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Community Health Needs Assessment of the Flying Eagle Tribal Nation

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COMMUNITY HEALTH NEEDS ASSESSMENT OF THE FLYING EAGLE TRIBAL NATION

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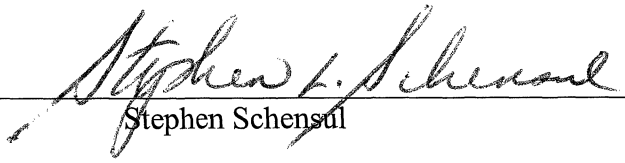
Associate Advisor 
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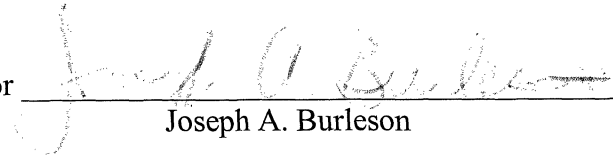
Associate Advisor 
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INTRODUCTION

The aim of this thesis is to present the findings of the Flying Eagle Tribal Nation Health Needs Assessment, make recommendations about increasing health care access for tribal members, and propose interventions to address some of the more concerning health indicators. To do this, the author uses the Healthy People Initiative as a way to identify risk factors and specific health issues. The Healthy People initiative provides an established set of priorities for the entire population of the United States, as well as sub-populations such as the Flying Eagle Tribal Nation.

A brief history of American Indians is presented, followed by general health information for American Indians, and a specific discussion of major Healthy People targeted health conditions. The background concludes with a discussion of interventions aimed at disease prevention and behavioral change. The needs assessment methodology and data analysis are presented in the next section. The results from the assessment are described and then compared to other American Indian tribes, as well as to specific racial/ethnic groups. The discussion section focuses on implications of the findings for the Flying Eagle Tribal Nation, and concludes with an exploration of appropriate interventions which might be developed to address these health issues. The significance of this work for Native American health and program development concludes this thesis.

The Flying Eagle Tribal Nation is located in the Northeastern United States. In 2003, a member of the Health Council approached the Community Based Education (CBE) office at the University of Connecticut School of Medicine looking for help in analyzing a recently performed health needs assessment. The Director of CBE had

experience working with the Flying Eagle Tribal Nation and other Native American tribes. The CBE Director contacted the author to see if he would be willing to help on this project. Because of his interest in health among marginalized populations, he agreed. He looked forward to working with and learning more about the Flying Eagle Tribal Nation, a subgroup of one of the poorest and least visible populations in the United States.

The Flying Eagle tribe asked that the identification of their tribe be kept confidential. They did not want sensitive health information to be available to the public. Thus, pseudonyms will be used to refer to this tribe, as well as other tribes in the area. It is for this reason that the specific history of the tribe will be excluded from this assessment.

BACKGROUND

The Healthy People Initiative established the foundation for a national prevention agenda. Its origin was the 1979 Surgeon General's report on health promotion and disease prevention. The foreword to that report stated that its purpose was to "encourage a second public health revolution in the history of the United States..." and it urged the Nation's health strategy to "be dramatically recast to emphasize the prevention of disease." This report was the first time that national health objectives were established and served as the basis for the development of national, state, and community health plans. By identifying opportunities to improve the health of all Americans, Healthy People helped initiate action toward common health improvement goals.

Healthy People 2000: National Health Promotion and Disease Prevention Objectives, released in 1990, was a comprehensive agenda with 319 objectives organized into 22 priority areas. The overarching goals were to increase years of healthy life, reduce disparities in health among different population groups, and achieve access to preventive health services.

Healthy People 2010 built on the previous Healthy People initiatives. Unlike the previous campaigns, Healthy People 2010 set a goal of eliminating the health disparities which exist among segments of the population. Communities, organizations, and governments were encouraged to work together to share their strategies and progress. The objectives were organized by four sections: promote healthy behaviors, promote healthy and safe communities, improve systems for personal and public health, and prevent and reduce diseases and disorders. The sections were further organized into 26 focus areas. The guidelines identified ten variables to serve as the leading health indicators for measuring the health of the nation over the next ten years. These variables were: amount of physical activity, percentage of overweight and obese persons, tobacco use, substance abuse, responsible sexual behavior, mental health, injury and violence, environmental quality, immunization, and access to health care. The leading health indicators reflect the major concerns in the United States in the beginning of the 21st century. These indicators are used as a framework for examining Native American health in general, as well as the needs assessment for the Flying Eagle Tribal Nation.

One population that has experienced persistent and, often, increasing health disparities, are Native Americans (also referred to as American Indians). These

disparities are evident in every aspect of health, including the leading health indicators identified by Healthy People 2010. American Indians suffer a disproportionate burden of social, economic, and behavioral factors that place them at risk for having some of the poorest health indicators of any racial or ethnic group in the country. This reduced state of health is the result of a combination of discrimination, poor access to healthcare, historical factors, and genetics.

American Indians and Alaska natives (AI/ANs) are a heterogeneous group of people who do not fit easily into traditional classification systems based on heritage. It is difficult to determine the exact numbers of American Indians living in the United States due to confounding factors such as variations in self-identification, isolation, and mobility. However, there are currently about 560 federally recognized tribes in 35 states[1] and over 100 state-recognized tribes, consisting of both urban (60%) and rural locations (40%). Each tribe has its own unique culture and heritage. For example, there are 217 native Indian languages spoken today.[2] In 2000, 2.5 million people (0.9% of the United States population) classified themselves as "AI/AN alone" and 4.1 million (1.5% of the United States population) as "AI/AN alone or in combination with another race." Between 1990 and 2000, the AI/AN population increased by 26%, compared to a 13% increase for the United States as a whole.[3] Some of the growth since the 1960s can be attributed to high fertility and improved mortality rates, but also to changes in self-identification.[4] The number of AI/ANs is expected to increase steadily by about 20

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[1] CDC. "Health Disparities experienced by American Indians and ANs.", MMWR 8/03: 52(30), 697.
[2] http://iccnetwork.org. Intercultural Cancer Council, "American Indians/Alaska Natives and cancer".
[3] CDC. "Health Disparities experienced by American Indians and ANs.", MMWR 8/03: 52(30), 697.
[4] Rhoades, Everett R. American Indian Health, The Johns Hopkins University Press, Maryland 2000. pp 42.

million in the next 20 years.[5] Major subgroups in this population include American Indians, Eskimos, and Aleuts. According to the United States Census Bureau population estimates, the states with the highest percentage of American Indians are Alaska (16.4%), New Mexico (9.5%), South Dakota (8.2%), Oklahoma (7.8%), Montana (6.5%), Arizona (5.5%), North Dakota (4.8%), Wyoming (2.3%), Washington (1.8%), and Nevada (1.8%).[6]

American Indian Background [7]

Most scholars believe that America's first pioneers crossed into North America in the general area of the Bering Strait. Existing evidence suggests that the first migrants arrived between 25,000 and 70,000 years ago. The first Americans spread quickly across North and South America, motivated partly by population pressure. As the larger mammals became extinct and the Indian population grew, many Indians turned to foraging, gathering food, fishing, and hunting smaller animals. This era, known as the Archaic period, offers many examples of these peoples' increasing technological sophistication. Following the Archaic period, the Formative period saw foragers who began to domesticate wild seeds. The rise of agriculture allowed for the creation of permanent settlements. For many years, the Indian societies grew and flourished, creating distinct cultures, languages, and traditions. New farming and construction techniques were developed and allowed the Indians to harness the natural energy and bounty of the Earth.

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[5] http://www.cdc.gov/tobacco/sgr/sgr_1998/sgr-min-fs-nat.htm. "American Indians and Alaska Natives and tobacco."
[6] http://iccnetwork.org. Intercultural Cancer Council. "American Indians/Alaska Natives and cancer."
[7] http://www.digitalhistory.uh.edu/native_voices/native_voices.cfm?

When Columbus arrived in the Caribbean in 1492, the New World was far from being an empty wilderness. About 60-70 million Native Americans existed, consisting of about 350 distinct groups speaking more than 250 different languages. The collision of cultures that occurred when Europeans arrived in the New World had vast consequences for both European and Native Americans. New crops were introduced and diseases against which the Indian peoples had no natural immunities caused the greatest mass deaths in history.

Relations between Indians and Europeans during the sixteenth and seventeenth centuries ran the spectrum from cooperation and accommodation to bitter conflict. Over the next 200 years, the Europeans systematically displaced the indigenous inhabitants and expropriated their land. American Indians were pitted against each other and routinely sold into slavery.

In the 1820s, the 125,000 Native Americans who still lived east of the Mississippi River began to be uprooted from their homelands and moved westward. This policy, President Jackson maintained, would open new farmland to whites while offering Indians a haven where they would be free to develop at their own pace. During the winter of 1831, the Choctaw became the first tribe to walk the "Trail of Tears" westward. Promised government assistance failed to arrive and malnutrition, exposure, and an epidemic of cholera killed many members of the nation. In 1836, the Creek suffered the hardships of removal and about 3,500 of the tribes 15,000 members died along the westward trek. Similarly, 4,000 of the 15,000 Cherokee died along the trail to Oklahoma. A number of tribes organized resistance against removal but ultimately failed.

The Indians were resettled on arid lands unsuitable for farming, and were forced to endure periods of slavery, mass killings, and executions. The treaty promises of land ownership, yearly payment, and agricultural aid were unfulfilled. In 1867, Congress recommended that Indians be moved to small reservations to be Christianized, educated, and taught to farm. The infamous Battle of Wounded Knee, which took place on December 29, 1890, marked the end of three centuries of bitter warfare between Indians and Europeans.

By the late nineteenth century, the new solution to the "Indian problem" was to erase a distinctive Indian identity, and thus "civilize" the American Indian. Private and government schools took Indian children away from their families, and sought to strip them of their cultural heritage. At the same time, Congress passed a series of laws designed to undermine the legal and political power of the Indian. At the end of the 19th century, Native Americans seemed to be a disappearing people. In fact, the 1890 census recorded an Indian population of less than 225,000. The prevailing view among whites was that Indians should be absorbed as rapidly as possible into the dominant society: their reservations broken up, tribal authorities abolished, traditional religions and languages eradicated. The 1887 Dawes Act allotted reservation lands to individual Indians in units of 40 to 160 acres. Land that remained after allotment was to be sold to whites to pay for Indian education.

During the 1920s, however, federal Indian policy began to shift away from its longstanding emphasis on assimilation. Job programs (as part of The New Deal) were created, and a special Indian Emergency Conservation work group was established to employ Indians. The 1934 Johnson-O'Malley Act promoted cooperation between the

federal and state governments in improving Indian agriculture, education, and health care. The Indian Reorganization Act encouraged reservation Indians to take a more active role in managing their own affairs. Funds were also allocated to provide scholarships for Indian students and help Indians establish their own businesses.

A renewed sense of Indian nationalism emerged during the 1940s and 1950s. After World War II, Indians became increasingly politically active, demanding equal voting rights and an end to discrimination. The major postwar innovation in Indian policy was the establishment by Congress in 1946 of the Indian Claims Commission to compensate Indians for fraud or unfair treatment by the federal government. Between 1946 and 1978, the commission heard 852 claims and awarded about $818 million in damages.

In spite of these gains, American Indians remained the nation's poorest minority group in 1970. The Indian unemployment rate was ten times the national average; life expectancy was a third less than that of the typical American; and fifty percent of the Native American population lived below the poverty line. Native Americans began to revolt against such conditions. Indian activists staged a series of dramatic demonstrations to dramatize the plight of the nation's Indians. During the 1970s, tribes also asserted greater control over their economic affairs, and a number of tribes initiated legal suits to recover land illegally seized by white settlers. The 1972 Indian Education Act gave Indian parents greater control over their children's schools. To address deficiencies in Indian health care, Congress passed the Indian Health Care Improvement Act in 1976, while the 1978 Indian Child Welfare Act gave tribes control over custody decisions involving Indian children.

Since the 1990s, the federal government has continued to take an active role in protecting the rights of Native Americans. Indian tribes maintain their traditions and unique culture, and function in mainstream society. Estimates indicate that about 1.2 million Native Americans currently live on 33 Indian reservations across the United States,[8] with many more living outside of reservations.

American Indians of the Northeast

As of 1990, about 6.4% of American Indians lived in the Northeast (1.7% in New England and 4.7% in the Mid-Atlantic). Appendix 1 identifies these tribes. There are 42 tribes speaking about 39 different language groups. Twenty-seven tribes still live in the Northeast (including Canada). They represent the second smallest population that the Indian Health Service serves. This service area is a multi-state aggregate consisting of Maine, Pennsylvania, South Carolina, Florida, Mississippi, and parts of Texas. There are no services provided to Maine, New York, Connecticut, Rhode Island, North Carolina, Alabama, or Louisiana. While this area has one of the smallest Native American populations, it has experienced the highest percentage of growth in the last 13 years (68%).[9]

Sources of Information

The Indian Health Service provides the majority of information regarding the health behaviors and health status of Native Americans in the United States. However, this data is not available for American Indian tribes in the Northeast. There has been a slow increase in the health literature that demonstrates health disparities for this

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[8] http://diabetes.niddk.nih.gov/dm/pubs/americanindian/index.htm. "Diabetes in American Indians and Alaska Natives."

