

January 2008

Regional Health Profile

Bristol Bay Area Health Corporation

BRISTOL BAY AREA HEALTH CORPORATION REGIONAL MAP & CLINIC SITES



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Table of Contents

Table of Contents.....	i-ii
Acknowledgements.....	iii
Introduction	1
Technical Notes	1-5
Glossary of Terms.....	6
Regional Health Profile Overview.....	8-9
Demographic Information	
2005 Population Estimates	12
2006 User Population	13
Census Estimates by Community	14
Population Pyramid.....	15
Educational Attainment.....	16
Employment Status.....	17
Poverty Status.....	18
Household Income	19
Mortality & Morbidity	
Mortality.....	22-23
Mortality Trends, 1979-2003.....	24-25
Leading Causes of Hospital Discharge, FY2005.....	26
Leading Causes of Inpatient Days, FY2005	27
Leading Causes of Outpatient Visits, FY2005.....	28
Health Promotion	
Adults: Tobacco Use- Smoking	30-31
Adults: Tobacco Use- Smokeless Tobacco	32
Adults: Physical Activity	33
Adults: Obesity.....	34-35
Adults: Substance Abuse– Binge Drinking	36-37
Adolescents: Overweight	38
Adolescents: Vigorous Physical Activity	39
Adolescents: Tobacco Use	40-41
Adolescents: Substance Abuse	43-44
Health Protection	
Unintentional Injury Death– Leading Causes	46

Table of Contents

Injury Hospitalizations	47-49
Environmental Health.....	50
Preventive Services and Access to Health Care	
Cancer.....	52
Cervical Cancer Screening	53
Breast Cancer Screening.....	54
Colorectal Cancer Screening	55
Immunizations	56-57
Diabetes	58-59
Maternal, Infant and Child Health– Infant Mortality Rate	60
Maternal, Infant and Child Health– Low Birth Weight	61
Maternal, Infant and Child Health– Adequate Prenatal Care	62
Maternal, Infant and Child Health– Smoking and Alcohol Consumption during Pregnancy.....	63
Family Planning: Teen Birth Rate	64
Adolescents: Responsible Sexual Behavior	65
Sexually Transmitted Infections: Gonorrhea and Chlamydia.....	66
Appendices	
Appendix A. Tables & Figures	68-71
Appendix B. Supplemental Data Tables	72-74
Appendix C. References & Data Sources.....	76-78
Appendix D. Description of Selected Data Sources	79-80
Appendix E. I.H.S. Service Unit and Corresponding Tribal Health Corporation and Census Area/Borough	81-82

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Specifically, we would like to thank the following people and programs for their contribution.

State of Alaska

- Rebecca Wells, BRFSS Coordinator, Alaska Behavioral Risk Factor Surveillance System (BRFSS), for her previous work on the Regional Health Profiles and for providing recommendations on the use of BRFSS data.
- The Alaska Bureau of Vital Statistics, State of Alaska for providing birth and death statistics.
- Youth Risk Behavior Survey (YRBS) for providing Alaska Native specific results.

Alaska Native Tribal Health Consortium

- ANTHC Immunization Program, for providing regional immunization rates.
- ANTHC Injury Prevention Program, for providing regionally specific injury rates among Alaska Natives.
- ANTHC Alaska Native Tumor Registry, AN EpiCenter, for providing regional cancer data.
- ANTHC Alaska Area Diabetes Program Diabetes Registry, for providing regional diabetes prevalence rates.
- ANTHC-Division of Environmental Health and Engineering, for providing water and sewer service rates by region

Indian Health Service

- Bonnie Boedeker, Alaska Area Indian Health Service, for providing village level Alaska Native population estimates, I.H.S. user population estimates, and NPIRS data.

Introduction

The Alaska Native Epidemiology Center (AN EpiCenter) is developing Regional Health Profiles to provide an overview of the health status of Alaska Native people for many of the service areas of Alaska's Tribal Health Organizations. We hope this information will be useful as a baseline for program planning and evaluation as well as for grant writing.

The Regional Health Profile is divided into basic demographic information, mortality statistics and three sections similar to the Healthy Alaskans document.

- Demographics
- Mortality and Morbidity
- Health Promotion
- Health Protection
- Preventive Services and Access to Health Care

Each section has subsections about specific topics. We provided the most up-to-date data available on each topic at the time of the development of the profile. Periodic updates to this profile are planned.

Technical Notes

Data Sources

Multiple data sources were utilized to develop the community health profile. The data sources used for each of the indicators is identified in **Table 1** on page 7. Listed below are the data sources used to access regional level data for the profile:

- 1) National Patient Information Reporting System (NPIRS)
- 2) State of Alaska Department of Labor (AK DOL)
- 3) 1990 and 2000 U.S. Census
- 4) Alaska Bureau of Vital Statistics (ABVS)
- 5) Behavioral Risk Factor Surveillance System (BRFSS)
- 6) Youth Risk Behavior Survey (YRBS)
- 7) Alaska Trauma Registry (ATR)
- 8) ANTHC Immunization Registry
- 9) Alaska Area Diabetes Program
- 10) ANTHC Department of Environmental Health and Engineering (ANTHC DEHE)

A general description of the major data sources is included in Appendix D.

Analyses

Much of the information presented in this document was previously analyzed and has been reproduced for this report. **Table 1** shows by whom data was analyzed for each indicator. Previously analyzed data is identified in **Table 1** as being analyzed by the data source. The AN EpiCenter and the ANTHC Injury Prevention Program also conducted data analysis for this report. A description of the methods used is listed below.

Technical Notes

Behavioral Risk Factor Surveillance System (BRFSS): For this report, the results of BRFSS respondents from the BBAHC service area were analyzed in order to give an estimate of several behavioral measures on the regional level. We followed CDC recommendations that data should not be reported where the unweighted sample size for the denominator is smaller than 50. In order to achieve a minimum sample size of 50, multiple years of respondent data were combined for analysis. For this reason, indicators reported include several years of data. Every year, the BRFSS survey contains slightly varied questions depending on the health topics that are of interest that particular year. Due to this variation, years presented in this report may vary between indicators. Data was analyzed using SAS Version 9.

Although these estimates can be useful for planning and evaluation purposes, the number of respondents from the region is relatively small therefore readers should use caution in the interpretation of these estimates. Confidence intervals were not calculated for these estimates. For this reason, differences in estimates between populations, age groups, sexes, and over time in this report cannot be determined to be statistically significant.

BRFSS data is not age-adjusted to account for the different age distributions between populations. Since Alaska's population as a whole is younger than the U.S. Population as a whole, comparisons between these populations should be interpreted with caution.

Alaska Bureau of Vital Statistics: Mortality data for Bristol Bay Area Health Corporation (BBAHC) Alaska Natives and Alaska Natives statewide included in this report was analyzed by the AN EpiCenter. Deaths cover the years 1999-2003 with the exception of **Table 17. Leading Causes of Unintentional Injury Death**, which covers the years 1999-2005. Rates are age-adjusted to the US standard population. We only calculated rates for those causes that had at least five deaths during the interval studied. Data for US Whites was available through the National Cancer Institute's Surveillance Epidemiology and End Results (SEER) Program. We created rate ratios to compare BBAHC Alaska Natives (BBAHC AN) to US Whites and calculated confidence intervals around these ratios. BBAHC AN Rates were said to be statistically different if the 95% confidence interval did not contain one. The on-line SEERStat software was used to calculate mortality rates.

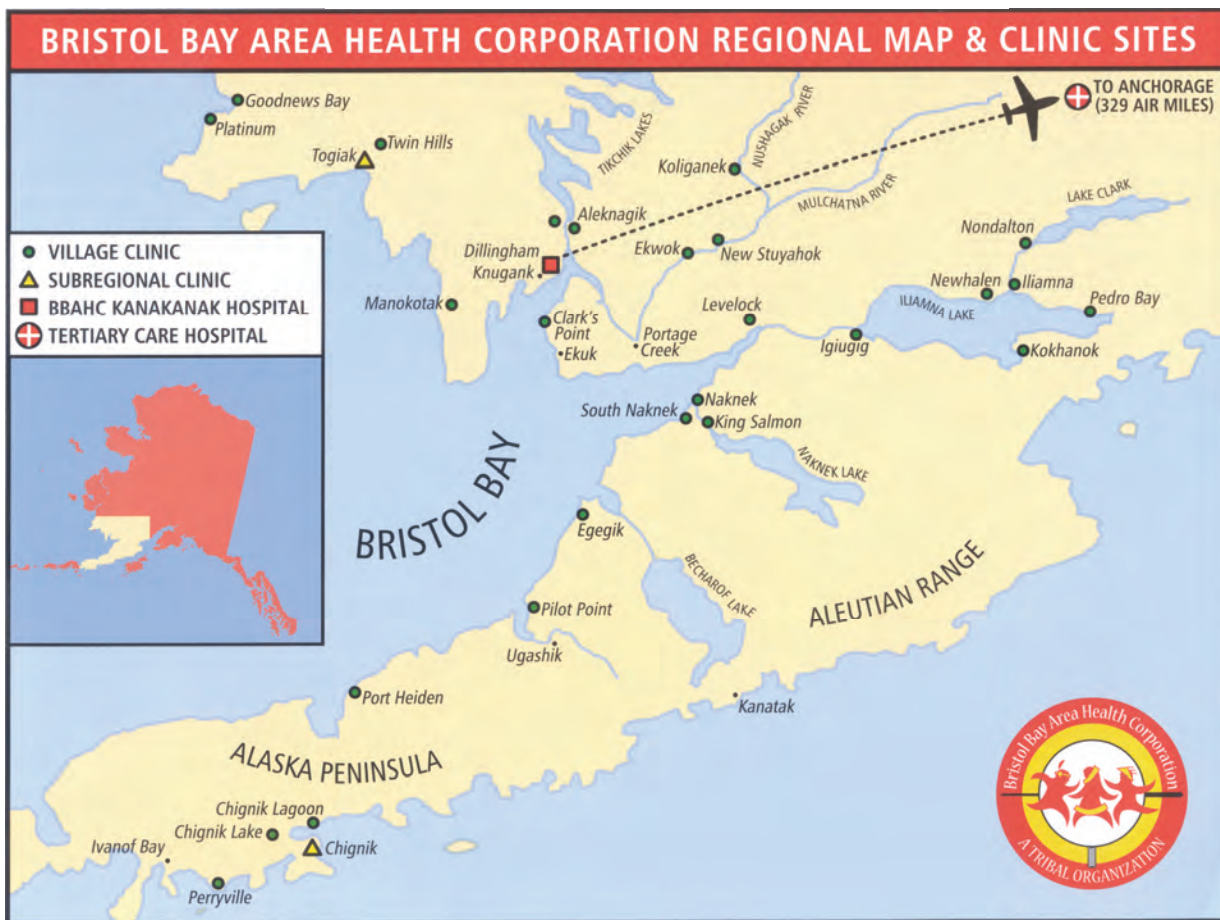
Geographical Definition

In this profile, Bristol Bay Health Corporation (BBAHC) service area has been geographically defined as one of the following, depending on the data source:

- Bristol Bay Borough, Dillingham Census Area and the Lake and Peninsula Borough combined or separately. This definition fits the BBAHC service area with the following exceptions: Goodnews Bay and Platinum are not included but are part of the BBAHC service area.
- Bristol Bay Service Unit: Indian Health Service designation which fits BBAHC service area
- BBAHC's service area (**Figure 1**)

Table 1 identifies which geographical boundary was used for each of the indicators.

Figure 1. BBAHC Service Area



Data Source: Bristol Bay Area Health Corporation

Race Classification

The way that Alaska Native people are classified varies by data source.

- **BRFSS:** Alaska Natives were those respondents who identified themselves as American Indian, Alaska Native, alone or in combination with any other race.
- **Alaska Bureau of Vital Statistics:** For mortality rates, Alaska Natives are those who were identified as American Indian or Alaska Native on their death certificate. Infant death certificates are matched with the birth certificate to ensure race is classified the same as on the birth certificate. For birth statistics, the birth certificate is used to determine race status. In most cases, the child's race is determined by the mother's race.
- **YRBS:** Alaska Natives were those respondents who identified themselves as American Indian, Alaska Native, alone or in combination with any other race.
- Where possible, data was presented for Alaska Natives only. However, the most current data for Employment Status, Poverty Status and Household Income includes all races. The population presented is listed for each indicator in **Table 1**.

Population Estimates for Rates Calculations

- **Mortality Rates:** "Bridged" population estimates from the National Center for Health Statistics were used by the AN Epidemiology Center to calculate mortality rates. Bridged estimates were necessary to adjust for the new option in the Census 2000 to choose multiple races, rather than one race.
- **Injury Hospitalization Rates:** "Bridged" population estimates from the State of Alaska Department of Labor were used by ANTHC Injury Prevention to calculate injury hospitalization rates. These rates are not age-adjusted.

Table 1. Technical Notes by Indicator

Indicator	Data Source	Analyses Conducted by:	Geographical Definition	Population	Years Presented
Demographics					
I.H.S. User Population	NPIRS ¹	Data Source	Bristol Bay Service Unit	Alaska Natives	FY 2004
Census Counts by Community	I.H.S., AK Area	Data Source	Bristol Bay Service Unit	Alaska Natives	2000
2004 Population Estimates	AK DOL ²	Data Source	Bristol Bay, Lake & Penn. Boroughs/Dillingham Census Area combined	Alaska Natives	2004
Educational Attainment	2000 U.S. Census	Data Source	Bristol Bay, Lake & Penn. Boroughs/Dillingham Census Area combined	Alaska Natives	2000
Employment Status	AK DOL	Data Source	Bristol Bay, Lake & Penn. Boroughs/Dillingham Census Area combined	All Races	March, 2007
Poverty Status and Household Income	2000 U.S. Census	SAIPE ⁷	Bristol Bay, Lake & Penn. Boroughs/Dillingham Census Area combined	All Races	2004
Mortality and Morbidity					
Mortality	ABVS ³	AN Epidemiology Center	Bristol Bay Service Unit	Alaska Natives	1999-2003
Hospital Discharges, Inpatient Days	NPIRS	Data Source	Bristol Bay Service Unit	Alaska Natives	2005
Health Promotion					
Adult Behavior Data— Tobacco Use, Physical Activity, Obesity, Substance Abuse, Overw eight	BRFSS ⁴	AN Epidemiology Center	Bristol Bay Service Unit	Alaska Natives	Varies by Indicator
Adolescent Behavior Data—Overw eight, Tobacco Use, Substance Abuse, Vigorous Physical Activity	YRBS ⁵	Data Source	State of Alaska	Alaska Natives	1995, 2003
Health Protection					
Injury Hospitalizations	AK Trauma Registry	ANTHC Injury Prevention	Bristol Bay, Lake & Penn. Boroughs/Dillingham Census Area combined	Alaska Natives	1991-2003
Injury Deaths	ABVS	AN Epidemiology Center	Bristol Bay, Lake & Penn. Boroughs/Dillingham Census Area combined	Alaska Natives	1999-2005
Preventive Services and Access to Health Care					
Cancer Screenings— Colorectal Cancer, Cervical Cancer, Breast Cancer, Overw eight	BRFSS	AN Epidemiology Center	Bristol Bay Service Unit	Alaska Natives	Varies by Indicator
Immunizations	ANTHC Immunization Registry	Data Source	BBAHC Service Area	I.H.S. User Population	Varies by Indicator
Diabetes	Alaska Area Diabetes Program	Data Source	Bristol Bay Service Unit	Alaska Natives	2004
Maternal, Infant and Child Health and Family Planning	ABVS	Data Source	Bristol Bay, Lake & Pen. Boroughs/Dillingham Census Area	Alaska Natives	2000-2004
Environmental Health	ANTHC DEHE ⁶	Data Source	Bristol Bay Service Unit	N/A	2006

1. NPIRS: National Patient Information Reporting System

2. AK DOL: Alaska Department of Labor

3. ABVS: Alaska Bureau of Vital Statistics

4. BRFSS: Behavioral Risk Factor Surveillance System

5. YRBS: Youth Risk Behavior Survey

6. ANTHC DEHE: Alaska Native Tribal Health Consortium, Division of Environmental Health and Engineering

7. Small Area Income and Poverty Estimates Program

Glossary of Terms

Age-Adjusted– Rates have been mathematically weighted to allow comparisons of populations with different age distributions. Adjustment is usually made to a standard population: in this report to the 2000 U.S. Population.

Birth weight– Weight of fetus or infant at time of delivery (recorded in pounds and ounces, or grams)

Body Mass Index– Anthropometric measure, defined as weight in kilograms divided by the square of height in meters. This measure correlates closely with body density and skin fold thickness.

Underweight	BMI <18.5 kg/m ²
Normal Weight	18.5 ≤ BMI < 25 kg/m ²
Overweight	25 ≤ BMI < 30 kg/m ²
Obese	BMI ≥ 30 kg/m ²

HP Objective– Healthy People 2010 objectives that are targeted to be achieved by the year 2010.

Infant Mortality Rate– A rate calculated by dividing the number of infant deaths during a calendar year by the number of live births reported in the same year. It is expressed as the number of infant deaths per 1,000 live births. Infant is defined as age from birth up to one year.

International Classification of Diseases (ICD Code)– A system designed for the classification of morbidity and mortality information for statistical purposes, for the indexing of hospital records by disease and operations and for data storage and retrieval. The ICD is developed collaboratively between the World Health Organization (WHO) and international centers.

Mortality Rate– An estimate of the proportion of a population that dies during a specified period. It is calculated by dividing the number of observations by the appropriate population multiplied by 100,000 (or other appropriate multiplier). This is also referred to as death rate.

Prevalence– The number of events, e.g., instances of a given disease or other condition, in a given population at a designated time.

Rate (crude)– An estimate of the proportion of a population that experiences the event of interest (e.g. injury hospitalization rate) during a specified period. It is calculated by dividing the number of observations by the appropriate population multiplied by 100,000 (or other appropriate multiplier). When interpreting crude rates, bear in mind that rates may be affected by differences in the population structures between areas. For example, if high numbers of older people were living in an area, this alone would result in higher crude death rates for many causes.

Service Unit– The local administrative unit of the Indian Health Service.

Weighted percent– Percent resulting after responses of persons in various subgroups (e.g. region, age, sex) are adjusted to compensate for the over-representation or under-representation of these persons in a sample. For example, in the BRFSS data set, factors that are weighted include: the number of telephones per household, the number of adults in a household, the geographic distribution of the sample, and the demographic distribution of the sample.

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Regional Health Profile Overview

Indicator	Alaska Data Source	Healthy Alaskans Objective	ALASKA				U.S.
			BBAHC AN	All AK Native	AK Non-Native	AK, All Races	U.S. White
Mortality							
Reduce the overall cancer death rate (deaths/year per 100,000 pop., age-adjusted)	ABVS ¹	159.9	283.7 ¹ (1999-2003)	245.4 ¹ (1999-2003)	Not Available	195.3 ⁸ (1999-2003)	193.5 ¹ (2000-2003)
Reduce heart disease deaths (deaths/year per 100,000 pop., age-adjusted) (ICD 10: I00-I51)	ABVS ¹	CHD only: 120	196.6 ¹ (1999-2003)	210.4 ¹ (1999-2003)	Not Available	187.2 ¹ (2000-2004)	243.6 ¹ (1999-2003)
Reduce unintentional injury death rate (deaths/year per 100,000 pop., age-adjusted)	ABVS ¹	17.5	192.7 ¹ (1999-2003)	109.0 ¹ (1999-2003)	AK White: 51.7 ⁴ (1999-2003)	59.2 ⁴ (1999-2003)	36.4 ¹ (1999-2003)
Reduce the suicide rate (deaths/year per 100,000 pop., age-adjusted)	ABVS ¹	5	17.2 ¹ (1999-2003)	36.1 ¹ (1999-2003)	AK White: 16.7 ⁴ (1999-2003)	18.6 ⁴ (1999-2003)	11.6 ¹ (1999-2003)
Reduce the homicide rate (deaths/year per 100,000 pop., age-adjusted)	ABVS ¹	3	15.1 ¹ (1999-2003)	17.7 ¹ (1999-2003)	AK White: 4.2 ⁴ (1999-2003)	6.5 ⁴ (1999-2003)	3.9 ¹ (1999-2003)
Health Promotion							
Tobacco Use							
Reduce cigarette smoking by adults (smoked more than 100 cigarettes in lifetime and smoked within the last month)	BRFSS ²	14%	43% ² (2002-2004)	45% ² (2005)	21% ² (2005)	25% ² (2005)	20.4% ² (2005)
Reduce the percentage of adults who use smokeless tobacco	BRFSS ²	3%	18% ² (2002)	10% ² (2005)	4% ² (2005)	5% ² (2005)	N/A
Reduce cigarette smoking by adolescents (smoked in the last 30 days)	YRBS ³	17%	Not Available	44.2% ³ (2003)	12.3% ³ (2003)	19.3% ³ (2003)	25.9% ³ (2005)
Physical Activity							
Increase the proportion of adults who engage in regular, preferably daily, moderate physical activity	BRFSS ²	40%	46% ² (2001 & 2003)	25% ² (2005)	22% ² (2005)	23% ² (2005)	51.1% ² (2005)
Increase the proportion of adolescents who engage in vigorous physical activity	YRBS ³	85%	Not Available	56.0% ³ (2003)	71.3% ³ (2003)	67.8% ³ (2003)	65.5% ³ (2005)
Overweight and Obesity							
Reduce the proportion of adults who are obese (BMI greater than or equal to 30)	BRFSS ²	18%	34% ² (2002-2004)	31% ² (2005)	24% ² (2005)	27% ² (2005)	23.5% ² (2005)
Reduce the proportion of adolescents who are over eight (BMI greater than or equal to 95th percentile)	YRBS ³	5%	Not Available	13.7% ³ (2003)	10.2% ³ (2003)	11% ³ (2003)	11.8% ³ (2005)
Substance Abuse							
Reduce binge drinking among adults (consumed 5 or more drinks on one occasion in the last 30 days)	BRFSS ²	13%	18% ² (2002-2004)	21% ² (2005)	17% ² (2005)	18% ² (2005)	14.3% ² (2005)
Increase the proportion of adolescents not using the following during the past 30 days: Alcohol	YRBS ³	60%	Not Available	37.6% ³ (2003)	39.1% ³ (2003)	38.8% ³ (2003)	46.4% ³ (2005)
Marijuana	YRBS ³	60%	Not Available	35.7% ³ (2003)	20.6% ³ (2003)	23.9% ³ (2003)	20.3% ³ (2005)
Cocaine	YRBS ³	60%	Not Available	2.7% ³ (2003)	2.6% ³ (2003)	2.6% ³ (2003)	3.2% ³ (2005)

1. ABVS– Alaska Bureau of Vital Statistics
2. BRFSS– Behavioral Risk Factor Surveillance System
3. YRBS– Youth Risk Behavior Survey
4. CDC NCIPC– Center for Disease Control and Prevention, National Center for Injury Prevention and Control
5. ANTHC/DEHE– Alaska Native Tribal Health Consortium, Division of Environmental Health and Engineering
6. ANTHC Immunization Program

8. OANHR– Office of Alaska Native Health Research
9. National Cancer Institute, State Cancer Profiles
10. Alaska Native Tribal Health Consortium, Injury Prevention Program
11. Alaska Trauma Registry
12. National Center for Health Statistics
13. Alaska Department of Environmental Conservation
14. National Center for Health Statistics, National Immunization Survey
15. National Cancer Institute, Surveillance and End Results Program

Regional Health Profile Overview

Indicator	Alaska Data Source	Healthy Alaskans Objective	ALASKA				U.S.
			BBAHC AN	All AK Native	AK Non-Native	AK, All Races	U.S. White
Health Protection							
Injury Prevention							
Reduce hospitalizations due to nonfatal unintentional injuries per 100,000	ANTHC/IP ¹⁰	570	1,128 ¹⁰ (1991-2003)	998 ¹⁰ (1991-2003)	Not Available	635 ¹¹ (1998)	U.S. All Races: 410.7 ¹² (2004)
Environmental Quality							
Increase number of communities with access to safe water and proper sewage disposal	ANTHC/DEHE ⁵	98%	88% (2006) ⁵	Not Available	Not Available	88% ¹³ (2000)	Not Available
Preventive Services and Access to Care							
Maternal and Child Health							
Reduce infant death rate (deaths within 1 year of birth per 1,000 live births)	ABVS ¹	4.5	*15.6% ¹ (1999-2003)	8.2 ¹ (1999-2003)	5.4 ¹ (1998-2004)	6.4 ¹ (2002-2004)	5.6 ¹² (2004)
Increase the proportion of pregnant women receiving adequate or better prenatal care (APNCU ^{**})	ABVS ¹	90%	52.1% ¹ (2000-2004)	47.7% ¹ (2000-2004)	White: 72.8% ¹ (2002-2004)	65.5% ¹ (2000-2004)	75.2% ¹² (2000-2004)
Immunizations							
Increase the proportion of young children who have received all vaccines recommended for universal administration (% children 19 to 35 months who have received 4:3:1:3:3 series)	ANTHC Immunization Program ⁶	90%	96% ⁶ (as of 6/2006)	86% ⁶ (as of 6/2006)	White: 72.0% ¹⁴ (2004)	75.3% ¹⁴ (2004)	83% ¹⁴ (2004)
Increase the proportion of adults aged 65 years and older who are vaccinated annually against influenza	ANTHC Immunization Program ⁶	90%	42% ⁶ (as of 6/2006)	55.9% ⁶ (as of 6/2006)	White: 60.2% ² (2005)	61.1% ² (2005)	69.0% ² (2006)
Increase the proportion of adults aged 65 years and older who have ever been vaccinated against pneumococcal disease	ANTHC Immunization Program ⁶	90%	82% ⁶ (as of 6/2006)	89.4% ⁶ (as of 6/2006)	White: 61.3% ² (2005)	61.1% ² (2005)	67.0% ² (2006)
Cancer							
Increase the proportion of adults who receive colorectal screening examination (adults 50 years and older who have ever had a sigmoidoscopy or colonoscopy)	BRFSS ²	64%	Not Available	50% ² (2004)	51% ² (2004)	51% ² (2004)	54.4% ² (2004)
Increase the proportion of women aged 40 years and older who have received a mammogram within the preceding 2 years	BRFSS ²	76%	Not Available	67% ² (2004)	67% ² (2004)	67% ² (2004)	74.6% ² (2004)
Increase the proportion of women aged 18 years and older who have received a Pap test within the preceding 3 years (women who have not had a hysterectomy)	BRFSS ²	95%	100% (2002 & 2004)	90% ² (2004)	88% ² (2004)	89% ² (2004)	86.4% ² (2004)

* Infant Mortality Rate calculated with fewer than 20 deaths, should be interpreted with caution

**Adequacy of Prenatal Care Utilization Index, also called the Kotelchuk Index

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Demographic Information

2005 Population Estimates

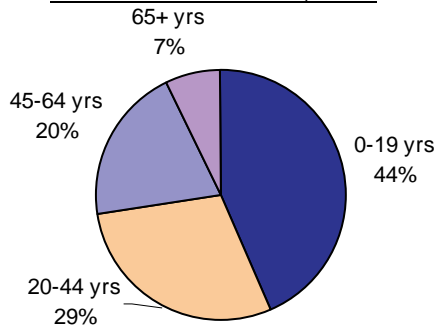
The State of Alaska Department of Labor uses the Census, Vital Records and other data to provide estimates of the population between census years. An explanation of the “Bridged” Estimates used in these figures can be found at <http://146.63.75.50/research/pop/estimates/>

Summary:

- The AK Department of Labor estimates that there are 5,004 Alaska Natives living in Bristol Bay, Lake and Peninsula Borough and Dillingham census area combined.
- The population estimates are lower than the BBAHC user population on the following page due to different definitions for geographical boundaries as well as race.
- The age distribution for population estimates and BBAHC user population is similar.

