasing prevention efforts of already existing prenatal programs. Tribal health centers may want to examine this issue within their own communities.

APPENDIX A

Age relates directly to patterns of morbidity and mortality. The following table lists the most prevalent health problems associated with each age group.

Age group	Health Problem Associations	Examples of Illnesses and Injuries
Infants	Prematurity, Injury, and Infectious Disease	birth defects, pneumonia, sudden infant death syndrome, poisonings, burns, and falls
Childhood	Injury, Infectious Disease, and Abuse	poisonings, burns, falls, vehicle crashes, influenza, ear/nose/throat (ENT) infections, bone fractures, and skin abrasions
Adolescence	Risk-taking Behaviors, Injury, Infectious Disease, and Sexual Behaviors	burns, bone fractures, spinal injury, poisonings, firearm and automobile-related trauma, abuse of chemicals, use of tobacco products, sexually-transmitted diseases, ENT infections, influenza, and unplanned pregnancy
Adulthood 24-44	Risk-taking Behaviors, Injury, and Infectious Disease	bone fractures, lacerations, spinal injury, firearm-related trauma, abuse of chemicals, use of tobacco products, influenza, and asthma
Adulthood 45-64	Chronic Disease and Risk-taking Behavior	cancer, heart disease, hypertensive disease, dental disease, arthritis, consumption of tobacco products, abuse of chemicals, and improper dietary practices
Adulthood 65+	Acute Disease, Injury, and Chronic Disease	influenza and pneumonia, falls, burns, suicides, cancer, heart disease, and cerebrovascular disease

Source: J.A. Rice. *Community Assessment: The First Step in Community Health Planning*. Chicago, Illinois: American Hospital Association, 1993.

APPENDIX B

Underlying Cause of Death ICD-9 and ICD-10 Codes

Cause of Death	ICD-9 Codes	ICD-10 Codes
Cancer	140-208	C00-C97
Chronic Liver Disease	571	K70, K73-K74
Chronic Lower Respiratory Diseases	490-494, 496	J40-J47
Diabetes	250	E10-E14
Heart Disease	390-398, 402, 404-429	I00-I09, I11, I13, I20-I51
Homicide	E960-E969	X85-Y09, Y87.1
Kidney Disease	580-589	N00-N07, N17-N19, N25-N27
Pneumonia and Influenza	480-487	J10-J18
Stroke	430-434, 436-438	I60-I69
Suicide	E950-E959	X60-X84, Y87.0
Unintentional Injury	E800-E869, E880-E929	V01-X59, Y85-Y86

ICD-9: International Classification of Diseases, 9th Edition, 1975
ICD-10: International Classification of Diseases, 10th Edition, 1993

APPENDIX C
Technical Notes

Age-Adjusting and Standard Population

Age-adjusted rates (also called standardized rates) have been adjusted to control for distorting effects of age. This allows for a comparison of mortality risks among populations over time, no matter how different the age distribution. However, they should be viewed as relative indexes rather than actual measures of mortality. Directly standardized mortality rates are calculated by applying age-specific death rates to the U.S. standard population (See Table 1).

Table 1 – Standard U.S. Population, 2000 Projected, for Age-Adjusting Rates

Age	Population	Proportions (weights)
Under 1 year	3,795,000	0.013818
1-4 years	15,192,000	0.055317
5-14 years	39,977,000	0.145565
15-24 years	38,077,000	0.138646
25-34 years	37,233,000	0.135573
35-44 years	44,659,000	0.162613
45-54 years	37,030,000	0.134834
55-64 years	23,961,000	0.087247
65-74 years	18,136,000	0.066037
75-84 years	12,915,000	0.044842
85 years and over	4,259,000	0.015508
Total	275,234,000	1.000000

Beginning with the 1999 data year, a new population standard, based on the projected year 2000 population of the United States, was adopted by the National Center for Health Statistics for use in age-adjusting death rates. The new population standard may affect levels of mortality, trends, and group comparisons. Effects on AI/AN mortality comparisons are of particular interest. For discussion that is more detailed, please see the following sources:

Anderson RN and Rosenberg HM. Age Standardization of Death Rates: Implementation of the Year 2000 Standard. National Vital Statistics Reports; Vol. 47, No. 3. Hyattsville, Maryland: National Center for Health Statistics, 1998.