[9] U.S. Department of Health and Human Services. "Trends in Indian Health, 2000-2001."

population. One of the limitations of this data is that it fails to adequately assess the health of the tribal members who do not utilize IHS resources.

Independent studies of American Indian health are limited in their applicability to other tribal groups. Either they include many different tribes in a particular area, or they focus on one particular geographic location. Small studies lack the power to make strong conclusions. However, larger studies often mask individual differences between groups that are important, or do not address significant regional variations. These differences are a combination of factors that are socio-economic, environmental, behavioral, and genetic.

The Behavioral Risk Factor Surveillance System (BRFSS) was created in order to monitor behaviors over time as well as among racial/ethnic groups. This allows for the comparison of health status indicators and health risk behaviors between AI/ANs and other racial/ethnic groups living in the United States. Significant regional and sex-specific variations in the prevalence of high-risk behaviors and health status indicators have been found among American Indians. While the data demonstrates disparities in health behaviors in relation to other racial/ethnic groups,[10] it also suggests the limitations of research conducted on AI/ANs as one group.

The Racial and Ethnic Approaches to Community Health (REACH) 2010 project is a federal initiative that supports community coalitions in designing, implementing, and evaluating community-driven strategies to eliminate health disparities. This project identifies six priority areas: infant mortality, deficits in breast and cervical cancer screening and management, cardiovascular diseases, diabetes,

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[10] Denny CH, Holtzman D, Cobb N. "Surveillance for health behaviors of American Indians and Alaska Natives. Findings from the Behavioral Risk Factor Surveillance System, 1997-2000", MMWR, 8/03: 52(SS-7).

HIV/AIDS infections, and child and adult immunizations. As part of this project, 21 minority communities across the United States were surveyed in an effort to identify risk factors and disease burden in minority groups.[11]

General Health of American Indians

Much like the rest of the developed world, the leading health problems of the Native Americans have changed significantly over the last 50 years. Malnutrition, infectious diseases, and infant mortality have been replaced by diabetes and other chronic diseases. According to the U.S. Department of Health and Human Services, the leading cause of death for AI/AN people residing in the IHS service area in 1998 was diseases of the heart, followed by malignant neoplasms. This finding coincides with the leading causes of death for the United States as a whole. Despite overall declines in morbidity and mortality, a persistent gap in health status remains between AIs and non-Hispanic whites. Of all racial/ethnic populations, Native Americans have the highest poverty rates (31%), more than twice the national rate. The median household income is significantly lower than the U.S. median household income. The AI/AN population is younger than the U.S. population, with a median age of 24.2 versus 32.9 for the U.S., all races. They also have less education, with a shortage of adults pursuing higher education.[12] See Table 1 Below.

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[11] http://www.cdc.gov/reach2010/

[12] U.S. Department of Health and Human Services. "Trends in Indian Health, 2000-2001."

Table 1. Comparison of AI/AN and U.S. selected demographics.

	U.S.	AI/AN
Median age	32.9	24.2
Median household income	$30,056	$19,897
Below poverty	13.1%	31.6%
Birth Rate	14.5%	24.0%
Education - High school graduate	75.2%	65.3%
Education - College graduate	20.3%	8.9%
Unemployed - male	6.4%	16.2%
Unemployed - female	6.2%	13.4%

These socioeconomic factors are related to extremely high disease indicators. During 2001, AI/ANs experienced the highest proportion of premature deaths attributable to heart disease (36%), versus blacks, whites, or Hispanics (31.5%, 14.7%, and 23.5% respectively).[13] In fact, the age-adjusted death rates for the following were significantly higher than those for the U.S. population: alcoholism, tuberculosis, diabetes, unintentional injuries, suicide, homicide, pneumonia and influenza, firearm injury, gastrointestinal disease, diseases of the heart, and cerebrovascular diseases.[14] Asthma rates are higher in AI/ANs than in any other minority group.[15] Tobacco use, once observed only in religious ceremonies, is now highest among AI/ANs, as compared to other racial and ethnic groups.[16] Both rates of current drinking (defined as 12 or more drinks in the past year) and heavy drinking (defined as five or more drinks on a single day at least once a month) are highest among AI/ANs.[17] AI/AN women are

[13] CDC. "Disparities in premature deaths from heart disease – 50 states and the District of Columbia", MMWR 2004: 53, 121-125.
[14] U.S. Department of Health and Human Services. "Trends in Indian Health, 2000-2001."
[15] CDC. "Asthma prevalence and control characteristics by race/ethnicity – US 2002", MMWR. 2/04: 53(7).
[16] Denny CH, Holtzman D, Cobb N. "Surveillance for health behaviors of American Indians and Alaska Natives. Findings from the Behavioral Risk Factor Surveillance System, 1997-2000", MMWR, 8/03: 52(SS-7).
[17] www.niaaa.nih.gov/publications/aa55.htm "Alcohol Alert", No. 55, January 2002.

at a greater risk of being victims of violence than other Americans.[18] During 1979-1992, suicide rates for Native Americans (AI and AN) were about 1.5 times the national rates.[19] While Native Americans experience some of the lowest overall rates of cancer among all minority groups, they continue to suffer higher death rates from lung, prostate, colon/rectum, stomach, gallbladder, and cervical cancers.[20]

Obesity

Healthy People Objective: Increase the proportion of adults who are at a healthy weight to 60%.

One of the nation's major health problems is obesity. This affects AI/AN individuals, as well as the rest of the population. In the United States, 42% of adults aged 20 years and older were at a healthy weight (defined as a body mass index equal to or greater than 18.5 kg/m^2 and less than 25 kg/m^2) between 1988–94. There are a variety of studies, both regional and national, which support the fact that AI/ANs are disproportionately affected by obesity. Findings from four large studies of AI/ANs will be presented. One of the limitations of these studies is the lack of uniformity in their definition of obesity, ranging from 25 kg/m^2 to 30 kg/m^2. This can lead to difficulty in comparing obesity rates.

There has been a lot of discussion surrounding the high rates of obesity among American Indians. Many feel that it is the result of acculturation, genetics, or both. To examine this, the Pima Indians have been studied extensively. The Pima Indians used to reside exclusively in Mexico. However, a portion of the group migrated to their current home in Arizona. There is a large difference in rates of obesity between these

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[18] www.4woman.gov. Minority Women's Health. "Violence and minority women."
[19] www.cdc.gov/ncipc/factsheets/suifacts.htm. "Suicide in the United States."
[20] www.cancer.gov/newscenter/healthdisparities. "Cancer Health Disparities", 4/21/03.

two groups.[21] The Pima Indians of Gila River Valley of Arizona have an obesity rate (BMI > 30 kg/m^2) of 69%. Yet their relatives in Mexico maintain an obesity rate of only 13%. The two groups have the same genes, but there is a difference in their lifestyles and cultures. The Arizona Indians have adopted more of the Western lifestyle. In Mexico, they have maintained a more traditional lifestyle, including diet, physical activity, and religion.

The Strong Heart Study compared three American Indian groups living in four states from 1988-1989.[22] The study defined obesity as having a body mass index (BMI) greater than 27.8 kg/m^2 for men and greater than 27.3 kg/m^2 for women. The researchers found that 67% of AI/AN men and 80% of AI/AN women in Arizona were obese. In Oklahoma, 67% of men and 71% of women were obese. In the Dakotas, 54% of men and 66% of women were obese.

The BRFSS (1997-2000) examined a variety of health behaviors and risk factors. Among the AI/AN population, obesity (BMI>30 kg/m^2) rates varied by geographic area. Overall prevalence rates varied from 21.6% to 29.0%.[23] AI/AN men and women had similar rates of obesity (23.9% vs 23.8%). The rates of obesity for the non-AI population in the same survey area were lower, 18.9% for men and 18.4% for women.

The National Health and Nutrition Examination Survey (NHANES) was conducted from 1988-1994. While this survey did not examine the AI/AN population,

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[21] Valencia ME, Bennett PH, Ravussin E, et al. "The Pima Indians in Sonora, Mexico", *Nutr Rev*, 1999: 57, S55-8.

[22] Welty TK, Lee ET, Yeh J, et al. "Cardiovascular disease risk factors among American Indians: The Strong Heart Study", *Am J Epidemiol*, 1995: 142, 269-87.

[23] Denny CH, Holtzman D, Cobb N. "Surveillance for health behaviors of American Indians and Alaska Natives. Findings from the Behavioral Risk Factor Surveillance System, 1997-2000", MMWR, 8/03: 52(SS-7).

one can use this data to compare rates of obesity seen in the AI/AN population to other racial/ethnic groups.[24] White men and women had the lowest rates of persons who were overweight and obese (61% of men and 49% of women). Mexican-American men and women had the highest rates of persons who were overweight and obese (64% and 66% respectively). Rates of persons who were overweight and obese in African American men and women were 57% and 66%.

More recently, the REACH 2010 data for 2001-2002 reports obesity rates in the AI/AN and other racial/ethnic groups. Obesity was defined as BMI>30 kg/m^2. The rates for AI men were 40.1% and 37.7% in AI women. African American men had a lower rate of obesity, 26.5% and a higher rate for women, 37.6%.[25]

Any discussion of obesity must also address exercise. Research has proven that exercise is key to maintaining overall health and weight. In 2001, 45.4% of the United States population engaged in activities consistent with the CDC physical activity recommendations of thirty minutes or more of moderate physical activity on most days of the week.[26] A larger portion of men, whites, and more educated persons met the recommendations. There is additional concern surrounding the large segment of the population that is not engaged in any type of regular physical activity. The American Heart Association reports that among American Indians ages 45-74, 16.8% men and 19.6% women report no physical activity during the past year. This sedentary lifestyle places them at higher risk for chronic conditions such as diabetes and obesity.

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[24] Zimmerman, RI. "The obesity epidemic in America", *Clinics in Family Practice*, June 2002: 4(2).
[25] REACH 2010
[26] CDC. "Prevalence of Physical Activity, including lifestyle activities among adults – US 2000-2001", MMWR, 8/03: 52(32), 764-769.

Tobacco

Healthy People Objective: Reduce cigarette smoking by adults to 12%.

The percentage of persons aged 18 and older in the United States who currently smoke cigarettes is 24%. The BRFSS collected information on rates of cigarette smoking among American Indians. There was considerable variation between American Indians living in different regions of the country, 21.2% to 44.1%.[27] AI/AN rates of smoking overall were higher than non AI/AN (32.2% versus 22.3%). Males in both groups were more likely to be smokers than females. Similar results were seen in another study conducted as part of the REACH 2010 study. They noted that 33% of AI/ANs in Oklahoma smoked as compared to the Oklahoma general population rates of 23% and the U.S. median rate of 23%.[28] The Strong Heart Study noted similar findings, and they also discovered that Indian smokers smoked fewer cigarettes per day than the general U.S. smoker.[29]

Information from the CDC indicates that since 1978, the prevalence of cigarette smoking has declined for African American and white women, but not for AI/AN women.[30] Usage of other forms of tobacco was examined in the National Health Interview Survey 1987-1991. This data indicates the prevalence of cigar smoking among AI/AN was 5.3%, compared with 4.8% for whites and 3.9% for African

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[27] Denny CH, Holtzman D, Cobb N. "Surveillance for health behaviors of American Indians and Alaska Natives. Findings from the Behavioral Risk Factor Surveillance System, 1997-2000", MMWR, 8/03: 52(SS-7).

[28] Bursac Z, Campbell JE, Oklahoma Reach 2010 Steering Committee. "Prevalence of current cigarette smoking among American Indians in Oklahoma: a comparison", *J Okla State Med Assoc*, March 2002: 95(3), 155-8.

[29] Welty TK, Lee ET, Yeh J, et al. "Cardiovascular disease risk factors among American Indians. The Strong Heart Study." *American Journal of Epidemiology*, August 1995: 142(3), 269-87.

[30] http://www.cdc.gov/tobacco/sgr/sgr_1998/sgr-min-fs-nat.htm. "American Indians and Alaska Natives and Tobacco."

American. The use of chewing tobacco was 4.5% among AI/AN, compared with 3.4% for whites and 3.0% for African Americans.

The Executive report of the Surgeon General regarding women and smoking was released in 2002 and emphasized the disparities among women's smoking rates. The prevalence of smoking was highest among AI/AN women (34.5%), compared to 23.5% of white women, and 21.9% of African American women. The report also notes that women who smoke have a modestly elevated risk for rheumatoid arthritis, osteoarthritis of the knee, cataracts, and for depression than for nonsmokers.[31]

Violence:

Healthy People Objective: Reduce the rate of physical abuse by current or former intimate partners to 3.3/1000 persons aged 12 years and older.

According to the CDC, in the United States there were 4.4 physical assaults per 1,000 persons aged 12 years and older by current or former intimate partners. Little is known about the prevalence of domestic abuse in the AI/AN population. One study found that rates of severe violence in American Indian couples were 36% higher than those of a comparable sample of white couples. Anecdotal evidence from tribal police records also indicates an unusually high level of domestic violence.[32] A recent study of a random sample of adult AIs living on or near the seven Montana reservations examined several forms of violence.[33] Physical violence (PV) was defined as victimization from physical violence or sexual assault. Intimate partner violence (IPV)

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[31] CDC. "Women and smoking: A report of the Surgeon General. Executive Summary", MMWR, August 2002: 51(RR-12).

