



The Health Status of American Indians and Alaska Natives Living in King County

A Special Report Produced by:
Public Health – Seattle & King County
in partnership with
The Seattle Indian Health Board



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Cover Artwork: Áldigáws (Hummingbird) by Joyce Troyer-Willson who is a member of the Tsimshian Tribe from Ketchikan, Alaska. She belongs to the Gishbuwidwada (Blackfish) Clan. Ms. Troyer-Willson served as a member of the SIHB Board of Directors for 10 years and served as Board President from 1985 to 1990. Her portfolio includes a totem pole raised in her ancestral village of Metlakatla, Alaska.

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Foreword

Several studies conducted by Public Health - Seattle & King County show that not all residents of this region enjoy good health. One often overlooked group is urban American Indians and Alaska Natives.

During the 1950s, Seattle was designated a relocation center for thousands of Indian people displaced by the ill-fated Indian relocation and termination policies of the federal government. Indians from across the nation were sent to Seattle with promises of housing, education, and jobs. While many succeeded in making the transition to urban life, others remain mired in poverty, struggling to find their way in the new environment.

Urban Indians now represent the largest segment of Indian people in the nation. However, federal policies regarding Indian health are generally directed at Indians living on or near the 226 Indian reservations scattered across the United States. Indians who leave reservation homes frequently find themselves without access to health care or lack an understanding of how the mainstream health system operates.

The Seattle Indian Health Board (SIHB) and Public Health - Seattle & King County have provided primary health care for Indian people and other low income residents for many years. This report is a result of the partnership that has evolved between Public Health - Seattle & King County and the SIHB on behalf of Indian people who now call King County home.

Understanding health disparities is the first step in developing effective interventions to correct these differences. We thank all of our community partners for their continuing support and efforts. We hope that this report will be a catalyst for both dialogue and action as we address the health concerns of the continent's first residents.

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Health Status of American Indians and Alaska Natives in King County

Report Highlights

In the 2000 U.S. Census 33,000 King County residents reported that they were of American Indian or Alaska Native (AI/AN or Indian) heritage. Together with Indians living in Pierce County, they comprise one of the largest concentrations of Indian people in the nation. Indians in King County have diverse ethnic identities; members come from hundreds of federally-recognized tribes and from tribes not officially recognized by the U.S. government.

The health status of Indians living in King County presents a varied picture with both notable improvements over time and a number of new or continuing challenges.

Progress toward better health:

- **Decreasing mortality:** The total mortality rate has decreased and is nearly 20% lower than the rate in 1980. With respect to specific causes, there have been decreases in mortality due to unintentional injuries, chronic liver disease and cirrhosis, and homicide. Since 1994, however, overall mortality has begun to increase.
- **Improved maternal and prenatal care:** Since 1980, the timely use of prenatal care (within the 1st trimester of pregnancy) has increased significantly to 91% of all births to AI/AN women. Decreases in maternal smoking and alcohol use have also been observed in recent years.
- **Decreasing communicable disease:** Substantial decreases in sexually transmitted diseases such as gonorrhea and chlamydia have occurred in the last decade.

Continuing and new health challenges:

- **Serious disparities in health indicators continue:** While some health concerns have decreased significantly in past years, these decreases have not kept pace with advances for all King County residents.
- **Increase in some rates and risk for serious disease:** Mortality overall has increased from 1994 to 1998. Increases are evident with respect to lung cancer, unintentional injury, diabetes, and drug-related causes.
- **High prevalence of some risk factors for disease:** Among adults, smoking (37%) and overweight status (60%) are higher than countywide rates (19% and 46%, respectively). The same indicators among AI/AN youth attending Seattle Public Schools (grades 7 through 12) were lower than the rates for AI/AN adults, but higher than the rates for all youth attending these schools. This was especially true among high school students. Similarly, other indicators with respect to carrying weapons, gang involvement, being the target of a weapon, and drug and alcohol use were also higher than for all students in the district.
- **Poverty:** Over one third of AI/AN children and over one quarter of adults lived in poverty in 1990. While more recent data are not available for children, surveys of adults, as recent as 1998, indicate that up to 41% of AI/AN live below 200% of the federal poverty level.
- **Lack of health insurance:** Up to 23% of adults report having no health insurance compared to 12% of all county residents.

Notes about using this report

In general the health indicators included in this report which pertain to the health of American Indians and Alaska Natives living in King County are compared to rates for all King County residents. Some national data on American Indians and Alaska Natives has also been included for comparison purposes when available. It should be noted that this report uses the terms "American Indian/Alaska Native," "AI/AN" and "Indian" interchangeably.

On rates and statistical significance: *The term "significant" when comparing numerical data is used to imply a statistically significant difference in rates. A rate in this report is usually expressed as the number of events per 100,000 population per year. When this applies to the total population (all ages), the rate is called the crude rate. When the rate applies to a specific age group (e.g., age 15-24), it is called the age-specific rate. The crude and age-specific rates present the actual magnitude of an event within a population or age group.*

When comparing rates between populations, it is useful to calculate a rate which is not affected by differences in the age composition of the populations. For example, if one population has a higher death rate and more older people, it will not be easy to determine if its rate is truly higher or just reflects the high death rate among older people. The age-adjusted rate is a rate that mathematically removes the effect of the age composition. By convention, we adjust the rate to the age distribution of the 1940 U.S. population.

When comparing rates between different groups with bar graphs, the "95% confidence interval" or margin of error is shown for each rate to assess how much the rate is likely to vary due to chance. For each estimated rate, one would expect the rate to fluctuate, but to remain within the confidence interval 95% of the time. The larger the population under consideration, the smaller the confidence interval, and thus the more reliable the rate. When comparing two rates, if the confidence intervals do not overlap, the difference in the rates is considered "statistically significant," that is, chance or random variation is unlikely to be the reason for the difference.

I. Introduction and Overview

More American Indians and Alaska Natives (AI/AN or Indians) now live in major metropolitan regions of the nation, like King County, than on Indian reservations. The 1990 Census found that over 60% of Americans who self-identify as American Indian or Alaska Native were living outside of reservations, with the majority of all Indians (56%) living in major metropolitan centers. In spite of this geographic shift and because the urban Indian populations in these areas are small and geographically dispersed, little is known about their general health status.

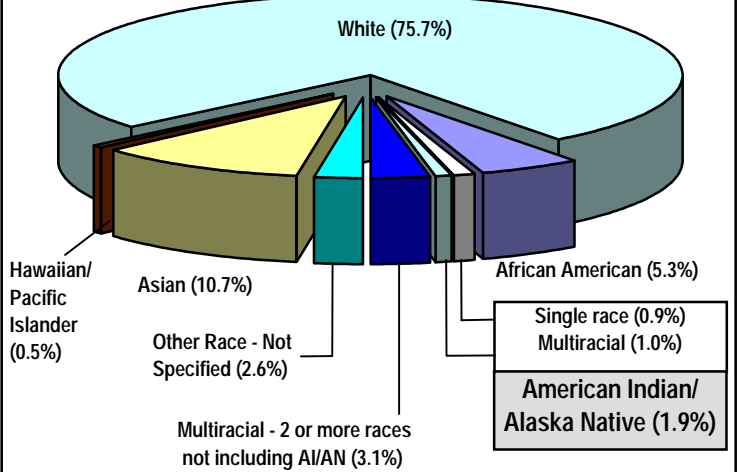
The Seattle/Tacoma metropolitan area had the 7th largest concentration of Indian people in the United States, according to the 1990 Census. In the 2000 Census, slightly more than 33,000 residents (1.9%) out of a total of 1.7 million people living in King County indicated that they were of American Indian or Alaska Native heritage (**Figure 1**). While nearly half (15,922) of these residents identified themselves solely as AI/AN, the remaining 17,100 reported mixed heritage. These figures when taken together probably represent an increase in the number of AI/AN living in King County when compared to the 1990 Census (**see box at right for a more details**).

Ethnic diversity among Indians living in King County is also quite great. A recent study performed for the Seattle Indian Health Board (SIHB) found that Indian people from 238 federally-recognized Indian tribes were served by this community health center in the past decade. Indians from dozens of non-federally recognized tribes also receive their care at the SIHB.

An earlier mapping study of clients of the SIHB found that there were no Indian “neighborhoods.” Instead, it was found that Indian people are living in most county zip codes. Because the populations are culturally diverse and geographically scattered, establishing reliable ways to identify health problems and track health conditions over time is both difficult and expensive.

In this report, the health status of Indians living in King County is described using locally available health data such as birth and death records. Communicable disease reports and large state

Figure 1. King County population by racial and ethnic make up, 2000.



Note: 11.0% of King County residents reporting AI/AN heritage are also of Latino or Hispanic ethnicity. Of all King County residents, 5.5% report Latino or Hispanic ethnicity.

How Many American Indians and Alaska Natives Live in King County?

The main source of information concerning the number of American Indians and Alaska Natives living in King County comes from the U.S. Census. On the 2000 Census, 33,022 persons indicated AI/AN racial heritage. This total number probably reflects an increase in the number of AI/AN living in King County when compared to the 17,305 AI/AN counted in 1990. In 2000, however, 15,922 indicated AI/AN heritage alone, while the remaining 17,100 persons indicated a mixed heritage. Since persons in 1990 were not given the option of indicating a mixed heritage, it is difficult to compare the 1990 and 2000 figures. It would be inaccurate to use the 2000 figure of 15,922 alone, since we do not know how many of the 17,100 persons reporting mixed heritage would have recorded their heritage had they been given only one choice. It is likely, therefore, that the AI/AN population in King County has increased over the past decade, since this would require only one in 12 (8%) of those who reported being of mixed race in 2000 to chose the single AI/AN category.

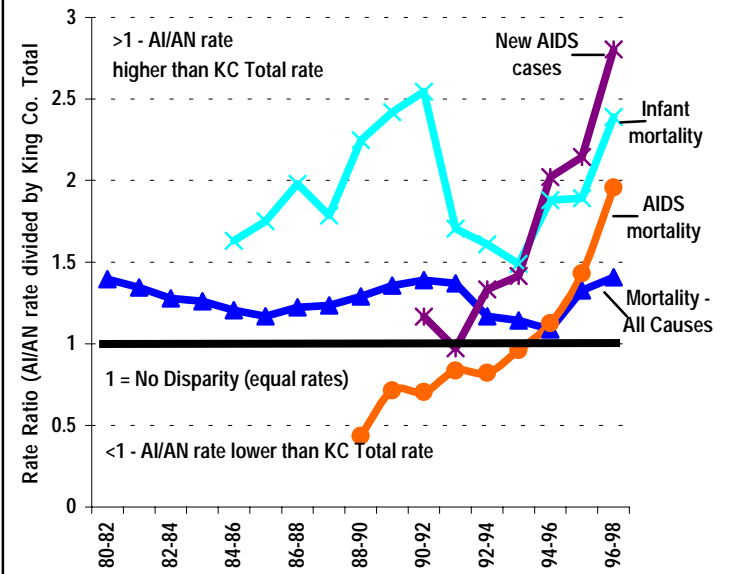
Other factors also influence estimates of AI/AN living in King County. For instance, some may not have participated in the census due to homelessness, frequent moving, or personal choice. Others remain skeptical of government attempts to count them due to historic abuses. Still other Indians, although they usually reside in King County, may have chosen to list themselves as living on a particular Indian reservation where they might have family or other strong connections.

wide surveys with large samples in King County are also used. In addition, findings from the 1999 Seattle Public Schools Teen Health Survey which included Indian students are reported. Because the number of actual cases of any particular indicator can be small, statistical confidence intervals may appear quite large. However, even with these statistical limitations, there is abundant evidence that Indians in King County suffer from poorer health when compared to the county as a whole. Key findings in this report are highlighted on page iv.

While some health indicators for Indians have improved since 1980, much of this progress has not kept pace with improvements seen for all county residents. For many indicators, health disparities have persisted or even increased significantly in the past decade (**Figure 2**).

Understanding the health of urban Indians and the conditions that affect them is an important step in designing programs and interventions to reduce the disparity in health status as demonstrated in this report.

Figure 2. Disparities in health indicators (comparison of health indicators between American Indians/Alaska Natives living in King County and all King County residents), three-year averages, 1980-1998.



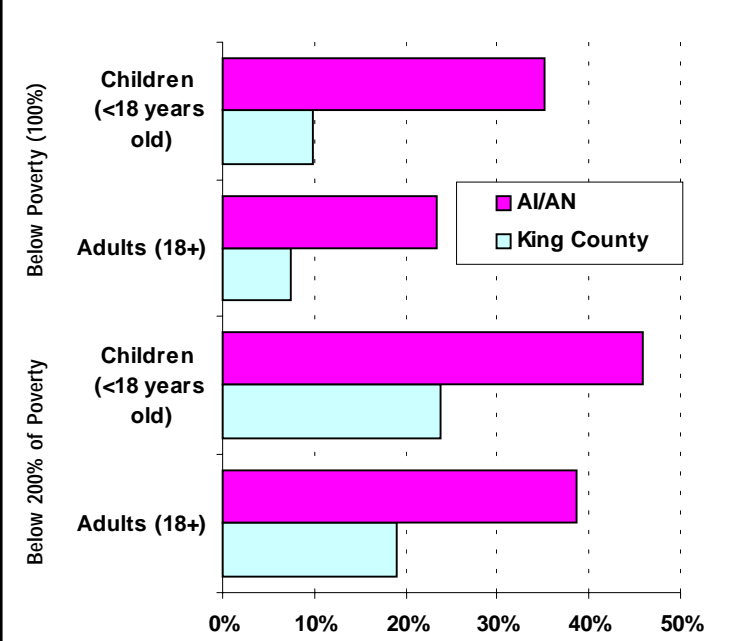
Source: Washington State Department of Health. Center for Health Statistics and Public Health – Seattle & King County HIV/AIDS Epidemiology

II. Health Status and Access to Health Services

Social and Economic Well-Being

- According to 1990 Census data which include information on 1989 household income, 35% of Indian children less than age 18 and 26% of adults lived in poverty (**Figure 3 and Appendix 1**). These rates were significantly higher than countywide rates of 10% and 7%, respectively. Nearly half (46%) of AI/AN children and 39% of adults were living in households with incomes below 200%
- More recent data from the State Population Survey conducted by telephone in 1998 indicate little to no improvement in relation to the 1989 findings. In this survey 38% of adult AI/AN respondents reported household incomes below 200% of the federal poverty level, compared to 15% countywide.
- More recent local data for children were unavailable.