Geographical Definition: BBAHC service area is defined as the Bristol Bay, Lake and Peninsula Boroughs and Dillingham Census Area combined.

Figure 2. Population by Age Group, Alaska Natives
BBAHC Service Area, 2005



Data source: Alaska Department of Labor and Workforce Development²

Table 2. Population Estimates, Alaska Natives, by Sex and Age,
BBAHC service area, 2005

Age (Years)	Males		Females		Total	
	Number	%	Number	%	Number	%
0-4	267	5.3%	225	4.5%	492	9.8%
5-9	282	5.6%	260	5.2%	542	10.8%
10-14	291	5.8%	261	5.2%	552	11.0%
15-19	280	5.6%	301	6.0%	581	11.6%
20-24	187	3.7%	165	3.3%	352	7.0%
25-29	138	2.8%	102	2.0%	240	4.8%
30-34	109	2.2%	121	2.4%	230	4.6%
35-39	152	3.0%	129	2.6%	281	5.6%
40-44	180	3.6%	181	3.6%	361	7.2%
45-49	196	3.9%	171	3.4%	367	7.3%
50-54	131	2.6%	121	2.4%	252	5.0%
55-59	90	1.8%	112	2.2%	202	4.0%
60-64	104	2.1%	81	1.6%	185	3.7%
65+	174	3.5%	193	3.9%	367	7.3%
Total	2,581	51.6%	2,423	48.4%	5,004	100.0%

Data source: Alaska Department of Labor and Workforce Development²

2006 User Population

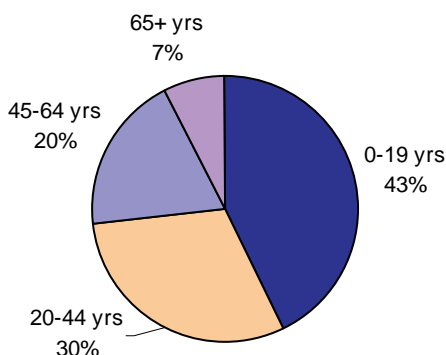
Definition: A user is defined by the Indian Health Service (I.H.S.) as an eligible American Indian/Alaska Native (AI/AN) who used a health facility at least once in a three year period (see Appendix A). The facility must be one that reports to the national I.H.S. data system. I.H.S. user population data are provided by fiscal year (FY). FY2006 is from October 1, 2005 through September 30, 2006.

Summary:

- 43% of the BBAHC user population was under the age of 20.
- 7.5% of the user population is 65 years of age or older.

Geographical definition: BBAHC service area is defined by the Bristol Bay Service Unit for Indian Health Service User data.

Figure 3. I.H.S. User Population by Age Group, Alaska Natives
BBAHC Service Area, FY2006



Data Source: Indian Health Service, National Patient Information and Reporting System (NPIRS)¹ FY 2004
Note: Age is determined as of the end date of FY 2006.

Table 3. I.H.S. User Population, Alaska Natives, by Sex and Age,
BBAHC Service Area, FY2006

Age (Years)	Males		Females		Total	
	Number	%	Number	%	Number	%
Less than 1	71	1.3%	54	1.0%	125	2.4%
1 to 4	227	4.3%	216	4.1%	443	8.4%
5 to 9	283	5.3%	245	4.6%	528	10.0%
10 to 14	300	5.7%	283	5.3%	583	11.0%
15 to 19	305	5.8%	282	5.3%	587	11.1%
20 to 24	222	4.2%	207	3.9%	429	8.1%
25 to 34	257	4.9%	255	4.8%	512	9.7%
35 to 44	343	6.5%	315	5.9%	658	12.4%
45 to 54	343	6.5%	328	6.2%	671	12.7%
55 to 64	178	6.5%	186	3.5%	364	6.9%
65 +	198	3.4%	197	3.7%	395	7.5%
Unknown	0	7.3%	0	0.0%	0	0.0%
Total	2,727	52%	2,568	48%	5,295	100%

Data Source: Indian Health Service, National Patient Information and Reporting System (NPIRS)¹ FY 2004
Note: Age is determined from the end date of FY 2006.

Table 4. Census by Community, 1990 and 2000, Alaska Natives and Total Population

Community	Alaska Native Population, 2000 Census	% AK Native, 2000 Census	Total Population, 2000 Census	Alaska Native Population 1990 Census	Total Population 1990 Census	% Change, AK Native Pop. 1990-2000
Aleknagik Dil	187	85%	221	154	185	21%
Chignik L&P	48	61%	79	85	188	-44%
Chignik Lagoon L&P	85	83%	103	30	53	183%
Chignik Lake L&P	127	88%	145	122	133	4%
Clarks Point Dil	69	92%	75	53	60	30%
Dillingham Dil	1,540	61%	2,521	1,125	2,017	37%
Egegik L&P	89	77%	116	86	122	3%
Ekuk Dil	0	0%	0	2	3	-100%
Ekw ok Dil	122	94%	130	67	77	82%
Goodnew s Bay Bethel	216	94%	230	231	241	-6%
Igiugig L&P	44	83%	53	26	33	69%
Iliamna L&P	59	58%	102	62	94	-5%
Ivanof Bay L&P	21	95%	22	33	35	-36%
Kanatak	0	0%	0	0	0	0%
King Salmon BB	133	30%	442	108	696	23%
Knugank	0	0%	0	0	0	0%
Kokhonak L&P	158	91%	174	137	152	15%
Koliganek Dil	159	87%	182	174	181	-9%
Levelock L&P	117	95%	123	87	105	34%
Manokotak Dil	378	95%	399	368	385	3%
Naknek BB	319	47%	678	236	575	35%
New Stuyahok Dil	452	96%	471	375	391	21%
New halen L&P	146	91%	160	151	160	-3%
Nondalton L&P	199	90%	221	159	178	25%
Pedro Bay L&P	32	64%	50	38	42	-16%
Perryville L&P	105	98%	107	102	108	3%
Pilot Point L&P	86	86%	100	45	53	91%
Platinum Bethel	38	93%	41	59	64	-36%
Pope Vannoy L&P	4	50%	8	0	0	N/A
Port Heiden L&P	93	78%	119	86	119	8%
Portage Creek Dil	31	86%	36	3	5	933%
South Naknek BB	115	84%	137	108	136	6%
Togiak Dil	750	93%	809	535	613	40%
Tw in Hills Dil	65	94%	69	61	66	7%
Ugashik L&P	9	82%	11	6	7	50%
Total	5,996	74%	8,134	4,914	7,277	13%

L&P= Lake & Peninsula Census Area, Dil= Dillingham Census Area, Bethel= Bethel Census Area, BB= Bristol Bay Census Area

Data Source: Alaska Area Office, Indian Health Service³

Population Pyramid

Summary:

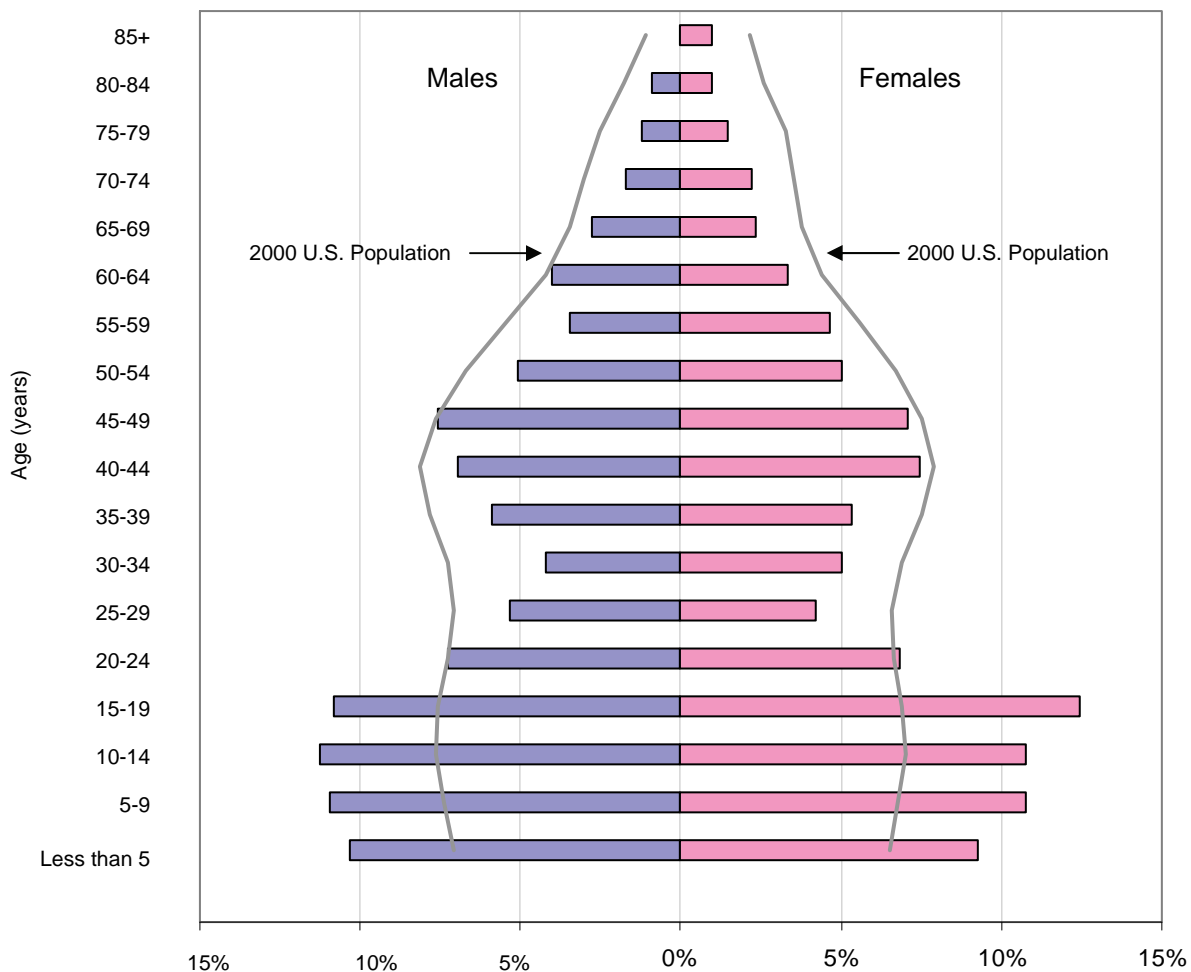
- 44% of the BBAHC Alaska Native population is under the age of 20 as compared to 28.7% of the U.S. population.
- In 2005, males accounted for 51.6% of the population in the BBAHC service area. Females accounted for 48.4% of the population.

Data Availability: Population estimates are available by state, race, borough or census area, place, and with modified age race (MARS) estimates, 1945-2005

For more information: For population estimates, go to the State of Alaska Department of Labor at <http://almis.labor.state.ak.us/>

Geographical Definition: BBAHC service area is defined as the BBAHC service area is defined as the Bristol Bay and Lake and Peninsula Boroughs, and Dillingham census area combined.

Figure 4. Population Pyramid, Alaska Natives, BBAHC Service Area, 2005



Data source: Alaska Department of Labor and Workforce Development²

Educational Attainment

Summary:

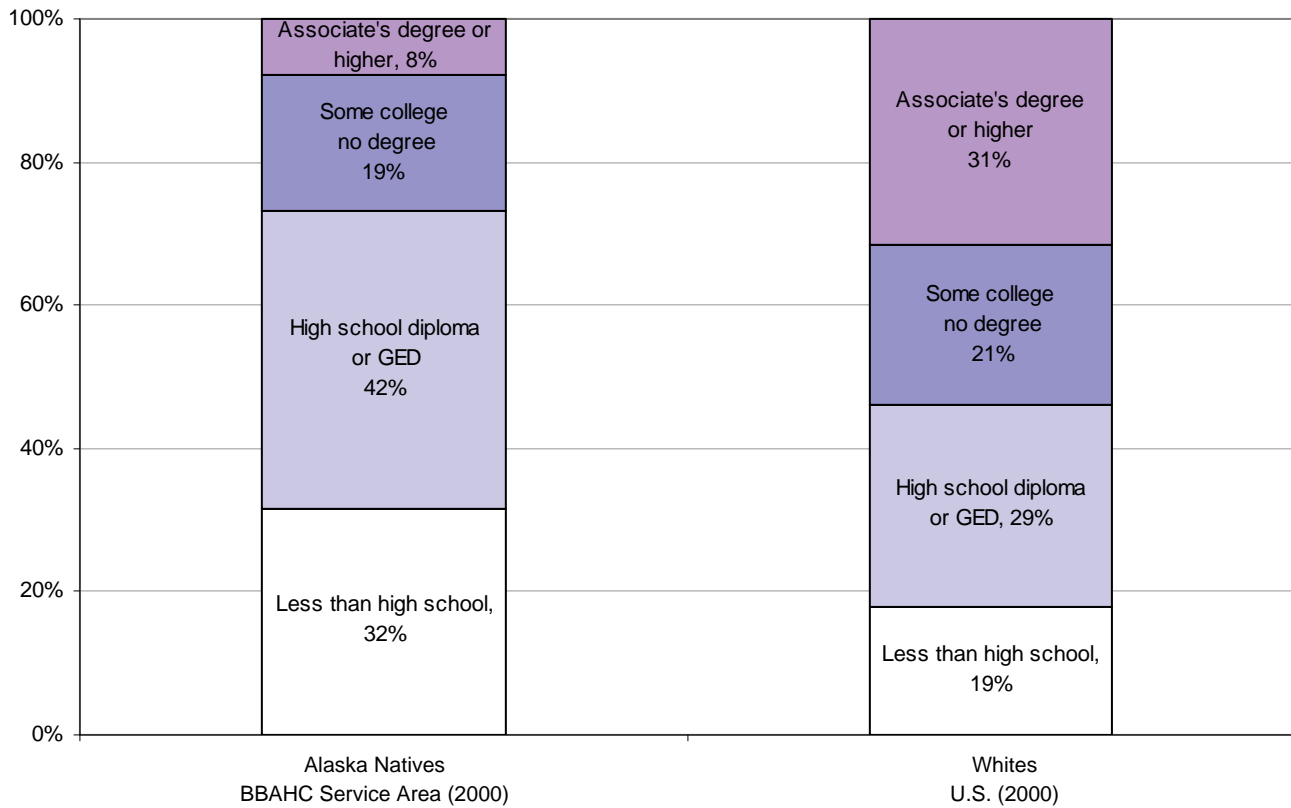
- 8% of BBAHC Alaska Natives received an associate’s degree or higher as compared to 31% of U.S. Whites.
- 32% of Alaska Natives reported having less than a high school diploma as compared to 19% of U.S. Whites.

Data availability: Data on the state level and census area/borough is available for census years (once every ten years). National level data is available through 2004 from the Current Population Survey

Geographical Definition: BBAHC service area is defined as the Bristol Bay and Lake and Peninsula Boroughs and Dillingham census area combined.

For more information: Go to American Factfinder at <http://factfinder.census.gov/>

Figure 5. Highest Educational Attainment, 25 Years and Older



Data Source: 2000 US Census ^{4, 19}

Employment Status

Definition: Unemployment includes anyone who has made an active attempt to find work in the four-week period up to and including the week that includes the 12th of the referenced month. Due to the scarcity of employment opportunities in rural Alaska, many individuals do not meet the official definition of unemployed because they are not conducting active job searches.

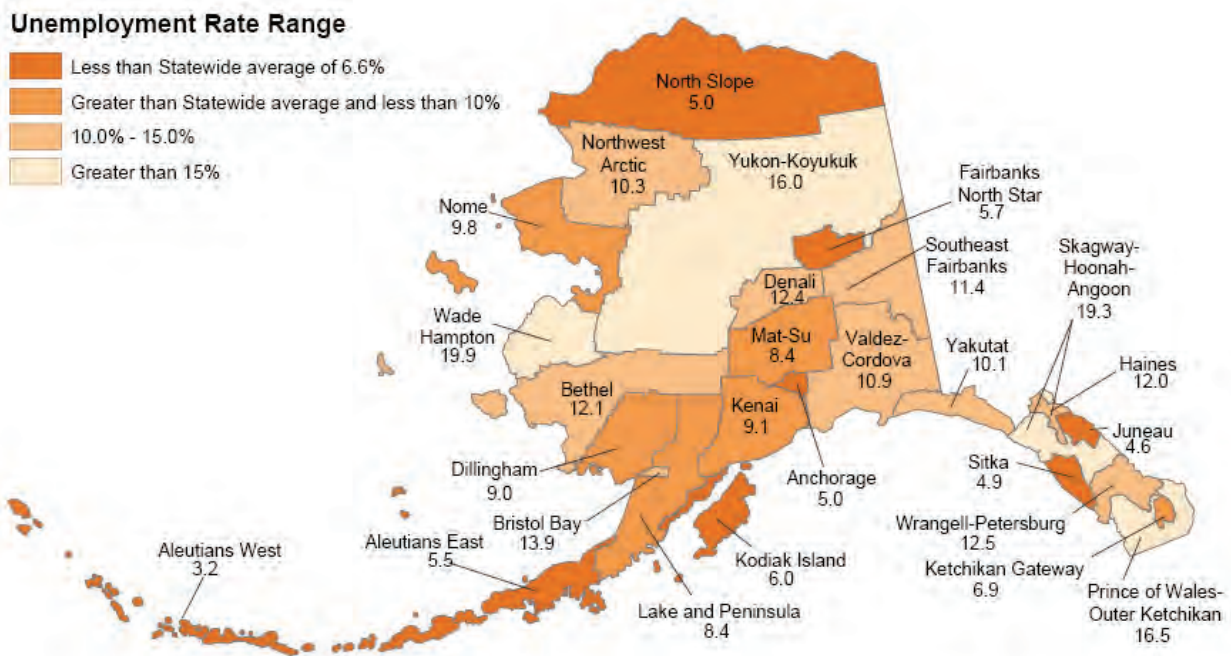
Summary:

- The unemployment rate for Bristol Bay Borough, Lake and Peninsula Borough and Dillingham Census Area was 13.9% and 8.4% and 9.0% respectively (September 2006).
- The Bristol Bay borough unemployment rate (13.9) was about two times the statewide unemployment rate of 6.6%. The Lake and Peninsula borough was slightly higher than the statewide rate.

Data availability: Monthly data for each borough/census area is available within 2 to 3 months.

For more information: Current employment statistics for boroughs and census areas in Alaska can be found at the Department of Labor and Workforce Development website at <http://almis.labor.state.ak.us/>

Figure 6. Unemployment Rate by Census Area, All Races, March 2007



Statewide Unemployment Rate for March 2007 is 6.6%

Map provided by Alaska, Department of Labor and Workforce Development ⁵

Poverty Status

Definition: The U.S. Census defines poverty in a complex way that takes into account the higher cost of living in Alaska. The Department of Health and Human Services (DHHS) adjusts poverty guidelines for entitlement programs such as Women, Infants and Children (WIC), and Temporary Assistance for Needy Families (TANF) for local factors. For a single person, the 2004 DHHS poverty level for Alaska for one person was \$11,630 and for a four-person household it was \$23,570 (Federal Register, 1999).

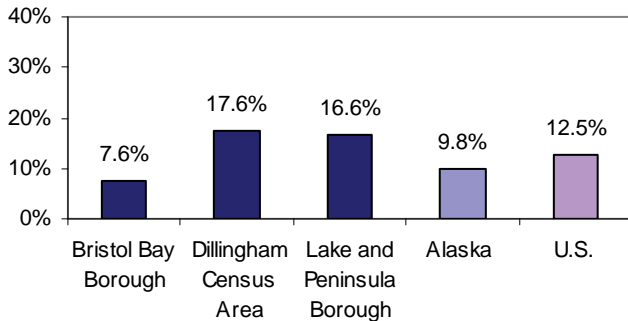
Summary:

- The percent of residents living below the federal poverty level in the Bristol Bay borough, Dillingham census area and Lake and Peninsula borough was 7.6%, 17.6%, and 16.6% respectively.
- Nearly one-quarter of children living in the Dillingham census area and Lake and Peninsula borough were living below the poverty level.

Data availability: Available by borough/census area and statewide through 2004.

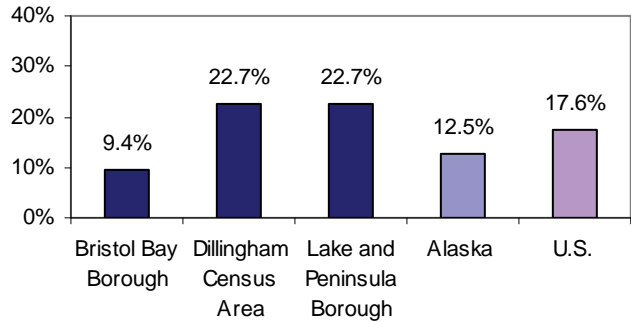
For more information: A source for the most current estimates of income and poverty is the U.S. Census' Small Area Income and Poverty Estimates program at <http://www.census.gov/hhes/www/saie/>

Figure 7. Estimated percent of Residents below Poverty Level All Races and Ages, 2004



Data source: Small Area Income and Poverty Estimates Program ⁶

Figure 8. Estimated percent of Residents below Poverty Level All Races, Under 18, 2004



Data source: Small Area Income and Poverty Estimates Program ⁶

Household Income

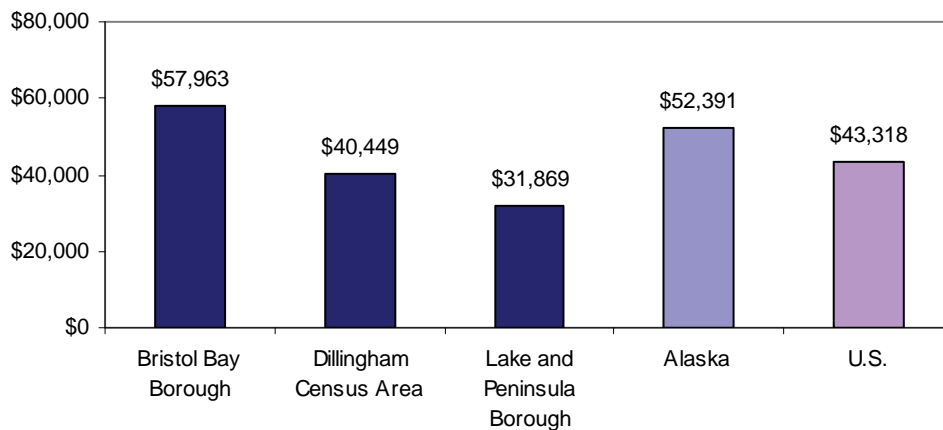
Definition: The person who was designated as head of household completed the 2000 Census form and reported household income. Income includes all monetary sources of income including wages, the Permanent Fund Dividend, Corporation Dividends and Public Assistance (Census 2000, Summary File 4, Technical Documentation, 2003). Income does not include subsistence resources.