[32] Chrestman KR, Polacca MA, Koss MP. "Domestic Violence" in Primary Care of Native American Patients. Butterworth-Heinemann, 1999.

[33] Harwell TS, Moore KR, Spence MR. "Physical violence, intimate partner violence, and emotional abuse among adult American Indian men and women in Montana", *Preventive Medicine*, Oct 2003, 37(4), 297-303.

was defined as having experienced PV by a current or former significant other. Emotional abuse was defined as having fear for one's safety or being controlled by another individual. Nine percent of men and 5% of women had experienced PV, 1% of men and 3% of women had experienced IPV, and 12% of men and 18% of women had experienced emotional abuse in the past year. According to the CDC, 25% of women and 7% of men in the United States have been victims of IPV at some point in their lifetime[34]. Factors associated with IPV included alcohol, and depression of the perpetrator.

Substance Abuse

Healthy People Objective: Reduce the number of adults engaging in binge drinking during the past month to 6.0%.

The current estimate for the rate of persons engaging in binge drinking in the United States population is 17%. Substance abuse is a well-documented problem in AI/AN communities. Prevalence varies geographically and by study. A recent study of AI/ANs living on reservations reported that 33% had a current substance abuse problem.[35] Predictors included gender, tribe, age, employment status, household income, and educational attainment. Another study focused on American Indians in the Northern U.S.[36] They found that males begin regular drinking at an earlier age than do females (17 versus 18.1 years old). On the whole, more males drink alcohol than females (70.7% versus 60.4%). Most drinkers are binge drinkers, with males

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[34] http://www.cdc.gov/ncipc/factsheets/ipvfacts.htm.

[35] Herman-Stahl M, Chong J. "Substance abuse prevalence and treatment utilization among American Indians residing on-reservation", *American Indian and Alaska Native Mental Health Research*, Jan 2002: 10(3), 1-23.

[36] May PA, Gossage P. "New data on the epidemiology of adult drinking and substance use among American Indians of the northern states: male and female data on prevalence, patterns, and consequences", *American Indian and Alaska native Mental Health Research*", January 2001: 10(2), 1-26.

consuming an average of 5.7 drinks per sitting, and females drinking an average of 3.1 drinks per sitting. The highest prevalence of drinking and heaviest level of drinking occurred at ages less than 30 years old. The most recent alcohol consumption prevalence data indicates that 62% of U.S. adults are current drinkers, 5% of adults heavy drinkers, and 38% nondrinkers.[37] Men were more likely than women to be current drinkers (69.1 versus 56.4%). The prevalence of current drinking increased with education and income for both men and women. Adults living in the Northeast were more likely to drink than other geographic locations (68.3% versus 55.2% in the South).

Another study focused on AIs from the Southwest and Northern Plains, ages 15-57 years old.[38] They discovered that the lifetime use of marijuana was 36.9-57.5%, cocaine was 4.3-31.5%, heroin was 0.5-2.1%, and inhalants was 3.6-17.0%. Forty to sixty percent had never used illicit drugs.

Hypertension

Healthy People Objective: Reduce the proportion of adults with high blood pressure to 16%.

In looking at the rates of high blood pressure in the general population, 23% of men and 25% of women over 18 in the U.S. have high blood pressure. The prevalence is higher in African Americans. The prevalence of high blood pressure increases with

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[37] Schoenborn CA, Adams PF. "Alcohol use among adults: United States, 1997-1998.", Advance data from Vital and Health statistics. April 2002: 324.

[38] Mitchell CM, Beals J, Novins DK, Spicer P. "Drug use among two American Indian populations: prevalence of lifetime use and DSM-IV substance use disorders", *Drug and Alcohol Dependence*, Jan 2003: 69(1), 29-41.

age. Over 70% of women and 50% of men over 70 have high blood pressure.[39] This review article also noted that the prevalence of high blood pressure among Navajo people and northern plain tribes was 25-30%. The Strong Heart Study found that the prevalence of high blood pressure among Arizona and Oklahoma Indians is higher than the rate for the United States.

Diabetes

Healthy People Objective: Reduce the overall rate of diabetes that is clinically diagnosed to 25 overall cases per 1,000 people.

The current number of overall diabetes cases (including new and existing cases) is 40 per 1,000 people in the United States. Diabetes is the most common reason for adult visits to a physician in the Indian Health Service. Native Americans have the highest prevalence of diabetes of any minority group in the United States. Prevalence studies vary, but at the highest rate is 65% (age 45-74 year olds) among the Pima Indians of Arizona.[40] AI/ANs suffer a higher rate of death from diseases that can be complications of diabetes, such as heart disease, stroke, pneumonia, and influenza.

Medical and public health officials are concerned about the increasing rates of diabetes in the United States. This increase is present in all segments of the population, however at different rates. During 1994-2002, the age adjusted prevalence of diabetes increased 54% among U.S. adults (4.8 to 7.3%). Among AI/AN adults, the rate increased by 33.2% (11.5 to 15.3%). Using data from the BRFSS and IHS, the prevalence of diagnosed diabetes in 2002 for AI/AN individuals greater than or equal to

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[39] Calvert, James F. "Cardiovascular disease. Hypertension", *Clinics in Family Practice*, December 2001: 3(4).

[40] Galloway JM, Goldberg BW, Alpert JS. "Type 2 diabetes mellitus: epidemiology, pathogenesis, management, and complications." in Primary Care of Native American Patients: Diagnosis, Therapy and Epidemiology, Butterworth-Heinemann, 1999.

20 years old is 12.7%. Of note is the fact that prevalence varied significantly between regions of the United States.[41] When looking at age-specific prevalence, it is two to three times higher for AI/AN adults than for U.S. adults. Diabetes is affecting younger segments of the AI/AN population. The data above also reveal that the prevalence of diabetes was slightly greater in AI/AN women than in AI/AN men, unlike the general population of the U.S.

Other estimates used to determine the national prevalence of diabetes among AI/ANs reveal a variety of rates. The Strong Heart Study examined two American Indian populations in Arizona, North and South Dakota, and Oklahoma. They discovered that Arizona Indians had the highest prevalence of diabetes, over 60%. In Oklahoma and South Dakota and North Dakota, 33% of men and 40% of women had diabetes.[42]

In 1997, the Balanced Budget Act provided $150 million in grants to the IHS for prevention and treatment programs. This money was used to establish 350 new diabetes programs in AI/AN communities. The money to support these programs was secured for 2002 to 2008. The CDC, in conjunction with the IHS, created the National Diabetes Prevention Center in New Mexico in order to help facilitate and support the creation of these programs. Other outreach efforts include the creation of a campaign called, "Control your diabetes for future generations", and "Move it!" to promote physical activity among AI/AN teens.

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[41] Denny CH, Holtzman D, Cobb N. "Surveillance for health behaviors of American Indians and Alaska Natives. Findings from the Behavioral Risk Factor Surveillance System, 1997-2000", MMWR, 8/03: 52(SS-7).

[42] Welty TK, Lee ET, Yeh J, et al. "Cardiovascular disease risk factors among American Indians: The Strong Heart Study", *Am J Epidemiol*, 1995: 142, 269-87.

chemical dependency, and a number of field service sites maintained by the tribe.[48] In fact, 92 of the 155 Indian Health Service units were operated by Native American tribes as of October, 2001.[49]

As of 2001, the IHS operated 36 hospitals, and 110 ambulatory facilities (59 health centers, two school centers, and 49 health stations). Tribes operated 13 hospitals, 172 health centers, three school health centers, 84 health stations, and 176 Alaska village clinics. In 1997, there were over 85,000 admissions to IHS and Tribal direct and contract general hospitals. In 2001 there were 81,000 admissions. About 40% of these admissions were in two IHS areas (Navajo and Oklahoma).[50] The leading cause of hospitalization was obstetric deliveries and complications of pregnancy. The second highest cause was respiratory system diseases, followed by digestive system disease, injury and poisoning, and circulatory system diseases. In 2001, more than 8 million ambulatory medical visits, 379,540 public health nurse visits, and 2.7 million dental services were provided.[51] In 1997, the IHS population of users (defined as AI/ANs who used IHS services at least once during the last three year period) was over 1.3 million tribal members.

Clinical Focus

The IHS is not only the federal health care provider for Indian people, but it is also to serve as their health advocate. Early efforts of the program were focused on increasing life expectancy, decreasing infectious diseases, and providing immunizations to Indian children. IHS, because of its population responsibilities, was more focused on

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[48] http://www.cherokee.org.
[49] U.S. Department of Health and Human Services. "Trends in Indian Health, 2000-2001."
[50] www.ihs.gov. "Regional differences in Indian Health 1998-99."
[51] U.S. Department of Health and Human Services. "Trends in Indian Health, 2000-2001."

public health priorities than the private sector. From 1960-1980, IHS expanded services and existing infrastructure, placing a priority on community-oriented primary care initiatives in rural communities. In the 1980s, IHS changed focus once again to concentrate on the chronic health problems which were plaguing the modernized tribes. In order to effectively do this, IHS formed alliances with other federal, private, and public programs.[52]

The IHS also publishes a journal, *The IHS Primary Care Provider,* which is aimed at health professionals working with AI and ANs. It contains medical updates, review articles, tribal updates, and editorials. In addition, it presents a variety of innovative preventive and treatment programs focused on target areas, such as diabetes, obesity, mental health, and risk behavior reduction.

In the future, IHS will continue to rely on the support of neighboring facilities in an effort to become increasingly more cost-effective. Disease prevention and management of chronic diseases will become an increasing priority. Administrators for the program envision working with a smaller budget and health care delivery system, with a substantial increase in the direct delivery of health services to AI/ANs by tribal health programs.[53]

Public Health Interventions

There is limited information published on successful interventions that have been used specifically in the AI/AN population. Therefore, some of the programs described were developed for minority populations in general. While not working

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[52] Galloway JM, Goldberg BW, Alpert JS. "Health care for Alaska Natives and Native Americans: Historical Perspective" in Primary Care of Native American Patients: Diagnosis, Therapy and Epidemiology, Butterworth-Heinemann, 1999.

[53] http://www.ihs.gov. "The future Indian health care system", May 1997.

Passamaquoddy/Indian Townships, Passamaquoddy/Pleasant Point, Penobscot, MicMac, Narragansett, Mohegan, and Mashantucket Pequot.

Obesity

The Pathways Program for obesity prevention is a well-documented multi-site clinical trial with the aim of lowering the amount of fat in school meals to 30% of energy in order to promote obesity prevention in 3rd-5th graders.[58] The intervention consists of nutrient guidelines, hands-on materials, training, and monthly visits to the kitchen. An initial study found that three of the four schools had implemented six of the eight behavioral guidelines. In an analysis of five days of school menus from three control schools, the lunch menus averaged from 34% to 40% of energy from fat; when the menus were analyzed after using the food preparation and serving methods in the behavioral guidelines, they averaged 31% of energy from total fat. The plan is now being implemented in 40 schools for five years. This program represents a school-based intervention which has the potential to work in any school whose population is concerned about the rising number of overweight and obese children.

Exercise

The Healthy Indian Kids Exercise Study III (HIKES III) and The Robust American Indian Lifestyle Study (TRAILS) are examples of two exercise intervention projects aimed at motivating AI students to increase their levels of physical activity. The projects hope to demonstrate that this exercise prescription improves intermediate risk factors associated with both Type 2 diabetes and cardiovascular disease.

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[58] Snyder P, Anliker J, Cunningham-Sabo L, et al. "The Pathways study: a model for lowering the fat in school meals", *Am J Clin Nutr*, April 1999: 69 (4 Suppl), 810S-815S.

Diabetes

One of the best-known programs is the IHS National Diabetes Program. It focuses on diabetes care quality improvement, development of monitoring systems of diabetes clinical care with *Annual IHS Diabetes Care and Outcomes Audit,* and the creation of surveillance systems for tracking diabetes complications and prevalence. It is also supported with publications and research documenting an ability to improve care and save money.[59] The NIH has launched a nationwide, multi-center clinical trial to evaluate the effectiveness of the Diabetes Prevention Program in preventing or delaying the disease in high-risk individuals.

The Kahnawake Schools Diabetes Prevention Project[60] was a 3-year diabetes prevention program in a Mohawk community in Canada. It was designed to improve healthy eating and encourage more physical activity among elementary school children. The interventions included a health education program, community advisory board, recreation path, and community-based activities promoting healthy lifestyles. There is ongoing analysis to determine its effectiveness.

The Family Centered Diabetes Project: *Sharing Wisdom,*[61] is a culturally-appropriate, lifestyle-specific intervention aimed at urban Native American women in New Mexico. The outcome measures include increased vegetable consumption, increased physical activity, and decreased fat consumption. Outcome data is not yet available.

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[59] http://info.ihs.gov.

[60] Macaulay AC, Paradis G, Potvin L, et al. "The Kahnawake Schools Diabetes Prevention Project: intervention, evaluation, and baseline results of a diabetes primary prevention program with a native community in Canada", *Prev Med*, 1997: 26, 779-790.