Figure 3. Percent of American Indians and Alaska Natives living in poverty in King County, 1989

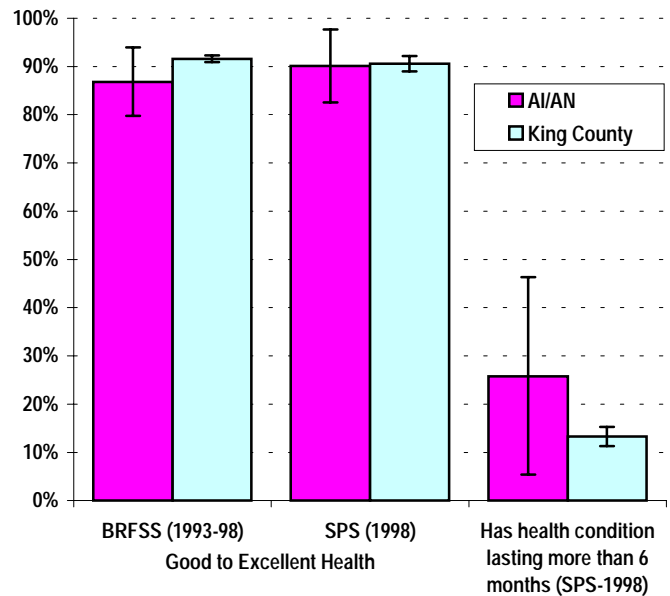


Source: 1990 U.S. Census.

General Health Status (Figure 4 and Appendix 2)

- Nearly all (approximately 90%) American Indian/Alaska Natives participating in two random telephone surveys between 1993 to 1998 reported “good” to “excellent” health. These rates were statistically the same as the rates for all King County residents.
- Although twice as many AI/AN respondents reported having a health condition lasting 6 months or longer, compared to all King County residents combined (25.8% and 13.3%, respectively), these differences also were not statistically different.
- Available 1990 Census data, however, report significantly higher rates of work limitations due to disability among AI/AN, compared to all King County residents combined. In particular, about 20% of AI/AN reported disability-related work limitations, compared to 11.3% countywide.

Figure 4. Self-reported health status and reports of having health conditions lasting more than 6 months, King County, 1993-1998.

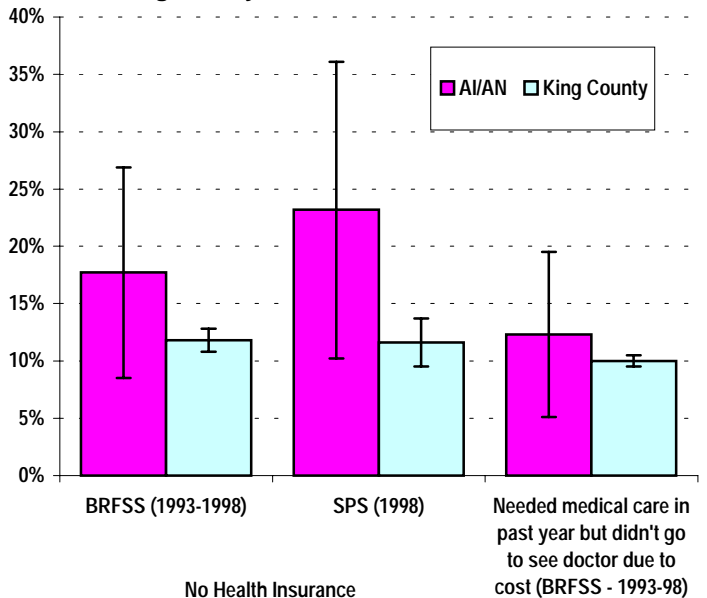


*BRFSS – Behavioral Risk Factor Surveillance System. Washington State Department of Health and U.S. Centers for Disease Control
SPS – State Population Survey. Washington State OFM.

Health Insurance Status and Unmet Medical Need (Figure 5 and Appendix 2)

- AI/AN respondents in King County had higher rates of being without health insurance in two studies, but these findings were not statistically significant. AI/AN rates in King County were 18% to 23%, compared to about 12% for all residents in both surveys.
- Reports of not receiving needed medical care among AI/AN were similar to countywide rates (12% and 10%, respectively).

Figure 5. No health insurance and unmet medical need due to cost among American Indians/Alaska Natives and all residents, King County, 1993-1998.



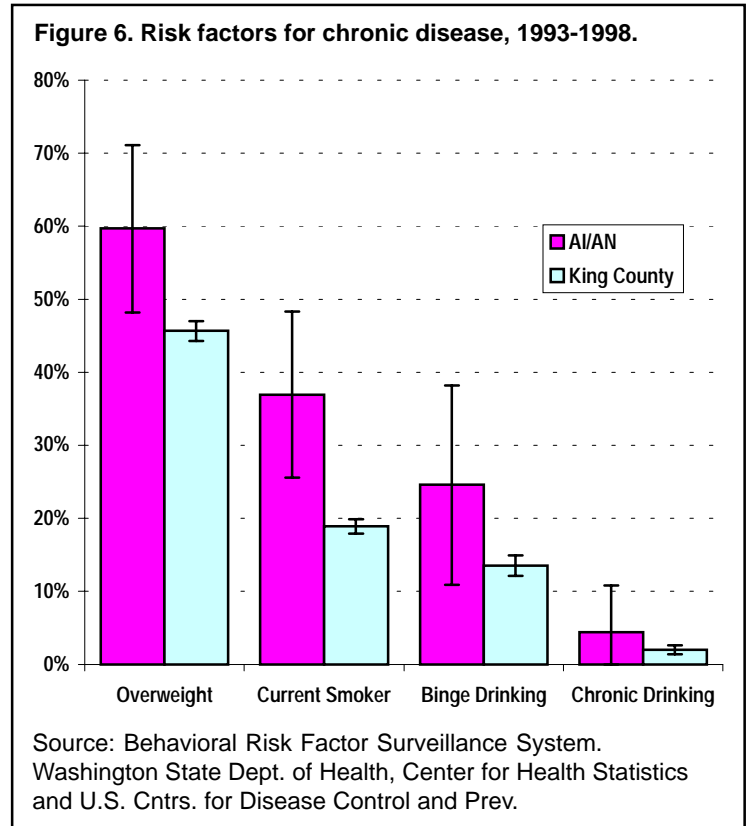
*BRFSS – Behavioral Risk Factor Surveillance System. Washington State Department of Health and U.S. Centers for Disease Control
SPS – State Population Survey. Washington State OFM.

Risk Factors for Chronic Disease (Figure 6 and Appendix 3)

With respect to measures of risk factors for chronic disease, several indicators were significantly higher among AI/AN survey respondents, when compared to all King County residents.

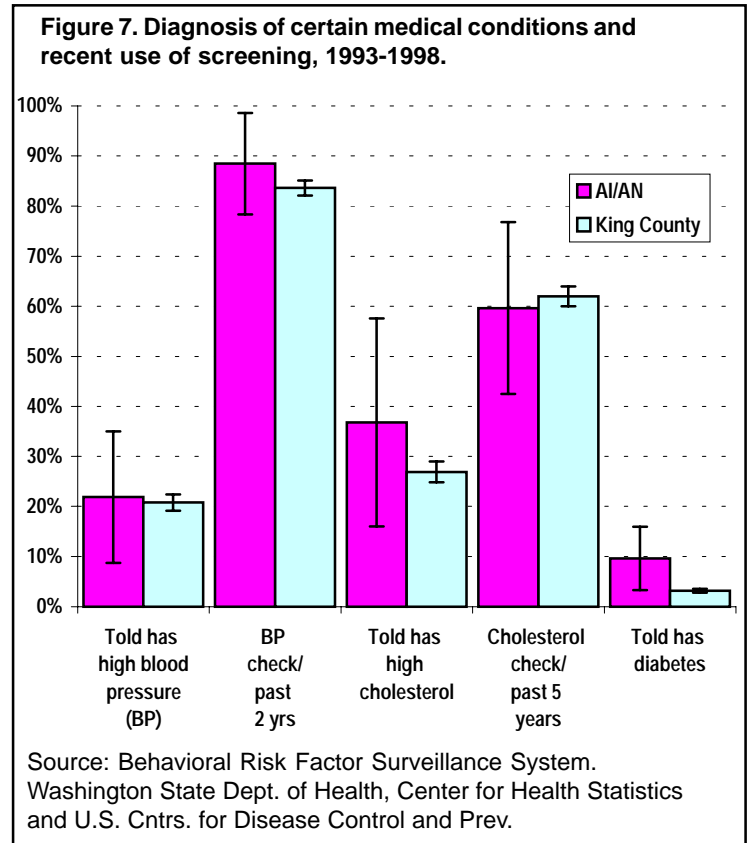
These indicators included:

- Higher overweight status, 60% among AI/AN compared to 46% among all respondents.
- Higher rates of smoking, 37% among AI/AN compared to 19% countywide.
- Rates of binge drinking (consumption of 5 or more drinks on a single occasion in the past month) and chronic drinking, although consistently higher than countywide rates were not statistically different from the rates for all respondents countywide.



Diagnosis of certain medical conditions and recent use of screening (Figure 7 and Appendix 3)

- Reports of having high blood pressure or high cholesterol among AI/AN in King County were not statistically different than countywide totals.
- Likewise, screening rates for high blood pressure or high cholesterol were also similar to countywide rates.
- However, nearly 10% of AI/AN respondents in King County reported having diabetes, compared to 3% of respondents countywide.



III. Mortality

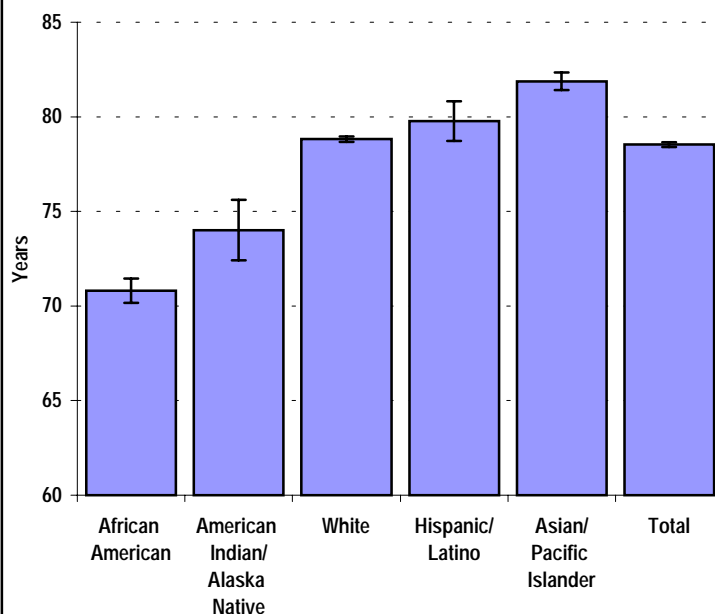
Life Expectancy and Mortality due to All Causes

- Based on data collected over the years 1996 to 1998, American Indians and Alaska Natives living in King County have life expectancies which are nearly 5 years less than the life expectancy of all residents countywide (74.0 years compared to 78.5 years, respectively) (**Figure 8 and Appendix 4a**).
- The shorter life expectancy is reflected in higher overall mortality rates among AI/AN compared to countywide rates. Since 1980 mortality rates among AI/AN in King County have dropped significantly (**Figure 9**). Some of this progress, however, has been erased due to a significant increase in mortality rates over the past five years (1994-1998).
- Under-reporting of AI/AN race on death certificates has been documented in a number of death certificate review studies. Studies conducted by the U.S. Indian Health Service estimated that misclassification of AI/AN race on death certificates occurred on approximately 10% of death certificates in Washington State.¹ Findings of another study conducted by the Seattle Indian Health Board suggest that the rate of misclassification may be even higher.² In this study 29% of persons who had identified AI/AN as their race in their health records had their race incorrectly reported on their death certificate. All mortality statistics in this report, however, do not reflect this under-reporting, but this difference, as reported by the Indian Health Service, is illustrated in **Figure 9**.

¹ U.S. Indian Health Service. Adjusting for miscoding of Indian race on state death certificates, November 1996.