Summary:

- The estimated median household income in Bristol Bay borough was higher than that of Alaskans statewide (\$57,963 vs. \$52,391).
- The estimated median household income in Dillingham census area and Lake and Peninsula borough was lower than that of Alaskans statewide.

Data availability: Available by Borough/Census Area and Statewide through 2003.

Figure 9. Estimated Median Household Income
All races, Age 18 and older, 2004



Data source: Small Area Income and Poverty Estimates Program ⁶

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Morbidity and Mortality

Mortality

Summary:

- The top three leading causes of death among Alaska Natives in the BBAHC service area during 1999-2003 were unintentional injury, cancer, and heart disease.
- Unintentional injury was the leading cause of death, accounting for 22.6% of all deaths in the BBAHC service area.
- The age-adjusted cancer mortality rate for BBAHC is 50% higher than for U.S. Whites (283.7 vs. 193.5/100,000, $p < .05$).
- BBAHC Alaska Natives are more than five times as likely to die of an unintentional injury as U.S. Whites (192.7 vs. 36.4/100,000, $p < .05$).
- BBAHC Alaska Natives are 50% more likely to die of suicide as U.S. Whites (17.2 vs. 11.6/100,000, $p < .05$).

Data availability: Mortality data is available by borough or census area, race, and statewide through 2005. Periodic reports on Alaska Native Mortality are published by the AN EpiCenter
<http://www.anthc.org/cs/chs/epi/>

Geographical Definition: BBAHC service area is defined as the Bristol Bay Area Service Unit.

For more information: Visit the Alaska Bureau of Vital Statistics at <http://www.hss.state.ak.us/dph/bvs/>

Table 5. Leading Causes of Death by Rank
1999-2003

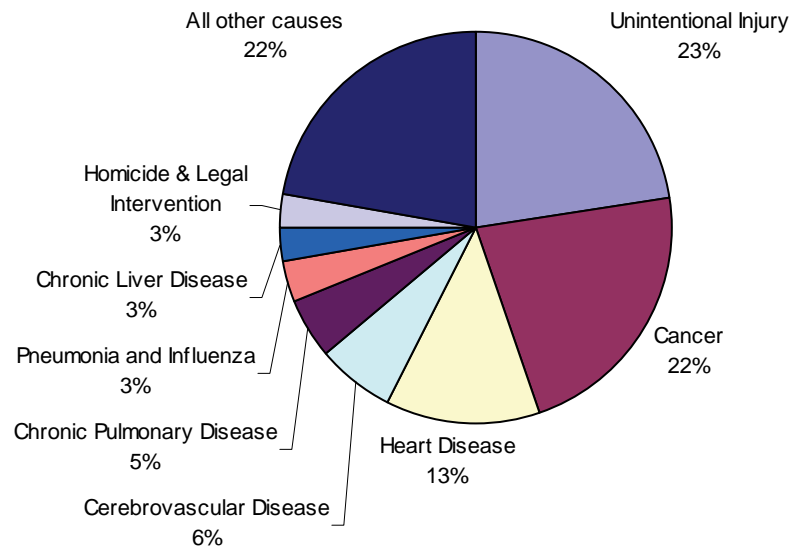
Alaska Natives (AN) BBAHC Service Area	Number	% Deaths	U.S. Whites Rank	AN Statewide Rank
1. Unintentional Injury	40	22.6%	5	3
2. Cancer	39	22.0%	2	1
3. Heart Disease	23	13.0%	1	2
4. Cerebrovascular Disease	11	6.2%	3	5
5. Chronic Pulmonary Disease	9	5.1%	4	6
6. Pneumonia and Influenza	6	3.4%	7	8
7. Chronic Liver Disease	5	2.8%	9	9
8. Homicide & Legal Intervention	5	2.8%	10	7
9. Suicide	4	2.3%	8	4
10. Diabetes Mellitus	3	1.7%	6	10
11. All other causes	32	18.1%		
Total	177	100%		

Data Source: Alaska Bureau of Vital Statistics ⁷

U.S. Data Source: Surveillance, Epidemiology, and End Results (SEER) Program ²⁰

Mortality

Figure 10. Leading Causes of Death, Alaska Natives, BBAHC Service Area, 1999-2003



Data Source: Alaska Bureau of Vital Statistics ⁷

Table 6. Leading Causes of Death Age-Adjusted Mortality Rates per 100,000, 1999-2003

Mortality Rates, age adjusted per 100,000, 1999-2003	BBAHC AN	AN Statewide	U.S. Whites	Healthy People Objective	Rate Ratio (BBAHC vs. US White)
Cancer	283.7	245.4	193.5	159.9	1.5*
Heart Disease	196.6	211.4	243.6	166.0	0.8
Unintentional Injuries	192.7	116.1	36.4	17.5	5.3*
Cerebrovascular Diseases	97.7	64.4	55.6	48.0	1.8
Suicide	17.2	36.3	11.6	5.0	1.5*
Homicide and Legal Intervention	15.1	19.0	4.0	3.0	3.8

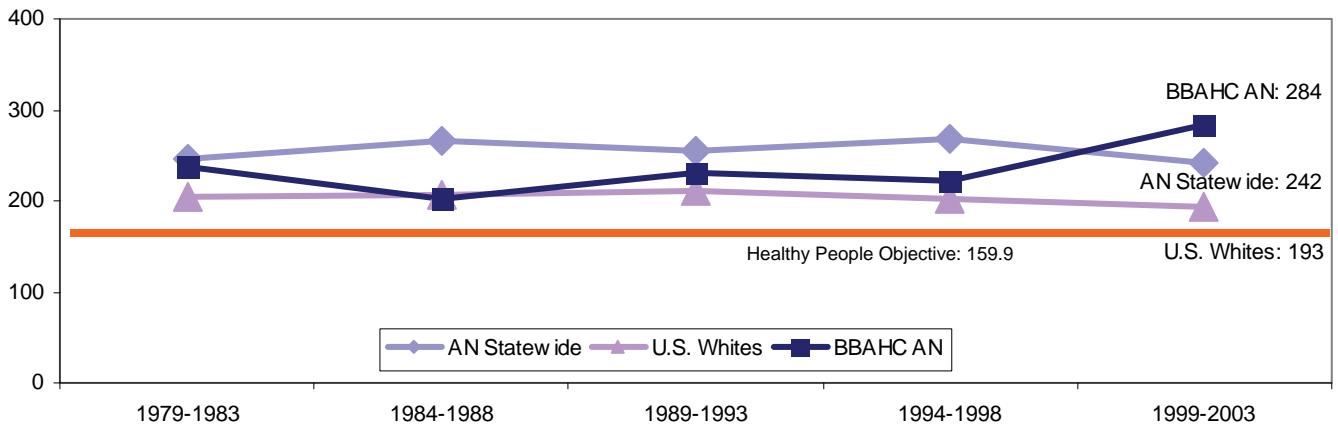
* BBAHC AN rate is significantly different from US White rate ($p < .05$);
 Alaska Data Source: Alaska Bureau of Vital Statistics⁷; Analysis Conducted by: Alaska Native Epidemiology Center
 U.S. Data Source: Surveillance, Epidemiology, and End Results (SEER) Program ²⁰

Mortality– Trends, 1979-2003

Summary:

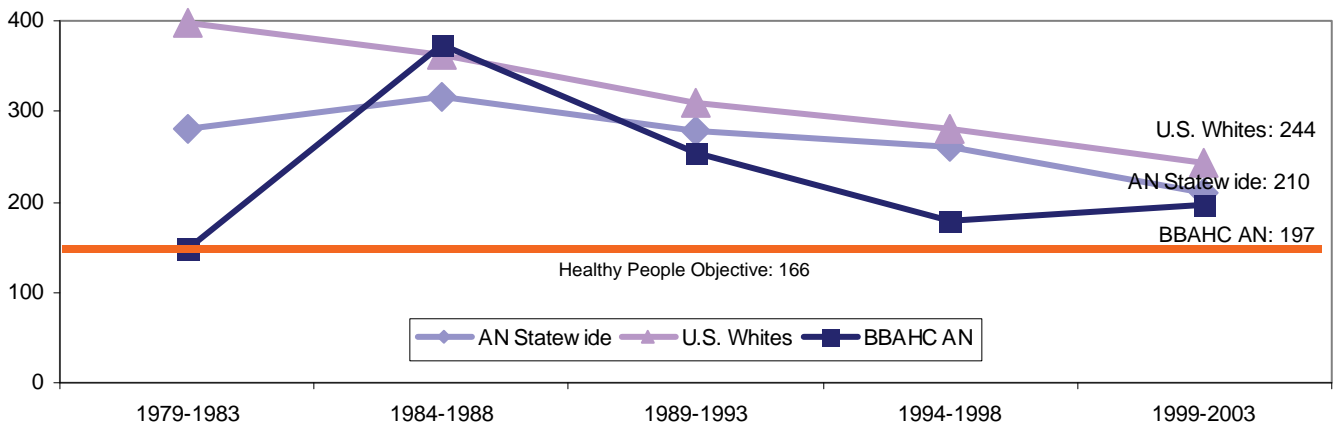
- The cancer death rate in the BBAHC service area increased 20% between 1979-1983 (236.8) and 1999-2003 (283.7). During this same time period the US White rate decreased by 4%.
- The heart disease death rate more than doubled between 1979-1988, declined until 1999 and then slightly increased until 2003.

Figure 11. Age-Adjusted Cancer Death Rates per 100,000, 5-year Intervals, 1979-2003



Data Source: Alaska Bureau of Vital Statistics ⁷
 U.S. Data Source: Surveillance, Epidemiology, and End Results (SEER) Program ²⁰

Figure 12. Age-Adjusted Heart Disease Death Rates per 100,000, 5-year Intervals, 1979-2003



Data Source: Alaska Bureau of Vital Statistics ⁷
 U.S. Data Source: Surveillance, Epidemiology, and End Results (SEER) Program ²⁰

Mortality– Trends, 1979-2003

Summary:

- During 1979-1998, there was a significant decrease in the unintentional injury death rate for Alaska Natives in the BBAHC service area. 26 Alaska Natives in the BBAHC service area died as a result of an unintentional injury during 1994-1998; 21 fewer deaths than 1979-1983. However, the rate increased during 1999-2003.
- The BBAHC suicide rate for 1999-2003 was less than half that for 1979-1983. The suicide death rate for US Whites decreased 12% between 1979-1983 and 1999-2003.

Figure 13. Age-Adjusted Unintentional Injury Death Rates per 100,000, 5-year Intervals, 1979-2003

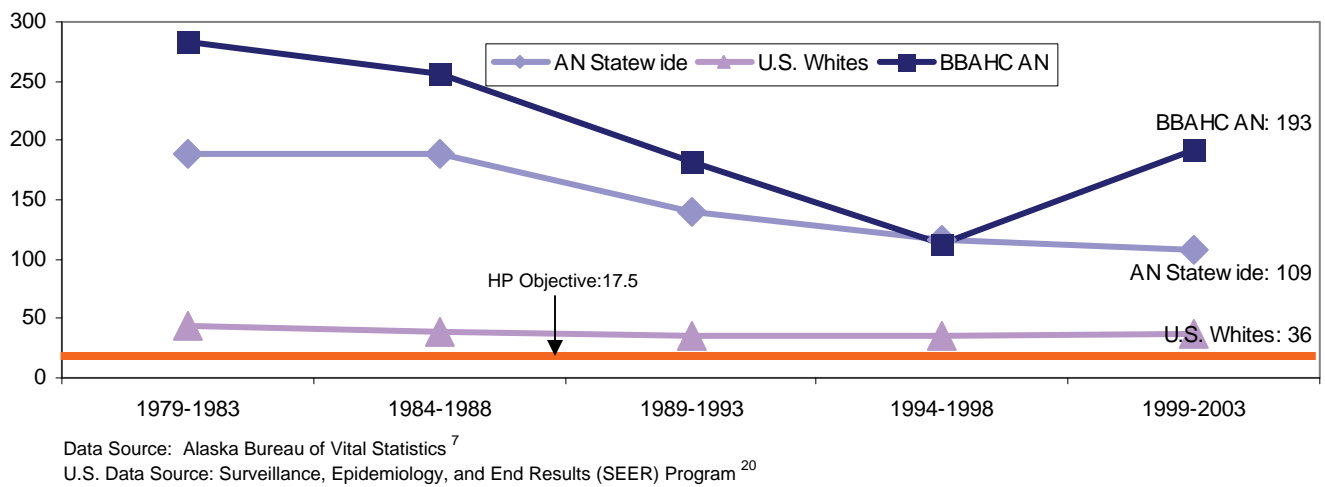
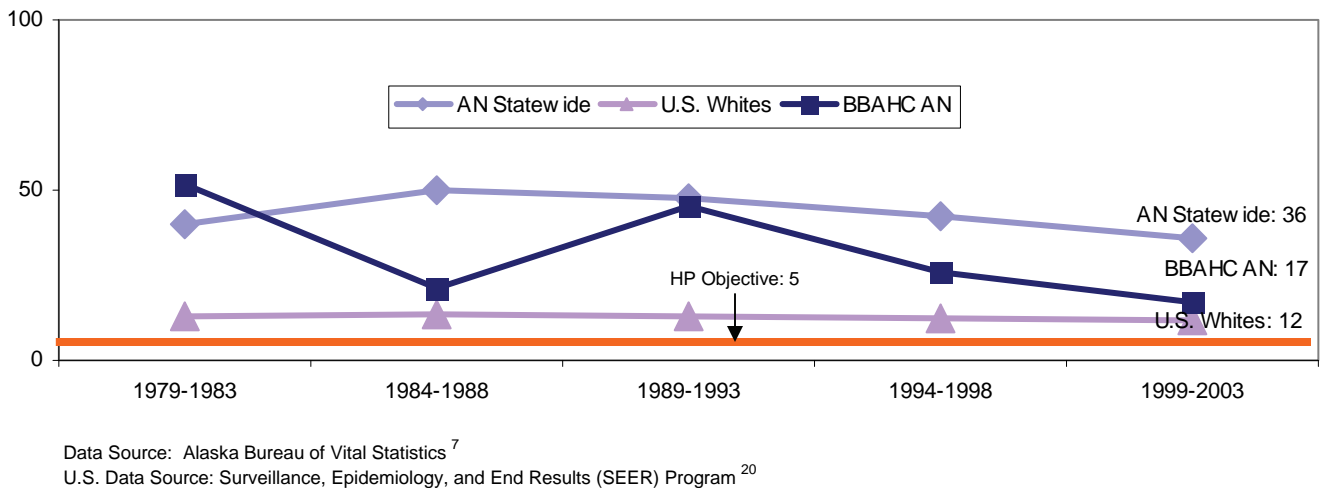


Figure 14. Age-Adjusted Suicide Death Rates per 100,000, 5-year Intervals, 1979-2003



Hospitalizations– Leading Causes of Hospital Discharge

Table 7. Hospital Discharge by ICD Recode*
All Ages, Fiscal Year 2005

Alaska Totals			
Rank	Cause	Number	% Total
1	Deliveries (Childbirth)	1,772	23.7%
2	Accidents & Injuries	1,083	14.5%
3	Pneumonia	602	8.0%
4	Complications of Pregnancy	333	4.4%
5	Infected Skin	308	4.1%
6	Heart Disease	303	4.0%
7	Alcohol Abuse	239	3.2%
8	Bronchitis, Emphysema	239	3.2%
9	Malignant Neoplasms	238	3.2%
10	Psychoses	193	2.6%
11	Urinary Tract Infections	187	2.5%
12	Bone & Joint Disorders	187	2.5%
13	Disease of the Appendix	179	2.4%
14	Gynecologic Problems & Breast	146	2.0%
15	Disease of Gall Bladder	124	1.7%
	Total Discharges	7,486	

Data Source: I.H.S. NPIRS⁸

* ICD Recode combines similar primary diagnosis into categories

Table 8. Top 15 Hospital Discharge by ICD Recode*
All Ages, Fiscal Year 2005

Kanakanak Hospital			
Rank	Cause	Number	% Total
1	Deliveries (Childbirth)	48	34.8%
2	Pneumonia	20	14.5%
3	Complications of Pregnancy	10	7.2%
4	Urinary Tract Diseases	8	5.8%
5	Accidents & Injuries	7	5.1%
6	Nutritional & Metabolic Disorders	6	4.3%
7	Disease of Gall Bladder	5	3.6%
8	Neuroses & Personality Disorders	4	2.9%
9	Heart Disease	4	2.9%
10	Bronchitis, Emphysema	4	2.9%
11	Infected Skin	4	2.9%
12	Cerebrovascular Disease	3	2.2%
	Total Discharges	138	

Data Source: I.H.S. NPIRS⁸

* ICD Recode combines similar primary diagnosis into categories

Hospitalizations– Leading Causes of Inpatient Days

Table 9. Top 15 Inpatient Days by ICD Recode*
All Ages, Fiscal Year 2005

Alaska Totals			
Rank	Cause	Number	% Total
1	Accidents & Injuries	6,046	16.7%
2	Deliveries (childbirth)	4,294	11.8%
3	Pneumonia	3,322	9.2%
4	Alcohol Abuse	3,241	8.9%
5	Malignant Neoplasms	2,295	6.3%
6	Infected Skin	1,863	5.1%
7	Psychoses	1,316	3.6%
8	Heart Disease	1,276	3.5%
9	Bone & Joint Disorders	1,120	3.1%
10	Bronchitis, Emphysema	988	2.7%
11	Urinary Tract Diseases	956	2.6%
12	Cerebrovascular Diseases	871	2.4%
13	Complications of Pregnancy	812	2.2%
14	Diseases of the Nervous System	716	2.0%
15	Arthritis	613	1.7%
	Total Inpatient Days	36,278	

Data Source: I.H.S. NPIRS⁸

* ICD Recode combines similar primary diagnosis into categories

Table 10. Top 15 Inpatient Days by ICD Recode*
All Ages, Fiscal Year 2005

Kanakanak Hospital			
Rank	Cause	Number	% Total
1	Deliveries (childbirth)	103	25.1%
2	Pneumonia	68	16.5%
3	Tuberculosis	55	13.4%
4	Bone & Joint Disorders	27	6.6%
5	Heart Disease	19	4.6%
6	Urinary Tract Diseases	15	3.6%
7	Complications of Pregnancy	14	3.4%
8	Infected Skin	12	2.9%
9	Nutritional & Metabolic Disorders	11	2.7%
10	Bronchitis, Emphysema	11	2.7%
11	Cirrhosis of the Liver	11	2.7%
12	Accidents & Injuries	11	2.7%
13	Cerebrovascular Disease	9	2.2%
14	Disease of Gall Bladder	9	2.2%
15	Neuroses & Personality Disorders	8	1.9%
	Total Inpatient Days	411	

Data Source: I.H.S. NPIRS⁸

* ICD Recode combines similar primary diagnosis into categories

Hospitalizations– Leading Causes of Outpatient Visits

Table 11. Top 15 Outpatient Visits by ICD Recode
All Ages, Fiscal Year 2005

Alaska Totals			
Rank	Cause	Number	% Total
1	Upper Respiratory Problems	43,401	7.6%
2	Accidents & Injuries	37,981	6.6%
3	Pregnancy, childbirth & puerperium	34,770	6.1%
4	Hospital Med/Surgical Follow-up	33,154	5.8%
5	Bone & Joint Disorders	30,234	5.3%
6	Assessment of Symptoms	29,347	5.1%
7	Neuroses & Non-Psychotic Disorders	28,803	5.0%
8	Tests Only (Lab, X-Ray, Screening)	25,997	4.5%
9	Musculoskeletal Disorder	22,724	4.0%
10	Hypertension	22,418	3.9%
11	Otitis Media	16,098	2.8%
12	Refractive Error	15,940	2.8%
13	Diabetes Mellitus	14,593	2.6%
14	Physical Examinations	13,715	2.4%
15	Gynecologic Problems & Breast	13,321	2.3%
Total Outpatient Visits		571,455	

Data Source: I.H.S. NPIRS⁸

* ICD Recode combines similar primary diagnosis into categories

Table 12. Top 15 Outpatient Visits by ICD Recode
All Ages, Fiscal Year 2005

Kanakanak Hospital			
Rank	Cause	Number	% Total
1	Neuroses & Non-Psychotic Disorders	2657	8.7%
2	Hypertension	2527	8.3%
3	Upper Respiratory Problems	2009	6.6%
4	Bone & Joint Disorders	1517	5.0%
5	Assessment of Symptoms	1510	4.9%
6	Physical Examinations	1350	4.4%
7	Hospital Med/Surgical Follow-up	1339	4.4%
8	Accidents & Injuries	1339	4.4%
9	Pregnancy, childbirth & puerperium	1253	4.1%
10	Respiratory Allergies	1210	4.0%
11	Gastrointestinal Disease	1056	3.5%
12	Diabetes Mellitus	950	3.1%
13	Arthritis	909	3.0%
14	Otitis Media	765	2.5%
15	Refractive Error	713	2.3%
Total Outpatient Visits		30,569	

Data Source: I.H.S. NPIRS⁸

Health Promotion

Tobacco Use– Smoking

Definition: Current smokers are adults who have smoked at least 100 cigarettes in their lifetime and currently smoke every day or some days.

Healthy People 2010, Objective 27.1a: Reduce tobacco use by adults to 12%

Healthy Alaskans 2010, Objective 3.8: Reduce the percentage of adults who smoke cigarettes to 14%.

Summary:

- The self-reported rates of smoking in the BBAHC service area between 1993-1995 and 2002-2004 did not change.
- The BBAHC Alaska Natives self-reported smoking rate for 2002-2004 was 43%. This is about the same as for Alaska Natives statewide, 44%. However, it is two times the U.S. rate (22%).

Data availability: Available by race, gender, BRFSS regions, and statewide, 1991-2006.

Geographical Definition: BBAHC AN includes all respondents residing in communities served by BBAHC.

For more information: For Alaska, go to <http://www.hss.state.ak.us/dph/chronic/hsl/brfss/default.htm>. For nationwide data, go to <http://www.cdc.gov/brfss/> or

Note: See Technical Notes regarding the interpretation of estimates of BRFSS data analyzed on a tribal health regional level.