[61] http://hsc.unm.edu/epiccpro/diabetes.html.

trial that examines the effects of intensive cholesterol and blood pressure reduction on cardiovascular disease. The study seeks to enroll 488 diabetic American Indian men and women older than 40 years old. Hopefully this trial will show that cardiovascular disease in the AI/AN population can be prevented.

Injury and Suicide Prevention

The IHS created a program targeting injury prevention in 1987. Some of the initiatives include child passenger protection, roadway/roadside hazard identification, safety belt use promotion, deterring drinking and driving, drowning prevention, smoke detector usage, helmet use, and injury prevention. Since its inception, there has been a 36% decline in IHS direct and contract hospitalizations for injuries and poisonings.[66]

There are a variety of suicide prevention programs in AI/AN communities that have been organized to reflect the culture of each community and the unique problems it faces in an effort to decrease suicide rates.[67] Examples of such programs include the Zuni Life-Skills Development Curriculum, the Wind River Behavioral Health Program, the Tohono O'odham Psychology Service, the Western Athabaskan Natural Helpers Program, and the Indian Suicide Prevention Center. Most of them focus on increasing traditional spiritual practices because of research that has demonstrated a high degree of cultural spirituality yields a decreased rate of suicide.[68]

A variety of efforts have been used to reduce suicide rates in a Western Athabaskan American Indian tribe in New Mexico.[69] School-based "natural helpers"

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[66] U.S. Department of Health and Human Services. "Trends in Indian Health, 2000-2001."
[67] www.apa.org/ppo/issues/psuicnat.html "Suicide: A crisis within the American Indian and Alaskan Native Community. 5/99.
[68] Garroutte EM. "Spirituality and attempted suicide among American Indians", *Soc Sci Med*, April 2003: 56(7), 1571-9.
[69] CDC. "Suicide prevention evaluation in a Western Athabaskan American Indian Tribe – New Mexico, 1988-1997", MMWR, 1998: 47(13), 257-261.

were used, as well as outreach to families, follow-up for reported at-risk youth, community education, and suicide risk screening. Rates of suicidal acts remained substantially lower after the program was initiated.

Tobacco

The National Cancer Institute has created a variety of programs in order to combat the high rates of smoking in both the AI/AN and United States populations. Many of theses programs focus on particular populations, while others are intentionally general. *Commit to Quit* uses vigorous physical activity as an aid to smoking cessation for women. Primarily Caucasian women were enrolled in the study. Eight weeks after their quit day, 30.6% of exercise subjects had not smoked for the past seven days, compared with 21.8% of the control subjects. Twenty weeks after the quit day, 24.6% versus 13.6% were smoke free, compared with 19.4% versus 13.6% after 60 weeks.[70] Even though this program enrolled white women, it shows the potential success of a smoking intervention focused on physical activity. A smoking cessation program like this would be ideal for both AI men and women.

Pathways to Change uses a computer-based support system that gives individually tailored reports to help adults quit smoking. The study enrolled primarily Caucasians in Rhode Island. Smoking cessation rates were significantly increased for the higher intervention group at each time interval: 2.3 times higher at six months, 3.5 times higher at 12 months, 5.1 times higher at 18 months, and 5.9 times higher at 24 months.[71] The results of a smoking cessation program that is less labor intensive are

[70] http://cancercontrol.cancer.gov/rtips/rtips_details.asp?programID=6.
[71] http://cancercontrol.cancer.gov/rtips/rtips_details.asp?programID=9.

offered. This type of program would be easier to implement and less time consuming than other programs mentioned.

It's Your Life - It's Our Future involves smoking cessation advice from physicians and health providers, along with a motivational videotape (15 minutes) and follow-up (6 months) by a community health representative. The program was designed for AI/ANs residing in California and found that 6.8% versus 3.4% of participants quit smoking after the intervention.[72]

Pathways to Health is a school-based program of cancer prevention and health promotion activities for 5th and 7th grade AI students.[73] The program involves a health promotion curriculum, social influences component, inter-generational activities, storytelling, parent education, school staff training and development, and modification of school meals. However, no statistically significant differences in pre-test/post-test change measures were found among fifth graders' self reports of smoking/intention to smoke. This comprehensive health intervention failed to have an impact on smoking behaviors, suggesting that focused programs are more effective.

Enhancing Tobacco Control Policies in Northwest Indian Tribes is a program designed to assist the tribes in developing their own culturally appropriate tobacco use policies. Tribal representatives were invited to one of four regional workshops that included a presentation on the health risks of tobacco and an introduction to the Tribal Tobacco Policy Workbook. The regional meetings were followed by a visit to each tribe to work with members of their health committee. A tobacco policy resolution approved by each tribal council was the goal. American Indian tribes in Washington

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[72] http://cancercontrol.cancer.gov/rtips/rtips_details.asp?programID=7.
[73] http://cancercontrol.cancer.gov/rtips/rtips_details.asp?programID=10.

and Oregon were studied. They found that the intervention led to significant changes in restricting smoking at tribal council meetings, at tribal work settings, and in private offices.[74]

The *Project Towards No Tobacco Use* is another school based prevention program designed to delay the initiation and reduce the use of tobacco by middle-school children. The program involved a ten-day classroom-based social influences program, training in active listening, effective communication, and general assertiveness development, self esteem building, education on tobacco, ways to counteract media, refusal role plays, and homework assignments. The study group included Caucasian, African American, Hispanic, and Asian American. Initiation of cigarette use was reduced by 26% at two years, and use of smokeless tobacco was reduced by 30%. Weekly or more frequent cigarette smoking was reduced by 60%, while weekly or more frequent smokeless tobacco use was eliminated.[75] Because this program was successful in a variety of minority groups, it suggests the possibility of being helpful in the AI community.

Forever Free consists of a serial mailing of eight bulletins designed to help former smokers stay smoke-free. Caucasian, African American, Asian- American, Hispanic, and Native American adults were included. Repeated mailings were shown to significantly reduce the relapse rate for the year during which the mailings were provided; 12% who received mailings relapsed, compared with 35% who did not.[76]

Lastly, *Native FACETS* (Family, Active health choices, Cancer prevention, Eating wisely, Thankfulness, Survival as a Native American) is a youth tobacco

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[74] http://cancercontrol.cancer.gov/rtips/rtips_details.asp?programID=8.
[75] http://cancercontrol.cancer.gov/rtips/rtips_details.asp?programID=12.
[76] http://cancercontrol.cancer.gov/rtips/rtips_details.asp?programID=1.

prevention and dietary modification program that involves 15 weekly group sessions (90 minutes each) after school or on Saturday. The study examined Native Americans living in the Northeast. For youths receiving the intervention, fewer ever tried cigarettes, smoked in the past 24 hours, smoked currently, or smoked for one month. The youth also demonstrated an increased knowledge of tobacco and dietary health effects.[77]

The American Lung Association's *Not on Tobacco (N-O-T)* was implemented with a group of Native American teenagers in the high school setting. After the ten-week curriculum, all of the students reported that the program was effective in helping them to quit smoking.[78]

Drugs/Alcohol

A trial called the *Telephone Aftercare Program* enrolled 30 American Indians who had successfully completed a residential substance abuse treatment program. For six months, they received aftercare via the telephone. Results suggest that the clients who participated showed decreased drinking and other drug use, had fewer encounters with the criminal justice system, and had improved familial and social interactions and relationships.[79]

In summary, there are a variety of programs that have been demonstrated effective in decreasing unhealthy behaviors and preventing disease in AI and other racial/ethnic minority populations. Additional programs are in the process of development and will contribute to knowledge about successful strategies. Targeted

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[77] http://cancercontrol.cancer.gov/rtips/rtips_details.asp?programID=13.
[78] Cleaver Vicki L. "Cessation intervention for Native American Teen Smokers", abstract presented at the 2003 National Conference on Tobacco or Health December 2003.
[79] Chong J, Herman-Stahl M. "Substance abuse treatment outcomes among American Indians in the Telephone Aftercare Project", *J Psychoactive Drugs*, Jan-Mar 2003: 35 (1), 71-77.

programs with individualized attention seem to work best. Future interventions must examine and build upon the elements that made these programs work.

THE FLYING EAGLE TRIBAL NATION

History

The tribe is located in the Northeastern United States and includes almost 1200 members. The majority of the tribal members reside within a common geographic location, however a small percentage have dispersed across the United States. The mean age of the FETN members is 39 years old.

The following description was taken from the FETN's *Comments on the Proposed Findings of the Bureau of Acknowledgement and Recognition.*[80]

> *The FETN settled on a small reservation [in the Northeast]...The tribe, forced to survive in conditions of economic deprivation, paternalism, and racism, struggled to maintain a cohesive community. Many left the reservation to find work, although nearly all remained within a ten-mile radius of the reservation, forming residential enclaves...With tribal funds limited to the needs of the poor, elderly, or infirm, most adult [Flying Eagles] were self-supporting throughout their history, while maintaining a remarkably close community, through periodic gatherings for religious or social purposes, church organizations, family get-togethers, and a highly organized but informal information network. Formal political organization, having been undermined by local and state ordinances and the imposition of the overseer system, was replaced by an informal system of voluntary leadership, wherein representatives of the major family lines stepped forward for specific purposes: to protect reservation resources, to protect the rights of elderly tribal members, to provide support for the aging and ill, to confront state officials who sought to further diminish tribal sovereignty, and to organize for their protracted efforts to receive Acknowledgement as an American Indian tribe. This style of leadership, and this type of political organization, conforms closely to the type of reactive response identified by many scholars as characteristic of tribal organizations...The Flying Eagle Tribal Nation has consistently expressed their native identity in marriage preferences, residence pattern, spirituality, sharing of worldview and oral traditions, and*

[80] Anonymous. *The FETN's comments on the proposed findings of the Bureau of Acknowledgement and Recognition,* 2001.

> *political style. While accepting of new ideas and occupations, and reacting always to the oppressive social conditions in which they lived, the Tribal nation has remained a group who defines itself primarily as Indian...Since the 1970s, the FETN has had a formal political organization, and created a tribal council with an elected chair... [It was during this time that] some tribal members began organizing the tribe's bid to become a Federally Acknowledged Tribe. This effort, along with other initiatives to improve tribal housing, health, and education, have been the foci of formal political activity, which works in tandem with the informal social and family relationships that have always characterized the [FETN]. Today the tribe continues its traditions of yearly gatherings, participates actively in regional native events, and remains distinctive in outlook and identity.*

The tribal government, vested with the powers of the tribe from its inherent sovereignty, aboriginal law, and applicable laws, has the power to legislate, appropriate, delegate, and exercise all ordinary and necessary powers to govern the tribe. The tribal members regularly congregate for tribal membership meetings, socials, honorary and cultural celebrations, and pow wows. These meetings are an extension of the meetings which were held every fourth Sunday beginning in the 18th century. These meetings varied in attendance, and were descended from religious gatherings held on the reservation. They often took place at the homes of tribal members, in addition to established churches. The Fourth Sunday meetings "served to create a social, religious, and political mechanism in that they foster community, keep the tribe tied to their land, enable the tribe to practice its own form of worship, and maintain a continuum of tribal spiritual/political leaders."[81]

Federal Recognition

The FETN is currently in the process of applying for federal recognition. This is a political and economically charged process. Within the last 15 years, a number of

[81] Anonymous. *The FETN's comments on the proposed findings of the Bureau of Acknowledgement and Recognition,* 2001.

Native American gaming casinos have been built in the Northeast with the result being a net profit of millions of dollars for the tribes. It is to this trend that many attribute the surge in federal tribal acknowledgement applications. Another possible financial gain that comes from federal recognition is access to IHS direct and contract health services.

As part of the recognition process, the tribe provided, "extensive documentation pointing to the tribe's descent from an historic tribe, its continuous history as a community, and its uninterrupted recognition by local, state, and federal officials as an Indian tribe. The petition also provided a wealth of detail about the workings of tribal politics, the history of leadership, and the distinctive nature of the [Flying Eagle Tribal Nation]." Detailed genealogic information, documentation of regular community and religious gatherings, and supporting evidence describing the unique cultural aspects of the tribe were also included.

There are conflicting definitions of what it means to be a tribal nation. Many of the standards are political, derived from specific court cases. One example of a definition is as follows: "a group of people of Indian descent still living in their traditional homelands, and distinct in marriage and social relations, customs, and identity." The national definition of a tribe includes "formal political structures, centralized leadership, and unity in political relations with the local, state, and federal governments." The scholarly and regional definition of tribe is less focused on political leadership than group identity, self-recognition, tradition, common regional residence, and patterns of social boundary maintenance. The FETN has historically determined tribal membership by descent from known Indians, and residence on an established reservation.

METHODS

The first step in developing community-based programs is to conduct a formal needs assessment. Community members should be involved in all phases of the assessment process, from development of research questions to participation in data collection, data analysis, and the use of findings. Ideally, participation would include a variety of community members in order to balance views and opinions. This can be achieved by conducting a series of focus groups or interviews with groups of community members. This will ensure a needs assessment that is culturally sensitive. Extensive community involvement and individual participation are important for ensuring an outcome which feels less like research and more like action.[82] Other themes that have emerged in designing a successful needs assessment are: careful design, methodological rigor, decisive leadership, good communication, involvement and ownership of the work from relevant stakeholders, support from senior decision-makers, and appreciation of the local political dynamics.[83] Overall the researcher must take into consideration the motivations of the target group.