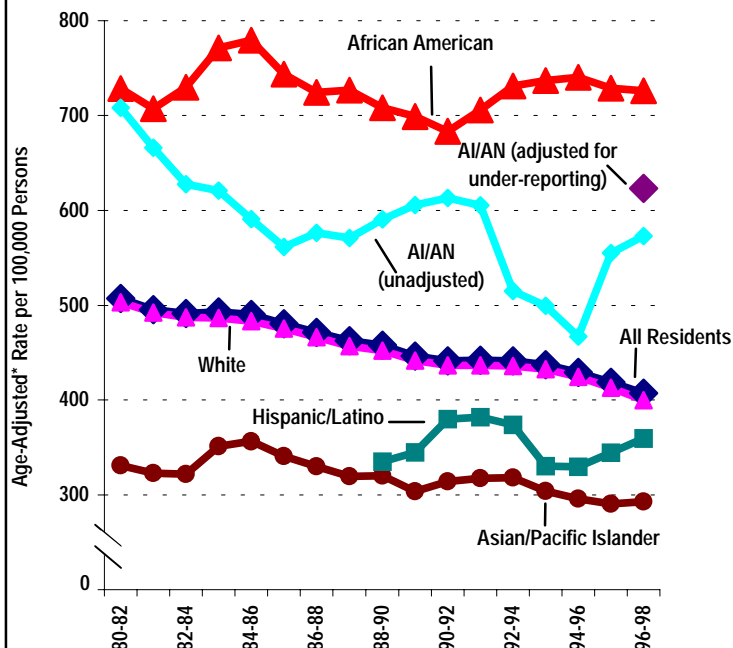
² Sugarman, J.R., Hill, G., Forquera, R., Frost, F. Coding of race on death certificates of patients of an urban Indian health clinic, Washington, 1973-1988. *IHS Primary Care Provider*. 1992. 17 (7): 113-115.

Figure 8. Life expectancy at birth by race/ethnicity, King County, 1996-1998



Source: Washington State Department of Health, Center for Health Statistics.

Figure 9. Mortality due to all causes by race/ethnicity, King County, three-year averages, 1980-1998.



*Rates adjusted to the 1940 U.S. Population.

Source: Washington State Department of Health, Center for Health Statistics.

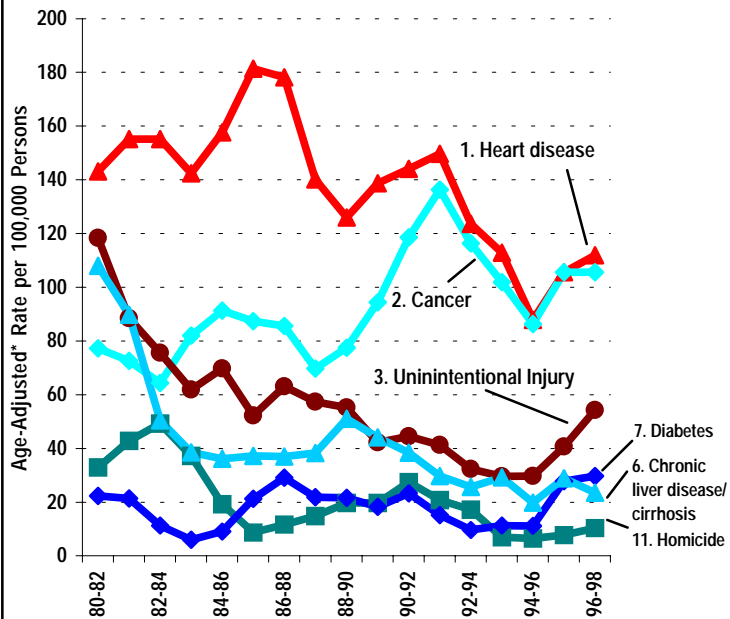
Age-Specific Mortality (Appendix 4b)

- Higher rates of death among American Indians/Alaska Natives in King County compared to countywide rates are observed primarily among persons less than age 45.
- 1980 through 1998 death rates decreased significantly among persons age 15 to 24 and 45 to 65. The decrease among the 25 to 44 year old group during this time period was only marginally significant.
- In the more recent years from 1994 through 1998, however, significant increases in mortality have been observed with respect to children (ages 1 to 14 years) and older adults (ages 65 to 84 years).

Leading causes of death (Figures 10 and 11, and Appendix 5)

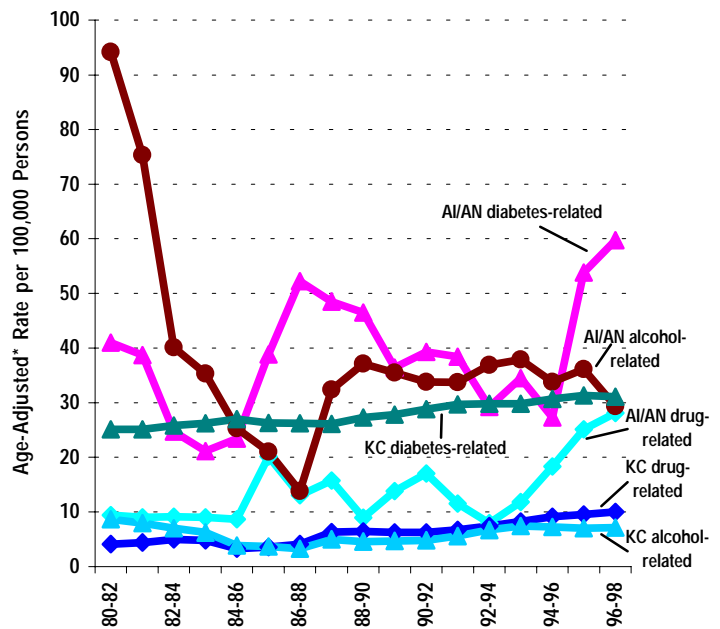
- Similar to other groups in King County, the leading causes of death among American Indians/Alaska Natives are heart disease and cancer. Heart disease mortality declined significantly over the period from 1986 to 1998. Although the increase in mortality due to all types of cancer since 1980 is not statistically significant, a significant increase in lung cancer over this time period is evident.
- Unintentional injury is the third leading cause of mortality among AI/AN. Mortality rates due to unintentional injury are 122% higher than countywide rates, where unintentional injury ranks sixth in terms of leading causes of death. Similar to the trend for all mortality, the rate of unintentional injury deaths has dropped significantly since 1980, but since 1994 the rate has begun to rise again significantly.
- Cerebrovascular disease and pneumonia combined with influenza are equally ranked as the 4th leading cause of death.

Figure 10. Leading causes of death with significant increasing or decreasing trends among American Indians and Alaska Natives living in King County, three-year averages, 1980-1998.



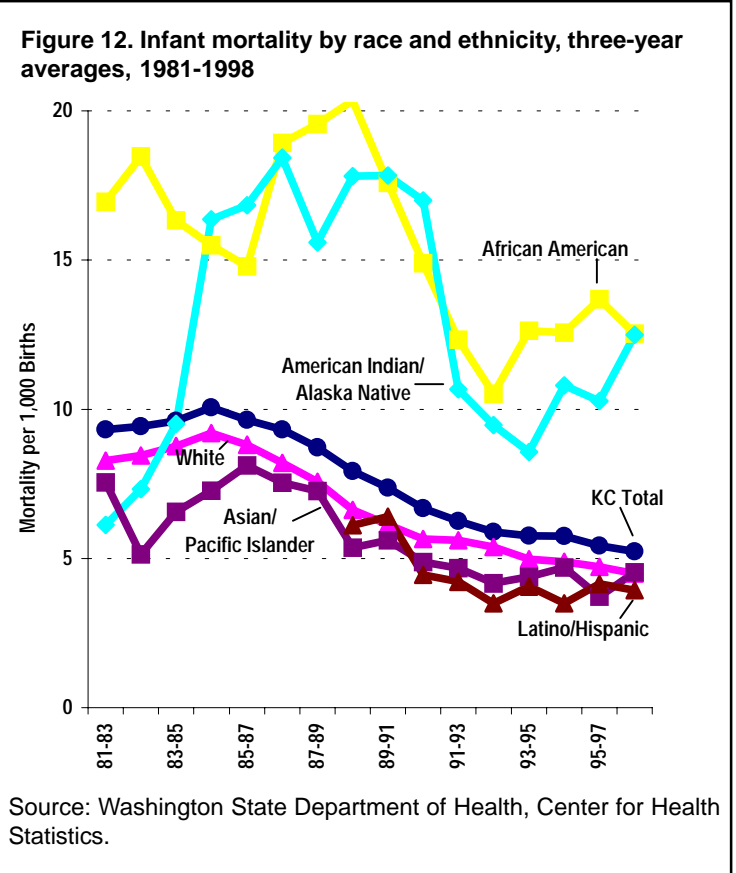
*Rates adjusted to the 1940 U.S. Population.
Source: Washington State Department of Health, Center for Health Statistics.

Figure 11. Mortality related to diabetes and alcohol and drug use, 1980-1998.



*Rates adjusted to the 1940 U.S. Population.
Source: Washington State Department of Health, Center for Health Statistics.

- Chronic liver disease, including cirrhosis of the liver, among American Indians and Alaska Natives in King County is the 6th leading cause of death among AI/AN in King County. Although mortality due to this cause remains more than twice as high as countywide rates, there has been a significant decrease in deaths since 1980.
- Diabetes ranks as the 7th leading cause of death among AI/AN in King County. The mortality rate due to diabetes is more than twice as high as the countywide rate and has increased marginally over the the five year period from 1994-1998.
- The impact of diabetes as a major cause of death among American Indians/Alaska Natives in King County becomes even more pronounced when deaths listing diabetes as both a primary and contributing cause of death are considered. All mortality due to diabetes-related illness has increased significantly over the period 1994 to 1998. If it were listed among leading causes of death, it would rank 4th after unintentional injury.
- Homicide among AI/AN now ranks as the 11th leading cause of death. Homicide rates have declined significantly since 1980.
- Alcohol-related deaths have declined significantly over the period 1980 through 1998.
- However, drug-related deaths among American Indians/Alaska Natives in King County occur at a rate over 4 times higher than the countywide rate and have increased significantly since 1980.



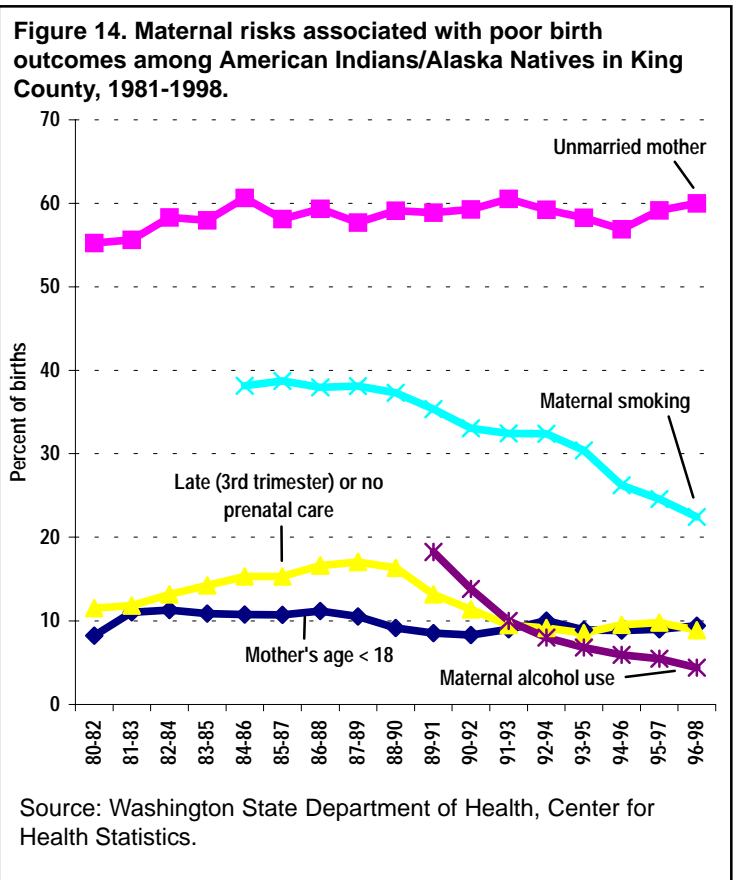
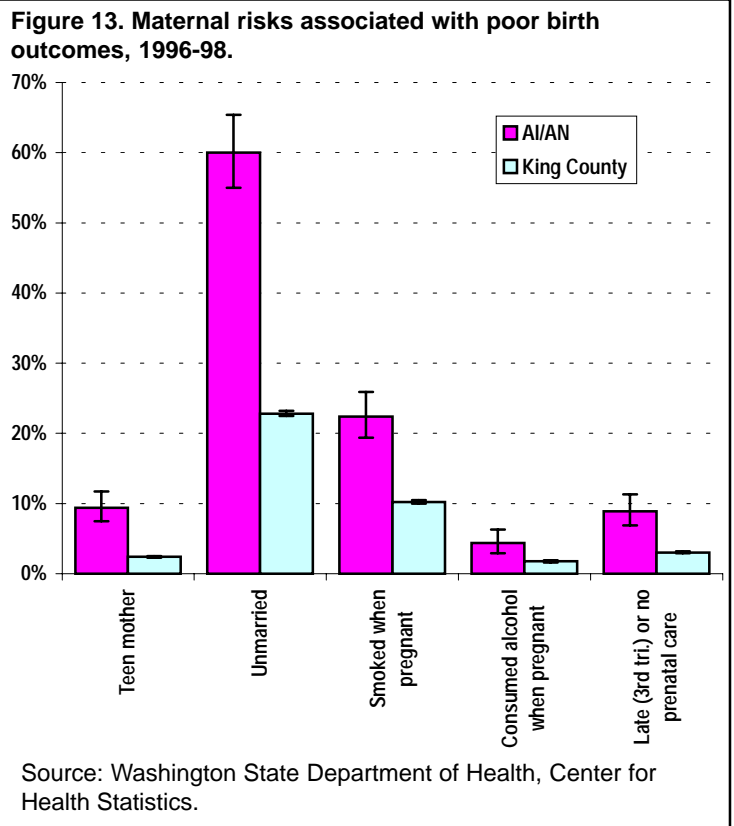
IV. Maternal and Child Health

- Mortality among infants born to mothers who are American Indian/Alaska Natives is more than twice as high as mortality for infants born to all mothers countywide (**Figure 12 and Appendix 6a**). Infant mortality peaked in 1990 with 8 deaths and declined significantly until 1993 when 2 deaths were recorded. Although rate in **Figure 12** appears to be increasing in recent years, no significant trend is evident at this time. More than half of the infant deaths are attributable to Sudden Infant Death Syndrome (SIDS), which occurs at a rate 10 times higher than the countywide rate.