Table 13. Current Smokers, BBAHC Alaska Natives, 18 years and older

	n	weighted %	N
<i>Gender (2000-2004)</i>			
Male	37	41%	92
Female	40	39%	101
Total	77	40%	193
<i>Years</i>			
1993-1995	43	44%	93
1996-1998	45	42%	113
1999-2001	47	37%	110
2002-2004	51	43%	127

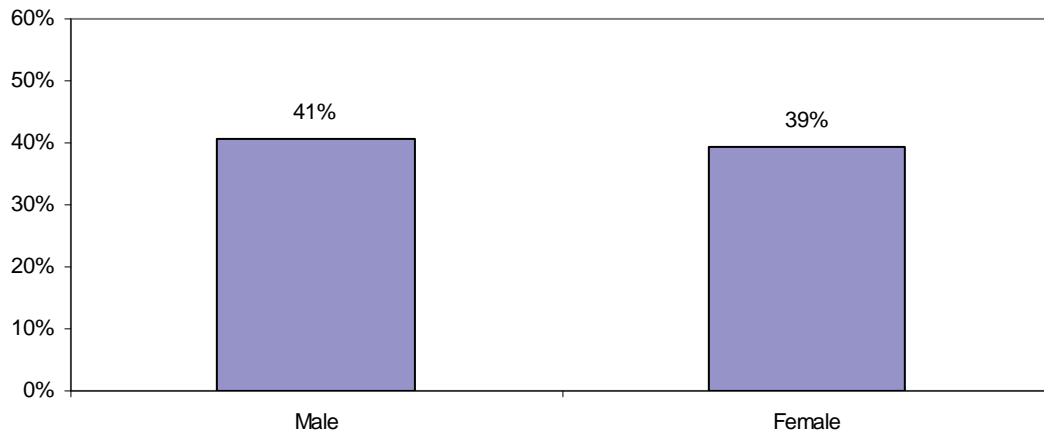
n= number of respondents who report they have smoked at least 100 cigarettes in their lifetime and currently smoke

N=total number of respondents in this subgroup

Data Source: Alaska Behavioral Risk Factor Surveillance System ⁹

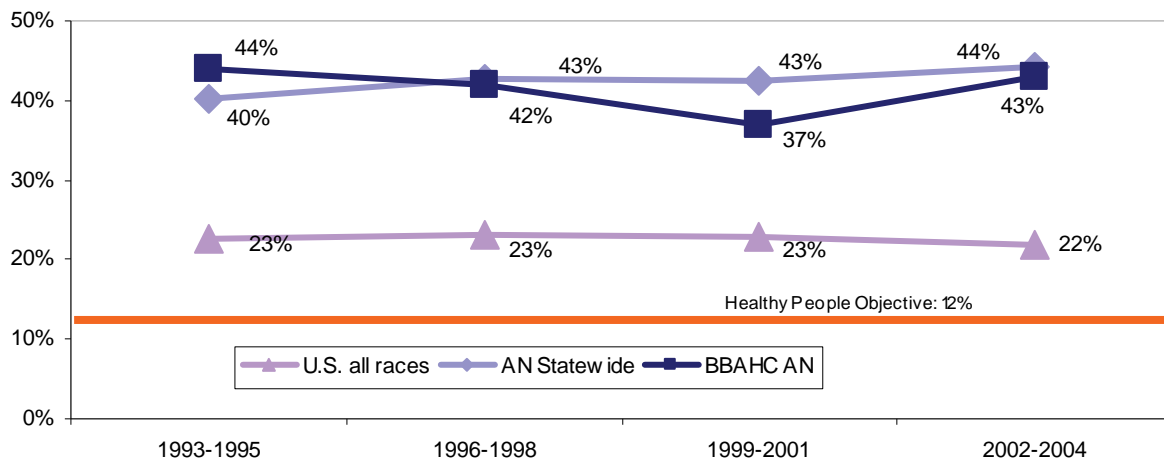
Tobacco Use– Smoking

Figure 15. Current Smokers by Gender, BBAHC Alaska Natives 18 years and older, 2000-2004 (weighted)



Data Source: Alaska Behavioral Risk Factor Surveillance System ⁹
 Analysis conducted by: AN EpiCenter

Figure 16. Current Smokers, BBAHC Alaska Natives, 18 years and older, 1993-2004 (weighted)



Data Source: Alaska Behavioral Risk Factor Surveillance System ⁹
 Analysis conducted by: AN EpiCenter
 U.S. Data Source: Behavioral Risk Factor Surveillance System ²¹

Tobacco Use– Smokeless Tobacco

Definition: Adults who currently use chewing tobacco, snuff or both.

Healthy People 2010, Objective 27.1b: Reduce spit tobacco use by adults to 0.4%.

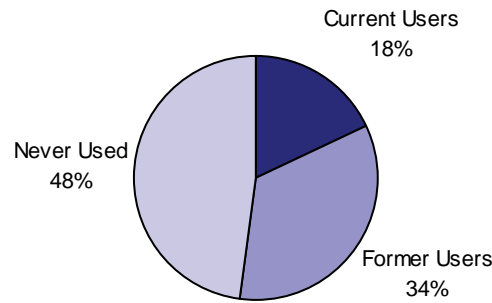
Healthy Alaskans 2010, Objective 3.9: Reduce the percentage of adults who use smokeless tobacco to 3%

Summary:

- Approximately 2 out of 10 Alaska Natives adults (18%) in the BBAHC service area are current smokeless tobacco users.
- Alaska Natives in the BBAHC service area appear to have smokeless tobacco rates greater than that of all Alaska Natives statewide and triple that of all Alaskans.

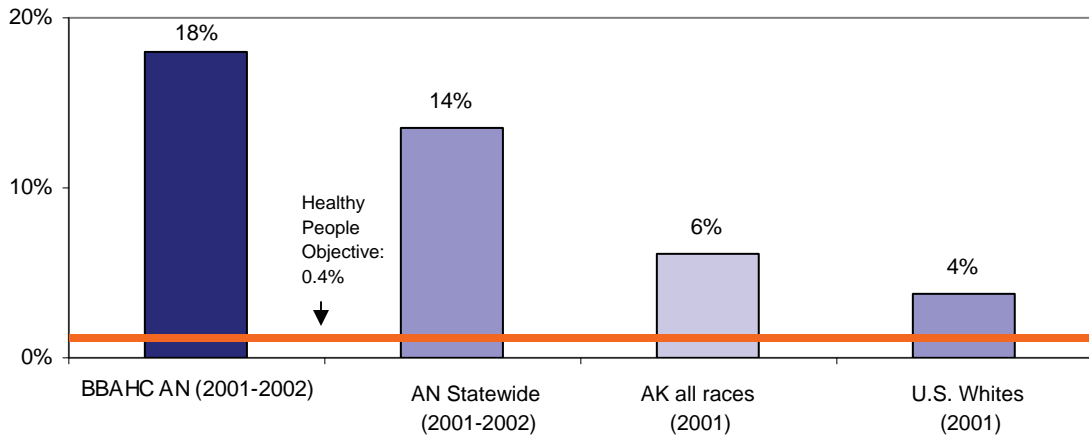
Geographical Definition: BBAHC AN includes all respondents residing in communities served by BBAHC.

Figure 17. Smokeless Tobacco Status
BBAHC Alaska Natives, 2001-2002 (weighted, n=75)



Data Source: Alaska Behavioral Risk Factor Surveillance System⁹

Figure 18. Current Smokeless Tobacco Users, 18 years and older (weighted)



Data Source: Alaska Behavioral Risk Factor Surveillance System⁹
Analysis conducted by: AN EpiCenter

Physical Activity

Definition: Adults who participated in moderate physical activity (30 or more minutes a day, 5 or more days per week) or vigorous physical activity (20 or more minutes a day, 3 times or more a week).

Healthy People 2010, Objective 22.2: Increase the proportion of adults who engage in regular, preferably daily, moderate physical activity to 30%.

Healthy Alaskans 2010, Objective 1.2: Increase the proportion of adults who engage in regular, preferable daily, moderate physical activity to 40%.

Summary:

- The percent of Alaska Natives in the BBAHC service area who meet physical activity recommendations is about 12% less than that for all Alaskans.

Geographical Definition: BBAHC AN includes all respondents residing in communities served by BBAHC.

Note: For a description of CDC recommendations for physical activity, visit <http://www.cdc.gov/nccdphp/dnpa/physical/recommendations/adults.htm>

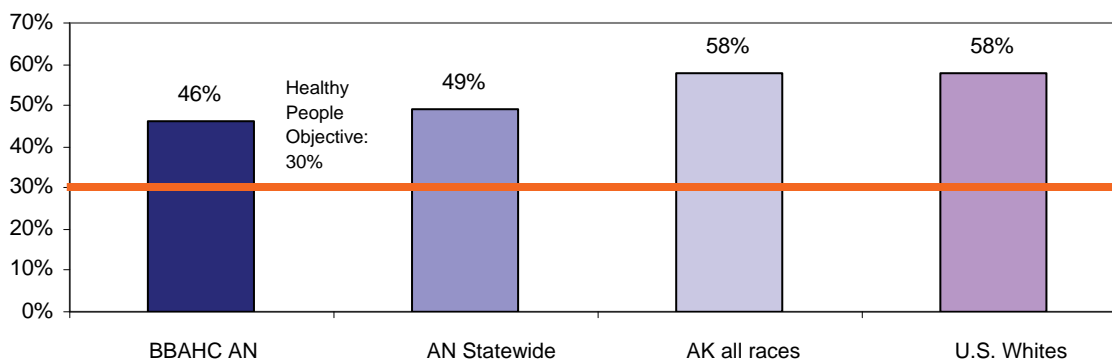
**Table 14. Meets moderate or vigorous physical activity recommendations
BBAHC Alaska Natives, 18 years and older, 2001 & 2003**

	n	Weighted %	N
<i>Population</i>			
BBAHC AN	33	46%	72
AN Statewide	262	49%	533
AK all race	1450	58%	2545
U.S. Whites	1450	58%	2516

Data Source: Alaska Behavioral Risk Factor Surveillance System⁹
Analysis conducted by: AN EpiCenter

n= number of respondents who meet physical activity recommendations
N=total number of respondents in this subgroup

**Figure 19. Meets moderate or vigorous physical activity recommendations, 2001 & 2003
(weighted)**



Data Source: Alaska Behavioral Risk Factor Surveillance System⁹
Analysis conducted by: AN EpiCenter
U.S. Data Source: Behavioral Risk Factor Surveillance System²¹

Obesity

Definition: Obesity is defined as having a body mass index (BMI) of 30 or greater (BMI table in glossary).

Healthy People 2010, Objective 19.1 and 19.2: Increase proportion of adults who are at a healthy weight ($18.5 \leq \text{BMI} < 25$) to 60%. Reduce the proportion of adults who are obese to 15%.

Healthy Alaskans 2010, Objective 4.4: Reduce the proportion of adults who meet criteria for overweight to 30%, and reduce obesity to 18%.

Summary:

- Over one-third of Alaska Native males and slightly less than one-third of Alaska Native females in the BBAHC service area have a BMI over 30.
- The rates of obesity in the BBAHC service area increased by 13% between 1993 and 2004.

Data availability: Available by race, gender, 5 BRFS regions, and statewide, 1991-2006.

Geographical Definition: BBAHC AN includes all respondents residing in communities served by BBAHC.

For more information: For Alaska, go to <http://www.hss.state.ak.us/dph/chronic/hsl/brfss/default.htm>. For nationwide data, go to <http://www.cdc.gov/brfss/>

Note: See cautionary note, Appendix B, regarding the interpretation of estimates of BRFS data analyzed on a tribal health regional level.

Table 15. Obesity (BMI \geq 30), BBAHC Alaska Natives, 18 years and older

	n	weighted %	N
<i>Gender (2000-2004)</i>			
Male	36	36%	95
Female	30	27%	99
Total	66	32%	194
<i>Years</i>			
1993-1995	19	21%	87
1996-1998	31	30%	105
1999-2001	32	30%	108
2002-2004	48	34%	129

Data Source: Alaska Behavioral Risk Factor Surveillance System⁹

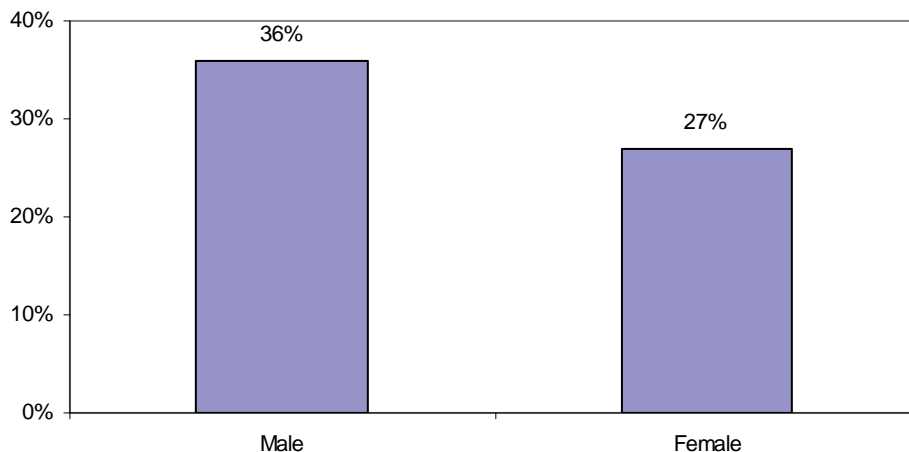
Analysis conducted by: AN EpiCenter

n= number of respondents who are obese

N= total number of respondents in this subset

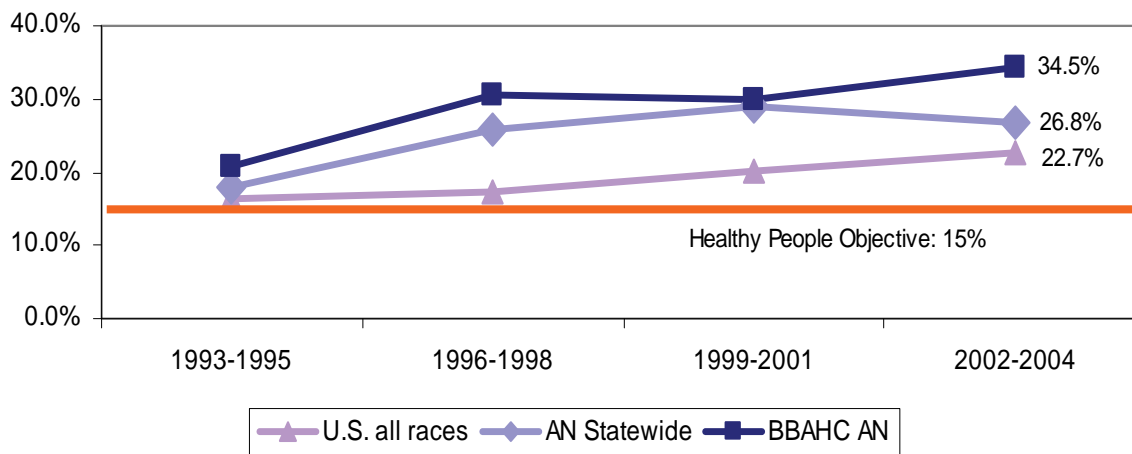
Obesity

Figure 20. Obesity (BMI≥30) by Gender
BBAHC Alaska Natives, 18 years and older, 2000-2004 (weighted)



Data Source: Alaska Behavioral Risk Factor Surveillance System ⁹
 Analysis conducted by: AN EpiCenter

Figure 21. Obesity (BMI≥30), 18 years and older, 1993-2004 (weighted)



Data Source: Alaska Behavioral Risk Factor Surveillance System ⁹
 Analysis conducted by: AN EpiCenter
 U.S. Data Source: Behavioral Risk Factor Surveillance System ²¹

Substance Abuse– Binge Drinking

Definition: Binge drinking is defined as having 5 or more drinks on one or more occasion in the past 30 days.

Healthy People 2010, Objective 26.11c: Reduce the percentage of adults who engage in binge drinking during the past month to 6%.

Healthy Alaskans 2010, Objective 4.4: Reduce binge drinking among adults to 13%.

Summary:

- The self-reported rates of binge drinking are slightly lower for BBAHC Alaska Natives than the binge drinking rates for Alaska Natives statewide.
- The self-reported rates of binge drinking decreased by 6% between 1993 and 2004.

Data availability: Available by race, gender, 5 BRFSS regions, and statewide, 2001-2004.

Geographical Definition: BBAHC AN includes all respondents residing in communities served by BBAHC.

For more information: For Alaska, go to <http://www.hss.state.ak.us/dph/chronic/hsl/brfss/default.htm>. For nationwide data, go to <http://www.cdc.gov/brfss/> or

Note: See Cautionary Note, Appendix B, regarding the interpretation of estimates of BRFSS data analyzed

Table 16. Alcohol Use- Binge Drinking, BBAHC Alaska Natives, 18 years and older

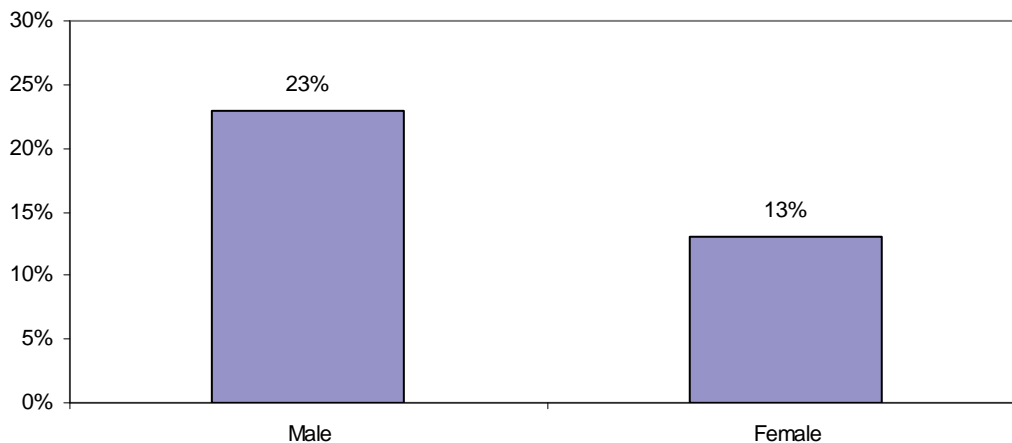
	n	weighted %	N
<i>Gender (2001-2004)</i>			
Male	16	23%	78
Female	11	13%	80
Total	27	19%	158
<i>Years</i>			
1993-1995	23	24%	94
1996-1998	29	24%	113
1999-2001	28	25%	110
2002-2004	20	18%	125

Data Source: Alaska Behavioral Risk Factor Surveillance System ⁹
 Analysis conducted by: AN EpiCenter

n= number of respondents who report they have binge drink
N=total number of respondents in this subgroup

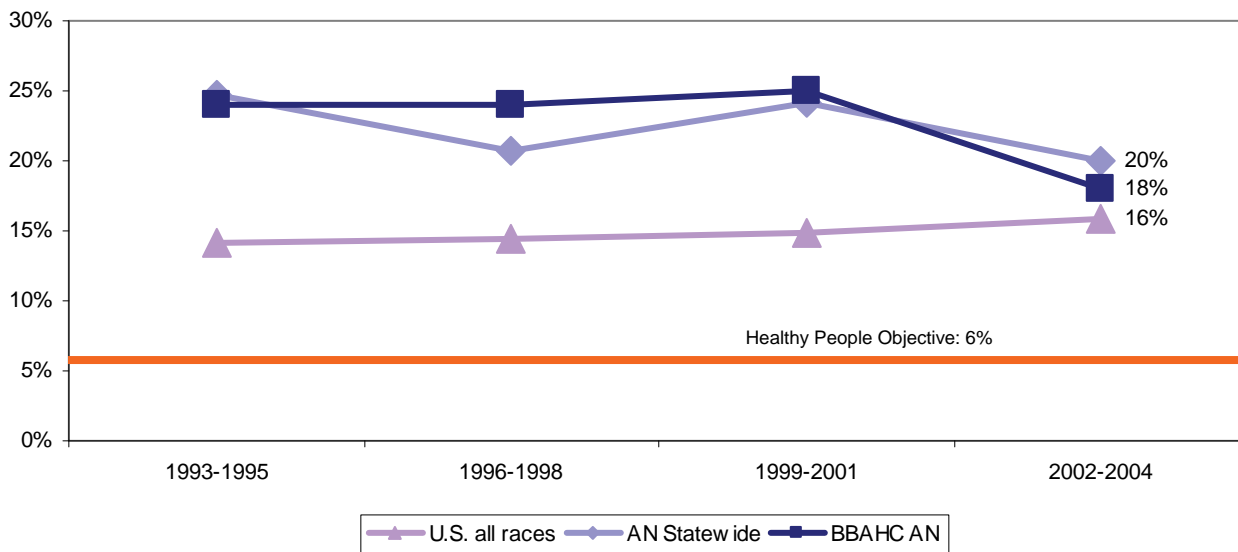
Substance Abuse– Binge Drinking

Figure 22. Binge Drinking by Gender
BBAHC Alaska Natives, 18 years and older, 2001-2004 (weighted)



Data Source: Alaska Behavioral Risk Factor Surveillance System⁹
 Analysis conducted by: AN EpiCenter

Figure 23. Binge Drinking, 18 years and older, 1993-2004 (weighted)



Data Source: Alaska Behavioral Risk Factor Surveillance System⁹
 Analysis conducted by: AN EpiCenter
 U.S. Data Source: Behavioral Risk Factor Surveillance System²¹

Overweight– Adolescents

Definition: In children, overweight is defined as having a body mass index (BMI) greater than or equal to the 95th percentile (based on CDC growth charts).

Healthy People 2010, Objective 19-3c: Reduce the proportion of children and adolescents who are overweight or obese to 5%.

Healthy Alaskans 2010, Objective 1.5: Reduce the proportion of adolescents who are overweight to 5%.

Summary:

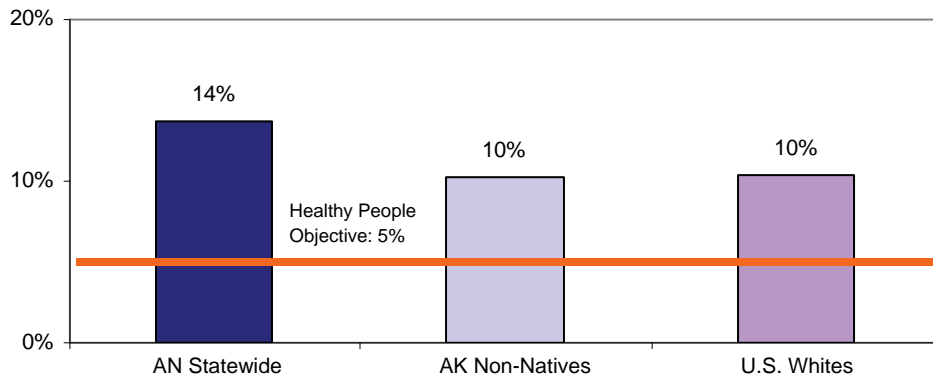
- According to data from the 2003 Youth Risk Behavior Survey, 14% of Alaska Native high school students are overweight. This is slightly higher than the rate for Alaska non-Natives and U.S. Whites.

Data availability: Alaska data is available for 1995, 1999 and 2003. Sample size is not large enough to be broken down to the regional level. Due to a small sample size from 2005, no data was able to be analyzed.

For more information: For Alaska Youth Risk Behavior Survey Reports (YRBS), go to <http://www.hss.state.ak.us/dph/chronic/school/YRBS.htm>

For state and national level data, visit CDC Youth Risk Behavior Surveillance System website at <http://apps.nccd.cdc.gov/yrbss/>

Figure 24. Percent of high school students who are overweight 2003 (weighted, n=7668)



Data Source: Alaska Youth Risk Behavior Survey¹⁰
 US Data Source: Youth Risk Behavior Survey²²

Vigorous Physical Activity– Adolescents

Definition: Vigorous physical activity for adolescents is defined as exercising or participating in sports activities for at least 20 minutes that cause sweating and heavy breathing on 3 or more of the past 7 days.

Healthy People 2010, Objective 22-7: Increase the proportion of adolescents who engage in vigorous physical activity to 85%.

Healthy Alaskans 2010, Objective 1.5: Increase the proportion of adolescents who engage in vigorous physical activity to 85%.

Summary:

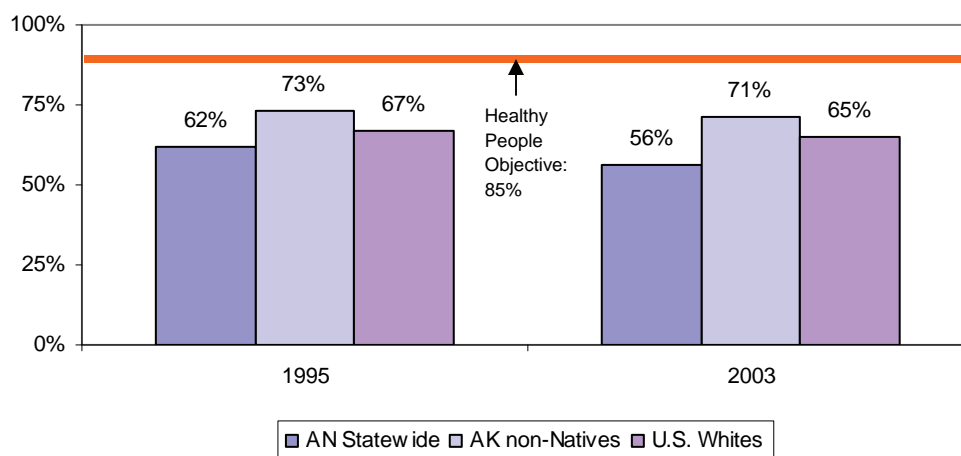
- 56% of Alaska Native high school students engaged in vigorous physical activity. This was 15% less than Alaska non-Native students and 9% lower than U.S. Whites.
- The rates of vigorous physical activity among adolescents appear to have decreased between 1995 and 2003 among AK Natives, AK Non-Natives and U.S. Whites.

Data availability: available by race, statewide. Sample size is not large enough to be broken down to the regional level. Due to a small sample size from 2005, no data was able to be analyzed.

For more information: For Alaska Youth Risk Behavior Survey Reports (YRBS), go to <http://www.hss.state.ak.us/dph/chronic/school/YRBS.htm>

For state and national level data, visit CDC Youth Risk Behavior Surveillance System website at <http://apps.nccd.cdc.gov/yrbss/>

Figure 25. Percent of high school students who engage in vigorous physical activity 1995 and 2003 (n=7914, weighted)



Data Source: Alaska Youth Risk Behavior Survey¹⁰
 US Data Source: Youth Risk Behavior Survey²²

Tobacco Use– Adolescents

Definition: Tobacco use is defined as having smoked cigarettes on one or more of the past 30 days.

Healthy People 2010, Objective 27.2b: Reduce cigarette smoking by adolescents to 17%

Healthy Alaskans 2010, Objective 3.1: Reduce cigarette smoking by adolescents to 16%.