The Native American Community Health Needs Questionnaire was developed by the Flying Eagle Tribal Nation in conjunction with other resources. Flying Eagle worked closely with the Charging Bear Tribal Nation, an adjacent tribe that had conducted a similar survey in the past. Needs assessments and related literature from tribes across the country were also used to develop the survey (see Appendix 4).

The questionnaire was mailed to all 674 adult members of the tribe in July 2003, and a total of 300 (45%) were returned. Phone calls were made to all of the tribal

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[82] Clark MJ, Cary S, Diemert G, et al. "Involving communities in community assessment." *Public Health Nursing*. 2003: 20(6), 456-463.

[83] Jordan J, Wright J, Ayres P, et al. "Health needs assessment and needs-led health service change: a survey of projects involving public health doctors." *J Health Serv Res Policy.* April 2002: 7(2), 71-80.

members in an effort to increase the response rate. Reminders to complete the survey were also posted in the monthly tribal newsletter. The survey included a letter describing the purpose of the needs assessment, encouraging the tribal members to answer the questions honestly. The questionnaire consisted of both multiple choice and fill-in the blank questions about demographic information, selected indicators of health status, opinions on health and related topics, health care utilization, health care coverage, and use of traditional medicine practices. The survey was anonymous and voluntary. The completed questionnaires were mailed back to the main tribal office in a stamped return envelope and remained sealed until they were entered into the database.

Data Entry and Analysis

A database was created in the Statistical Program for the Social Sciences (SPSS) SPSS, version 10.1. Data was entered and analyzed using SPSS. In creating the database and entering the data, the author had to make some decisions due to limitations of the survey design. Because the survey was designed and implemented prior to the author's involvement, there was no ability to modify the questions, and many of the coding categories were already determined.

The income variables were fixed categories that contained significantly different ranges in each choice. When computing the per capita income, the middle of the ranges was taken. If more than one answer ("own" and "rent") was given regarding home ownership, the response was coded as "own." This occurred in five cases. If no condition was circled in the questions about chronic illness, all items were listed as "missing" (about 12% of surveys). If one of the questions on this list was answered, the rest of the items were recorded as "no." This information was tabulated based on a

positive response. The average number of cigarettes smoked in one day was calculated if a range was given. Inconsistencies were seen in the question regarding diet changes. A large number of respondents answered that they did not change what they ate for medical/health reasons. However, they marked the specific conditions that forced a dietary change. When this occurred, the original answer was left as "no," the respondent did not have to change his/her diet. This occurred 27 times. The question regarding the frequency of physical activity elicited considerable variability. The question appeared as, "In the past 3 months, how often did you ... (times per week)." Because the questions were fill-in-the-blank, respondents did not answer in a consistent manner. Some answered in words, while others gave a numerical response. The question was not understood by all respondents, which led to answers that were unclear. This problem was addressed by entering ½ time per week for all verbal responses (for example: Some, Not much, Rarely, or Often). All numerical responses greater than 10 times per week for any one given activity were recorded as 10 times per week (answers as high as 90 times per week were given). This allowed for a consistent calculation of a mean for the group. A similar problem was seen in the question about the frequency of alcohol consumption. After choosing a "yes or no" response to drinking alcoholic beverages, the respondent was asked, "How much? How often? Daily/Weekly." Due to variability in responses, the question could not be analyzed. Many of the respondents gave more than one answer in regards to the method of birth control used. When two were offered, it was coded for the less effective method. More than one response was used for some of the sexual abuse questions. When this happened, the younger age of the victim and the older age of the abuser were recorded.

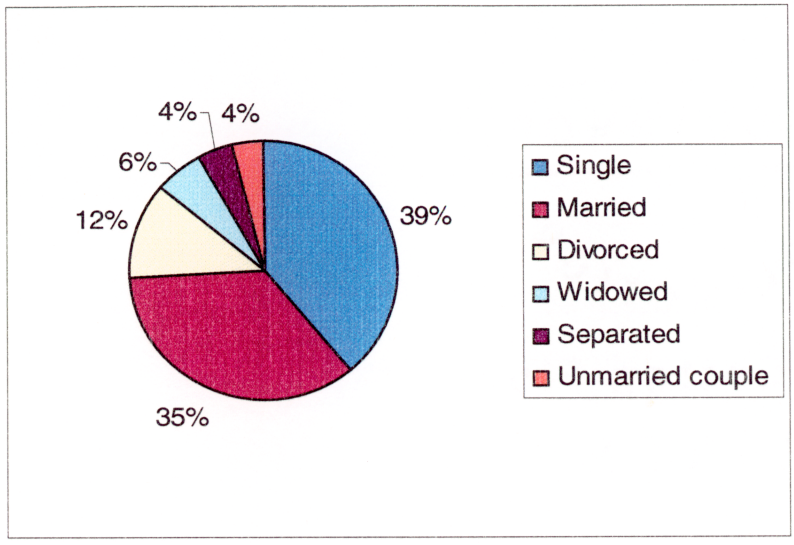
Two types of bivariate statistics were used in the analysis of the data. Descriptive statistics were reported using means with standard deviations. Inferential statistics were reported with the corresponding test statistic. Pearson correlations were reported with an "r" value. A Pearson correlation was conducted when two continuous variables were compared. Chi square analysis was be recorded with "X^2" value. This test was performed when dichotomous variables were compared. A t-test was reported using a "t" value. A t-test was performed when a continuous variable was compared to a dichotomous variable.

RESULTS

Demographics

Three hundred tribal members completed the questionnaire: 129 (43%) males and 170 (57%) females. English was the primary language of all respondents. The age range was 18-88 years old, with a mean age of 43. About one-thirds were single (39%), one-thirds were married (35%), and the rest were divorced (12%), widowed (6%), separated (4%), or members of an unmarried couple (4%). See Figure 1 below.

Figure 1. Summary of the marital status of members of the FETN.

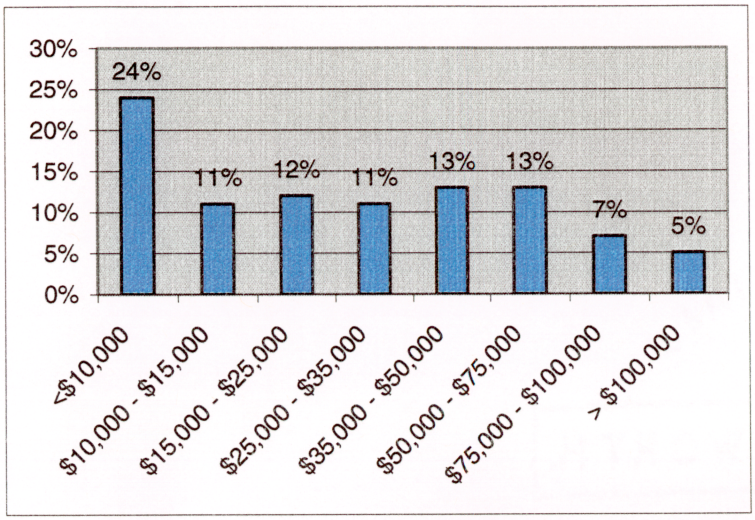


Most respondents (83%) had completed 12th grade or higher, and 40% had some post-graduate training. The majority of the tribal members (60%) were currently employed. Sixty-seven percent of adults between the ages of 18 and 55 years old were employed. Twenty-five percent answered affirmatively when asked, "Do you need assistance re: job?" Seventeen percent described themselves as disabled. Most respondents identified themselves as Christian (38% were Baptist, 21% were Protestant, 7% were Catholic, and <2% were Born Again Christian, Jehovah's Witness, or African Methodist Episcopal Zion). Eight percent identified themselves as having no religion, and the other religions indicated contained less than 2.0% each (Islam, Native American, and Jewish).

Household size ranged from one (16%) to 10+ (1%), with 68% living in households of two to four people. Figure 2 presents the household income of the respondents. Household income was relatively evenly divided between income levels: 23.5% earned < $10,000, 11% earned $10,000-15,000, 11.7% earned $15,001-25,000,

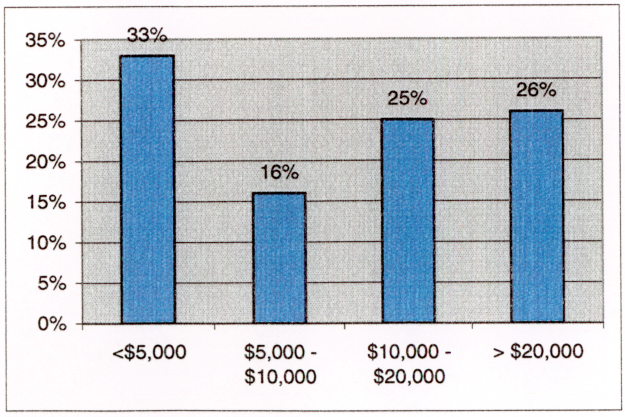
11.0% earned $25,001-35,000, 17.4% earned $35,001-50,000, 13.5% earned $50,001-75,000, 6.8% earned $75,001-100,000, and 5.0% earned > $100,000.

Figure 2. Household income of members of the FETN.



From this data, annual per capita income was determined (Figure 3). Thirty-three percent earned less than $5000, 16% earned between $5,000 and 10,000, 25% earned between $10,000 and 20,000, and 26% earned greater than $20,000.

Figure 3. Per capita income of FETN members.



Forty percent owned their residence. Nearly half of the group lived in a detached, one family house (46%). The others lived in a duplex, townhouse, or attached housing (14%), an apartment (32%), or a mobile home/trailer (3%). One percent of the respondents were homeless, and 3% lived in elderly housing, a halfway house, a rooming house, or were staying with a friend. Active military personnel made up 4% of the group, while 11% indicated that they were military veterans.

Health Status Indicators

General Health

Most tribal members felt that their general health was excellent, very good, or good (13%, 31%, 37% respectively). Fifteen percent indicated that their health was fair, while 5% felt that their general health was poor. Six percent had stayed overnight in the hospital in the last 6 months, and an additional 6% had stayed overnight in a hospital in the last 12 months. The highest number of hospitalizations indicated was seven times in the last six months.

Illnesses/Chronic Conditions

The frequency of chronic illnesses is presented in Table 2. There were some gender differences noted. Women had a higher prevalence of arthritis (21%) as compared to men (17%), congestive heart failure (2% as compared to 1% of men), asthma (21% versus 17% for men), and sexually transmitted diseases (8% compared to 5% for men). Men had a higher prevalence of stroke.

Table 2. Summary and comparison of chronic illnesses by gender.

	Men	Women	Combined
Arthritis	16.5%	21.4%	19.7%
Congestive heart failure	0.9%	1.9%	1.5%
Stroke	2.8%	.6%	1.5%
Asthma	17.4%	21.4%	20.1%
Cataracts	5.5%	3.3%	4.2%
Breast cancer	0%	1.5%	1.5%
Prostate cancer	1.5%	--	1.5%
Colon/rectal cancer	0.9%	0.7%	0.8%
Lung cancer	--	--	0%
Other cancer	3.7%	4.6%	4.2%
High blood pressure	31.2%	31.2%	31.4%
Diabetes	15.6%	18.8%	17.4%
Dialysis	1.8%	1.3%	1.5%
Sexually transmitted disease	4.6%	7.8%	6.4%
HIV	--	--	0%

The individual chronic conditions above were combined: 33% of the group had none of the above conditions, 41% percent had one condition, 13% had two, 9% had three, and 4% had four or five. See Table 3.

Table 3. Prevalence of multiple chronic conditions.

0 of above conditions	37.1%	30.4%	33.1%
1 of above	39.0%	41.9%	40.6%
2 of above	11.4%	14.9%	13.4%
3 of above	8.6%	9.5%	9.4%
> 4	3.9%	3.4%	3.6%

Table 4 presents the frequency of disorders of the eyes and ears.

Table 4. Summary of eye and ear disorders.

Blindness in one eye	3.2%	2.4%	2.7%
Use glasses/contact lenses	51.6%	74.4%	64.6%
Color blind	9.6%	1.2%	4.7%
Deaf in one ear	2.4%	2.4%	2.4%
Use a hearing aid	--	2.4%	1.3%
Have trouble hearing	5.5%	1.8%	3.4%

The distribution of tribal members who visited an optometrist, audiologist, and dentist is presented in Table 5. Almost half of respondents had not seen an optometrist or dentist in the past year. A greater percentage (69%) had not had their hearing tested in the last year.

Table 5. Distribution of usage of selected preventive health services.

	Never	<6 months	6-12 months	>12 months
Last visit to eye doctor	9.1%	18.5%	24.2%	48.3%
Last visit to test hearing	12.6%	6.1%	11.9%	69.4%
Last visit to a dentist	4.1%	28.7%	22.6%	44.6%

Dental Health

There was a high level of need for dental care in this population. Seventy-six percent of the respondents indicated that they were in need of at least one type of dental service: 58% needed one or two distinct services, 12% needed three, and 6% needed four or five. These services consisted of needing a tooth filled or replaced, a tooth pulled, gum treatment, denture work, relief of pain, work to improve the appearance, or a check up/cleaning. Almost half (45%) reported that their last visit to the dentist or hygienist was over one year ago.