- Rates of low birth weight and premature births among infants born to AI/AN mothers are marginally higher than countywide rates. In recent years (1994-1998), however, the rate of premature births has dropped significantly (**Appendix 6b**).
- Several other factors associated with poor birth outcomes are significantly higher among mothers who are AI/AN compared to all mothers countywide (**Figure 13 and Appendix 6b**). These factors include significantly higher percentages of teenage mothers (9% and 2%, respectively), unmarried mothers (60% and 23%, respectively), maternal smoking (22% and 10%, respectively) and maternal alcohol use (4% and 2%, respectively). Late (3rd trimester) or no prenatal care was also more common among AI/AN mothers than all mothers countywide (9% and 3%, respectively).
- Significant improvements over time since 1980 are evident with respect to late or no prenatal care (**Figure 14**). More recently, from 1994 to 1998, smoking and alcohol use during pregnancy have decreased. Use of alcohol during pregnancy is strongly related to the occurrence of Fetal Alcohol Syndrome (FAS) and other disability. Due to limitations in screening for FAS, however, estimates of the number of persons affected by FAS are difficult to produce. More information concerning FAS is referenced in the resource section of this report.
- The percentage of single mothers giving birth has increased marginally to 60% in the period from 1980 to 1998.

Stress and Social Support During Pregnancy

- Increasingly, researchers are better able to document the relationship between stress and its negative effect on birth outcomes (e.g., preterm delivery and other risk factors for infant mortality). As a surrogate measure of stress experienced by recent mothers, we present in **Appendix 7** details pertaining to stressful life events measured by the statewide Pregnancy Risk Assessment Monitoring System (PRAMS) survey conducted among women who gave birth in the preceding year.

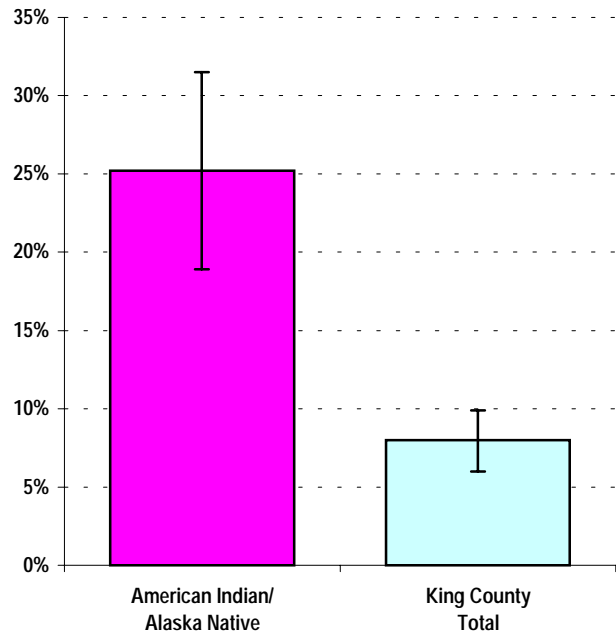


- With respect to eight of the 13 measures shown in **Appendix 7**, the rates for AI/AN mothers are significantly higher than for all mothers countywide. One in four (25.2%) AI/AN mothers reported 5 or more stressful life events in the year preceding the delivery of their child compared to less than one in 10 (8.0%) mothers countywide (**Figure 15**).
- Just as stress in a mother's life is believed to increase the risk of poor birth outcomes, some studies indicate that social support (particularly from the woman's partner or other close family members or friends) may help buffer the negative effects. However, with respect to four indicators measured in the PRAMS survey (**Figure 16**), AI/AN mothers had consistently lower levels of social support when compared to all mothers countywide.

V. Middle and High School Youth

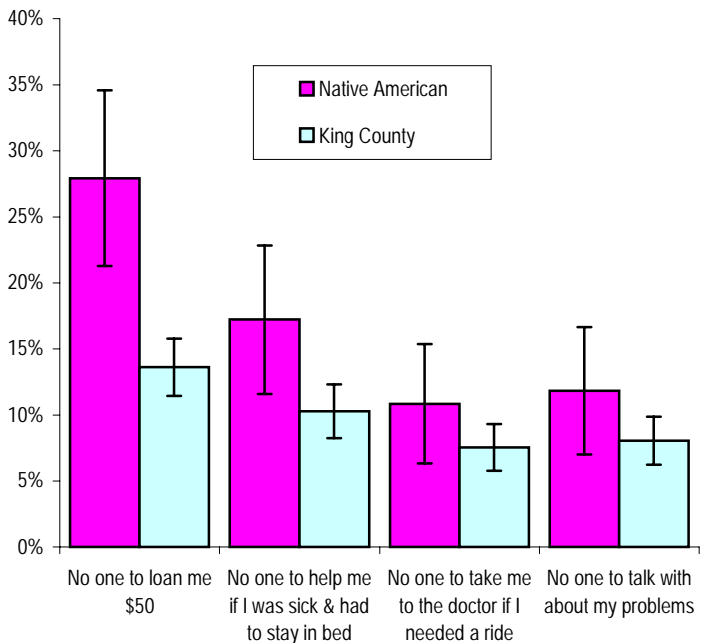
Data concerning the health of school-age youth of American Indian/Alaska Native heritage are extremely limited. In the year 2000, AI/AN children and youth living in King County under age 18 years old are estimated to number approximately 9,900. In addition to mortality data (Appendix 4b) and teen pregnancy data which has been reported earlier in this report, some health behavioral and risk factor data are available from statewide and local surveys of youth attending public middle and high schools. At the statewide level, only a sample of schools are surveyed, making the number of AI/AN youth surveyed within King County too small for analysis. Within Seattle Public Schools, however, larger samples of Indian students attending high schools and grades 7 and 8 have been included in periodic surveys. The most recent survey took place in the spring of 1999. The results of this survey, called the 1999 Teen Health Survey, are reported in detail in a final report published by the Seattle Public Schools Health Education Office.

Figure 15. Reporting Five or More Stressful Life Events in the Year Before Delivery, 1996-1998.



Source: Washington State Department of Health, Center for Health Statistics. Pregnancy Risk Assessment Monitoring System (PRAMS).

Figure 16. Lack of Social Support During Pregnancy, King County, 1996-1998.



Source: Washington State Department of Health, Center for Health Statistics. Pregnancy Risk Assessment Monitoring System (PRAMS).

This report includes a summary of the findings as they pertain to AI/AN youth in Seattle Public Schools who attend high school and 7th and 8th graders at selected middle schools. The 1999 Seattle Teen Health Survey included a sample of 31 7th and 8th graders and 117 high school students who self-identified as American Indian or Alaska Native. Overall, the total sample of students included 1,827 7th and 8th graders and 8,665 high school students.

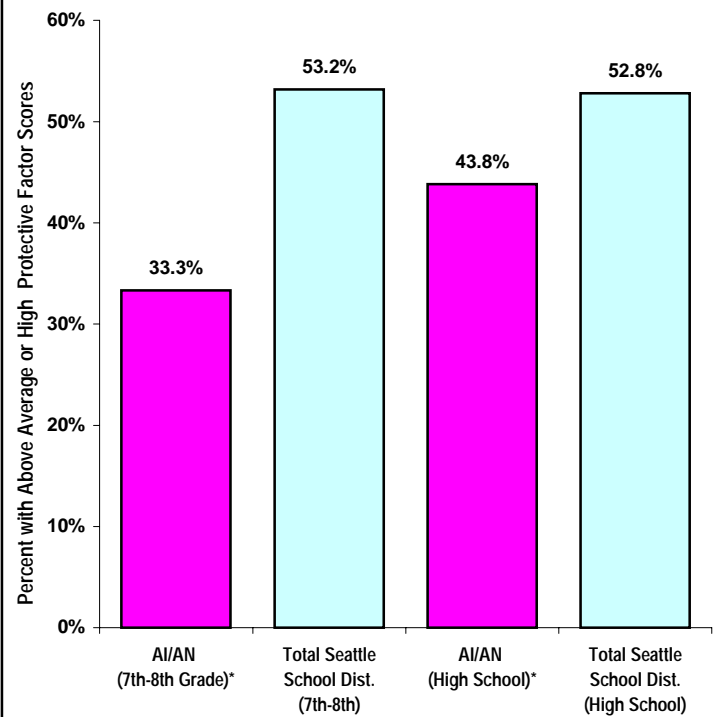
These selected findings, however, should be interpreted with caution since the number of AI/AN students surveyed was only a small fraction of the AI/AN youth who would be of middle school and high school age. In addition, generalization of these results to AI/AN youth living in King County outside Seattle or who do not attend Seattle Public Schools should also be made with great hesitation.

Family Environment and Protective Factors

This section summarizes the results for questions pertaining to family environment and protective factors (also called developmental assets). Emerging research shows that protective factors may help youth avoid engaging in harmful risk behaviors such as smoking or illegal drug use. The indicators used in the Seattle Teen Survey to describe some protective factors are presented in **Appendix 8**.

- Family rule setting and parental encouragement among the AI/AN youth participating in the Teen Health Survey were similar for participants of all ethnicities. Reports of substance abuse among AI/AN family members, however, were reported more frequently by both middle school and high school youth compared to the rates for all students combined (41.9% and 26.3%, respectively, among 7th and 8th graders and 48.2% and 27.7% among high school students).
- Above average or high protective factor scores developed from the 11 indicators listed in **Appendix 8** were significantly lower for AI/AN middle school students and marginally lower for AI/AN high school students (33.3% and 53.2% among 7th and 8th graders, respectively, and 43.8% and 52.8% among high school students) (**Figure 17**).

Figure 17. Protective Factors (developmental assets) among Seattle Public School Middle (7th and 8th grade) and High School Students, 1999.



* Significantly different from total.

Source: 1999 Teen Health Survey. Seattle Public Schools, Health Education Office.

Physical and Mental Health

General physical and mental health indicators among Seattle Public Schools middle and high school students are presented in **Appendix 9**.

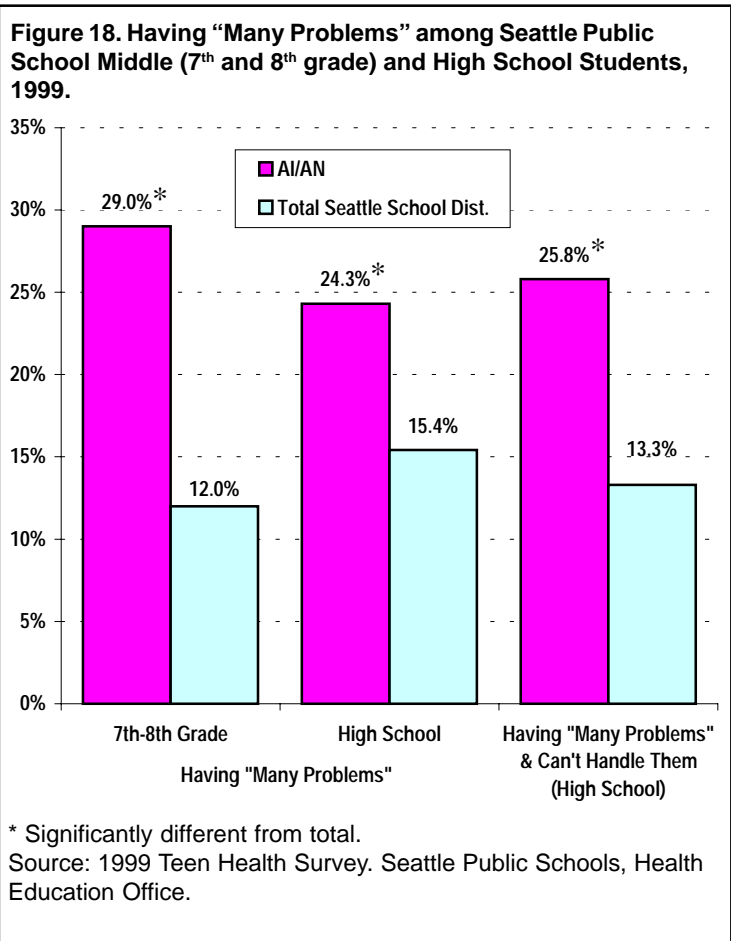
- Access to health and dental care and reports of asthma in the past year were similar among AI/AN respondents and all survey participants.
- Indicators for being overweight or at-risk for being overweight, however, were significantly higher among AI/AN high school respondents compared to all students (14.3% were overweight compared to 7.4% overall, and 21.4% compared to 12.8% overall were at-risk).