Summary:

- In 2003, 44% of Alaska Natives high school students smoked cigarettes on one or more of the past 30 days. This was an 18% decrease from 1995.
- The percent of Alaska Native high school students who used chewing tobacco or snuff during the past 30 days did not decrease between 1995 and 2003 as compared to the percent of non-Native high school students which decreased by half over the 8-year period (15% to 7%).

Data availability: Alaska data is available for 1995, 1999 and 2003. Sample size is not large enough to be broken down to the regional level. Due to a small sample size from 2005, no data was able to be analyzed.

For more information: For Alaska Youth Risk Behavior Survey Reports (YRBS), go to <http://www.hss.state.ak.us/dph/chronic/school/YRBS.htm>

For state and national level data, visit CDC Youth Risk Behavior Surveillance System website at <http://apps.nccd.cdc.gov/yrbss/>

Tobacco Use— Adolescents

Figure 26. Percent of high school students who smoked cigarettes on one or more of the past 30 days, 1995 and 2003 (n=7243, weighted)

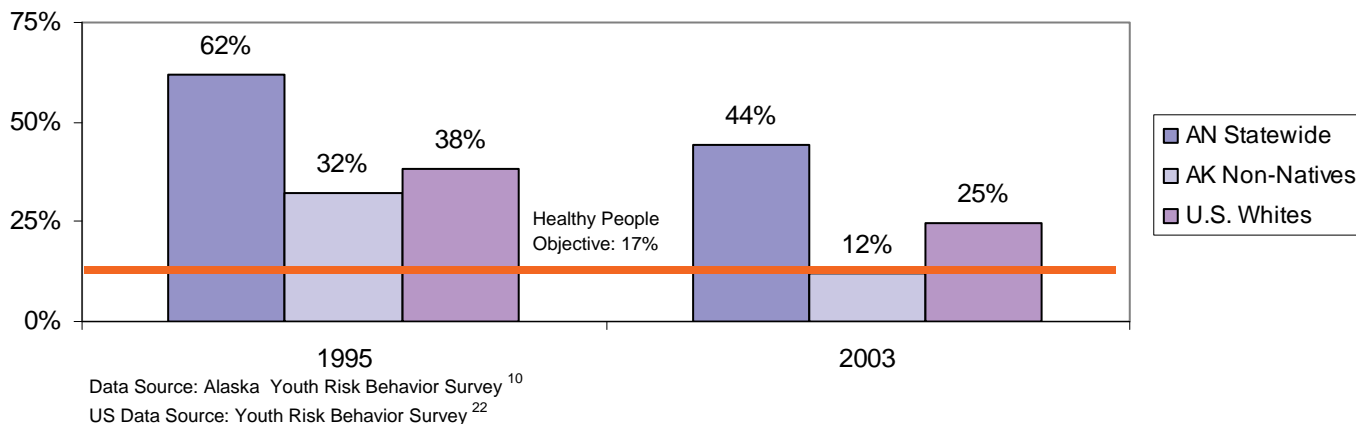


Figure 27. Percent of high school students who used chewing tobacco or snuff on one or more of the past 30 days, 1995 and 2003 (n=7678, weighted)

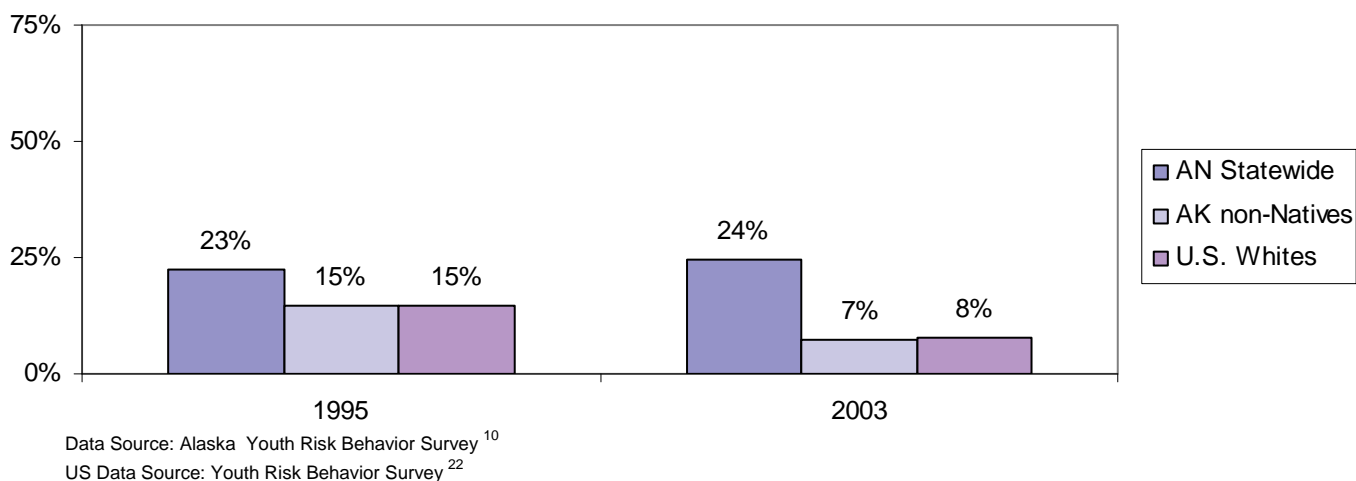
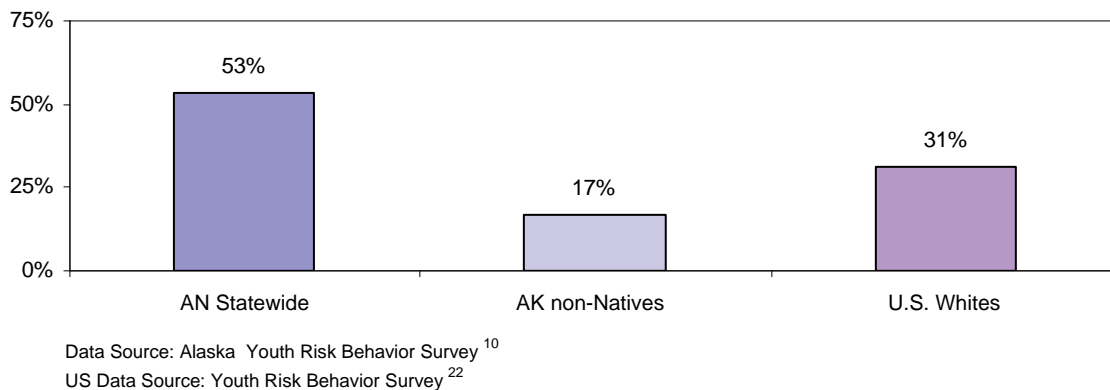


Figure 28. Percent of high school students who used any tobacco on one or more of the past 30 days, 2003 (n=7099, weighted)



Substance Abuse– Adolescents

Definition: Substance abuse is defined as having used alcohol, marijuana or cocaine in the past 30 days.

Healthy People 2010, Objective 26.10a: Increase the proportion of adolescents not using alcohol or any illicit drugs during the past 30 days to 89% (Decrease proportion who use to 11%).

Healthy Alaskans 2010, Objective 4.7: Increase the proportion of adolescents not using alcohol or any illicit drugs during the past 30 days to 60% (Decrease proportion who use to 40%).

Summary:

- The percent of Alaska Native high school students who report having at least one drink of alcohol on one or more of the past 30 days was smaller than for U.S. Whites (38% vs. 47%).
- A little over one-third (36%) of AK Native high school students report using marijuana during one or more of the past 30 days compared to 22% of U.S. Whites.
- The percent of AK Native high school students tried a form of cocaine in the last month was similar to that for U.S. Whites (3% vs. 4%).

Data availability: Alaska data is available for 1995, 1999 and 2003. Sample Size is not large enough to be broken down to the regional level. Due to a small sample size from 2005, no data was able to be analyzed.

For more information: For Alaska Youth Risk Behavior Survey Reports (YRBS), go to <http://www.hss.state.ak.us/dph/chronic/school/YRBS.htm>

For state and national level data, visit CDC Youth Risk Behavior Surveillance System website at <http://apps.nccd.cdc.gov/yrbss/>

Substance Abuse– Adolescents

Figure 29. Percent of high school students who had at least one drink of alcohol on one or more of the past 30 days, 1995 and 2003 (weighted, n=7496)

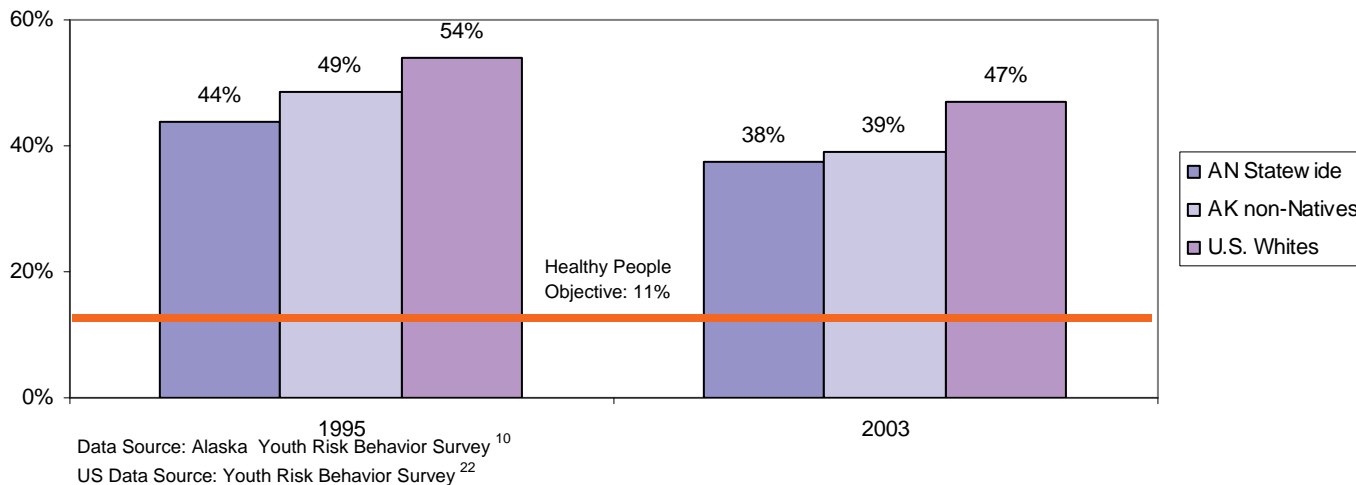


Figure 30. Percent of high school students who used marijuana on one or more of the past 30 days, 1995 and 2003 (weighted, n=7506)

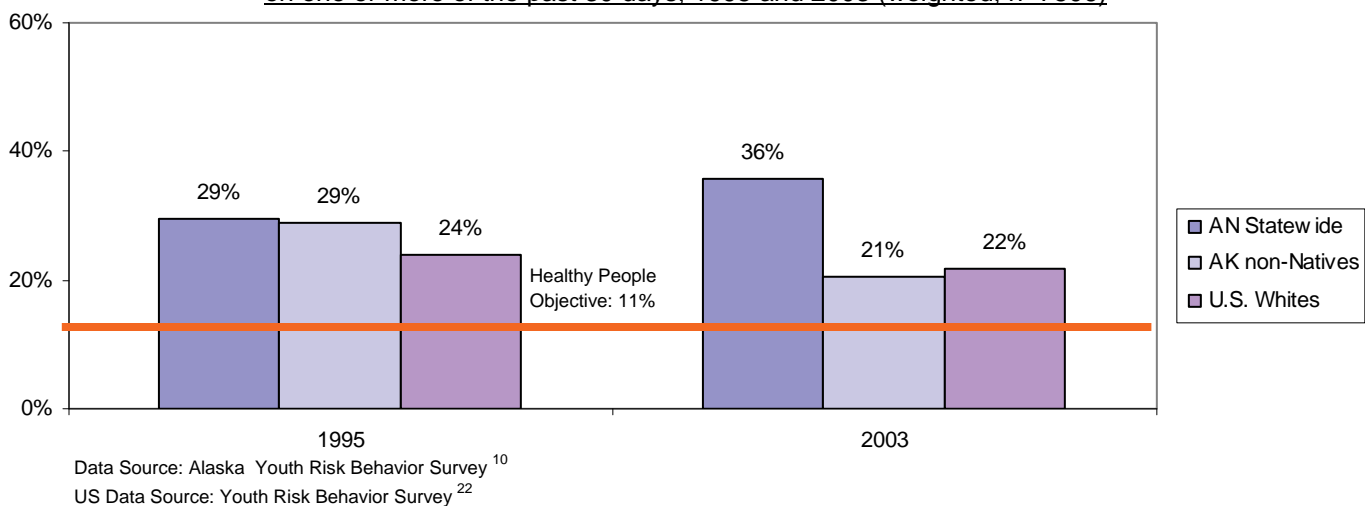
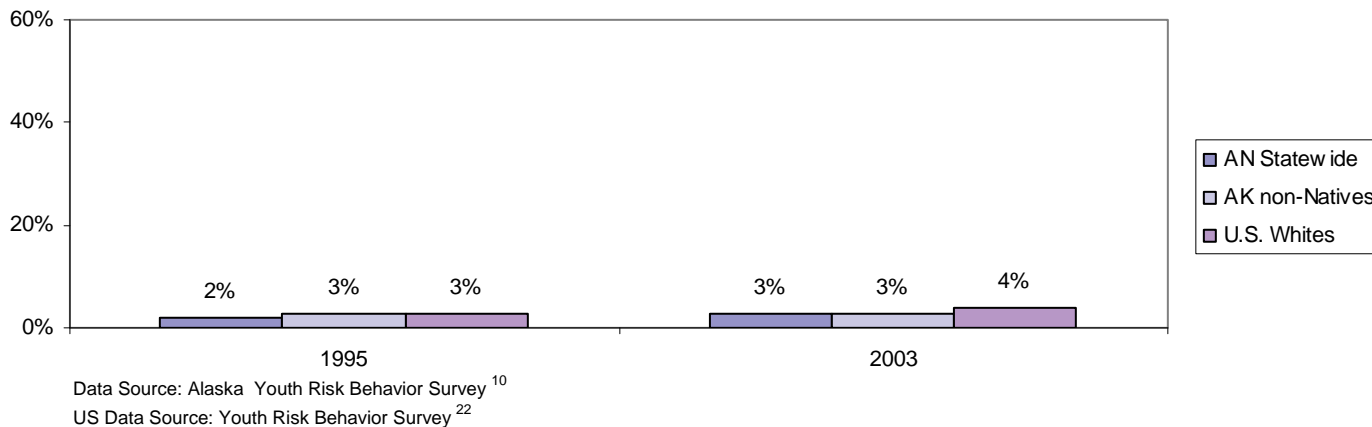


Figure 31. Percent of high school students who used any form of cocaine, including powder, crack or freebase on one or more of the past 30 days, 1995 and 2003 (weighted, n=7891)



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Health Protection

Unintentional Injury Death– Leading Causes

Summary:

- Air transport was the leading cause of unintentional injury death in the BBAHC service area between 1999-2005, comprising nearly one quarter of all unintentional injury deaths.
- Unintentional injuries resulted in the deaths of 60 Alaska Natives in the BBAHC Service area during 1999-2005.

Data availability: Injury death data is available at the tribal health regional level, by census area, race and statewide. Data is complete through 2005.

Geographical Definition: BBAHC service area is defined as the Bristol Bay, Lake and Peninsula boroughs and Dillingham census area combined.

For more information: For injury data on Alaska Natives, contact ANTHC's Injury Prevention Program at 907-729-3513 or visit their website at <http://www.anthc.org/cs/dehe/envhlth/injprev/> Or visit the Alaska Bureau of Vital Statistics at <http://www.hss.state.ak.us/dph/bvs/>

Table 17. Leading Causes of Unintentional Injury Death, Alaska Natives, BBAHC service area 1999-2005

Cause	No. of Deaths	% of Total
1. Air Transport	14	23.3%
2. Off Road Vehicle	11	18.3%
3. Water Transport	9	15.0%
4. Drowning	9	15.0%
Total Deaths, All Causes	60	

Data Source: Alaska Bureau of Vital Statistics ¹¹
 Analysis Conducted by: AN EpiCenter

Injury Hospitalizations

Definition: An injury hospitalization is defined as having sustained an injury that results in either inpatient admission or transfer to an acute care facility.

Healthy People 2010, Objective 15.14: Reduce nonfatal unintentional injuries

Healthy Alaskans 2010, Objective 8.2: Reduce hospitalizations due to nonfatal unintentional injuries to 57/10,000 population

Summary:

- During 1991-2003, there were 970 injury hospitalizations to Alaska Natives in the BBAHC service area.
- BBAHC unintentional injury hospitalization rate is 112.8/10,000 (p. 48), slightly higher than for Alaska Natives statewide (99.8 per 10,000).
- Falls were the most common cause of injury hospitalization for residents living in the BBAHC service area, accounting for 29% of all injury hospitalizations.
- ATV injury accounted for more than one out of every ten injury hospitalizations in the BBAHC service area.
- The BBAHC service area has one of the lowest suicide attempt rates of all service areas (12.8 per 10,000).

Data availability: The Alaska Trauma Registry tracks all injury hospitalizations.

Geographical Definition: BBAHC service area is defined as the Bristol Bay, Lake and Peninsula boroughs and Dillingham census area combined.

For more information: For injury data on Alaska Natives, contact ANTHC's Injury Prevention Program at 907-729-3513 or visit their website at <http://www.anthc.org/cs/dehe/envhlth/injprev/> or visit the State of Alaska Trauma Registry at the http://www.hss.state.ak.us/dph/chems/injury_prevention/trauma.htm

**Table 18. Five Leading Causes of Non-Fatal Injury Hospitalization by Tribal Health Organization
Alaska Natives, All Ages, Both Sexes, 1991-2003**

Rank	Tribal Health Organization									Total
	ASNA	BBAHC	KANA	Maniilaq	NSHC	SCF	Southeast	TCC	YKHC	
1	Falls 245	Falls 280	Falls 95	Falls 267	Falls 328	Falls 1,152	Falls 1,029	Falls 653	Falls 806	Falls 5,185
2	Suicide Attempt 149	ATV 115	Suicide Attempt 46	Suicide Attempt 267	Suicide Attempt 292	Motor Vehicle 737	Suicide Attempt 405	Suicide Attempt 464	Suicide Attempt 412	Suicide Attempt 2,729
3	Assault 121	Suicide Attempt 90	Assault 34	Assault 167	Assault 130	Assault 695	Assault 381	Assault 376	Assault 399	Assault 2,474
4	Snogo 93	Snogo 84	ATV 27	Snogo 163	ATV 125	Suicide Attempt 518	Motor Vehicle 314	Motor Vehicle 245	Snogo 338	Motor Vehicle 1,839
5	ATV 90	Assault 78	Motor Vehicle 23	ATV 108	Snogo 116	Struck by Obj/Person 131	Struck by Obj/Person 207	Snogo 169	Cut/Piercing 167	Snogo 1,029
Total	1,015	970	299	1,329	1,385	4,102	2,999	2,477	3,205	18,768

ASNA: Arctic Slope Native Association, Barrow
 BBAHC: Bristol Bay Area Health Corporation, Dillingham
 KANA: Kodiak Area Native Association, Kodiak
 Maniilaq Association: Kotzebue
 NSHC: Norton Sound Health Corporation, Nome

SCF: Southcentral Foundation, Anchorage
 Southeast: Southeast AK
 TCC: Tanana Chiefs Conference, Fairbanks
 YKHC: Yukon Kuskokwim Health Corporation, Bethel

Injury Hospitalizations

Figure 32. Non-Fatal Unintentional Injury Hospitalization Rate by Tribal Health Organization, Alaska, 1991-2003

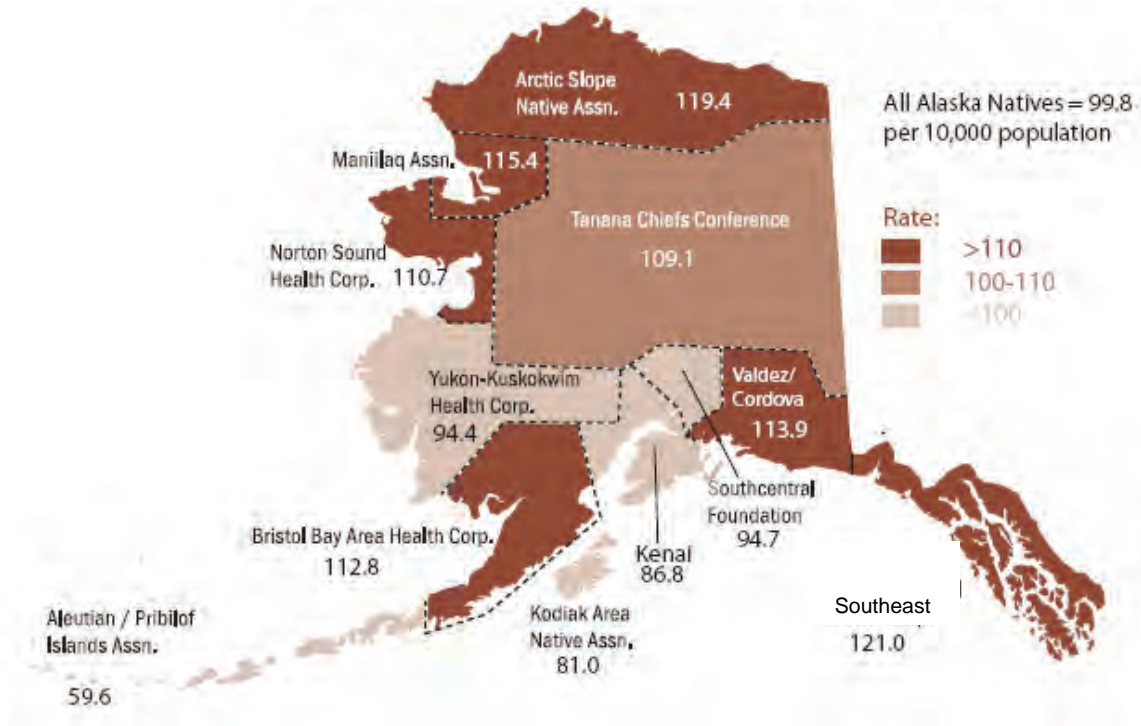
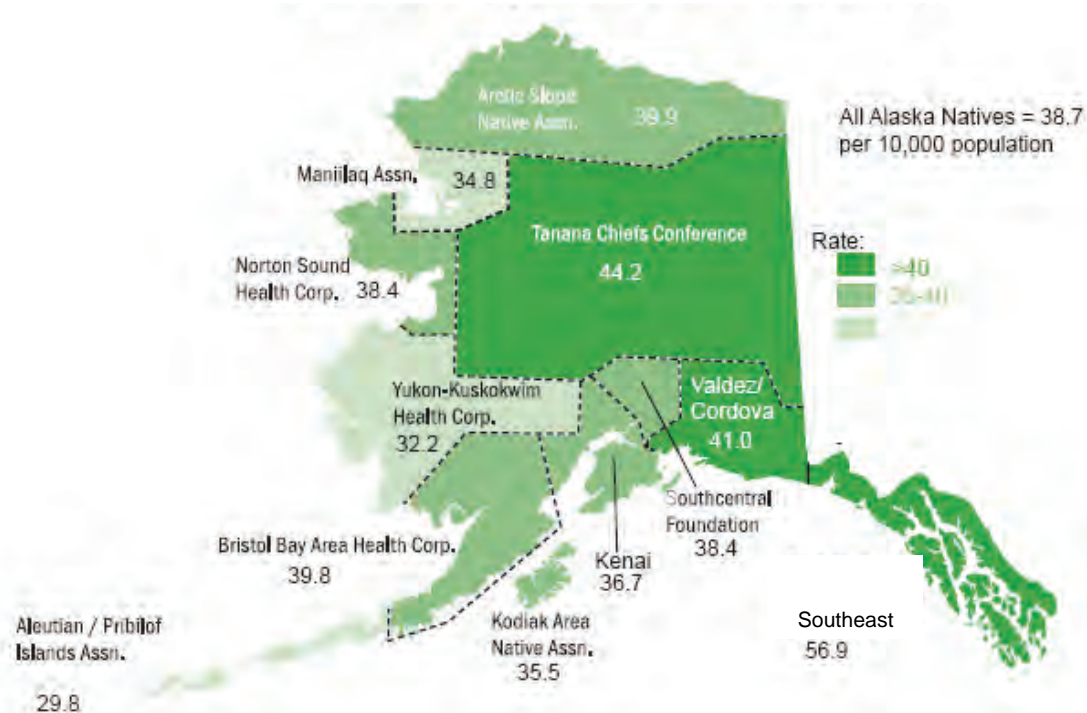


Figure 33. Non-Fatal Fall Hospitalization Rate by Tribal Health Organization, Alaska, 1991-2003



Injury Hospitalizations– Suicide, Assaults

Figure 34. Non-Fatal Hospitalization Rate for Suicide Attempts by Tribal Health Organization, Alaska, 1991-2003