Arias E, Anderson RN, Hsiang-Ching K, Murphy SL, Kochanek KD. Deaths: Final Data for 2001. National Vital Statistics Reports; Vol. 52, No. 3. Hyattsville, Maryland: National Center for Health Statistics, 2003

Infant Mortality

Infant mortality rates are the most commonly used index for measuring the risk of dying during the first year of life. The rates presented are calculated by dividing the number of infant deaths (under one year of age) in the 2001 calendar year by the number of live births registered for the same period and then presented as rates per 1,000.

Miscoding/Misclassification

State birth and death certificates may contain racial miscoding/misclassification for AI/AN populations, which would underestimate AI/AN births and deaths.

Data Sources

Data from the 2000 U.S. Census was gathered from Summary File 1 (SF-1) and Summary File 3 (SF-3) using the Census Bureau's website.

The 2001 mortality rates in this report use official 2000 U.S. Census numbers as denominators and the number of deaths from death certificates as numerators. In the future, a mid-year population estimate will be used as the denominator for that year's mortality rate.

The sexually transmitted disease section includes data for the AI/AN population across years to show changes over time, not comparisons to other populations. In addition, when compiling this data, race categories employed may vary from state to state.

Data included in the maternal and child health section are from vital records and the respective states' Special Supplemental Nutrition Program for Women, Infants, and Children (WIC). This data are collected at the clinic level, aggregated at the state level, and submitted to the Centers for Disease Control and Prevention (CDC) for analysis.

Pediatric Nutrition Surveillance System (PedNSS)

WIC data is included in the CDC's Pediatric Nutrition Surveillance System (PedNSS), which is a child-based public health surveillance system that monitors the nutritional status of low-income children in federally funded maternal and child health programs.

For the 2001 PedNSS report, refer to Polhamus B etal. *Pediatric Nutrition Surveillance 2001 Report*. Atlanta: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2003.

Healthy People 2010

Health People 2010 (HP2010) target objectives are from *Healthy People 2010: Understanding and Improving Health,* 2nd ed., U.S. Department of Health and Human Services.

APPENDIX D

RESOURCES

Great Lakes EpiCenter
Nancy Miller-Korth, Project Coordinator
Chandra Reddy, Medical Epidemiologist
Kimmine Pierce, Epidemiologist
Heather Vaughan, Epidemiologist
Gregory Rachu, Epidemiologist
Derek Moore, Epidemiologist
Dwayne Jarman, Epidemiologist
Dina Chapman, Data Management System Educator

Great Lakes Inter-Tribal Council, Inc.
P.O. Box 9
Lac du Flambeau, WI 54538
(715) 588-3324

Bemidji Area Office
Indian Health Service
Federal Building
522 Minnesota Ave.
Bemidji, MN 56601
(218) 759-3440

Rhinelander Field Office
Indian Health Service
9A S. Brown St.
Rhinelander, WI 54501
(715)365-5106

Epidemiology Branch
Indian Health Service
5300 Homestead Dr., NE
Albuquerque, NM 87110
(505)248-4226

Wisconsin Department of Health and Family Services
Bureau of Health Information
1 West Wilson St.
P.O. Box 309
Madison, WI 53701-0309
(608)266-7568

Michigan Department of Community Health
Lewis Cass Building
320 South Walnut St.
Lansing, MI 48913
(517)373-3740

Minnesota Center for Health Statistics
121 East 7th Place
Metro Square Building, 4th Floor
St. Paul, MN 55101
(612)297-1232

Websites

Centers for Disease Control and Prevention	www.cdc.gov
National Center for Health Statistics	www.cdc.gov/nchs/
U.S. Census Bureau	www.census.gov
Indian Health Service	www.ihs.gov
Great Lakes Inter-Tribal Council, Inc.	www.glitc.org
Michigan Dept. of Community Health	www.mdch.state.mi.us
Wisconsin Dept. of Health and Family Services	www.dhfs.state.wi.us
Minnesota Dept. of Health	www.health.state.mn.us