Health behaviors

Table 6 presents a summary of substance use by the tribal members of the FETN.

Table 6. Summary of substance use by gender of FETN members.

	Men	Women	Combined
Smoke	44.5%	37.1%	40.1%
Ever smoked	62.7%	62.1%	62%
Drink alcohol	66.7%	59.8%	63%
Marijuana	60.2%	53.9%	56.4%
Cocaine	22.4%	16.1%	18.7%
Inhalants	0.8%	1.2%	1.0%
Steroids	2.3%	0.6%	1.3%
Dirty needle	10.9%	1.8%	4.4%
Lsd, pcp, ecstasy	15.5%	8.3%	11.4%

Tobacco

Forty percent of tribal members in this survey currently smoked. Of smokers, the large majority (91%) indicated that they smoked cigarettes, as opposed to cigars (13%), snuff (0%), or chewing tobacco (< 1%). Of the smokers who indicated how many cigarettes they smoked, 26% smoked <5 cigarettes per day, 14% smoked 5-9 ½ cigarettes per day, 25% smoked 10-15 cigarettes per day, and 36% smoked >15 cigarettes per day. Sixty-two percent of the respondents had smoked at some point in the past, quitting anywhere from within the last year (14%) to over 20 years (27%).

Alcohol

Sixty-three percent of the group drank alcoholic beverages. In the last thirty days, 47% reported not having any drinks, 29% consumed more than one drink per week, and 5% drank everyday. When asked, "In the last thirty days, on how many days did you have five or more drinks in a row?" 77% reported "never," 10% "on one

or two days," 6% "on three to five days," 2% "on six to nine days," 2% "on ten to nineteen days," and 3% "on twenty or more days."

Marijuana

More than half of the group had used marijuana (57%). Of those who had used marijuana, 72% used it less than 100 times, and 28% used it greater than 100 times. Most first used marijuana when they were between the ages of 13 and 16 (48%) and when they were older than 17 years old (43%).

Other drugs

Two questions dealt with cocaine (powder, crack, or freebase) use by the tribal members. Twenty percent of the group reported to having used cocaine at some point in their lifetime. About half of these respondents had used cocaine multiple (>10) times.

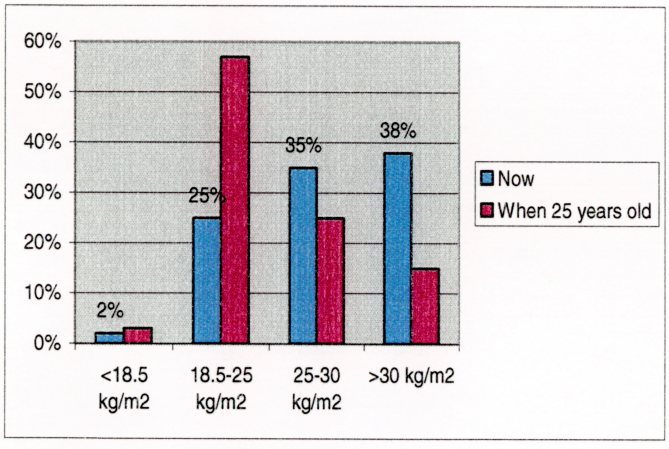
The remaining drug questions were less detailed. One percent reported having sniffed glue, aerosol, or paints. Positive responders usually indicated use of "one to two times." One percent reported having used steroids at some point during their lives. Four percent reported having shared a needle or using a dirty one. Most (89%) had never used LSD, PCP, ecstasy, or mushrooms.

Weight, diet and exercise

The survey asked the tribal member to give their current height and weight, and at 25 years old (when applicable). This information was used to calculate body mass index (BMI). The formula to calculate BMI is wt (kg)/ht^2 (m^2). BMI less than 18.5 kg/m^2 was defined as underweight, over 18.5 kg/m^2 and less than 25 kg/m^2 was considered healthy, 25-30 kg/m^2 was overweight, and 30 kg/m^2 or above was obese.

Figure 4 summarizes the BMI distribution of the tribal members. The respondents tended to be overweight and obese, with a mean BMI of 29.5 kg/m^2. This is higher than the mean BMI when the respondents were 25 years old, 25 kg/m^2. Seventy-three percent were overweight or obese, compared to 40% when the group was 25 years old. The median difference in weight between the respondent's current weight and their weight when they were 25 years old was a gain of 25 pounds. The difference in weight ranged from losing 106 pounds to gaining 149 pounds.

Figure 4. Comparison of BMI distribution, now versus 25 years of age.

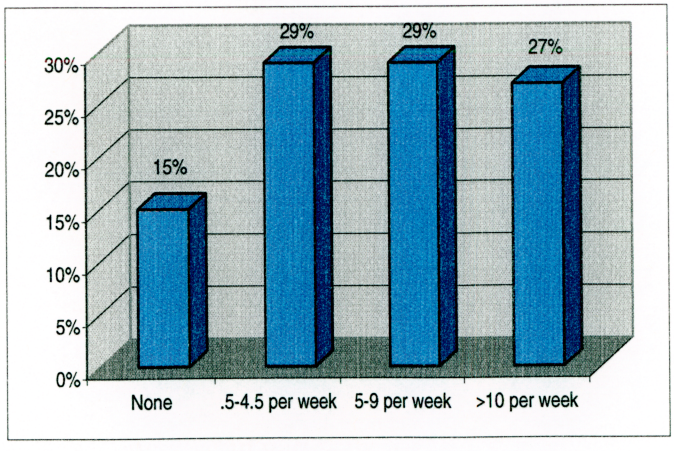


One third (35%) of the tribal members indicated that they had to change their diet for medical reasons in the past 12 months. These reasons were: overweight/obesity (49%), high blood pressure (29%), high blood cholesterol (33%), diabetes (29%), heart disease (9%), allergy (4%), ulcer (4%), and other medical reasons (9%). The other medical reasons listed included acid reflux, afraid of health risks, antidepressant pills, arthritis, back problem, cancer, Crohn's disease, dental reasons, digestion problems, general health, difficulty breathing, hernia, increased appetite, reduced sodium,

migraines, multiple sclerosis, pancreas problems, stomach problems, and thyroid problems. The frequency of eating breakfast by the respondents was: 42% every day, 34% some days, 21 % rarely or never, and 3% weekends only.

The tribal members were asked questions about their level of physical activity during the last three months. Respondents indicated how many times per week they walked a mile without stopping, jogged or ran, rode a bike or an exercise bike, swam, did aerobics or aerobic dancing, participated in other dancing, performed calisthenics or exercise, engaged in gardening or yard work, or lifted weights. The results of the individual questions were combined and the results were aggregated (Figure 5). Fifteen percent did not engage in any physical activity. Twenty-nine percent participated in ½ to 4 ½ activities per week, 29.4% participated in 5 to 9 activities per week, and 26.8% participated in 10 or more activities per week.

Figure 5. Distribution of the frequency of physical activity performed per week.

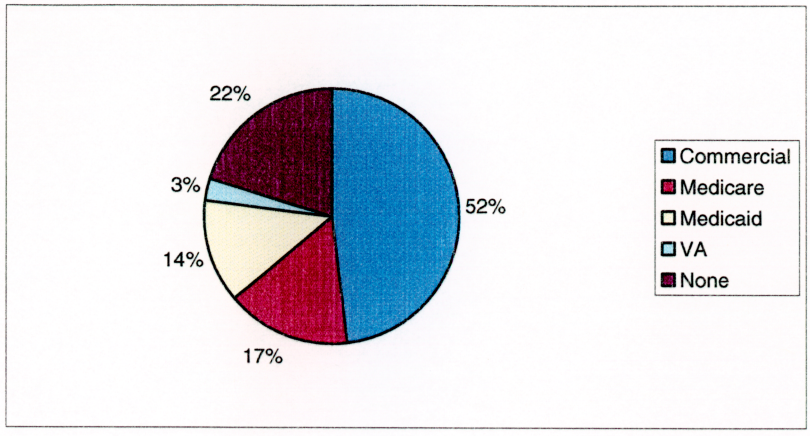


Access to healthcare

In the last twelve months, 30% of respondents reported having to wait more than three days for a primary care appointment. Fifty-two percent reported having to wait more than 15 minutes at the primary care doctor's office. The number of visits to a family doctor varied from zero visits to 25 visits in the last twelve months. Thirty percent reported no visits, 19% reported one visit, 27% reported 2-3 visits, 19% reported 4-10 visits, and 5% reported >10 visits. Similarly, the range for visits to a specialist in the last twelve months was zero to fifty-two visits. Forty-five percent reported no visits to see a specialist doctor in the last twelve months, 19% reported one visit, 18% reported 2-3 visits, and 17% reported >4 visits in the last 12 months.

Figure 6 presents the insurance coverage for the tribal members. Fifty-two percent had commercial insurance, 17% had Medicare, 14% had Medicaid, 3% had VA insurance, and 22% had no health insurance coverage. When asked if their health insurance adequately covered the cost of health care, 61% answered "yes." The type of insurance coverage which a person had did not affect their satisfaction with their most recent visit to a doctor.

Figure 6. Summary of the insurance coverage for members of the FETN.



Most respondents (89%) expressed some degree of satisfaction with the local healthcare system. In addition, most people reported satisfaction with their most recent visit to a doctor: 39% were very satisfied, 27% were somewhat satisfied, 22% were satisfied, 9% were not very satisfied, and 3% were very dissatisfied. Thirty percent of the group reported not being able to afford a drug that was prescribed for them. Similarly, 30% of the group needed to see a doctor in the last twelve months but couldn't because of cost. Most (69%) respondents had a source of primary care, as indicated by having a particular doctor that they usually went to for health care.

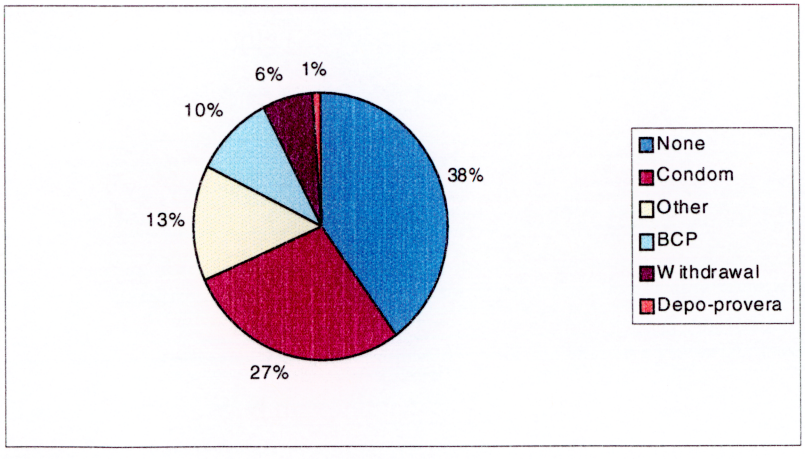
Indicators of mental health status

In the past 12 months, 32% of the tribal members had felt so sad or hopeless that they stopped their usual activities. Nine percent reported that they had seriously considered suicide in the last 12 months, and 2% had actually attempted suicide. Half of these attempts required medical treatment.

Indicators of reproductive health status

Almost all members of the group reported being sexually active at some point in their life. Four people (2%) responded that they had never had sexual intercourse. Their ages were 18, 20, 50, and 51 years old. No current method of birth control was reported by 38%, while 10% used birth control pills, 27% used condoms, 1% used Depo-provera, 6% used the withdrawal method, and 13% used some other method of birth control. Nine (3%) indicated that they were not sure which method of birth control they had used the last time they had intercourse. Figure 7 describes the findings for contraception use. When examining women between the ages of 18 and 49 years old, the percentages are similar: no method 32%, birth control pills 11%, condoms 31%, Depo-provera 3%, withdrawal 9%, and some other method 11%. The mean age for women using birth control pills was 36.5 years old, condoms 39 years old, and Depo-provera and withdrawal were both 32.7 years old.

Figure 7. Contraception use by members of the FETN.



Nineteen percent of the women in the survey had never been pregnant. Fifteen percent had been pregnant one time, and 65% had been pregnant two or more times. Twenty-two percent of women aged 18 to 49 years old had never been pregnant. Thirty-one percent of the men had never fathered a child. Twenty-three percent had fathered a child one time, and 42% had been responsible for fathering a child two or more times. When asked about the number of sexual partners they had in the last three months, the following results were obtained: 63% had one, 4% had two, 4% had three or more, and 26% had not had had sexual intercourse during the last three months.

Intimate partner abuse (defined as having been physically hit by a significant other) by a boyfriend/girlfriend was experienced by 4% of respondents, as compared to 3% who experienced abuse by a spouse/partner. However, further analysis demonstrated that intimate partner abuse was reported by the same people twice. Three percent of the group had experienced abuse by either a spouse or a significant other. Ten percent of the group had been in a physical fight in the last twelve months. Of these, half had been in one, and half in two or more fights. Twenty-one percent of the group reported some form of sexual abuse. Of these cases, 42% were under 10 years old, 43% were between 10 and 18 years old, and 15% did not remember how old they were when it happened. The molester, at the time of abuse, was 12-18 years old (20%), 19-29 years old (21%), 30-39 years old (16%), 40-49 years old (16%), 50-59 years old (6%), or they couldn't remember (16%). Fourteen percent reported having been abused by a parent or an adult in their lifetime. The age of the child at the time of the abuse was under 10 years old (53%), between 10 and 18 years old (30%), or they could not remember (17%). In addition, 16% had been forced to have sex at some time.