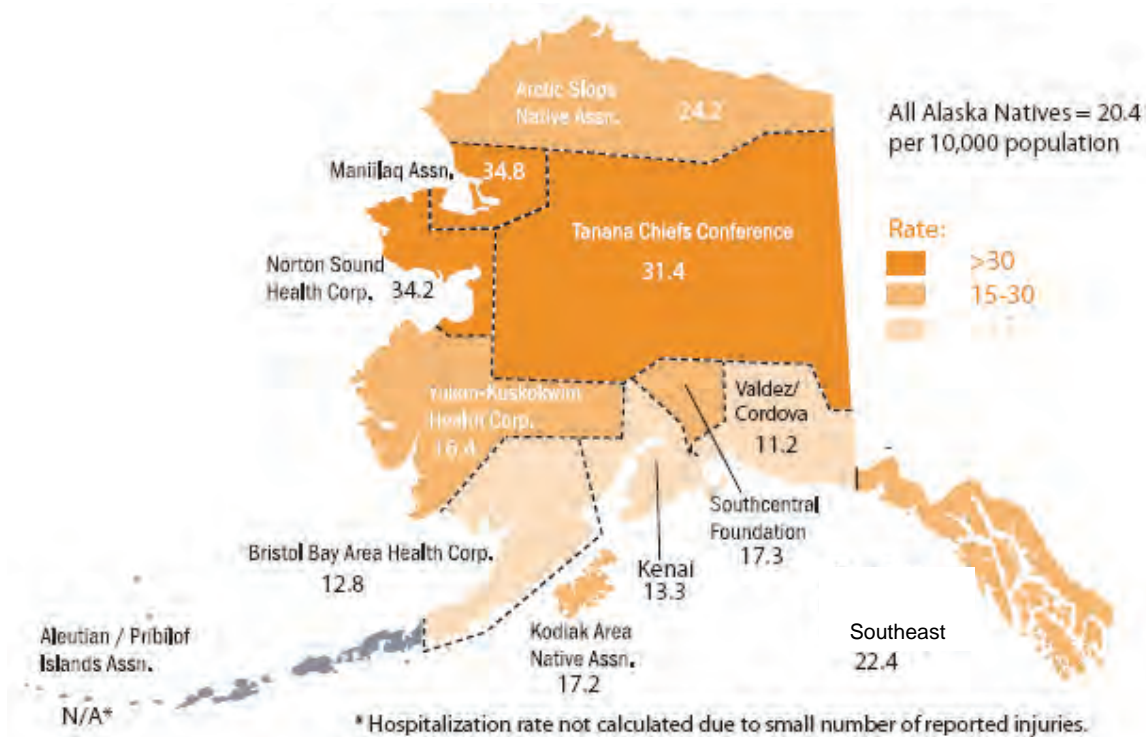
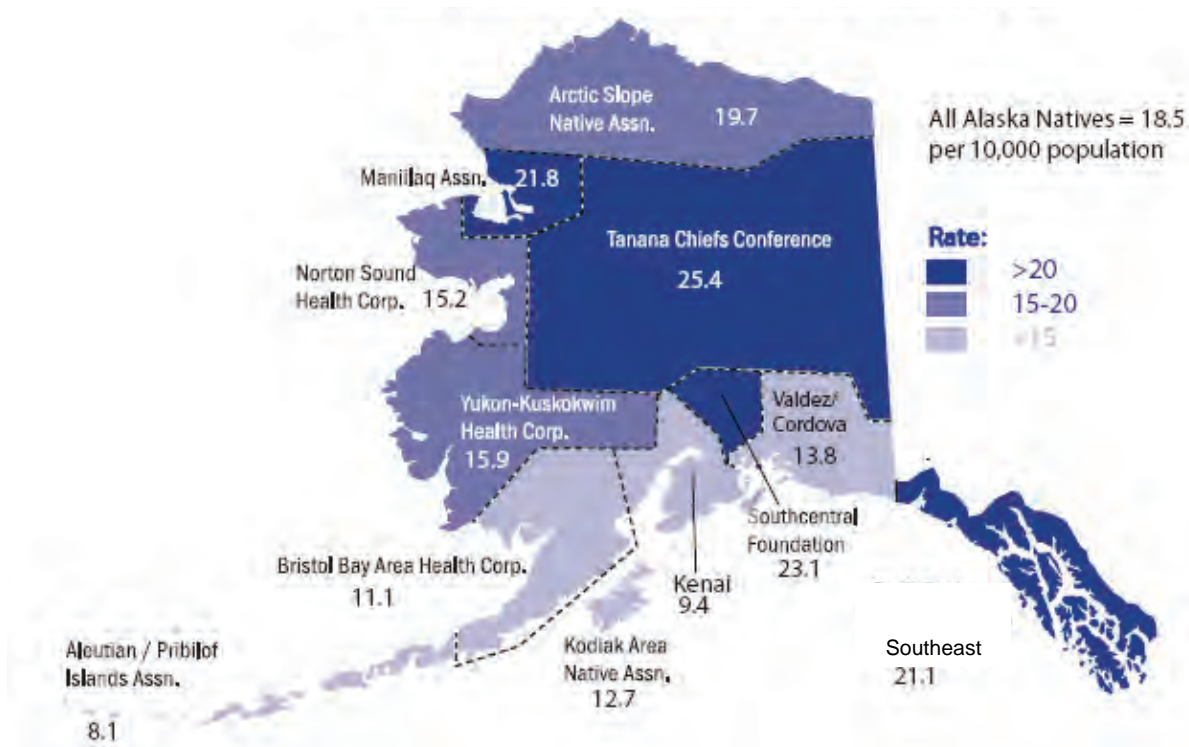


Figure 35. Non-Fatal Hospitalization Rate for Assault Injuries by Tribal Health Organization, Alaska, 1991-2003



Provided by: ANTHC Injury Prevention Program¹²
 Data Source: Alaska Trauma Registry

Environmental Health– Water and Sewer Service Rates

Definition: Water and sewer service is defined as a housing unit with water/sewer pipes or closed haul services.

Note: Housing units which have received funding for pipes or closed haul services but have not yet been connected are not included in the percent of housing units with served water and sewer.

Healthy People 2010: N/A

Healthy Alaskans 2010, Objective 11.7: Increase the number of communities with access to safe water and proper sewage disposal to 98%.

Summary:

- As of 2006, 88% of the communities in the BBAHC service area had water and sewer service.

Data availability: Available by Tribal Health Region, Census Area, statewide

Geographical Definition: BBAHC is defined as all of the communities served by BBAHC.

For more information: Visit ANTHC's Division of Environmental Health and Engineering at <http://www.anthc.org/cs/dehe/envhth/index.cfm> or Alaska Department of Environmental Conservation: at <http://www.dec.state.ak.us/>

Table 19. Water and Sewer Service Rates
by Tribal Health Organization, Alaska, 2006

Tribal Health Organization	Total Number of Housing Units	% of Housing Units with Served Water and Sewer
Arctic Slope Native Association	1668	91%
Bristol Bay Area Health Corp.	1863	88%
Maniilaq Association	1504	82%
Norton Sound Health Corp.	1565	70%
SouthEast Alaska Regional Health Corp.	2098	98%
Tanana Chiefs Conference	877	49%
Yukon-Kuskokwim Health Corp.	4235	66%

Data Source: ANTHC DEHE ¹³

Preventive Services and Access to Health Care

Cancer– Leading Cancers

Table 20. Leading Cancers, BBAHC Alaska Natives, 1989-2003

Rank	Site	No.	% of Total
1	Colon/Rectum	45	24.7%
2	Lung	35	19.2%
3	Breast	19	10.4%
4	Prostate	11	6.0%
5	Stomach	10	5.5%
6	Oral/Pharynx	8	4.4%
7	Kidney	6	3.3%
8	Pancreas	6	3.3%
9	Non-Hodgkin	4	2.2%
10	Thyroid	4	2.2%
	Total	148	81.3%

Data Source: Cancer in Alaska Natives: 35-Year Report¹⁴

Table 21. Leading Cancers, All Alaska Natives, 1989-2003

Rank	Site	No.	% of Total
1	Colon/Rectum	698	18.4%
2	Lung	660	17.4%
3	Breast	583	15.4%
4	Prostate	238	6.3%
5	Stomach	177	4.7%
6	Oral/Pharynx	156	4.1%
7	Kidney	155	4.1%
8	Pancreas	107	2.8%
9	Non-Hodgkin	87	2.3%
10	Leukemia	74	2.0%
	Total	2,935	77.5%

Data Source: Cancer in Alaska Natives: 35-Year Report¹⁴

Cervical Cancer Screening

Definition: Females age 18 and older who report at least one Pap test within the last three years.

Healthy People 2010, Objective 3-13: Increase the proportion of women aged 18 years and older who received a Pap test within preceding 3 years to 90%.

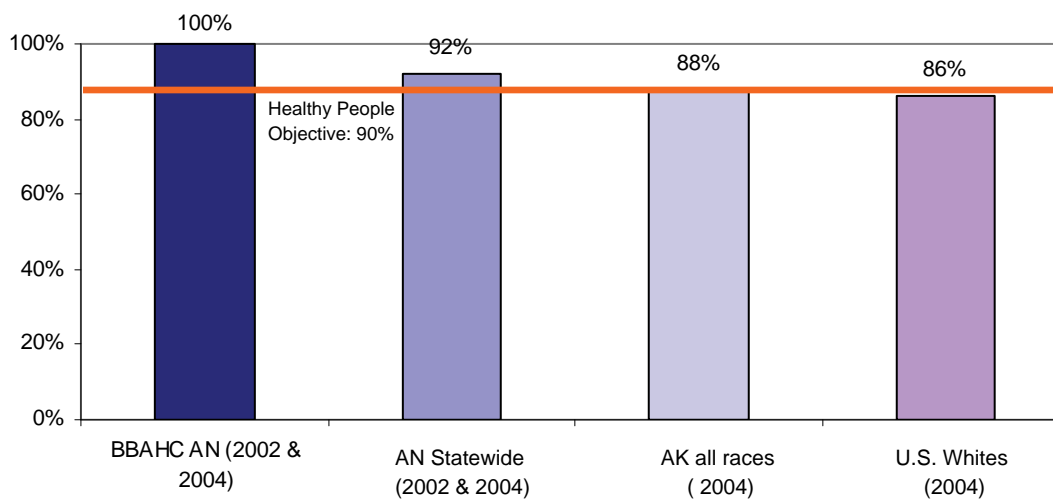
Healthy Alaskans 2010, Objective 22.11: Increase the proportion of women aged 18 years and older who received a Pap test within the preceding 3 years to 95%.

Summary:

- BBAHC AK Native women appear to have exceeded the Healthy People objective of 90% for cervical cancer screening.

Geographical Definition: BBAHC AN includes all respondents residing in communities served by BBAHC.

Figure 36. Percent of women with pap test within 3 years, 18 years and older (weighted, n=51)



Data Source: Alaska Behavioral Risk Factor Surveillance System ⁹

Analysis conducted by: AN EpiCenter

U.S. Data Source: Behavioral Risk Factor Surveillance System ²¹

Breast Cancer Screening

Definition: Females age 40 and older who report a mammogram within the last 2 years.

Healthy People 2010, Objective 3-13: Increase the proportion of women aged 40 years and older who have received a mammogram within the preceding 2 years to 70%.

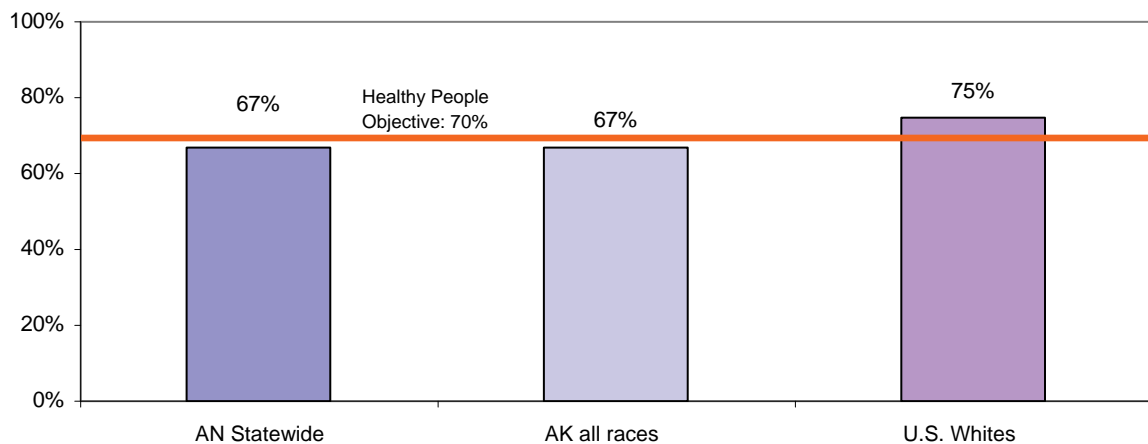
Healthy Alaskans 2010, Objective 22.11: Increase the proportion of women aged 40 years and older who have received a mammogram within the preceding 2 years to 76%.

Summary:

- AK Native women appear to be near the Healthy People objective of 70% for having a mammogram within the past 2 years.

Data availability: Alaska data is available for 2001-2004. Sample Size is not large enough to be broken down to the regional level for BBAHC.

Figure 37. Percent of women with Mammogram in last two years
40 years and older, 2004 (weighted, n=110)



Data Source: Alaska Behavioral Risk Factor Surveillance System ⁹
Analysis conducted by: AN EpiCenter
U.S. Data Source: Behavioral Risk Factor Surveillance System ²¹

Colorectal Cancer Screening

Definition: Adults age 50 and older who report ever having a sigmoidoscopy or colonoscopy. (This does not include Fecal Occult Blood Test)

Healthy People 2010, Objective 3-12b: Increase the proportion of adults aged 50 years and older who have ever received a sigmoidoscopy to 50%.

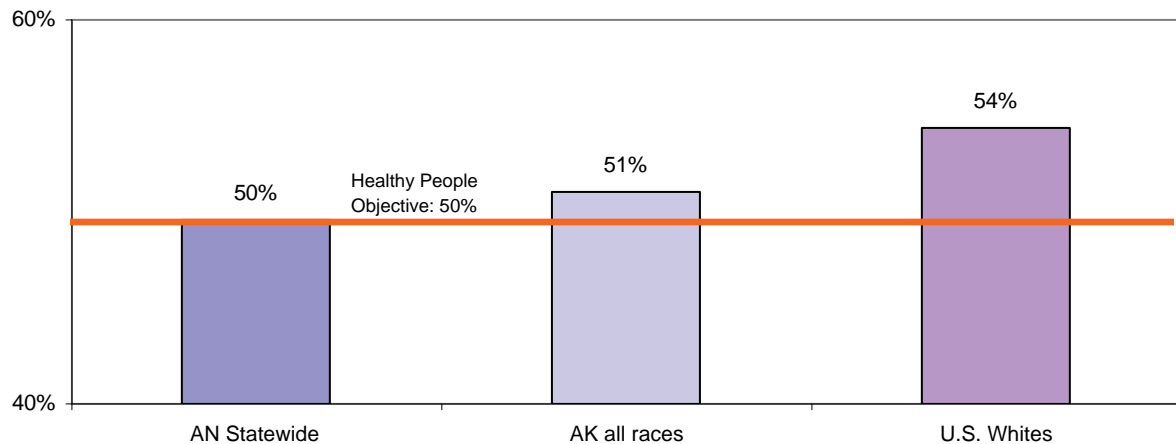
Healthy Alaskans 2010, Objective 22.10: Increase the proportion of adults 50 years and older who received colorectal cancer screening examinations to 64%.

Summary:

- One out of every two (50%) Alaska Natives age 50 years and older report ever having a sigmoidoscopy or colonoscopy, attaining the Healthy People 2010 Objective.

Data availability: Alaska data is available for 2002, 2004 and 2006. Sample Size is not large enough to be

Figure 38. Percent who have had sigmoidoscopy or colonoscopy ever
50 years and older, 2004 (weighted, n=190)



Data Source: Alaska Behavioral Risk Factor Surveillance System⁹

Analysis conducted by: AN EpiCenter

U.S. Data Source: Behavioral Risk Factor Surveillance System²¹

Immunizations– 4:3:1:3:3

Definition: By two years of age, it is recommended that all children should have received 4 doses of diphtheria-tetanus-pertussis (DTP), 3 doses of polio, 1 dose of measles-mumps-rubella (MMR), 3 doses of Hepatitis B, and 3 doses of Haemophilus Influenza, type B (Hib) vaccines. This recommendation is referred to in shorthand as "4:3:1:3:3."

Healthy People 2010, Objective 14.24a: Increase the proportion of young children aged 19-35 months who have received the 4:3:1:3:3 series to 80%.

Healthy Alaskans 2010, Objective 18.10: Increase proportion of young children aged 19-35 months who have received the 4:3:1:3:3 series to 90%

Summary:

- As of June 2006, BBAHC service area had attained Healthy Alaskans objective of 90% 4:3:1:3:3 coverage.

Data Availability: Available by region (Tribal Health Organizations), statewide for AK Natives and nationwide for the Indian Health System. Data on immunization coverage for non-natives is less comprehensive.

Geographical Definition: BBAHC AN includes all respondents residing in communities served by BBAHC.

For more information: Go to the ANTHC Immunization Program at <http://www.anthc.org/cs/chs/immunization/>

Figure 39. Two-year old vaccination coverage, BBAHC
as of June 2006

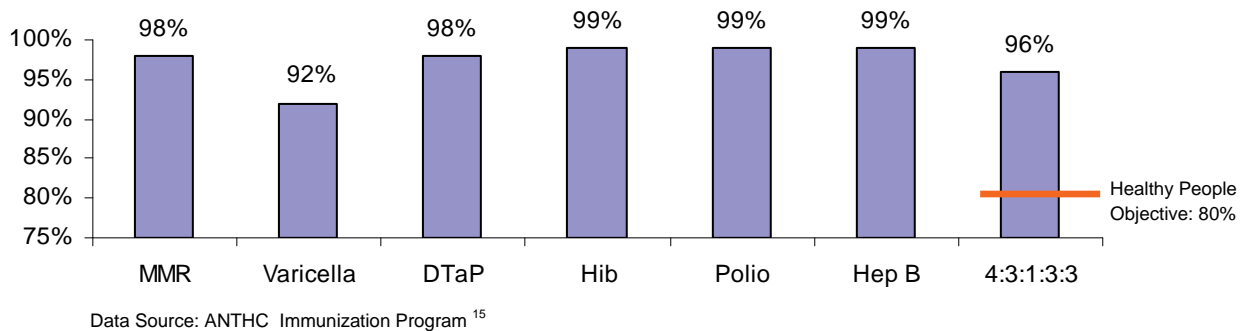
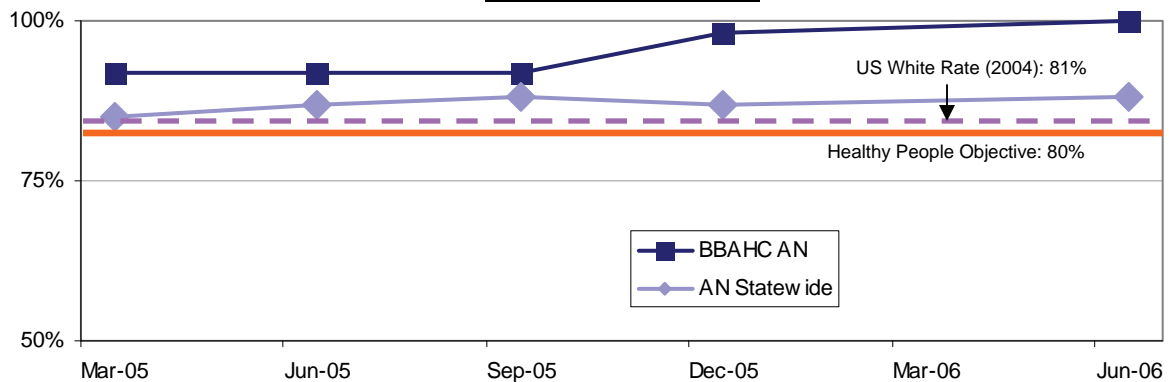


Figure 40. Two-year old rates of 4:3:1:3:3 Vaccination Coverage
March 2005-June 2006



Data Source: ANTHC Immunization Program¹⁵
US Data Source: National Immunization Survey Data²³

Immunizations– Influenza and Pneumococcal Vaccine ages 65 and older

Definition: 1) Adults aged 65 years and older who have received an influenza vaccine in the past year; 2) Adults who have ever received a pneumococcal vaccine

Healthy People 2010, Objective 14.29: Increase the proportion of elderly adults (65 years and older) immunized against influenza and pneumococcal disease to 90%.

Healthy Alaskans 2010, Objective 18.14: same definition and objective as above.

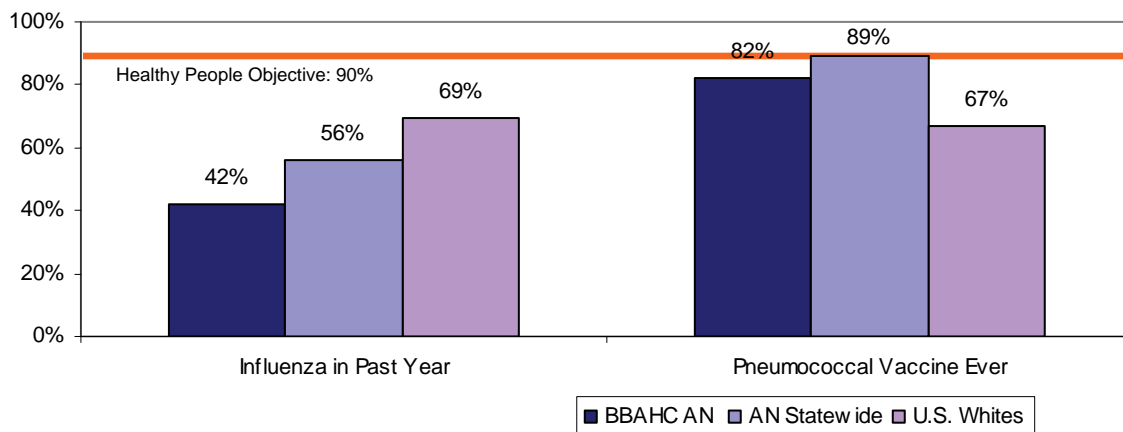
Summary:

- As of June 2006, 42% of BBAHC users 65 years and older were vaccinated against influenza in the past year as compared to 71% of U.S. Whites.
- As of June 2006, 82% of BBAHC users 65 years and older had received a pneumococcal vaccine ever as compared to 69% of U.S. Whites.

Data Availability: Available by region (Tribal Health Organizations), statewide for AK Natives and nationwide for the Indian Health System. Data on immunization coverage for non-natives is less comprehensive.

Geographical Definition: BBAHC AN includes all respondents residing in communities served by BBAHC.

**Figure 41. Influenza and Pneumococcal Vaccination Rates
Adults 65 years and older, June 2006**



BBAHC Data Source: ANTHC Immunization Program ¹⁵

AN Data Source: 2006 GPRA Aggregate Report

U.S. Data Source: 2006 Behavioral Risk Factor Surveillance System ²¹

Diabetes

Definition: Diabetes mellitus, commonly referred to as diabetes, is a group of metabolic diseases characterized by high blood sugar levels, which result from defects in insulin secretion, or action, or both.

Healthy People 2010, Objective 5.3: Reduce the overall rate of diabetes that is clinically diagnosed to 25 per 1,000 population

Healthy Alaskans 2010, Objective 23.4: Prevent diabetes: Reduce new cases per year to 2.5 per 1,000 population

Summary:

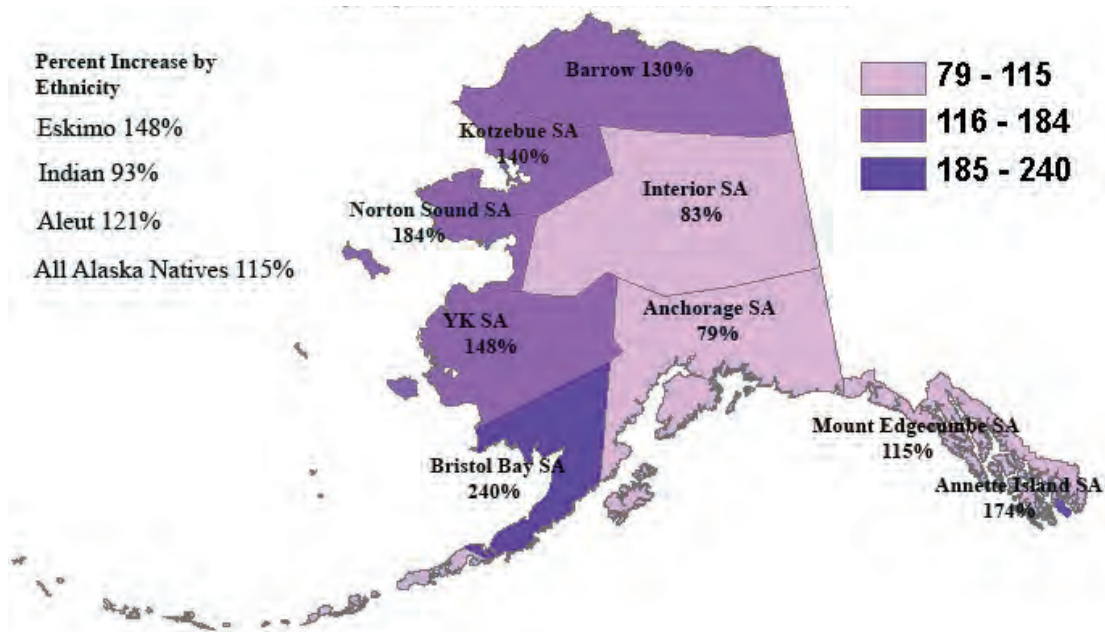
- The rate of diabetes increased by 240% from 1990 to 2005 among Alaska Natives in the BBAHC service area.
- Please note that in 2005, Bristol Bay's population decreased while the number of cases increased. This is reflected in the extremely high increase in prevalence. However, overall trends, which show that Eskimos who live in rural areas have high increases in prevalence, still hold true when comparing 1990-2004 or 1990-2005.
- As of 2005, 42 out of every 1,000 people in the BBAHC service area had diabetes.