- With respect to transportation safety, AI/AN respondents reported always using a seatbelt at rates which were not statistically different from the rates for all students. Reports of never riding with a drunk or high driver, however, were significantly lower among AI/AN high school respondents compared to all respondents (57.3% and 69.5%, respectively).
- Reports of suicide attempts or depression among AI/AN respondents were also similar to overall rates. However, both middle and high school AI/AN respondents reported having “many problems” more frequently than all of the respondents combined (29.0% compared to 12.4% overall among 7th and 8th graders and 24.3%, compared to 15.4% overall among high school students) (**Figure 18**). AI/AN high school students also reported “having many problems” and not being able to handle them more frequently than all respondents in general (10.4% and 4.4%, respectively). In addition, fewer AI/AN high school students felt their future would be good compared to students in general (57.4% and 70.5%).

Risk Behaviors

Risk behaviors including violence and weapons, drug use, and sexual behaviors are reported in **Appendices 10 and 11**.

- There were few statistically significant differences between AI/AN 7th and 8th grade respondents compared to all 7th and 8th grade respondents. The pattern of responses among AI/AN 7th and 8th graders, however, is similar to AI/AN high school respondents, which may be cause for concern. Questions pertaining to sexual activity among middle school students were not asked.
- Among AI/AN high school respondents, many differences are evident when compared with all

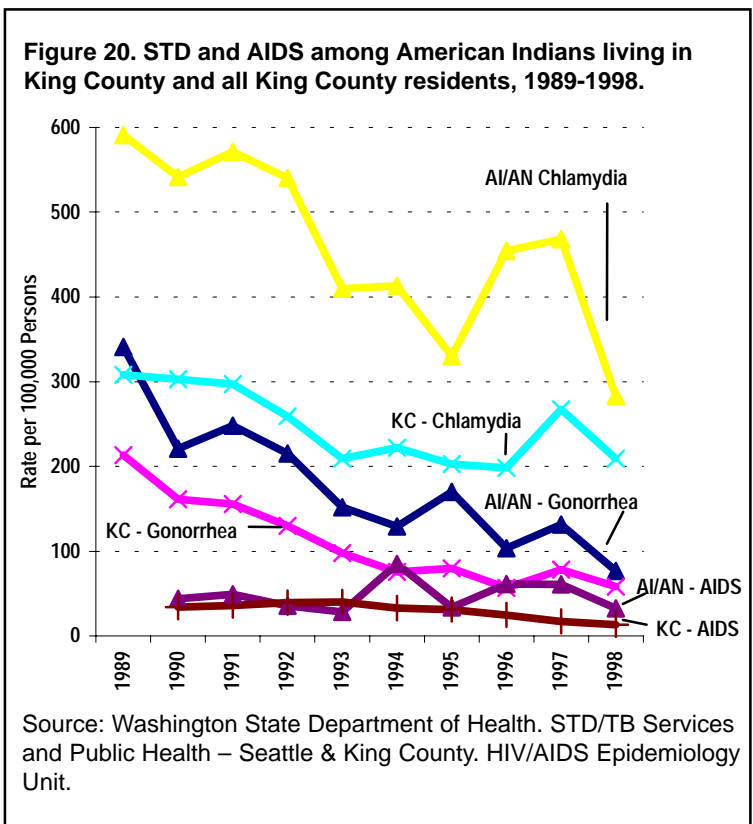
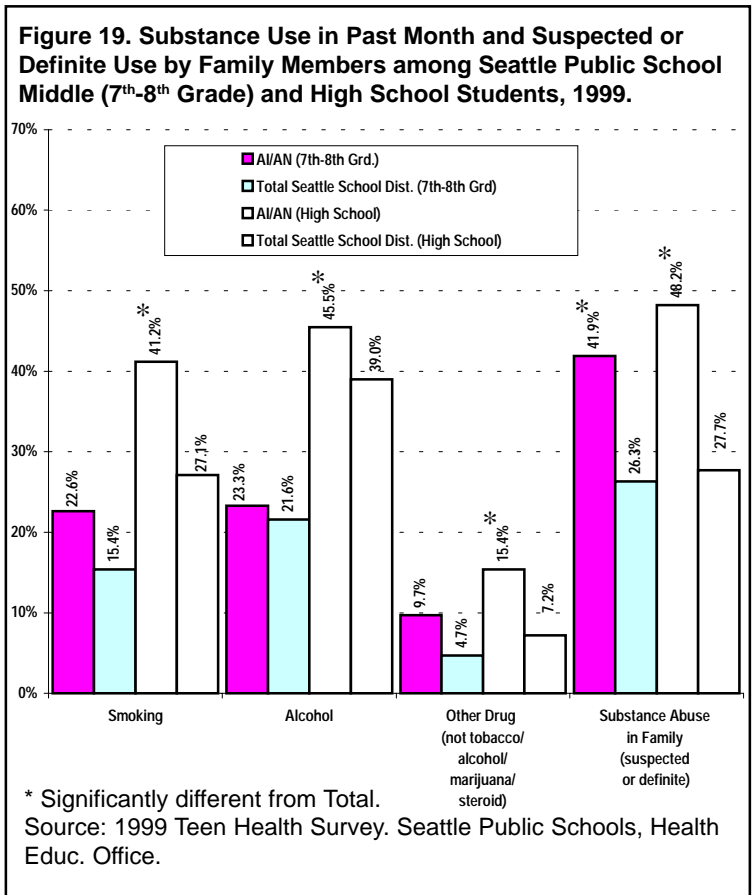


high school respondents combined. Carrying a gun in the past month and gang involvement were both reported more frequently among AI/AN high school respondents than among all respondents (14.8% compared to 5.6% overall carried guns in the past month, and 8.5% compared to 3.5% overall reported involvement in gangs).

- Lifetime use of any drug and use of any drug in the past month were also more frequently reported among the AI/AN high school respondents compared to all respondents (82.9% compared to 70.4% overall reported ever using any drug, and 60.7% compared to 48.1% overall reported using drugs or alcohol in the past month). Compared to all high school students, AI/AN students were more likely to report smoking, alcohol and other drug use in the past month (**Figure 19**). Substance abuse among family members was also more likely to be reported by AI/AN students than all students.
- Reports of sexual activity and having six or more lifetime partners were reported at significantly higher rates among the AI/AN respondents than among all of the high school respondents combined. Over half (53.5%) of AI/AN high school respondents reported ever having sex compared to 39.5% overall. Nearly half (45.5%) of AI/AN respondents reported having sex in the past three months compared to 29.8% overall. Reports of having 6 or more lifetime partners were also reported more often among the AI/AN high school respondents compared to all respondents (21.6% and 7.9%, respectively).
- Reports of pregnancy (current or past) or causing a pregnancy were marginally higher among the AI/AN respondents than overall (11.6% and 7.9%, respectively).

VI. Communicable Disease

- The rates of sexually transmitted diseases, such as gonorrhea and chlamydia, among American Indians and Alaska Natives have decreased significantly over the 10 year period from 1989 to 1999 (**Figure 20 and Appendix 12**).
- Despite these improvements, however, the rate of chlamydia and gonorrhea for AI/AN remains significantly higher than countywide rates.
- Similarly, AIDS case reports are significantly higher among AI/AN than countywide.
- Two other leading causes of reportable communicable disease are also higher among AI/AN than countywide (**Appendix 12**). These include hepatitis A and pertussis (whooping cough). The rate of pertussis is more than double the countywide rate.

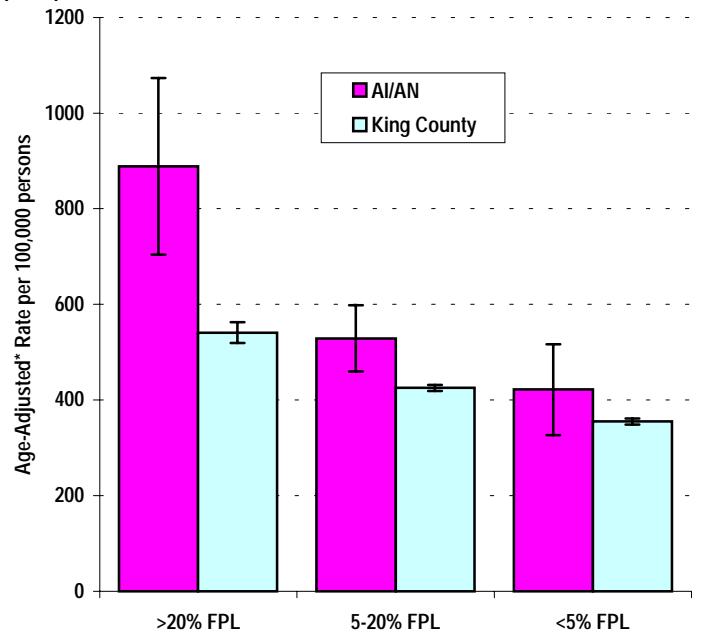


VII. Other Factors Affecting Health Status

In addition to many of the factors and outcomes described in this report, there are many other factors which affect a person's health or access to health services. Some of these factors include:

- *Economic opportunity and equity.* As previously mentioned, at least one quarter of American Indians/Alaska Natives in King County currently live in poverty. Poverty and economic inequity are major factors related to poor health. As an example, **Figure 21** shows that persons residing in neighborhoods with higher percentages of households living in poverty, experience higher rates of mortality than persons residing in neighborhoods with lower percentages of households living in poverty.
- *Stress due to social or environmental factors* such as being exposed to acts of racism or living in areas with high crime may impact a person's health directly or indirectly.
- *Mental health and social support* also play an important role in influencing health and well-being. Appropriate mental health services and a supportive environment of family, friends, and community are significant factors in maintaining good health.
- *Trust or confidence in the health care system.* Confidence in the health system may be eroded due to historical events. In particular, the indigenous peoples of this continent have been subjected to hundreds of years of severe mistreatment. These events may lead some to delay using existing health services or to distrust the providers of those services. In addition, the significant lack of American Indian/Alaska Native health care professionals and researchers may also reinforce feelings of distrust and lack of confidence in our current health system.

Figure 21. All-cause mortality among persons living in areas with high (>20%), medium (5-20%) and low (<5%) percentages of households with incomes below the Federal poverty level (FPL), 1996-98.



*Rates adjusted to the 1940 U.S. Population.
Source: Washington State Department of Health. Center for Health Statistics.

- *Language or other cultural factors* may also play an important part in a person's ability to navigate our complex medical system or to understand materials promoting better health. Among practitioners of Western medicine, traditional healing methods used among native peoples have often been discounted and not understood. In addition, few culturally appropriate social marketing methods are utilized to promote education for better personal health and understanding of the health care system.

All of these factors and many others influence an individual's health outlook and need to be considered when developing strategies to improve the health of American Indians and Alaska Natives.

VIII. Resources and Websites on Indian Health

- Seattle Indian Health Board (SIHB):
Telephone: (206) 324-9360
<http://www.sihb.org/>
Urban Indian Health Institute (UIHI):
<http://www.uihi.org>
- Affiliated Tribes of Northwest Indians:
<http://www.atni.org/>
Telephone: (503) 249-5770
- Fetal Alcohol Syndrome Education and Prevention
Public Health – Seattle & King County:
<http://www.metrokc.gov/health/atodp/fas.htm>

Washington State Fetal Alcohol Diagnostic and
Prevention Network:
<http://depts.washington.edu/fasdpr/>
Telephone: (206) 526-2522
- Muckleshoot Indian Tribe Health Clinic
Telephone: (253) 931-6709/939-6648
Tribal profile (NPAIHB):
<http://www.teleport.com/~npaihb/profiles/muckle.html>
- Native American Diabetes Project:
La Plaza Diabetes Wellness Connection
Telephone: (505) 272-4462
<http://www.laplaza.org/health/dwc/>
- Northwest Portland Area Indian Health Board
(NPAIHB):
Telephone: (503) 228-4185
<http://www.npaihb.org/index.html>
- United Indians of All Tribes Foundation:
Telephone: (206) 285-4425
<http://www.unitedindians.com/>
- U.S. Department of the Interior. Bureau of
Indian Affairs:
Telephone: (202) 208-3711
<http://www.doi.gov/bureau-indian-affairs.html>
- U.S. Indian Health Service (Portland Area):
Telephone: (503) 326-4123
<http://www.ihs.gov/>

IX. Sources and Limitations of Data

Data used in this report are derived from several sources. These include vital records (birth and death certificates, 1980 to 1998), U.S. Census data (1990 and 2000), communicable disease reports, and two telephone interview surveys and one survey of Seattle Public Schools high school and middle school students. All of these sources may produce figures and rates which may be below true rates largely due to under-reporting of American Indian/Alaska Native race. The results of the two telephone interview surveys are derived from the Behavioral Risk Factor Surveillance System surveys conducted in Washington State and King County from 1993 to 1998 and the 1998 State Population Survey. Both of these surveys may not be representative of the entire AI/AN population, since telephone surveys are likely to over-sample persons of higher socioeconomic status. Persons who are of lower socioeconomic status may not be contacted in these surveys due to not having a working telephone. Persons who are homeless will be excluded from these surveys. Census data from 1990, in particular, indicate that 8% of AI/AN living in King County did not have working telephones in their home or apartment, compared to 2% for all King County residents (**see Appendix 1**).

Appendices

Appendix 1. Demographic information for American Indians and Alaska Natives (AI/ AN) living in King County compared to all King County residents, 1990- 1998.