Traditional Indian Medicine

Table 7 summarizes the findings of traditional healing practice usage. The questions were all listed under the heading, "Traditional healing practices." When all variables were examined, 60% had participated in at least one of the practices. Twenty-seven percent participated in two or more. When "prayer", "dance", and "singing" were removed from the analysis, 24% of tribal members participated in at least one of the practices. Nine percent participated in two or more.

Table 7. Summary of the use of traditional healing practices by members of the FETN.

Sweats	7%
Cleansing	7%
Herbals	11%
Vision Quest	2%
Smudging	9%
Prayer	46%
Dance	19%
Singing	16%
Drumming	3%
Medicine Man	3%

Opinion Questions

There were a series of questions that gave the respondent the opportunity to identify issues considered a problem in the community. The topics identified by the greatest number of respondents were: alcohol and drug abuse (74%), adequate housing (70%), teen pregnancy (69%), tobacco (69%), lack of physical activity (64%), unplanned pregnancy (60%), chronic illnesses such as cancer, heart disease, diabetes, and disease of the elderly (average 60%), sexually transmitted diseases (59%), nutrition (59%), access to primary care services for children, elderly, and everyone (average

57%), murder, sexual assault, and child abuse (average 53%), and injuries from motor vehicles (51%). Respondents identified issues that were considered "not a problem" in the community. The issues considered "not a problem" included: toxic exposures at home (32%) and access to emergency medical services (31%). The rest of the opinion questions yielded results that were not indicative of either a "problem" or "not a problem" in the community.

Relationship between age and social and health factors

Older tribal members were more likely to be disabled ($t=4.62$, $p<.001$), own their home ($t= 4.24$, $p<.001$), and earn more money ($r = .19$, $p=.002$). Younger tribal members were more likely to need job assistance ($t = 3.32$, $p=.001$), and have higher perceptions of their general health ($X^2 = 28.38$, $p<.001$).

Older tribal members were more likely to have arthritis ($t=4.02$, $p<.001$), stroke ($t=3.07$, $p=.002$), cataracts ($t=4.78$, $p<.001$), prostate cancer ($t=3.26$, $p=.002$), high blood pressure ($t=7.02$, $p<.001$), diabetes ($t=5.64$, $p<.001$), wear eyeglasses ($t=6.83$, $p<.001$), and wear a hearing aid ($t=2.02$, $p=.039$). In addition, older members were more likely to have a higher number of chronic conditions ($r=.37$, $p<.001$). Younger members were more likely to report asthma ($t=3.95$, $p<.001$), and a sexually transmitted disease ($t=3.32$, $p=.001$).

Older tribal members had a longer period since seeing a dentist ($X^2 = 14.73$, $p=.0228$). They were also more likely to need denture work ($t=6.84$, $p<.001$). Younger individuals were more likely to need a tooth filled/replaced (mean 40.2 versus 44.6, $t=2.5$, $p=.013$), as well as work to improve appearance (37.4 versus 45.2, $t=3.72$, $p<.001$).

Younger tribal members smoke more (t=2.31, p=.023), drink more (t=2.96, p=.004), were more likely to report marijuana use (t=5.17, p<.001), more likely to have used LSD, PCP (t = 2.85, p=.005), and were more likely to have been in fight (t=4.02, p<.001). Older tribal members were more likely to have had to change their diet in the last 12 months (t=2.73, p=.006). There was no relationship between age and BMI. The younger tribal members were more likely to be active (r = .20, p=.001)

Older members were more likely to have Medicare (t=9.91, p<.001), while younger individuals were more likely to not have insurance (t=4.80, p<.001). Younger tribal members were also more likely to report a time when they needed to see a doctor but couldn't because of money (t=2.65, p=.010). This was not true when looking at access to medications. Older tribal members were more likely to identify a regular doctor (t=4.24, p<.001).

Older respondents were more likely to eat breakfast every day (t= 4.83, p<.001). Younger respondents more likely to report having seriously considered suicide in the last 12 months (t=2.23, p=.029).

Relationship between gender and social and health factors

Male marijuana users were more likely to be heavy marijuana users (40+ times in lifetime) than female marijuana users (X^2 = 5.67, p=.018). Male marijuana users also used marijuana at an earlier age (X^2 = 8.53, p=.004). Men were more likely to share needles or use dirty needles (X^2 = 6.53, p=.011).

Males were more likely to have higher BMIs (X^2 = 8.71, p=.013), with 82% of males being overweight/obese compared to 67% of females being overweight/obese.

Males were more likely to engage in higher total activity (t=4.08, p<.001), and females were more likely to have changed their diet (X^2 = 8.64, p=.003).

Females were more likely to have seen a family doctor (X^2 = 19.54, p<.001), have Medicaid (X^2 = 8.16, p=.004), wear glasses (X^2 = 16.58, p<.001), and to have a usual doctor (X^2 = 24.84, p<.001). Males were more likely to be without insurance (X^2 = 10.51, p=.001). Females were also more likely to have been forced to have sex (X^2 = 23.63, p<.001), as well as have experienced unwanted touching (X^2 = 5.14, p=.024).

Relationship between marital status and social and health factors

Married people were more likely to rate their health as better (X^2 = 9.22, p=.027). Tribal members who were not married were more likely to get into fights (X^2 = 5.92, p=.015), be depressed (X^2 = 8.59, p=.003), use condoms as a form of birth control (X^2 = 14.43, p<.001), and to report having been forced to have sex (X^2 = 4.74, p=.030).

Relationship between education and social and health factors

People with higher education were more likely to be employed (X^2 = 29.32, p<.001), own their home (X^2 = 11.01, p=.004), have higher perceptions of their health (X^2 = 40.76, p<.001), and have higher income levels (t=4.92, p<.001). In addition, they had fewer chronic conditions (X^2 = 25.19, p<.001), were less likely to smoke (X^2 = 21.78, p<.001), and more likely to drink (X^2 = 15.46, p<.001). People with higher education engaged in higher levels of physical activity (t=3.46, p=.001), had lower BMIs (t=2.13, p=.030), and were less likely to be depressed (X^2 = 7.77, p=.021).

Relationship between employment and social and health factors

Employed people had higher incomes: $18,000 vs. 11,000 ($t = 5.86$, $p<.001$), fewer chronic conditions ($X^2 = 17.44$, $p<.002$), were more likely to have commercial insurance ($X^2 = 45.71$, $p<.001$), and higher perceptions of their health status ($X^2 = 46.31$, $p<.001$). They also drank more alcohol than unemployed members ($X^2 = 13.92$, $p<.001$), and were less likely to feel sad/hopeless ($X^2 = 8.88$, $p=.002$).

Relationship between income and social and health factors

Tribal members with higher income levels were most likely to own their home ($t=5.91$, $p<.001$), perceive their general health as better ($X^2 = 46.01$, $p<.001$), use more alcohol ($t=2.17$, $p=.031$), use less tobacco ($t = 3.44$, $p=.001$), have commercial insurance ($t = 8.6$, $p<.001$), and be more satisfied with the local health care system ($X^2 = 21.23$, $p=.002$).

People with lower income were more likely to have no insurance ($t=4.18$, $p<.001$), to not seek care because of money ($t=3.3e$, $p=.001$), to not be able to afford medications ($t=4.03$, $p<.001$), and more likely to be sad/hopeless ($t=3.75$, $p<.001$).

Traditional healing practices

There were few people who participated in traditional healing practices, and few characteristics that defined who was more likely to use them. Females used prayer more often than males ($X^2 = 4.33$, $p=.039$), and used dancing more than males ($X^2 = 14.81$, $p<.001$). Older tribal members were more likely to use smudging ($X^2 = 11.73$, $p=.008$).

Presentation of results to the FETN

A presentation of the initial findings was given to members of the Health and IHS Councils of the FETN. A total of twelve members (8 female and 4 male) were

present. There were a variety of age groups represented at the meeting, including elders (>55 years old) and younger members. Some of the members present participated in the creation of the needs assessment. The power-point presentation, including responses to comments and questions by the tribal members, lasted approximately one hour. The prevalence of selected health behaviors and health indicators was presented. Following this, a brief comparison of selected indicators was performed, highlighting the health status of the FETN in relation to the nation and to other racial/ethnic groups. During the presentation, the tribal members asked candid and detailed questions about the information. They recognized that further analysis was needed before final conclusions could be drawn.

Following the presentation, a discussion was held regarding impressions, implications, and interventions. At first, there was silence in the room as the members absorbed the information. Few of the facts were surprising based on the anecdotal evidence they had accumulated. In regards to demographic information, many present felt that the number of divorced and separated members who completed the questionnaire was low. They felt that they were under-represented in the survey. They were also surprised by the high number of respondents who had college education. They felt that more educated members may have been over-represented in the survey. Household and per capita incomes were soberly noted and it was mentioned that the tribe's median income was lower than the state's median income. Everyone agreed that the number of active military personnel who completed the survey was low. They felt that they had more military members within the tribe. The high asthma, high blood pressure, diabetes, and obesity rates were noted by the group. This emphasized the

need for preventive and appropriate medical services. Obesity, especially, was a topic they all thought was important. This coincided with their impressions of low physical activity, poor nutrition, and high rates of chronic diseases among the tribal members. Overall, reported substance abuse rates were felt to be low, compared with individual tribal members' experiences. Lastly, rates of sexual abuse were surprising to the group. This high rate was attributed to a lack of education within the community on this issue. The biggest impact of the presentation involved the comparison of many of the health behaviors and indicators to other racial/ethnic populations.

There was a brief discussion involving the priorities that the tribal nation placed on various health areas. They had difficulty limiting this to one or two specific areas. Rather, they felt that they all had to be addressed simultaneously. The way to do that was felt to be through proper access to prevention and primary care services.

While they were not completely surprised by the results, they were overwhelmed by the implications. It was decided that the intervention efforts should be broad, reaching a large number of tribal members. They felt that an integrated approach would be more productive than focusing on individual health indicators.

DISCUSSION

Obesity

The Flying Eagle tribe had significantly higher rates of obesity than other racial/ethnic groups. In fact, the tribe is not close to approaching the objective of Healthy People 2010 (60% achieving a healthy weight). Only 25% of the members of the FETN are at a healthy weight. When compared to the Strong Heart Study, the Flying Eagles had a lower percentage of obese men and women. When compared to the BRFSS, Flying Eagle had significantly higher rates of obesity, 40% for men and 36.4%

for women. A comparison of the Flying Eagle tribe and results from the BRFSS in 1999 is presented below (Table 8). When compared to the NHANES data (see Table 9), Flying Eagle had significantly higher rates of obesity. The REACH 2010 reports similar rates of obesity in the AI/AN population as compared to the Flying Eagles (see table 10). The same data also show that African American men have a lower rate of obesity, 26.5% and a higher rate for women, 37.6%.[84]

Table 8. Comparison of the obesity prevalence (BMI>30 kg/m^2) in the FETN to selected racial/ethnic groups.

		Flying Eagle
	%	%
Men	19.1	**40**
Women	18.6	**36.4**
18-29	12.1	**33.8**
30-39	18.6	**37.8**
40-49	22.4	**50.8**
50-59	24.2	**31.3**
60-69	22.3	**38.9**
>70	16.1	**27.7**
White	17.7	
Black	27.3	
Hispanic	21.5	

Table 9. Summary of the overweight and obesity prevalence (BMI>25 kg/m^2) in selected racial/ethnic groups, as compared to the FETN.

White men	61%
White women	49.2%
Black men	56.5%
Black women	65.8%
Mexican-American men	63.9%
Mexican-American women	65.9%
Black, non-Hispanic men	56.7%
Black, non-Hispanic women	66%
Flying Eagle men	**81.6%**
Flying Eagle women	**66.6%**

[84] REACH 2010

Table 10. Comparison of selected chronic diseases and risk factors in the FETN to selected racial/ethnic groups.

	AI	Black	**Flying Eagle**
Obesity (BMI>30) (men/women)	40.1/37.7	26.5/37.6	**40/36.4**
Current smoking (men/women)	42.6/36.8	29.3/20.4	**43/37.1**
HTN (men/women)	38.5/36.8	34.5/40.9	**31.2/31.2**
Diabetes (men/women)	16.8/19.7	11.6/14.5	**15.6/18.8**

In this assessment, 15% of members of the Flying Eagle tribe reported no physical activity. However, this does not include the people who did not answer the question. If one assumes that the people who did not answer the question did not engage in physical activity, 25% of the members do not engage in any physical activity. The number of people engaging in no physical activity exceeds the Healthy People objective of 20%. This relatively high number of sedentary tribal members significantly increases their risk of diabetes, obesity, high blood pressure, and other chronic conditions. This percentage is higher than in other AI/AN studies. In keeping with the Healthy People 2010 objectives, the tribe needs an intervention focused on increasing levels of physical activity.