Data Availability: Available by region, statewide for AK Natives and nationwide for the Indian Health System.

Geographical Definition: BBAHC service area is defined as the Bristol Bay Area Service Unit.

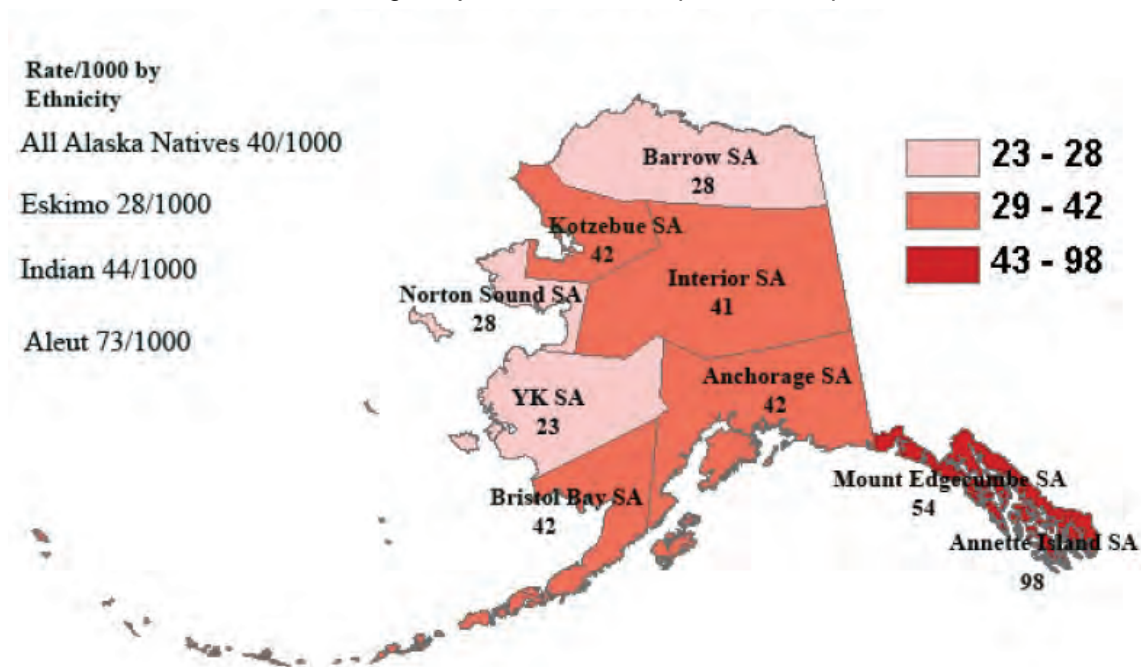
For more information: Go to the ANTHC Diabetes Program at <http://www.anmc.org/services/diabetes/>

Figure 42. Percent Rate of Increase in Diabetes Prevalence Among Alaska Natives
1990 versus 2005



Data Source: Alaska Area Diabetes Program Diabetes Registry ¹⁶

Figure 43. 2005 Diabetes Prevalence among Alaska Natives
Age-Adjusted Prevalence per 1,000 Population



Data Source: Alaska Area Diabetes Program Diabetes Registry ¹⁶

Maternal, Infant and Child Health– Infant Mortality Rate

Definition: Infant mortality rate is defined as number of deaths within first year of life per 1,000 live births

Healthy People 2010, Objective 16-1c. Reduce infant mortality rate to 4.5/1,000 live births.

Healthy Alaskans 2010, Objective 16.2: Reduce infant mortality rate to 4.5/1,000 live births.

Summary:

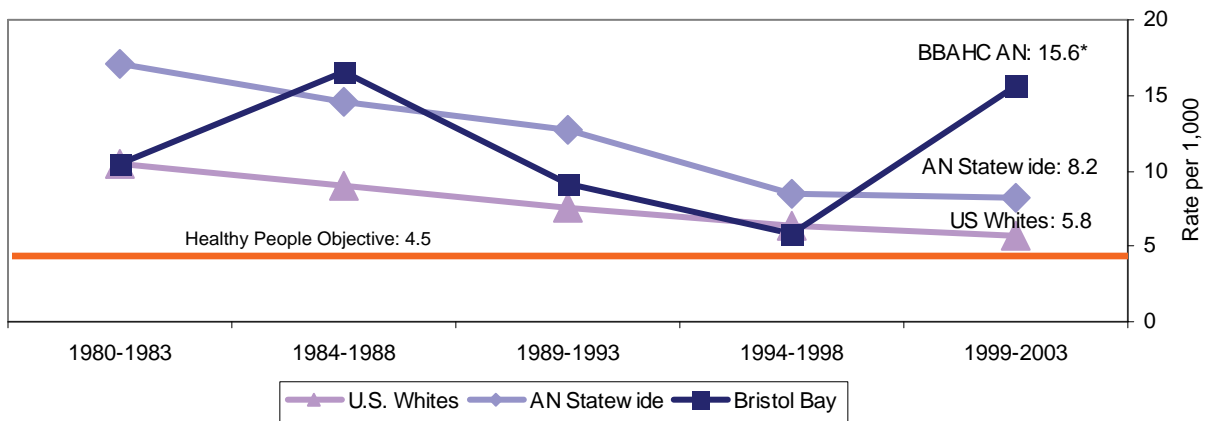
- The infant mortality rate among BBAHC Alaska Natives is 2.6 times greater than for U.S. Whites. This is a significant difference ($p < .05$).
- There has been no significant decrease in infant mortality rates during 1980-2003 among BBAHC Alaska Natives.

Data availability: Mortality data is available by borough or census area, race, and statewide through 2004. Periodic Reports on Alaska Native Mortality are published by the AN EpiCenter, <http://www.anthc.org/cs/chs/epi/>

Geographical Definition: BBAHC service area is defined as one of the communities served by BBAHC.

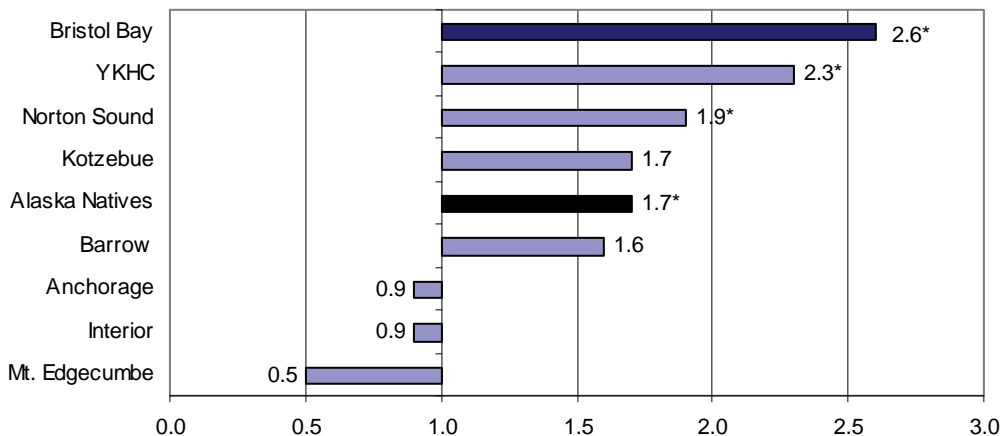
For more information: Visit the Alaska Bureau of Vital Statistics at <http://www.hss.state.ak.us/dph/bvs/>

Figure 44. Infant Mortality Rates per 1,000, 5-year Intervals, 1980-2003



* Infant Mortality Rate calculated with fewer than 20 deaths and should be interpreted with caution
Alaska Data Source: Alaska Bureau of Vital Statistics⁷; Analysis Conducted by: AN EpiCenter; U.S. Data Source: Surveillance, Epidemiology, and End Results (SEER) Program²⁰

Figure 45. Ratio of Infant Mortality Rates, Alaska Natives vs. U.S. Whites, by Service Region, 1999-2003



* Alaska Native rate is significantly different from US White rate ($P < .05$); Alaska Data Source : Alaska Bureau of Vital Statistics⁷; Analysis Conducted by: AN EpiCenter; U.S. Data Source: Surveillance, Epidemiology, and End Results (SEER) Program²⁰

Maternal, Infant and Child Health– Low Birth Weight

Definition: Low birth weight is defined as births less than 2500 grams

Healthy People 2010, Objective: Reduce low birth weight (LBW) to 5% of live births.

Healthy Alaskans 2010, Objective 16.12: Reduce percentage of live births who have low birth weight to 4%.

Summary:

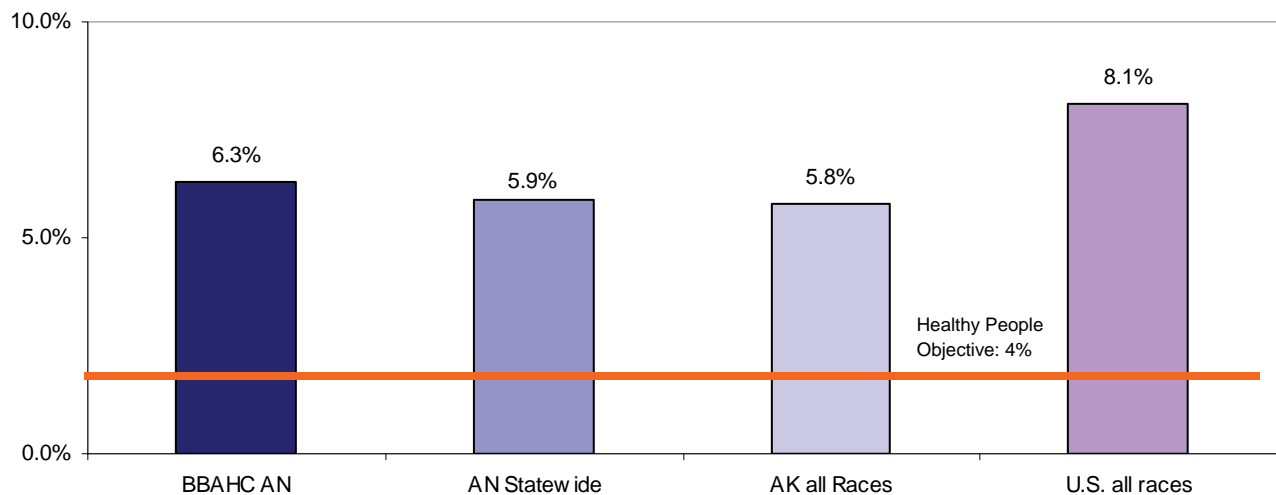
- 6.3% of Alaska Native babies in the BBAHC service area were born with low birth weight; less than U.S. babies (all races).

Data availability: Available by Census Area, by Race, Statewide through 2004

Geographical Definition: BBAHC service area is defined as the Bristol Bay, Lake and Peninsula boroughs and Dillingham census area combined.

For more information: Statewide birth statistics are available at <http://www.hss.state.ak.us/DPH/bvs/data/default.htm>

Figure 46. Percentage of Live Births with Low Birth Weight, 2000-2004



Data Source: Alaska Bureau of Vital Statistics ¹⁷
US Data Source: National Center for Health Statistics ²⁴

Maternal, Infant and Child Health– Adequate Prenatal Care

Definition: The Adequate Prenatal Care Utilization Index (APCNU) combines the initiation of prenatal care and the number of prenatal visits. A ratio of actual to recommended visits is calculated. When the ratio is 110% or greater, care is considered “adequate plus” prenatal care. If the ratio is greater than 80% but less than 110%, care is considered “adequate”. A ratio between 50 and 79% is considered “intermediate” and a ratio of less than 50% is considered “inadequate” (Bureau of Vital Statistics, 2002). For this report, the categories “adequate” and “adequate plus” were combined to create the category “adequate or greater.”

Healthy People 2010, Objective 16.6b: Increase the proportion of women who receive adequate prenatal care to 90%

Healthy Alaskans 2010, Objective 11.b: Increase the proportion of pregnant women who receive adequate prenatal care (APNCU Index greater than or equal to 80) to 90%.

Summary:

- 52% of Alaska Native pregnant women in the BBAHC service area were documented on the birth certificate as having received adequate or better prenatal care. This percent is greater than that of pregnant Alaska Native women statewide (48%).

Data availability: Available by Census Area, by Race, Statewide

Geographical Definition: BBAHC service area is defined as the Bristol Bay, Lake and Peninsula boroughs and Dillingham census area combined.

For more information: Statewide birth statistics are available at <http://www.hss.state.ak.us/DPH/bvs/data/default.htm>

Note: Differing methods in recording prenatal visits may lead to an under representation of adequate prenatal care; U.S. Rate is based on 41 states, the District of Columbia and New York City

Figure 47. Percentage of Births by Adequacy of Prenatal Care (APNCU), 2000-2004

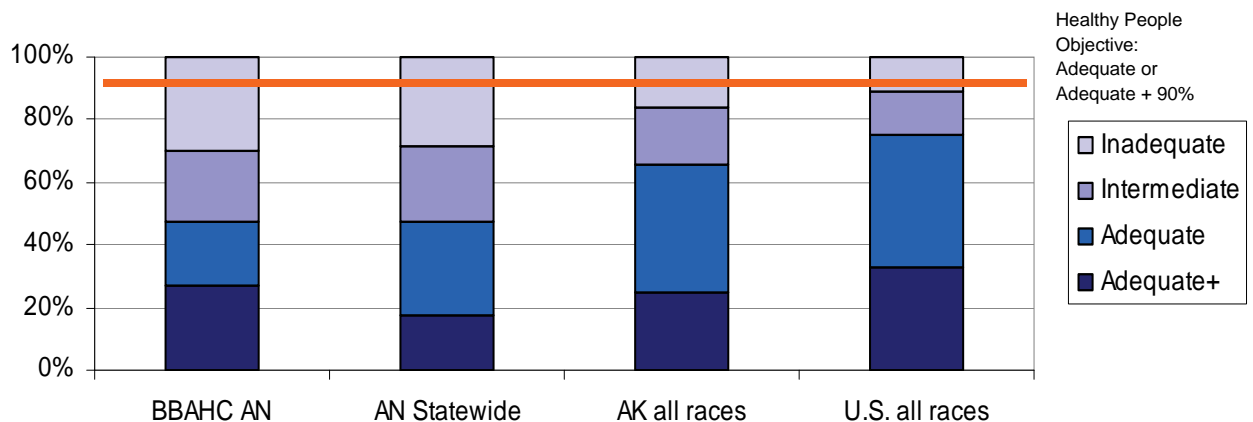


Table 22. Percentage of Births by Adequacy of Prenatal Care (APNCU), 2000-2004

	BBAHC AN	AN Statewide	AK all races	U.S. all races.
Adequate plus	29.5%	17.5%	25.0%	32.6%
Adequate	22.6%	30.2%	40.5%	42.6%
Intermediate	24.8%	23.9%	18.3%	13.7%
Inadequate	33.1%	28.4%	16.2%	11.2%

Maternal, Infant and Child Health– Smoking and Alcohol Consumption during Pregnancy

Definition: Women who reported alcohol-use and smoking anytime during pregnancy.

Healthy People 2010, Objective 16-17a. Increase the reported abstinence in past month from alcohol use by pregnant women to 94%; **Objective 16-17c.** Increase the reported abstinence in past month from cigarette smoking by pregnant women to 99%.

Healthy Alaskans 2010, Objective 16-17. Decrease proportion of women who delivered a live birth who report use of alcohol during last 3 months of pregnancy to 3.5%. **Objective 16.18.** Decrease proportion of women who delivered a live birth who report cigarette smoking during last three months of pregnancy to 15%.

Summary:

- Among Alaska Native mothers in the BBAHC service area, 96% report abstaining from alcohol use during pregnancy compared to 98% percent of mothers statewide.
- Among Alaska Native mothers in the BBAHC service area, 59% report abstaining from smoking cigarettes during pregnancy, 8% lower than Alaska Native mothers statewide.

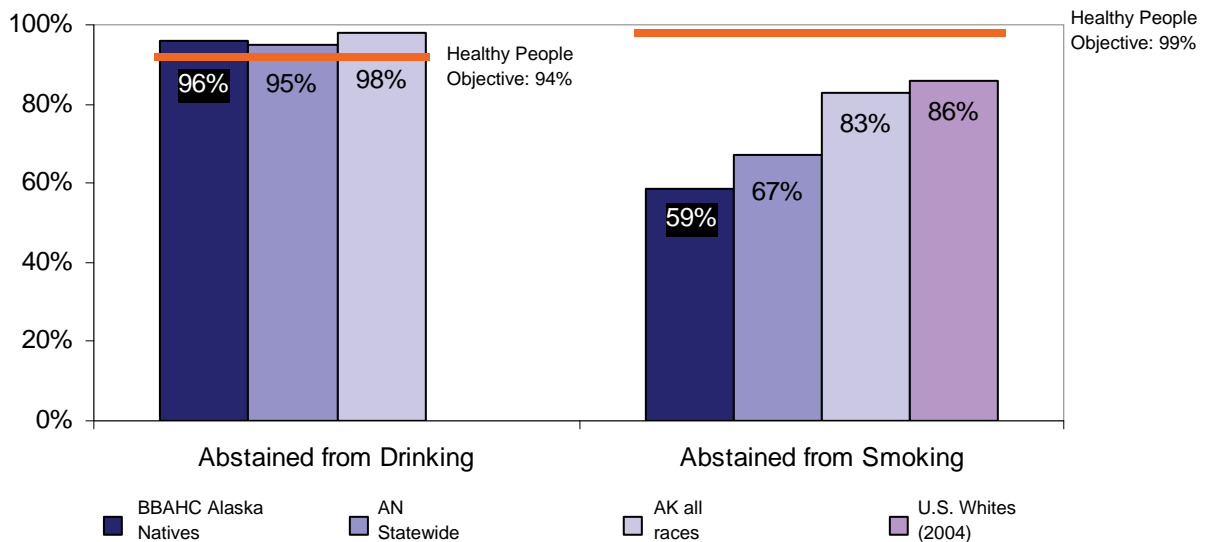
Data availability: Available by Census Area, by Race, Statewide

Geographical Definition: BBAHC service area is defined as the Bristol Bay, Lake and Peninsula boroughs and Dillingham census area combined.

For more information: Statewide birth statistics are available at <http://www.hss.state.ak.us/DPH/bvs/data/default.htm>. National birth statistics available at <http://www.cdc.gov/nchs/products/pubs/pubd/hestats/prelimbirths04/prelimbirths04health.htm>

Note: Vital Statistics data reported here is data from birth certificates which refers to smoking and alcohol use at any time during pregnancy.

Figure 48. Percent of Women Reporting Abstaining from Alcohol Use and Smoking During Pregnancy 2000-2004



Data Source: Alaska Bureau of Vital Statistics ¹⁷
U.S. Data Source: National Center for Health Statistics ²⁴

Family Planning– Teen Birth Rate

Definition: Teen birth rate is defined as live births per 1,000 females age 15-19 years.

Healthy People 2010, Objective 16.2. Reduce pregnancies among adolescent females aged 15 to 17 years to 43 per 1,000 live births.

Healthy Alaskans 2010, Objective 17.2. Reduce young teen births 15 to 17 years to 18 per 1,000 live births.

Summary:

- The teen birth rate for the BBAHC service area is lower than the rate for Alaska Natives statewide but is higher than the Alaska, all races, rate.

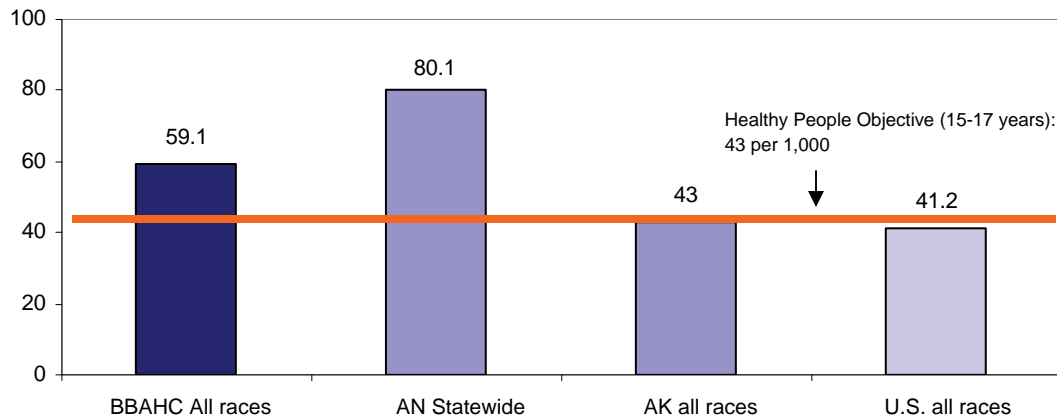
Data availability: Available by Census Area, by Race, Statewide

Geographical Definition: BBAHC service area is defined as the Bristol Bay, Lake and Peninsula boroughs and Dillingham census area combined.

For more information: Statewide birth statistics are available at <http://www.hss.state.ak.us/DPH/bvs/data/default.htm>. National birth statistics available at <http://www.cdc.gov/nchs/products/pubs/pubd/hestats/prelimbirths04/prelimbirths04health.htm>

Note: Data presented are for teen births age 15-19 years. Healthy Alaskans 2010 and Healthy People 2010 Objectives are to reduce young teen births ages 15-17 years.

Figure 49. Teen Birth Rate (15-19 yrs) per 1,000 Live Births, 2000-2004



Data Source: Alaska Bureau of Vital Statistics¹⁸
U.S. Data Source: National Center for Health Statistics²⁴

Responsible Sexual Behavior– Adolescents

Definition: Responsible sexual behavior of adolescents is defined as not having sexual intercourse OR having intercourse in past 30 days and using a condom at last intercourse.

Healthy People 2010, Objective 25.11: Increase the proportion of adolescents who abstain from sexual intercourse or use condoms if currently sexually active to 95%.

Healthy Alaskans 2010, Objective 19.14 & 19.15: Increase the proportion of adolescents who abstain from sexual intercourse to 65%; Increase the proportion of sexually active adolescents who use condoms.

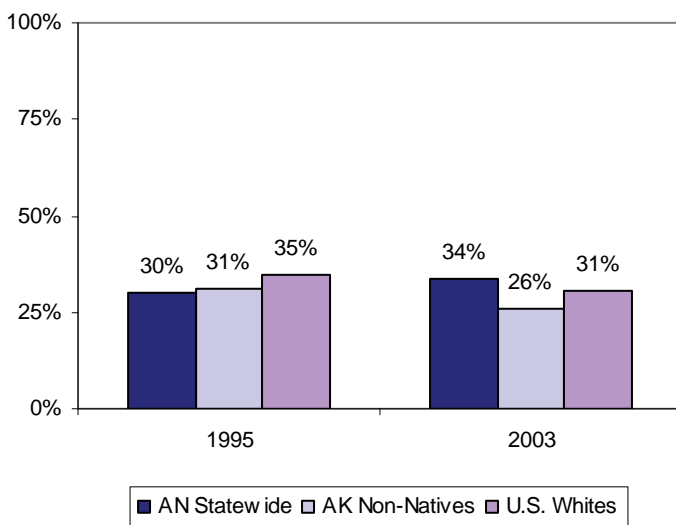
Summary:

- One-third of Alaska Native high school students are sexually active. Of those students, 68% used a condom at last intercourse.

Data availability: available by race, statewide. Sample size is not large enough to be broken down to the regional level. Due to a small sample size from 2005, no data was able to be analyzed.