	Source (Time Period)	King County						AI/AN in US (BRFSS - 1997)		
		American Indian/Alaska Native			King County Total			Relative Difference (AI/AN compared to KC Total)	Median Result	Range across States
		n	Rate	95% Confidence Interval	n	Rate	95% Confidence Interval			
No telephone in house or apartment	PUMS (1990)	465	8. 4%	(5. 3- 11. 4)	46, 181	1.5%	(1. 3- 1. 7)	▲ +456%	-	
Household Income										
Below poverty (< 100% of poverty)										
Children (< 18 years old)	Census (1989)	4,788	35. 2%	(30.4- 40.1)	333,421	9. 8%	(9. 4- 10. 1)	▲ +260%	-	
	PUMS (1989)	197	25. 7%	(16.0- 35.5)	13, 518	9.6%	(8. 7- 10.4)	▲ +168%	-	
Age 18 and older	Census (1989)	12,492	25. 7%	(19. 4- 24.6)	1,143,641	7.4%	(7. 3- 7. 6)	▲ +247%	-	
	PUMS (1989)	479	23. 4%	(18.7- 28.2)	46, 365	7.4%	(7. 1- 7. 8)	▲ +215%	-	
	SPS (1998)	77	5.5%	(0. 0- 12.2)	2,552	4. 7%	(3. 2- 6. 2)	-	-	
Below 200% of poverty										
Children (< 18 years old)	PUMS (1989)	197	45. 8%	(35.0- 56.6)	13, 518	23. 9%	(22. 7- 25.1)	▲ +91%	-	
Age 18 and older	PUMS (1989)	479	38. 6%	(33.1- 44.1)	46, 365	19. 1%	(18. 6- 19.6)	▲ +102%	-	
	BRFSS (1993- 98)	98	41. 2%	(29. 8- 52.6)	8,706	19. 8%	(18.7- 20.9)	▲ +108%	-	
	SPS (1998)	77	37. 8%	(17. 6- 58.0)	2,552	14. 6%	(11.9- 17.2)	▲ +160%	-	
Food Security										
Skipped meal in last month due to lack of food/money	BRFSS (1993- 98)	42	12. 4%	(0. 7- 24. 2)	3, 043	3.6%	(2. 9- 4. 3)	-	-	
Did not eat for whole day due to lack of food/money	BRFSS (1993- 98)	42	2. 6%	(0. 0- 6. 2)	3, 043	0. 7%	(0. 4- 1. 0)	-	-	
Education										
Has high school diploma/GED (age 25+)	Census (1990)	10, 546	76. 1%	(73. 7- 78.4)	1,017,973	88. 2%	(88. 0- 88.4)	▼ -14%	-	
	BRFSS (1993- 98)	86	80. 9%	(71. 2- 90.6)	8,008	95. 2%	(94.6- 95.8)	▼ -15%	83. 0% (68.0- 96.6)	
	SPS (1998)	57	86. 2%	(73. 7- 98.8)	2,088	96. 3%	(95.3- 97.3)	-	-	
Has 4 year college degree (age 25+)	Census (1990)	10, 546	12. 4%	(10. 6- 14.2)	1,017,973	32. 8%	(32. 5- 33.1)	▼ -62%	-	
	BRFSS (1993- 98)	86	17. 3%	(8. 6- 25.9)	8, 008	44. 9%	(43. 5- 46.2)	▼ -62%	-	
	SPS (1998)	57	24. 5%	(4. 7- 44. 2)	2, 088	45. 4%	(42. 2- 48.7)	-	-	
Marital Status (married)	PUMS (1990)	482	39. 8%	(34.9- 44.7)	47, 382	54. 2%	(53. 6- 54.8)	▼ -27%	-	
	BRFSS (1993- 98)	98	46. 8%	(35. 3- 58.3)	8,668	56. 3%	(55.0- 57.6)	-	-	
	SPS (1998)	75	33. 3%	(14. 6- 52.0)	2,509	55. 6%	(52.5- 58.8)	▼ -40%	-	
Employment Status (unemployed)	Census (1990)	8, 712	8.4%	(6. 8- 9. 9)	853, 717	4.2%	(4.0- 4.3)	▲ +102%	-	
	BRFSS (1993- 98)	86	4. 3%	(0. 0- 9. 1)	7, 768	4. 6%	(4.0- 5.2)	-	-	
	SPS (1998)	51	4.6%	(0. 0- 11.6)	1,747	4. 8%	(3.5- 6.1)	-	-	
Single Head of Household	Census (1990)	2,142	48. 5%	(42.8- 54.2)	178,990	22.3%	(21.8- 22.8)	▲ +118%	-	

Sources of data:

Census - U. S. Census conducted in 1990. Household income data were based on preceding year's income (i. e., 1989).

PUMS - Public Use Microdata Sample derived from a 5% sample of the 1990 Census.

BRFSS - Behavioral Risk Factor Surveillance System. King County: Washington State DOH. Ctr for Health Statistics. U. S: MMWR 2000; 49(No. SS- 3).

SPS - State Population Survey conducted in 1998 by Washington State Office of Financial Management.

Symbols: ▲ / ▼ Significantly (with 95% confidence) higher/ lower rate for AI/ AN living in King County than King County total rate; , / + marginally (with 90% confidence) higher/ lower rate than rate.

Appendix 2. General health, disability status, and health service access among American Indians and Alaska Natives (AI/AN) living in King County, compared to all King County residents, 1990-1998.

	Source (Time Period)	King County						Relative Difference (AI/AN compared to KC Total)	AI/AN in US (BRFSS - 1997)	
		American Indian/Alaska Native			King County Total				Median Result	Range across States
		n	Rate	95% Confidence Interval	n	Rate	95% Confidence Interval			
General Health and Disability Status										
Good to excellent health	BRFSS (1993- 98)	98	86.8%	(79.6- 93. 9)	8, 687	91.6%	(90.9- 92. 3)	-	82.5% (64.6- 89. 9)	
	SPS (1998)	77	90.1%	(82.5- 97. 7)	2, 552	90.6%	(89.0- 92. 2)	-	-	
Days activity limited due to poor health	BRFSS (1993- 98)	96	3.1	(1.4- 4.8)	8,636	1.8	(1.7- 2.0)	-	-	
Poor mental health days	BRFSS (1993- 98)	97	4.0	(2.3- 5.7)	8,553	3.1	(2.9- 3.3)	-	-	
Poor physical health days	BRFSS (1993- 98)	95	4.9	(2.9- 6.9)	8,542	2.9	(2.7- 3.0)	+ +71%	-	
Disability or Health Condition Lasting > 6 Months										
Has health condition lasting more than 6 months	SPS (1998)	69	25.8%	(5.3- 46.2)	2,428	13.3%	(11.3- 15.3)	-	-	
Has health condition which limits work	SPS (1998)	69	21.3%	(1.1- 41.4)	2,426	10.0%	(8.2-11.8)	-	-	
Has health condition which prevents working	SPS (1998)	69	8.9%	(0.4- 17.4)	2,419	6.4%	(4.9- 7.9)	-	-	
Has permanent disability	SPS (1998)	62	21.7%	(4.2- 39.3)	2,322	14.8%	(12.0- 17.7)	-	-	
Disability limits work ability	PUMS (1990)	482	20.1%	(16.0-24.1)	47,382	11.3%	(11.0-11.6)	▲ +78%	-	
Disability prevents from working	PUMS (1990)	482	11.8%	(8.7- 15.0)	47,382	6.5%	(6.3- 6.8)	▲ +82%	-	
Disability limits personal care	PUMS (1990)	482	4.1%	(1.0- 7.1)	47,382	3.7%	(3.5- 3.9)	-	-	
Access to Health Services										
No health insurance	BRFSS (1993- 98)	88	17.7%	(8.5- 26.9)	7,062	11.8%	(10.9- 12.8)	-	24.5% (12.5- 50.5)	
	SPS (1998)	72	23.2%	(10.3- 36.2)	2, 196	11.6%	(9.5- 13.7)	-	-	
Has primary source of care	BRFSS (1993- 98)	98	81.6%	(72.0- 91.2)	8, 632	82.9%	(81.9- 83.9)	-	-	
Needed medical care in past year but didn't go to see doctor due to cost	BRFSS (1993- 98)	98	12.3%	(5. 1- 19. 5)	8,679	10.0%	(9. 1- 10. 8)	-	12.6% (9.2- 26.7)	

Sources of data:

Census - U. S. Census conducted in 1990. Household income data were based on preceding year's income (i. e., 1989).

PUMS - Public Use Microdata Sample derived from a 5% sample of the 1990 Census.

BRFSS - Behavioral Risk Factor Surveillance System. King County: Washington State DOH. Ctr for Health Statistics. U. S: MMWR 2000; 49(No. SS- 3).

SPS - State Population Survey conducted in 1998 by Washington State Office of Financial Management.

Symbols: ▲ / ▼ Significantly (with 95% confidence) higher/ lower rate for AI/ AN living in King County than King County total rate; , / + marginally (with 90% confidence) higher/ lower rate than rate.

Appendix 3. Risk for chronic disease and personal injury, diagnosis of chronic disease and utilization of screening measures among American Indians and Alaska Natives (AI/AN) living in King County, compared to all King County residents, 1993-1998.

	Source (Time Period)	King County						Relative Difference (AI/AN compared to KC Total)	AI/AN in US (BRFSS - 1997)	
		American Indian/Alaska Native			King County Total				Median Result	Range across States
		n	Rate	95% Confidence Interval	n	Rate	95% Confidence Interval			
Risk for Chronic Disease										
Overweight	BRFSS (1993-98)	93	59.7%	(48.2-71.1)	8,402	45.7%	(44.3-47.0)	▲	+31%	-
Obese		93	17.6%	(9.3-25.9)	8,402	12.7%	(11.8-13.6)	-	-	30.1% (8.1-34.7)
Sedentary lifestyle		58	25.1%	(10.7-39.4)	5,856	21.8%	(20.3-23.2)	-	-	-
Eats 5 fruits/vegetables daily		58	33.4%	(18.4-48.4)	5,789	23.4%	(22.0-24.9)	-	-	-
Current Smoker		97	36.9%	(25.6-48.3)	8,676	18.9%	(17.9-19.9)	▲	+96%	41.3% (3.1-48.8)
Mean number of cigarettes smoked		23	24.2	(14.6-33.9)	1,292	17.8	(16.9-18.6)	-	-	-
Current smoker (M)		46	44.2%	(27.6-60.8)	3,971	20.5%	(19.0-22.1)	▲	+115%	-
Current smoker (F)		51	29.4%	(14.2-44.5)	4,705	17.3%	(15.9-18.6)	-	-	-
Binge drinking		40	24.6%	(10.9-38.2)	2,822	13.5%	(12.1-14.9)	-	-	18.9% (11.4-30.2)
Drove when had 'too much to drink'		40	0.0%	(0.0-8.8)	2,839	2.0%	(1.5-2.6)	,	-100%	-
Chronic drinking	38	4.4%	(0.0-10.8)	2,789	2.0%	(1.4-2.6)	-	-	-	
Risk for Personal Injury										
Always uses seatbelt	BRFSS (1993-98)	39	87.5%	(76.9-98.2)	2,833	80.1%	(78.4-81.7)	-	-	59.1% (24.9-79.4)
Has unlocked loaded gun at home		33	1.4%	(0.0-4.0)	3,342	3.6%	(2.8-4.4)	-	-	-
Chronic Disease Diagnosis and Use of Physical Exams and Regular Check Ups										
Told has high blood pressure	BRFSS (1993-98)	40	21.9%	(8.7-35.0)	2,832	20.8%	(19.1-22.4)	-	-	20.7% (16.6-30.7)
BP check within past 2 years		38	88.5%	(78.3-98.6)	2,828	83.6%	(82.1-85.1)	-	-	-
Told has high blood cholesterol		24	36.8%	(16.0-57.6)	2,126	26.9%	(24.8-29.0)	-	-	-
Cholesterol check within past 2 years		36	59.6%	(42.5-76.8)	2,737	62.0%	(60.0-64.0)	-	-	54.7% (49.9-75.4)
Told has diabetes		97	9.6%	(3.3-15.9)	8,698	3.2%	(2.8-3.6)	+	+201%	7.6% (3.3-14.0)
Had Pap test in past 3 years (women, age 18+)		37	95.1%	(88.3-100.0)	3,680	87.8%	(86.6-89.1)	+	+8%	-
Had mammogram in past 2 yrs (women, age 40+)		35	71.8%	(54.8-88.8)	2,881	73.4%	(71.4-75.4)	-	-	-
CBE within last 2 years (women, age 40+)		35	80.2%	(65.5-94.9)	2,853	81.5%	(79.8-83.3)	-	-	-
Medical check up in past year		96	58.9%	(47.4-70.4)	8,616	64.5%	(63.2-65.8)	-	-	-
Medical check up in past 2 years		96	78.6%	(69.0-88.2)	8,616	80.8%	(79.8-81.9)	-	-	85.5 (70.0-91.2)

Source: BRFSS: Behavioral Risk Factor Surveillance System. King County: Washington State DOH Center for Health Statistics. U.S.: MMWR 2000; 49(No. SS-3)
 Symbols: ▲ / ▼ Significantly (with 95% confidence) higher/lower rate for AI/AN living in King County than King County total rate; + / , marginally (with 90% confidence) higher/lower rate.

Appendix 4a. Life expectancy for American Indians and Alaska Natives (AI/AN) living in King County compared with all King County residents, three-year averages, 1996-1998.

	AI/AN		Total King County		Relative Difference (AI/AN compared to KC Total)
	Years	95% Confidence Interval	Years	95% Confidence Interval	
Life Expectancy at Birth	74.0	(72.4-75.6)	78.5	(78.4-78.7)	▼ -6%

Source: Washington State Department of Health. Center for Health Statistics.

Appendix 4b. Mortality rates for American Indians and Alaska Natives (AI/AN) living in King County compared with all King County residents by age group and cause of death, three-year averages, 1996-1998.

	AI/AN					Total King County			Relative Difference (AI/AN compared to KC Total)	Trend for AI/AN in King County	
	Rank	Total Count Over 3 Years	Annual Count	Rate* per 100,000 persons	95% Confidence Interval	Annual Count	Rate* per 100,000 persons	95% Confidence Interval		80-98	94-98
<1 year		12	4	1,272.5	(658.6-2,215.2)	114	547.9	(491.5-609.2)	▲ +132%		
1-14 years		8	3	54.8	(23.7-107.2)	54	16.8	(14.3-19.6)	▲ +226%		▲
15-24 years		9	3	90.9	(41.6-171.5)	131	68.5	(61.9-75.6)	-	▼	
25-44 years		74	25	337.1	(264.8-423.0)	767	132.8	(127.4-138.3)	▲ +154%	,	+
Unintentional injury	1	20	7	91.1	(55.7-140.6)	177	30.6	(28.1-33.4)	▲ +198%	▼	+
45-64 years		70	23	622.0	(485.2-785.5)	1759	489.7	(476.6-503.1)	+ +27%	▼	
Cancer	1	13	4	115.5	(61.6-197.0)	665	185.1	(177.0-193.4)	-		
65-84 years		107	36	3,847.5	(3,154.5-4,648.5)	5470	3,495.6	(3,442.3-3,549.5)	-	▲	
Heart Disease	1	27	9	970.9	(640.6-1,412.6)	1514	967.6	(939.7-996.1)	-		
Cancer	1	27	9	970.9	(640.6-1,412.6)	1602	1,023.8	(995.1-1,053.2)	-	▲	
..Respiratory cancer		11	4	395.5	(197.7-704.8)	488	312.1	(296.3-328.5)	-	▲	
85 and older		17	6	10,493.8	(6,122.7-16,778.6)	3217	14,785.7	(14,492.2-15,083.7)	-		
Heart Disease	1	9	3	5,555.6	(2,543.2-10,481.5)	1070	4,919.9	(4,751.2-5,093.1)	-		
All Causes		297	99	572.9	(517.3-628.4)	11,511	407.2	(402.7-411.7)	▲ +41%	▼	▲

Source: Washington State Department of Health. Center for Health Statistics.

*All rates are age-specific, except the rate for All Causes of death which is age-adjusted to the 1940 U.S. population.

Symbols: ▲ / ▼ Significantly (with 95% confidence) higher/lower rate for AI/AN living in King County than King County total rate; + / , marginally (with 90% confidence) higher/lower rate.

Appendix 5. Mortality rates for American Indians and Alaska Natives (AI/AN) living in King County compared with all King County residents by age group and cause of death, three-year averages, 1996-1998.

	King County											AI/AN in US (1998) Rate* per 100,000 persons
	AI/AN				Total King County			Relative Difference (AI/AN compared to KC Total)	Trend for AI/AN in King County			
	Rank	Total Count Over 3 Years	Annual Count	Rate* per 100,000 persons	95% Confidence Interval	Annual Count	Rate* per 100,000 persons		95% Confidence Interval	80-98	94-98	
All Causes		297	99	572.9	(517.3-628.4)	11511	407.2	(402.7-411.7)	▲ +41%	▼ ▲		458.1
Heart disease	1	53	18	119.9	(84.5-139.2)	3029	93.9	(91.8-96.0)	-	▼		97.1
All cancer	2	51	17	105.7	(77.5-133.9)	2797	114.4	(111.9-117.0)	-			83.4
Respiratory cancer		18	6	38.2	(20.8-55.5)	754	32.4	(31.0-33.9)	-	▲		25.1
Colorectal cancer		6	2	11.5	(2.7-20.3)	280	10.7	(9.9-11.5)	-			8.2
Unintentional injury	3	35	12	54.3	(36.2-72.3)	486	24.5	(23.2-25.9)	▲ +122%	▼ ▲		55.6
Cerebrovascular disease	4	16	5	35.3	(18.8-51.9)	934	25.0	(24.0-26.1)	-			19.6
Pneumonia and influenza	4	16	5	30.8	(15.4-46.1)	497	12.4	(11.7-13.1)	▲ +148%			14.1
Chronic liver disease and cirrhosis	6	14	5	23.6	(10.8-36.4)	130	6.4	(5.8-7.1)	▲ +269%	▼		22.0
Diabetes	7	13	4	29.7	(13.7-45.8)	311	12.3	(11.4-13.1)	▲ +141%		+	29.6
HIV infection	8	9	3	13.1	(4.5-21.6)	131	6.7	(6.0-7.4)	-			2.2
Suicide	8	9	3	15.0	(5.1-25.0)	191	10.5	(9.6-11.4)	-			13.4
COPD (Chronic Obstructive Pulmonary Disease)	10	8	3	17.6	(5.8-29.3)	527	17.9	(16.9-18.8)	-			15.7
Homicide	11	7	2	10.4	(2.6-18.3)	74	5.0	(4.3-5.7)	-	▼		9.9
Other Combined Causes of Death:												
Diabetes-related		26	9	59.7	(37.5-81.8)	848	31.1	(29.8-32.4)	▲ +92%		▲	-
Drug-related deaths		20	7	28.1	(15.6-40.5)	192	10.0	(9.2-10.9)	▲ +181%	▲	+	-
Alcohol-related deaths		19	6	29.3	(15.8-42.8)	137	7.1	(6.4-7.8)	▲ +313%	▼		-
Firearm deaths		6	2	10.1	(2.0-18.2)	137	8.3	7.5-9.2	-			-
All Mortality by Poverty Areas												
> 20% FPL		67	22	888.6	(703.5-1073.7)	864	540.6	(518.8-562.4)	▲ +64%	▼ ▼		-
5 - 20% FPL		160	53	528.6	(459.6-597.7)	6,601	424.9	(418.4-431.3)	▲ +24%	▼		-
< 5% FPL		53	18	421.6	(326.8-516.3)	3,856	754.5	(348.4-361.0)	-	▼		-

*All rates are age-specific, except the rate for All Causes of death which is age-adjusted to the 1940 U.S. population.

Sources of data: Washington State Department of Health, Center for Health statistics, U.S. Centers for Disease Control and Prevention. CDC Wonder (<http://wonder.cdc.gov/>) and National Center for Health statistics, *Health, United States, 2000 With Adolescent Health Chartbook*. Hyattsville, MD: 2000.

Symbols: ▲ / ▼ Significantly (with 95% confidence) higher/lower rate for AI/AN living in King County than King County total rate; + / -, marginally (with 90% confidence) higher/lower rate.

Appendix 6a. Infant mortality rates for American Indians and Alaska Natives (AI/AN) living in King County compared with all King County residents, three-year averages, 1996-1998.

	King County										US (1997)
	AI/AN				Total King County			Relative Difference (AI/AN compared to KC Total)	Trend for AI/AN in King County		
	Total Count Over 3 Years	Annual Count	Rate* per 1,000 births	95% Confidence Interval	Annual Count	Rate* per 1,000 births	95% Confidence Interval		80-98	94-98	
Total infant mortality	11	4	12.5	(6.3-22.3)	114	5.2	(4.7-5.8)	▲ +140%	-	-	8.7
Primary cause of infant death: SIDS	7	2	8.0	(3.2-16.2)	18	0.8	(0.6-1.1)	▲ +900%	-	-	1.6

Sources of data: Washington State Department of Health, Center for Health statistics, U.S. Centers for Disease Control and Prevention. CDC Wonder (<http://wonder.cdc.gov/>) and National Center for Health statistics, *Health, United States, 2000 With Adolescent Health Chartbook*. Hyattsville, MD: 2000.

Symbols: ▲ / ▼ Significantly (with 95% confidence) higher/lower rate for AI/AN living in King County than King County total rate; + / , marginally (with 90% confidence) higher/lower rate.

Appendix 6b. Factors associated with poor birth outcomes among American Indians and Alaska Natives (AI/AN) compared with all King County residents, three-year averages, 1996-1998.

	King County							Relative Difference (AI/AN compared to KC Total)	Trend for AI/AN in King County		A/AN in U.S. (1997)
	AI/AN				Total				80-98	94-98	Percent of Births
	Total Over 3 years† or Surveyed*	Annual Count	Percent of births	95% Confidence Interval	Annual Count	Percent of births	95% Confidence Interval				
Infant-Related Factors at Birth†											
Low birth weight (< 2500 g)	68	23	7.8	(6.0-9.8)	1,280	5.9	(5.7-6.1)	+ +32%			6.8
Very low birth weight (<1500 g)	10	3	1.1	(0.6-2.1)	224	1.0	(1.0-1.1)	ns			1.2
Born premature	77	26	12.2	(9.6-15.2)	1,574	9.5	(9.2-9.8)	+ +28%		▼	7.8
Maternal Circumstances†											
Teenage mother (age < 18)	83	28	9.4	(7.5-11.7)	515	2.4	(2.3-2.5)	▲ +292%			8.6
Unmarried	525	175	60.0	(55.0-65.4)	4,961	22.8	(22.5-23.2)	▲ +163%		+	58.7
Smoked during pregnancy	191	64	22.4	(19.4-25.9)	2,111	10.2	(10.0-10.5)	▲ +120%	na	▼	20.8
Consumed alcohol during pregnancy	29	10	4.4	(2.9-6.3)	290	1.8	(1.6-1.9)	▲ +144%	na	,	-
Prenatal Care†											
Late (3rd trimester) or none	65	22	8.9	(6.9-11.3)	549	3.0	(2.9-3.2)	▲ +197%		▼	8.6
Pregnancy Intention (1993-97)*											
Intended	141		46.8	(40.6-52.9)	1,814	65.8	(62.8-68.9)	▼ -29%	na	na	-
Unintended	152		53.2	(47.1-59.4)	1,285	34.2	(31.1-37.2)	▲ +56%	na	na	-
Unwanted	28		10.6	(6.3-14.8)	323	7.8	(6.2-9.5)	ns	na	na	-
Mistimed	124		42.7	(36.6-48.8)	962	26.3	(23.5-29.1)	▲ +62%	na	na	-

Sources of data: Washington State Department of Health, Center for Health statistics, U.S. Centers for Disease Control and Prevention. CDC Wonder (<http://wonder.cdc.gov/>) and National Center for Health statistics, *Health, United States, 2000 With Adolescent Health Chartbook*. Hyattsville, MD: 2000.

Symbols: ▲ / ▼ Significantly (with 95% confidence) higher/lower rate for AI/AN living in King County than King County total rate; + / , marginally (with 90% confidence) higher/lower rate.

Appendix 7. Stressful Life Events For Mothers During Year Before Delivery, King County, 1996-1998.

	Native American/ Alaska Native		King County Total		Relative Difference (AI/AN compared to KC Total)
	Percent	95% Confidence Interval	Percent	95% Confidence Interval	
Stress Events					
Changed residence	47.1%	(39.9-54.3)	40.0%	(36.3-43.7)	
Argued with husband/partner more than usual	43.3%	(36.1-50.5)	24.2%	(21.0-27.4)	▲ +79.2%
Had bills and couldn't pay	40.6%	(33.4-47.7)	22.8%	(19.6-25.9)	▲ +78.2%
Someone close had drinking/drug problem	38.9%	(31.9-46.0)	11.5%	(9.1-14.0)	▲ +237.4%
Close family member hospitalized	26.9%	(20.7-33.2)	20.0%	(16.9-23.0)	
Someone close died	26.4%	(20.0-32.9)	15.2%	(12.5-17.9)	▲ +74.0%
Separated or divorced from husband/partner	17.1%	(11.5-22.6)	6.7%	(5.1-8.4)	▲ +153.0%
Mom or husband/partner went to jail	17.0%	(11.5-22.5)	3.6%	(2.3-4.9)	▲ +369.4%
Husband/partner lost job	16.9%	(11.4-22.3)	9.3%	(7.1-11.4)	▲ +82.4%
Involved in a physical fight	12.8%	(7.9-17.6)	3.3%	(2.1-4.5)	▲ +286.0%
Mom lost job	12.7%	(8.0-17.4)	7.3%	(5.5-9.2)	
Husband/partner didn't want pregnancy	9.2%	(5.0-13.4)	8.9%	(6.9-11.0)	
Homeless	8.4%	(4.4-12.5)	4.6%	(3.0-6.1)	
Reported 5 or more of the listed stress events	25.2%	(18.9-31.5)	8.0%	(6.1-10.0)	▲ +213.1%

Source: Washington State Department of Health, Center for Health statistics. Pregnancy Risk Assessment Monitoring System (PRAMS)

Symbols: ▲ / ▼ Significantly (with 95% confidence) higher/lower rate for AI/AN living in King County than King County total rate; + / - marginally (with 90% confidence) higher/lower rate.

Appendix 8. Family Environment and Protective Factors among American Indians and Alaska Natives (AI/AN) attending Seattle Public Schools compared to all Seattle Public Schools attendees, 1999.