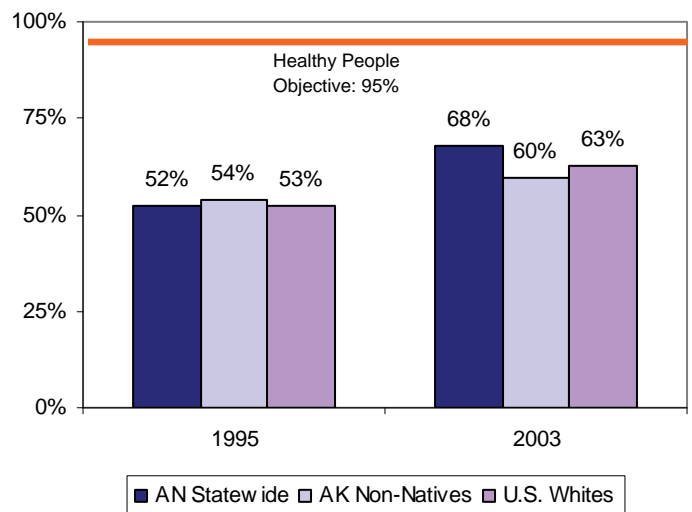
For more information: For Alaska Youth Risk Behavior Survey Reports (YRBS), go to <http://www.hss.state.ak.us/dph/chronic/school/YRBS.htm>
For state and national level data, visit CDC Youth Risk Behavior Surveillance System website at <http://apps.nccd.cdc.gov/yrbss/>

Figure 50. Percent of high school students who had sex during the last three months, 1995 and 2003 (weighted, n=7236)



Data Source: Alaska Youth Risk Behavior Survey¹⁰
US Data Source: Youth Risk Behavior Survey²²

Figure 51. Percent of sexually active high school students who used a condom during last sexual intercourse, 1995 and 2003 (weighted, n=2360)



Data Source: Alaska Youth Risk Behavior Survey¹⁰
US Data Source: Youth Risk Behavior Survey²²

Sexually Transmitted Infections (STI) Gonorrhea and Chlamydia

Definition: Chlamydia is a common STI caused by *Chlamydia trachomatis*, a bacterium, which can damage a woman's reproductive organs. Gonorrhea is an STI caused by the bacterium *Neisseria gonorrhoea*.

Healthy People 2010, Objective 25.1 and 25.2. Reduce the proportion of adolescents and young adults with *Chlamydia trachomatis* infections to 3%; Reduce gonorrhea rate to 19 per 100,000 population.

Healthy Alaskans 2010, Objective 19.1 and 19.2. Reduce *Chlamydia trachomatis* rate (per 100,000 population) to 304; Reduce gonorrhea rate to 19 (per 100,000).

Summary:

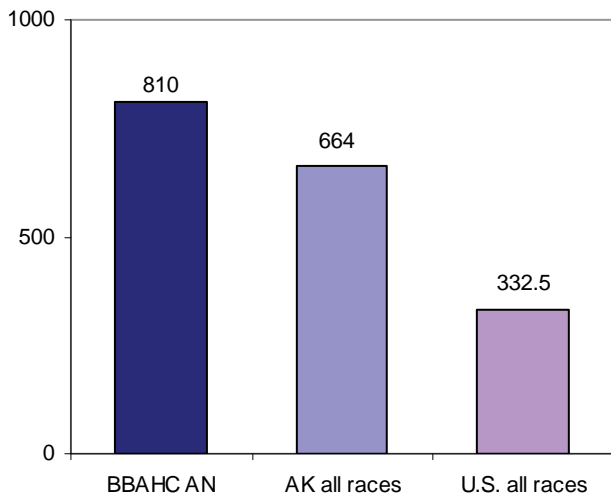
- The Chlamydia rate for Alaska Natives living in the BBAHC service area (810 per 100,000) is higher than that for all Alaskans, and 2.4 times that of U.S. all races.
- The BBAHC Gonorrhea rate of 135 per 100,000 is higher than for all Alaskans as well as for U.S. all races.

Data availability: Available by Region, by Race, Statewide

Geographical Definition: BBAHC AN includes all residents living in communities served by BBAHC.

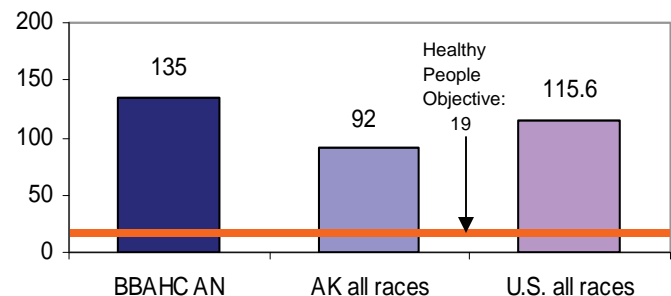
For more information: Statewide birth statistics are available at <http://www.hss.state.ak.us/DPH/bvs/data/default.htm>. National birth statistics available at <http://www.cdc.gov/nchs/products/pubs/pubd/hestats/prelimbirths04/prelimbirths04health.htm>

Figure 52. Chlamydia Rate per 100,000 population, 2005



Data Source: State of AK Epidemiology, AN Epidemiology Center
U.S. Data Source: CDC Division of STD Prevention

Figure 53. Gonorrhea Rate per 100,000 population, 2005



Data Source: State of AK Epidemiology, AN Epidemiology Center
U.S. Data Source: CDC Division of STD Prevention

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Appendix A. Tables and Figures

TABLES

Introduction

Table 1. Technical Notes by Indicator	7
---	---

Demographics

Table 2. Population Estimates by Age Group, Alaska Natives, BBAHC Service Area, 2004 ..	14
Table 3. I.H.S. User Population by Age Group, Alaska Natives, BBAHC Service Area, FY2006	15
Table 4. Census Counts by BBAHC Community, 1990 and 2000, Alaska Natives and Total Population	16

Morbidity & Mortality

Table 5. Leading Causes of Death by Rank, 1999-2003.....	24
Table 6. Leading Causes of Death, Age-adjusted Mortality Rates per 100,000, 1999-2003	25
Table 7. Top 15 Hospital Discharges by ICD Recode, All Ages, FY 2005, Alaska Totals	28
Table 8. Top 15 Hospital Discharges by ICD Recode, All Ages, FY 2005, YKDRH	28
Table 9. Top 15 Inpatient Days by ICD Recode, All Ages, FY2005, Alaska Totals	29
Table 10. Top 15 Inpatient Days by ICD Recode, All Ages, FY2005, YKDRH	29
Table 11. Top 15 Outpatient Visits by ICD Recode, All Ages, FY2005, Alaska Totals	30
Table 12. Top 15 Outpatient Visits by ICD Recode, All Ages, FY2005, YKDRH	30

Health Promotion

Table 13. Current Smokers, BBAHC Alaska Natives, 18 years and older	32
Table 14. Meets moderate or vigorous physical activity recommendations, 2003	35
Table 15. Obesity (30+BMI), BBAHC Alaska Natives, 18 years and older	36
Table 16. Alcohol Use- Binge Drinking, BBAHC Alaska Natives, 18 years and older.....	38

Health Protection

Table 17. Leading Causes of Unintentional Injury Death, Alaska Natives, BBAHC service area, 1999-2005	48
Table 18. Five Leading Causes of Non-Fatal Injury Hospitalization by Tribal Health Organization, Alaska Natives, All Ages, Both Sexes, 1991-2003	49
Table 19. Water and Sewer Service Rates by Tribal Health Region, Alaska, 2006.....	52

Preventive Services and Access to Care

Table 20. Leading Cancers, BBAHC Alaska Natives, 1989-2003	54
Table 21. Leading Cancers, All Alaska Natives, 1989-2003	54

Appendix A. Tables and Figures

Table 23. Percentage of Births by Adequacy of Prenatal Care (APNCU), 2000-2004.....	64
Table 24. Infant Mortality Rates for Alaska Natives by Service Region for Five Time Periods 1980-1993, 1984-1988, 1989-1993, 1994-1998, 1999-2003	72
Table 25. Infant Mortality Rates for Alaska Natives by Service Region for Five Time Periods, 1980-1993, 1984-1988, 1989-1993, 1994-1998, 1999-2003	72
Table 26. Ratio of Infant Mortality Rates for Alaska Natives Compared to U.S. Whites for Service Regions, 1999-2003	73
Table 27. Mortality Rates for BBAHC Alaska Natives and U.S. Whites for Five Time Periods, 1979-1983, 1984-1988, 1989-1993, 1994-1998, 1999-2003	74

FIGURES

Introduction

Figure 1. BBAHC Service Area	3
------------------------------------	---

Demographics

Figure 2. Population Estimates by Age Group, Alaska Natives, BBAHC Service Area, 2005..	12
Figure 3. I.H.S. User Population by Age Group, BBAHC Service Area, FY2006	13
Figure 4. Population Pyramid, Alaska Natives, BBAHC Service Area, 2004	15
Figure 5. Highest Educational Attainment, 25 Years and Older	16
Figure 6. Unemployment Rate by Census Area, All Races, March 2007	17
Figure 7. Estimated percent below Poverty Level, All Races and Ages, 2004.....	18
Figure 8. Estimated percent below Poverty Level, All Races, Under 18, 2004	18
Figure 9. Estimated Median Household Income, 2004, All Races, Age 18 and older, 2004....	19

Mortality & Morbidity

Figure 10. Leading Causes of Death, Alaska Natives, BBAHC service area, 1999-2003.....	23
Figure 11. Age-adjusted Cancer Death Rates per 100,000, 5-year Intervals, 1979-2003.....	24
Figure 12. Age-adjusted Heart Disease Death Rates per 100,000, 5-year Intervals, 1979- 2003.....	24
Figure 13. Age-adjusted Unintentional Injury Death Rates per 100,000, 5-year Intervals, 1979-2003.....	25
Figure 14. Age-adjusted Suicide Death Rates per 100,000, 5-year Intervals, 1979-2003.....	25

Health Promotion

Figure 15. Current Smokers by Gender, BBAHC Alaska Natives, 18 years and older, 2000-2004	31
Figure 16. Current Smokers, 18 years and older, 3-year intervals, 1993-2004	31
Figure 17. Smokeless Tobacco Status, BBAHC Alaska Natives, 2001-2002	32

Appendix A. Tables and Figures

Figure 18. Current Smokeless Tobacco Users, 18 years and older.....	32
Figure 19. Meets moderate or vigorous physical activity recommendations, 2001 & 2003	33
Figure 20. Obesity (BMI≥30) by Gender, BBAHC Alaska Natives, 18 years and older, 2000-2004	35
Figure 21. Obesity (BMI≥30), 18 years and older, 3-year Intervals, 1993-2004	35
Figure 22. Binge Drinking by Gender, BBAHC Alaska Natives, 18 years and older, 2001-2004	37
Figure 23. Binge Drinking, BBAHC Alaska Natives, 18 years and older, 1993-2004.....	37
Figure 24. Percent of high school students who are overweight, 2003.....	38
Figure 25. Percent of high school students who engage in vigorous physical activity, 1995 and 2003	39
Figure 26. Percent of high school students who smoked cigarettes on one or more of the past 30 days, 1995 and 2003.....	41
Figure 27. Percent of high school students who used chewing tobacco or snuff on one or more of the past 30 days, 1995 and 2003	41
Figure 28. Percent of high school students who used any tobacco during the past 30 days, 1995 and 2003	41
Figure 29. Percent of high school students who had at least one drink of alcohol on one or more of the past 30 days, 1995 and 2003	43
Figure 30. Percent of high school students who used marijuana on one or more of the past 30 days, 1995 and 2003.....	43
Figure 31. Percent of high school students who used any form of cocaine, including powder, crack or freebase on one or more of the past 30 days, 1995 and 2003 ...	43
Health Protection	
Figure 32. Non-fatal unintentional injury hospitalization rate by Tribal Health Organization, Alaska, 1991-2003.....	48
Figure 33. Non-fatal fall hospitalization rate by Tribal Health Organization, 1991- 2003	48
Figure 34. Non-fatal hospitalization rate for suicide attempts by Tribal Health Organization, 1991-2003	49
Figure 35. Non-fatal hospitalization rate for Assault Injuries by Tribal Health Organization, 1991-2003.....	49
Preventive Services and Access to Health Care	
Figure 36. Percent of women with pap test within 3 years (age 18+).....	53
Figure 37. Percent of women with mammogram in last 2 years, 40 years and older, 2004	54
Figure 38. Percent who have had sigmoidoscopy or colonoscopy ever, 50 years and older, 2004	55
Figure 39. Two-year old vaccination coverage, BBAHC, as of June 2006.....	56
Figure 40. Two-Year old rates of 4:3:1:3:3 Vaccination coverage, March 2005-June 2006	56

Appendix A. Tables and Figures

Figure 41. Influenza and Pneumococcal Vaccination Rates, Adults 65 years and older, June 2006	57
Figure 42. Percent Rate of Increase in Diabetes Prevalence among Alaska Natives, 1990 versus 2005.....	59
Figure 43. 2005 Diabetes Prevalence among Alaska Natives per 1,000 Population	59
Figure 44. Infant Mortality Rates, per 1,000, 5-year Intervals, 1980-2003	60
Figure 45. Ratio of Infant Mortality Rates, Alaska Natives vs. U.S. Whites, by Service Region, 1999-2003.....	60
Figure 46. Percentage of Live Births with Low Birth Rate, 2000-2004	61
Figure 47. Percentage of Births by Adequacy of Prenatal Care (APNCU), 2000-2004	62
Figure 48. Percent of Women Reporting Abstaining from Alcohol Use and Smoking During Pregnancy, 2000-2004.....	63
Figure 49. Teen Birth Rate (15-19 yrs) per 1,000 live births, 2000-2004	64
Figure 50. Percent of high school students who had sex during the last three months, 1995 and 2003	65
Figure 51. Percent of sexually active high school students who used a condom during last sexual intercourse, 1995 and 2003.....	65
Figure 52. Chlamydia Rate per 100,000, 2005.....	66
Figure 53. Gonorrhea rate per 100,000, 2005	66

Appendix B. Supplemental Data Tables

Table 23. Infant Mortality Rates for Alaska Natives by Service Region for Five Time Periods 1980-1983, 1984-1988, 1989-1993, 1994-1998, 1999-2003

Service Region	Percent	1999-2003	1994-1998	1989-1993	1984-1988	1980-1983
	Change	Rate per 1,000	Rate per 1,000	Rate per 1,000	Rate per 1,000	Rate per 1,000
Anchorage	57%↓	5.5	8.0	9.1	12.2	12.8
Barrow	69%↓	9.2	8.3	12.5	22.3	30.1
Bristol Bay	NS	15.6	5.9	9.1	16.5	10.4
Interior	73%↓	5.1	9.7	15.0	13.4	19.0
Kotzebue	63%↓	10.2	10.5	17.4	18.9	27.4
Mt. Edgecumbe	85%↓	2.7	7.9	10.6	12.4	18.3
Norton Sound	52%↓	11.3	8.9	18.4	16.2	23.3
YKHC AN	NS	13.7	9.2	15.7	15.9	15.1
U.S. Whites ^a	43%↓	5.8	6.4	7.6	9.0	10.4
Alaska Natives ^b	52%↓	8.2	8.5	12.7	14.6	17.1

↓ Significant Mantel Haenszel Chi-Square for Trend Test

^a U.S. White rates are from SEER data

based their denominator largely on mother's race. Our denominator includes all infants born to either a Native mother or father.

Table 24. Infant Mortality Rates for Alaska Natives by Service Region for Five Time Periods 1980-1983^c, 1984-1988, 1989-1993, 1994-1998, 1999-2003

Service Unit Name	Anchorage	Barrow	Bristol Bay	Interior	Kotzebue	Mt. Edgecumbe	Norton Sound	YKHC
Births 99-03 ^a	4918	544	514	1365	879	1488	886	2982
Deaths ^b	27	5	8	7	9	4	10	41
Rate per 1,000	5.5	9.2	15.6	5.1	10.2	2.7	11.3	13.7
Births 94-98 ^a	4508	482	680	1240	855	1521	894	2947
Deaths ^b	36	4	4	12	9	12	8	27
Rate per 1,000	8.0	8.3	5.9	9.7	10.5	7.9	8.9	9.2
Births 89-93 ^a	4949	638	549	1535	1091	1894	1087	3185
Deaths ^b	45	8	5	23	19	20	20	50
Rate per 1,000	9.1	12.5	9.1	15.0	17.4	10.6	18.4	15.7
Births 84-88 ^a	4191	629	727	1497	1057	2022	1114	2833
Deaths ^b	51	14	12	20	20	25	18	45
Rate per 1,000	12.2	22.3	16.5	13.4	18.9	12.4	16.2	15.9
Births 80-83 ^a	2980	399	480	1105	657	1478	687	1852
Deaths ^b	38	12	5	21	18	27	16	28
Rate per 1,000	12.8	30.1	10.4	19.0	27.4	18.3	23.3	15.1

^a All births in which either the mother or father is listed as Native for race. Births from 1996-2003 are from BVS Birth Database. Births before 1996 are from Alaska Native Births and Infant Deaths, 1980-1997, ANTHC, Alaska Area Office, Division of Planning, Evaluation, and Health Statistics, 2001.

^b All deaths for Alaska Natives under 1 year of age. Data comes from BVS Mortality Database.

^c The earliest time period comprises four years instead of five.

Table 25. Ratio of Infant Mortality Rates for Alaska Natives Compared to U.S. Whites for Service Regions, 1999-2003			
		95% Confidence Intervals	
	Rate Ratio	Lower Limit	Upper Limit
Mt. Edgecumbe	0.5	0.17	1.21
Interior	0.9	0.41	1.82
Anchorage	0.9	0.64	1.35
Barrow	1.6	0.65	3.71
Alaska Natives	1.7	1.39	2
Kotzebue	1.7	0.9	3.3
Norton Sound	1.9	1.02	3.51
YKHC	2.3	1.7	3.13
Bristol Bay	2.6	1.31	5.18

Appendix C. References and Data Sources

Alaska Data

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Appendix D. Description of Selected Data Sources

Behavioral Risk Factor Surveillance System

The Behavioral Risk Factor Surveillance System (BRFSS) is an ongoing national telephone-based survey supported by the Centers for Disease Control and Prevention (CDC). Alaska began participating in the BRFSS in 1990. The CDC now provides funding and technical assistance to all 50 states, Washington DC, and 3 territories to conduct the survey annually. The survey includes questions about health status and perceptions, preventive health practices, and risky behaviors that influence the prevalence of chronic disease, injury, and preventable infectious diseases.

The BRFSS is a standardized telephone interview conducted with a computer-assisted script. There is a fixed core of questions asked by all states every year and a rotating core asked by all states in alternating years. In addition, there are a number of optional modules that states may or may not choose to use and states may add questions on their own. The entire interview takes less than 30 minutes to complete. Interviews are conducted during every month of the year. Approximately 200 adults are interviewed each month in Alaska.

Respondents are adults 18 years and older living in households. Individuals living in military barracks, dormitories, nursing homes, and other group living situations are excluded. Apart from that exclusion, each state's sample is designed to be representative of the state's population. Respondents are contacted by telephone using a selection process based on area codes and prefixes that are highly likely to be associated with residential listings. Alaska uses an additional sampling procedure to take into account differences in telephone coverage by geographic and economic factors. It is estimated that 97% of the households in the state as a whole have telephones (U.S. Census 2000 Summary File 3), but the percentage is substantially lower in some geographic areas and among groups of lower socioeconomic status.

The analysis of BRFSS data requires complex statistical procedures to take into account the fact that not every adult resident of the state has an equal chance of being contacted for an interview. The analysis assigns a probability to each respondent which reflects their likelihood of being contacted. In addition, each person interviewed is treated as a representative for other, similar persons. The probability factor and assumption of representativeness are used to calculate a statistical weighting factor to be used in analysis to draw inferences about the overall population.

Cautionary Note:

For this report, the results of respondents from the BBAHC service area were analyzed in order to give an estimate of several behavioral measures on a regional level. Although these estimates can be useful for planning or evaluation purposes, the number of respondents from the region is relatively small therefore readers should use caution in the interpretation of these estimates. Confidence intervals were also not calculated for these estimates. For this reason, differences in estimates between populations, age groups, gender, and over time in this report cannot determine statistical significance.

BRFSS data has not been age-adjusted to account for the different age distributions between populations. Since Alaska's population as a whole is younger than the U.S. Population as a whole, comparisons between these populations should be interpreted with caution.

Appendix D. Description of Selected Data Sources

Youth Risk Behavior Survey

(Description from <http://www.hss.state.ak.us/dph/chronic/school/YRBS.htm>)

The Youth Risk Behavior Survey (YRBS) is part of an epidemiological surveillance system that was established in 1988 by the [Centers for Disease Control and Prevention \(CDC\)](#). The purpose of the Youth Risk Behavior Survey (YRBS) is to help monitor the prevalence of behaviors that put Alaskan youth at risk for the most significant health and social problems that can occur during adolescence and adulthood, in order to assist in prevention and intervention planning and evaluation. The YRBS survey is a school-based survey of high school students administered in cooperation with the [Department of Education and Early Development](#). This anonymous survey examines a minimum of six categories of adolescent behavior:

- behaviors that result in unintentional and intentional injuries
- tobacco use
- alcohol and other drug use
- sexual behaviors that can result in HIV infection, other sexually transmitted diseases (STD's) and unintended pregnancies
- dietary behaviors
- physical activity

The YRBS has been administered in Alaska five times, 1995, 1999, 2001, 2003 and 2005. Weighted (representative) data were collected in 1995 and 1999, and 2003, resulting in published reports.

Alaska Trauma Registry

(Description from http://www.hss.state.ak.us/dph/ipems/injury_prevention/trauma.htm)

The Alaska Trauma Registry is an information system of the most seriously injured patients in Alaska, and the treatment that they have received. Since 1991, the trauma registry has collected data from all 24 of Alaska's acute care hospitals.

The purpose of the registry is to evaluate the quality of trauma patient care and to plan and evaluate injury prevention programs. The criteria for inclusion in the trauma registry are patients with injuries who are admitted to an Alaska hospital, held for observation, transferred to another acute care hospital, or declared dead in the emergency department, and for who contact occurred within 30 days of the injury. Injuries include trauma, poisoning, suffocation, and the effects of reduced temperature.

Trauma Registry data is confidential and protected under Alaska Statute 18.23.010-070 All trauma registry personnel and those requesting trauma registry data are required to sign a confidentiality statement. The trauma registry does not include patient, physician, hospital, clinic, or ambulance service identifiers.

IPEMS provides quality improvement and administrative reports to hospital and ambulance service officials. Trauma registry information is also used by a variety of agencies and individuals in the planning and evaluation of injury prevention programs, for research and public education, for EMS training, and in developing public policy.

Appendix E. I.H.S. Service Units, And Corresponding Tribal Health Organizations, Villages And Census Area/Boroughs

I.H.S. Service Unit	Tribal Health Corporation/Village	Census Area/Borough
Anchorage	Alaska Native Tribal Health Consortium, Southcentral Foundation	Anchorage Municipality, Matanuska-Susitna Borough, Kenai Peninsula Borough, Kodiak Island Borough, Valdez-Cordova, Aleutians East Borough, Aleutians West Borough
	Aleutian Pribilof Islands Association	Aleutians East Borough, Aleutians West Borough
	Chickaloon	Matanuska-Susitna Borough
	Chitna	
	Chugachmuit	Kenai Peninsula Borough, Valdez/Cordova
	Copper River Native Association	Denali Borough, Southeast Fairbanks, Valdez/Cordova
	Eastern Aleutian Tribes	Aleutians East Borough
	Native Village of Eklutna	Anchorage Municipality
	Kenaitze Indian Tribe	Kenai Peninsula Borough
	Knik Tribal Council	Matanuska-Susitna Borough
	Kodiak Area Native Association	Kodiak Island Borough
	Mt. Sanford Tribal Consortium	Valdez/Cordova
	Southcentral Foundation	Anchorage Municipality, Matanuska-Susitna Borough
	St. George Island	
Seldovia Village Tribe	Kenai Peninsula Borough	
Native Village of Tyonek	Kenai Peninsula Borough	
Ninilchik Village Traditional Council	Kenai Peninsula Borough	
Annette Island	Metlakatla Indian Community	Prince of Wales/Outer Ketchikan
Barrow	Arctic Slope Native Association	North Slope Borough
Bristol Bay	Bristol Bay Area Health Corporation	Dillingham, Lake and Peninsula Borough, Bristol Bay Borough

I.H.S. Service Unit	Tribal Health Corporation/Village	Census Area/Borough
Interior	Tanana Chiefs Conference Council of Athabascan Tribal Governments Tanana Tribal Council	Denali Borough, Fairbanks North Star Borough, Southeast Fairbanks, Yukon-Koyukuk
Kotzebue	Maniilaq Association	Northwest Arctic Borough
Mt. Edgecumbe	Southeast Alaska Regional Health Consortium	Yakutat Borough, Skagway-Hoonah-Angoon, Haines Borough, Juneau Borough, Sitka Borough, Wrangell-Petersburg, Prince of Wales/Outer Ketchikan
Ketchikan	Ketchikan Indian Community Hoonah Indian Community Yakutat Tlingit Tribe	Ketchikan-Gateway Borough Yakutat Borough
Norton Sound	Norton Sound Health Corporation	Nome
Yukon-Kuskokwim Delta	Yukon-Kuskokwim Health Corporation	Bethel, Wade-Hampton