	Middle School (7th-8th Grade)					High School				
	AI/AN		Total		Relative Difference (AI/AN compared to Total)	AI/AN		Total		Relative Difference (AI/AN compared to Total)
	Pct	(N)	Pct	(N)		Pct	(N)	Pct	(N)	
A. Protective Factors (above average or high)	33.3%	(30)	53.2%	(1777)	▼ -37.3%	43.8%	(89)	52.8%	(6679)	, -17%
a. Family rules (always enforced)	44.4%	(27)	54.4%	(1756)	-	52.3%	(88)	53.6%	(6600)	-
b. Parents encourage student to do best (always/most of time)	90.0%	(30)	85.3%	(1765)	-	85.2%	(88)	90.3%	(6633)	-
c. Teachers encourage student to do best (3 or more)	43.3%	(30)	46.7%	(1753)	-	42.0%	(88)	43.0%	(6616)	-
d. Knows one/more adult at school to talk to about problems	48.4%	(31)	59.3%	(1793)	-	51.3%	(115)	60.1%	(8421)	, -14.6%
e. Knows an adult at school if they see something illegal or harmful	51.6%	(31)	73.5%	(1815)	▼ -29.8%	63.8%	(116)	67.2%	(8561)	-
f. Does not go along with friends if they ask him/her to do something harmful	26.7%	(30)	20.2%	(1771)	-	19.3%	(114)	17.8%	(8419)	-
g. Gets as much help as needed with homework	58.6%	(29)	59.4%	(1737)	-	55.0%	(109)	50.9%	(8104)	-
h. Participates in organized after school activities (2 or more days/week)	39.3%	(28)	52.9%	(1760)	-	37.1%	(89)	49.6%	(6621)	▼ -25.2%
i. Volunteer work (1-4 hours or more per month)	42.9%	(28)	54.6%	(1750)	-	36.4%	(88)	46.3%	(6620)	, -21.4%
j. Physical exercise (3 or more days/week)	80.0%	(30)	74.6%	(1796)	-	76.4%	(110)	64.4%	(8216)	▲ +18.5%
k. Perception that future will be good	74.2%	(31)	70.2%	(1810)	-	57.4%	(94)	70.5%	(6977)	▼ -18.6%
B. Family Environment										
a. Family rules (always enforced)	44.4%	(27)	54.4%	(1756)	-	52.3%	(88)	53.6%	(6600)	-
b. Parental encouragement most or all of the time	90.0%	(30)	85.3%	(1765)	-	85.2%	(88)	90.3%	(6633)	-
c. Substance abuse in the family (definite or suspected)	41.9%	(31)	26.3%	(1805)	▲ +59.7%	48.2%	(114)	27.7%	(8400)	▲ +74%

Source: 1999 Teen Health Survey, Seattle Public Schools, Health Education Office.

Symbols: ▲ / ▼ Significantly (with 95% confidence) higher/lower rate for AI/AN in Seattle Public Schools than total rate; + / , marginally (with 90% confidence) higher/lower rate.

Appendix 9. General Physical and Mental Health among American Indians and Alaska Natives (AI/AN) attending Seattle Public Schools compared to all Seattle Public Schools attendees, 1999.

	Middle School (7th-8th Grade)					High School					
	AI/AN		Total		Relative Difference (AI/AN compared to Total)	AI/AN		Total		Relative Difference (AI/AN compared to Total)	
	Pct	(N)	Pct	(N)		Pct	(N)	Pct	(N)		
I. General Physical and Mental Health											
A. Physical health and lifestyle											
1. Access to health care											
a. General medical care (physical exam in past year)	80.6%	(31)	64.1%	(1807)	+	+25.8%	66.7%	(90)	66.2%	(6729)	-
b. Dental exam in past year	70.0%	(30)	75.1%	(1799)	-		67.9%	(112)	70.2%	(8285)	
2. Weight Status (based on body mass index)											
a. At-risk							21.4%	(84)	12.8%	(6970)	▲ +66.9%
b. Overweight							14.3%	(84)	7.4%	(6970)	▲ +93.7%
3. Asthma (past year)	11.1%	(27)	10.6%	(1737)	-		14.7%	(109)	12.0%	(8007)	-
4. Transportation safety											
a. Seat belt use (always)	48.4%	(31)	44.5%	(1823)	-		38.8%	(116)	43.8%	(8647)	-
b. Riding with drunk or high driver (never)	80.6%	(31)	81.7%	(1816)	-		57.3%	(117)	69.5%	(8640)	▼ -17.6%
B. Mental health											
1. Life satisfaction and handling problems											
a. Personal Problems											
1. Having "many problems"											
2. Having "many problems" and can't handle them	29.0%	(31)	12.4%	(1821)	▲	+133.9%	24.3%	(115)	15.4%	(8535)	▲ +57.9%
3. Doesn't know what to do about problems											
4. No adult at school to help with problems	12.9%	(31)	8.2%	(1819)	-		10.4%	(115)	4.4%	(8535)	▲ +136.9%
b. Outlook for future (feel it will be good)	51.6%	(31)	40.7%	(1793)	-		33.0%	(115)	39.9%	(8421)	-
2. Depression and suicide	74.2%	(31)	70.2%	(1810)	-		57.4%	(94)	70.5%	(6977)	▼ -18.6%
a. Depression (2 weeks or more/past year)											
b. Seriously considered suicide in past year	19.4%	(31)	23.0%	(1803)	-		33.6%	(116)	28.9%	(8543)	-
							24.3%	(115)	19.7%	(8538)	-

Source: 1999 Teen Health Survey, Seattle Public Schools, Health Education Office.

Symbols: ▲ / ▼ Significantly (with 95% confidence) higher/lower rate for AI/AN in Seattle Public Schools than total rate; + / -, marginally (with 90% confidence) higher/lower rate.

Appendix 10. Risk Behaviors among American Indians and Alaska Natives (AI/AN) attending Seattle Public Schools compared to all Seattle Public Schools attendees, 1999.

	Middle School (7th-8th Grade)					High School					
	AI/AN		Total		Relative Difference (AI/AN compared to Total)	AI/AN		Total		Relative Difference (AI/AN compared to Total)	
	Pct	(N)	Pct	(N)		Pct	(N)	Pct	(N)		
II. Risk Behaviors											
A. Violence and weapons											
1. Violence in the community											
a. Guns and weapons											
1. Carried a gun past month, anywhere	9.7%	(31)	6.6%	(1804)	-	14.8%	(115)	5.6%	(8579)	▲	+164.8%
2. Self, friends, or family shot at by a gun	35.5%	(31)	28.0%	(1815)	-	46.2%	(117)	30.4%	(8627)	▲	+51.7%
b. Gang involvement (currently in gang)	6.5%	(31)	4.1%	(1811)	-	8.5%	(117)	3.5%	(8606)	▲	+147.7%
c. Dating violence (boy/girlfriend hurt you/past year)	9.7%	(31)	7.5%	(1805)	-	12.8%	(117)	8.8%	(8617)	-	-
d. Forced intercourse						7.3%	(109)	8.0%	(8241)		-
2. Violence and safety at school											
a. Weapons at school											
1. Carried a weapon (past month)	12.9%	(31)	8.8%	(1821)	-	19.7%	(117)	9.4%	(8621)	▲	+108.7%
2. Carried a gun (past month)	6.5%	(31)	2.4%	(1798)	-	4.5%	(112)	2.2%	(8520)		-
b. Fights and injuries at School											
1. Target of weapon (past year)	9.7%	(31)	11.0%	(1824)	-	15.4%	(117)	9.8%	(8634)	▲	+57.4%
2. In fight at school (past year)	35.5%	(31)	27.0%	(1917)	-	25.0%	(116)	16.9%	(8605)	▲	+48.2%
c. Property damage/theft at school (past year)	32.3%	(31)	42.9%	(1816)	-	40.2%	(117)	32.0%	(8621)	+	+25.7%
d. Harassment at school											
1. Racial harrassment at/to/from school	38.7%	(31)	41.0%	(1809)	-	27.4%	(117)	32.2%	(8593)		-
2. Sexual harrassment at/to/from school	38.7%	(31)	29.8%	(1810)	-	40.5%	(116)	34.4%	(8598)		-
e. Perceived safety at school (most/all of the time)	12.9%	(31)	6.4%	(1809)	-	3.4%	(117)	5.3%	(8639)		-

Source: 1999 Teen Health Survey, Seattle Public Schools, Health Education Office

Symbols: ▲ / ▼ Significantly (with 95% confidence) higher/lower rate for AI/AN in Seattle Public Schools than total rate; + / -, marginally (with 90% confidence) higher/lower rate.

Appendix 11. Risk Behaviors among American Indians and Alaska Natives (AI/AN) attending Seattle Public Schools compared to all Seattle Public Schools attendees, 1999.

	Middle School (7th-8th Grade)					High School				
	AI/AN		Total		Relative Difference (AI/AN compared to Total)	AI/AN		Total		Relative Difference (AI/AN compared to Total)
	Pct	(N)	Pct	(N)		Pct	(N)	Pct	(N)	
II. Risk Behaviors (continued)										
B. Drug use										
1. Lifetime drug use										
a. Ever tried any drug	58.1%	(31)	51.0%	(1827)	-	82.9%	(117)	70.4%	(8665)	▲ +17.7%
b. Ever tried drug other than tobacco/ alcohol/marijuana/steroids	22.6%	(31)	17.0%	(1827)	-	37.6%	(117)	24.5%	(8665)	▲ +53.8%
2. Past month drug use										
a. Used drugs/alcohol	29.0%	(31)	27.3%	(1827)	-	60.7%	(117)	48.1%	(8665)	▲ +26.1%
b. Drug other than tob/alc/marijuana/steroids	9.7%	(31)	4.7%	(1827)	-	15.4%	(117)	7.2%	(8665)	▲ +113%
3. Summary of use by substance										
a. Cigarettes										
1. Smoked in past month	22.6%	(31)	15.4%	(1791)	-	41.2%	(114)	27.1%	(8520)	▲ +52.1%
2. Smoking by other household members	54.8%	(31)	41.4%	(1784)	-					
b. Alcohol										
1. Used in past month	23.3%	(30)	21.6%	(1777)	-	45.5%	(110)	39.0%	(8330)	-
2. Binge drinking in past month	16.7%	(30)	9.5%	(1764)	-	27.3%	(110)	22.5%	(8322)	-
c. Marijuana (used in past month)	25.8%	(31)	14.8%	(1803)	+ +74.9%	46.5%	(114)	28.4%	(8416)	▲ +64.0%
C. Sexual behavior										
1. Sexual activity										
b. Sexual intercourse, ever and current										
1. ever						53.5%	(114)	39.5%	(8464)	▲ +35.5%
2. Past three months						45.5%	(101)	29.8%	(7787)	▲ +53.0%
c. Age of first intercourse (14 or younger)						38.1%	(113)	21.3%	(8409)	▲ +78.5%
d. Number of partners (6 or more life-time partners)						21.6%	(111)	7.9%	(8376)	▲ 172.7%
2. Contraception										
a. No method of pregnancy prevention (last time had sex)						13.8%	(58)	12.9%	(3169)	-
b. Condom used (last time had sex)						63.0%	(54)	58.8%	(3140)	-
3. Pregnancy (pregnant or has caused pregnancy)						11.6%	(112)	6.9%	(8308)	+ +68%
4. History of sexually transmitted disease						6.1%	(115)	3.4%	(8421)	-

Source: 1999 Teen Health Survey, Seattle Public Schools, Health Education Office

Symbols: ▲ / ▼ Significantly (with 95% confidence) higher/lower rate for AI/AN in Seattle Public Schools than total rate; + / -, marginally (with 90% confidence) higher/lower rate.

Appendix 12. Communicable disease among American Indians and Alaska Natives (AI/AN) living in King County compared to all King County residents, three-year averages, 1996-1998.

	King County							Relative Difference (AI/AN compared to KC Total)	Trend for AI/AN in King County 1994 - 98
	AI/AN				Total				
	Total Count Over 3 Years	Annual Count	Rate per 100,000 persons	95% Confidence Interval	Annual Count	Rate per 100,000 persons	95% Confidence Interval		
Water or Foodborn Disease									
Hepatitis A	22	7	40.5	(25.4-61.4)	414	25.2	(23.8-26.6)	+ +61%	
Bloodborn or Sexually Transmitted Disease									
Hepatitis B	2	1	3.7	(0.4-12.7)	51	3.1	(2.6-3.6)	ns	
Chlamydia	226	75	366.9	(320.7-418.0)	3,296	200.1	(196.2-204.1)	▲ +83%	, ▼
Gonorrhea	53	18	86.1	(64.5-112.5)	939	57.0	(54.9-59.2)	▲ +51%	
Syphilis	4	1	6.5	(1.8-16.3)	64	3.9	(3.4-4.5)	ns	
AIDS cases	28	9	45.5	(30.3-65.8)	303	18.4	(17.2-19.6)	▲ +147%	
Other Communicable Disease									
Pertussis (Whooping cough)	15	5	27.6	(15.5-45.5)	205	12.5	(11.5-13.5)	▲ +121%	

Source: Washington State Department of Health, STD/TB Services/Communicable Disease Epidemiology, and Public Health - Seattle & King County, HIV/AIDS Epidemiology Unit.
 Symbols: ▲ / ▼ Significantly (with 95% confidence) higher/lower rate for AI/AN living in King County than total King County rate; + / , marginally (with 90% confidence) higher/lower rate.