Chronic diseases

Hypertension

The Flying Eagles had rates of high blood pressure that were slightly higher than that of the United States population. This could be explained by the high number of risk factors in the population: smoking, drinking, obesity, and lack of physical activity. In fact, the prevalence of hypertension is nearly double that of the Healthy People 2010 objective of reducing the number of people with hypertension to 16%. Programs that target hypertension will have to have a broader mission, focusing on these risk factors.

Over 50% of the population had one or more chronic illnesses. This is surprising given the mean age of the respondents (43 years old), and emphasizes the need for disease prevention in this population.

Diabetes

In the Flying Eagle tribe, the self-reported prevalence of diabetes for individuals greater than or equal to 18 years old was 17.4%. The mean age for the diabetics was 54 years old. Diabetes is affecting younger segments of the AI/AN population. This prevalence is higher than the prevalence for the national population of American Indians, as well as for the general population of the United States. There was no statistically significant difference among men and women in Flying Eagle. The increased rate of diabetes in the Flying Eagle tribe demands an increase in preventive efforts. Important factors include diet and physical activity. Even if a genetic predisposition exists, proper preventive care can delay or prevent diabetes from developing. To meet the objectives of Healthy People 2010 (25 overall cases per 1,000 people), diabetes prevention and education will need to be addressed. In similar units, the rate of diabetes in this population was 153 overall cases per 1,000 people.

Asthma

The asthma rates in the Flying Eagle tribe (20.1%) are higher than those of previous American Indian studies, as well as other racial/ethnic groups (see table 11).[85] The mean age for the people with asthma is 36 years old. This mean age rules out the explanation that more kids are being diagnosed with asthma. Scientists are still struggling with a plausible explanation for this rise. Some have proposed that it is due

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[85] CDC. "Asthma prevalence and control characteristics by race/ethnicity – United States, 2002", MMWR, 2/04: 53(7).

to increased urbanization, increased pollution, smoking, or even an increased rate of Respiratory syncytial virus (RSV) infection which leads to a predisposition for asthma. At any rate, education is important for proper maintenance and treatment. Hospitalization rates for this disease should be examined. The Healthy People 2010 objective is to decrease hospitalizations due to asthma to 7.7 per 10,000 people aged 5-64 years old, and to reduce emergency department visits to 50 per 10,000 people aged 5-64 years old. These numbers are currently unknown within the FETN. With an increase in preventive services, the rates of hospitalization and emergency department visits for acute exacerbations could be decreased in this population.

Table 11. Asthma rates in selected populations

	Prevalence
White	7.6%
Black	9.3%
AI	11.6%
Flying Eagle	**20.1%**

Health Behaviors

Smoking

Flying Eagles had significantly higher rates of smoking when compared to other racial/ethnic groups in previous studies (see Table 12). Forty percent of Flying Eagles smoked less than half of a pack of cigarettes per day. While more American Indians smoke, their rates of lung cancer are not higher. This is consistent with the finding that Indian smokers smoke fewer cigarettes per day than the general U.S. smoker. Smoking has detrimental effects on physical conditioning, which may lead to a decrease in the amount of physical activity performed. Smoking can also be a marker for a general lack

of importance placed on general health. Regardless, however, according to Healthy People, the number of smokers will have to be decreased to 12%.

Table 12. Rates of smoking among various populations.

	Male	Female	Total
White	29.1	25.9	27.4
Black	30.1	22.2	25.7
AI/AN	40.9	40	40.4
Flying Eagle	**44.5**	**37.1**	**39.5**
National median	24.0	21.4	22.7

Violence

The patterns of violence documented in American Indians are similar to that seen within the Flying Eagle tribe. While the health needs assessment of the Flying Eagle Tribal Nation did not include the exact same items on violence, they contained similar questions. This remains an important area that needs to be made a priority within the American Indian community. When compared to the Healthy People 2010 objective of 3.3 per 1000 people, the FETN experienced intimate partner violence at a much higher rate of 3% (30 per 1000 people). The fact that there is such a high percentage of abuse and violence in this community suggests that the tribal members are in need of education. Education needs to be provided to both the tribal members, as well as to the health care providers in the area.

Substance Abuse

Similar trends to other AI/AN research were found in the Flying Eagle Tribal Nation. For example, drinking increased with education and income. Overall rates, however, were similar to both other American Indian populations, as well as that of the

United States population (see Table 13). Binge drinking is difficult to assess with this needs assessment. Thirteen percent of drinkers reported binge drinking (>5 drinks in one sitting) on more than two days in the last month. The Healthy People 2010 objective is to reduce binge drinking to 6%. Flying Eagle had similar rates of marijuana use and lower rates of inhalant use than other American Indian populations. Heroin use was not ascertained.

Table 13. Comparison of alcohol use by various populations.

Population	% current drinkers (men/women)
United States	69/56
White	72
Hispanic	65
Black	57
AI/AN	71/60
Flying Eagle Tribal Nation	**67/60**

Suicide

The AI/AN population has historically had higher rates of suicide. See Table 14 below for a summary of suicide and other injury death rates in the AI/AN population. The Healthy People 2010 objective is to reduce the number of suicides to 5 per 100,000 people, and the number of attempts to 1% over 12 months. The FETN had much higher rates of suicide attempts (2% over the last 12 months). Few studies examining potential causes for this disparity exist. Possible causes include the loss of traditional culture, exposure to Western culture, discrimination, lack of social integration, increased poverty, emotional trauma, or an association with alcoholism and psychiatric conditions.[86] Among the Flying Eagles, 9% had seriously considered suicide in the last

[86] Rhoades, Everett R. American Indian Health, The Johns Hopkins University Press, Maryland 2000.

year. The mean age of the person who considered suicide was 36 years old. This shows that efforts need to be focused on suicide prevention both in adolescents and in older adults. Forty-five percent of the respondents indicated that suicide was a problem in their community. Fifty-three percent felt that homicide was a problem, while 18% felt that drowning was a problem.

Table 14 - Injury-death rates (per 100,000 people) among children and youth aged <19 years in the United States from 1997-1998.[87]

	AI/AN	Black	White
Motor Vehicle	23.8	9.7	11.8
Firearm	8.4	13.1	3.8
Suicide	9.1	2.0	2.9
Homicide	6.0	15.0	2.7
Drowning	2.9	2.7	1.6
Fire	1.3	2.3	.7

RECOMMENDATIONS

Healthy People 2010 identifies a group of ten variables that serve as the leading health indicators that will be used to measure the health of the nation over a ten year period. The variables are: amount of physical activity, percentage of overweight and obese persons, tobacco use, substance abuse, responsible sexual behavior, mental health, injury and violence, environmental quality, immunization, and access to health care. After conducting the community health needs assessment, it is obvious that the Flying Eagle Tribal Nation has significant need for improvement in seven of the ten indicators: physical activity, obesity, tobacco use, substance abuse, mental health, injury

[87] CDC. "Injury mortality among American Indian and Alaska Native children and youth – United States, 1989-1998", MMWR, 8/03: 52(30).

and violence, and access to health care. The tribe does not meet the objectives outlined by Healthy People 2010. Thus, these should be the focus areas for the tribe. These findings are consistent with both the BRFSS and the REACH 2010 data that demonstrate higher rates of obesity, cigarette smoking, inactivity, and binge drinking among American Indians. Two of the common threads that touch all of these indicators are prevention and health behaviors. These two aspects will have the biggest impact for this population.

The results of REACH 2010 show that although American Indians had a higher prevalence of chronic disease risk factors than other racial/ethnic minority populations, they also were more likely to use preventive services. Thus, culturally sensitive primary prevention strategies to reduce risk factors and disease burden in AI communities should be developed and implemented.[88] Most tribal members currently go to diverse private sector settings, as a result of a lack of health structure within the Flying Eagle Tribal Nation. While they have limited access to a nearby IHS direct facility, this site is not used by the majority of the tribe. A systematic method to deliver preventive healthcare to the tribal members is needed.

Preliminary data from the Tribal Nation, as well as results of the assessment, indicated that approximately 80% of tribal members reside within a common geographic area. This grouping is critical when planning a successful health intervention. Members who live outside this area will have difficulty accessing local services. However, in looking at the demographics of the tribal members who live

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[88] CDC. "Health status of American Indians compared with other racial/ethnic minority populations – selected states, 2001-2002", MMWR, 11/03: 52(47).

outside of this area, these members are more educated and have higher income levels. In terms of health needs, they appear to be similar to the rest of the tribal members.

The FETN needs a comprehensive and integrated approach to disease prevention and treatment. Emphasis should be placed on outpatient areas consisting of medical, dental, mental health, and nutritional services. Currently, primary care services are provided by hospital outpatient clinics, private physicians, and emergency services. Interestingly, 69% of respondents indicate that they have a particular doctor to which they seek medical care. On the whole, the members indicate that they are satisfied with their physician. Yet, access to medical care is one of the areas that the tribal members feel is a problem in their community. One possibility for this contradicting information is that the current health care services are not responsive to the needs of the tribal members. They would choose to go elsewhere if they were given a choice. While the relatively small population of tribal members does not warrant the creation of a distinct health center, a more concerted effort needs to be made to provide culturally sensitive, prevention-based primary care. In order to do this, educational incentives to health facilities that are providing medical care to a large number of American Indians should be offered. The creation of Continuing Medical Education (CME) courses could be developed with the help of local physicians and neighboring health organizations. A holistic approach to health should be taught and, when applicable, traditional healing practices should be approached. The combination of Western medicine and alternative medicine could be integrated successfully.

Another approach that combines various cultural and medical needs of the tribal nation needs to be developed. The creation of a Center dedicated to preserving the

traditions and health of the tribe could accomplish such goals. Such a cultural center could serve as a base for comprehensive prevention programs and outreach efforts. Community education, job training, social gatherings, cultural events, and health education and prevention activities would all be functions that would be accommodated. Recreational facilities could also be provided that would encourage members to engage in regular physical activity. The Center would be for children and adolescents as well, housing daycare, recreation space, counselors, and meeting areas. Outside groups could use the Center as a venue to disseminate information to the tribal members. In this way, a variety of different aspects to community health could be addressed. The Center would serve as a focal point to the tribal community and would actively strive to restore the health and well-being of the tribe.

Funding for the development and maintenance of such a facility would be important in order to create a self-sustaining intervention. The Center would have to build on community resources that already exist. The source of funding is unclear and would have to be determined. The lack of direct medical services as a supplement to grants and other resources poses a challenge. Further discussions with the FETN and community partners will need to occur. Specific input as to how this plan would be integrated into the current goals and resources of the Tribal Nation needs to be obtained.

In summary, there is no single strategy that will solve a problem as complex as health inequalities and poor health indicators. Access to quality primary care is an important factor in addressing health disparities. With the development of a comprehensive, multi-disciplinary Center, the Flying Eagle Tribal Nation could begin to

improve their health status and contribute to the goal of Healthy People 2010 – the elimination of health disparities.

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Appendix 1. Description of the Northeastern Native American tribal names, origins, and current residence.

Native American Group	Alternate Name or Spelling	Ancestral Heartland	Contemporary Location(s)
Abenaki	Abnaki, Wabanaki, Wapanahki	Southern Maine; parts of New Hampshire, Vermont, Massachusetts, and Quebec	Maine, Vermont; Quebec
Algonquin	Algonkin, Algonkian	Southeastern Ontario, southwestern Quebec	Ontario, Quebec
Delaware	Lenni Lenape, Leni-Lenape, Lenape	New Jersey, eastern New York, eastern Pennsylvania, northern Delaware	Kansas, New Jersey, Oklahoma, Ohio, Pennsylvania, Wisconsin; Ontario
Erie		Northern Ohio, Pennsylvania, New York	
Fox	Meskwakihuk, Mesquakie, Meshwahkihaki	Eastern Wisconsin	Iowa, Kansas, Oklahoma
Huron	Wyandot, Wyandotte, Wendat	Southern Ontario	Kansas, Oklahoma; Ontario, Quebec
Illinois	Illini, Illiniwe, Hileni	Western Illinois, eastern Iowa, northern Arkansas	Illinois, Oklahoma
Iroquois Confederation: -Cayuga -Mohawk -Oneida -Onondaga -Seneca -Tuscarora	 Haudenosaunee Guyohkohnyoh Mohowawog Ononondowagah, Nundawaono Ska-Ruh-Reh	 Central New York East central New York Central New York Central New York Western New York Northeastern North Carolina, southeastern Virginia	New York, Oklahoma; Ontario New York; Ontario, Quebec New York, Wisconsin; Ontario New York; Ontario New York, Oklahoma; Ontario New York, North Carolina; Ontario
Kickapoo		Southern Wisconsin	Kansas, Oklahoma, Texas; Mexico
Mahican	Mohican	Eastern New York	Connecticut, Wisconsin
Maliseet	Malecite		
Massachuset	Massachusset	Eastern Massachusetts	Massachusetts
Menominee	Menomini, Omenomenew, Rice	Northeastern Wisconsin	Wisconsin
Miami	Twightwee	Indiana, western Ohio, eastern Illinois, southern Michigan, southern Wisconsin	Indiana, Oklahoma

Mi'kmaq	Micmac, Mi'kma	Nova Scotia, Cape Breton Island, Prince Edward Island, eastern New Brunswick, southeastern Quebec, southern Newfoundland and Labrador	Maine; New Brunswick, Nova Scotia, Prince Edward Island, Quebec
Mohegan	Mohican	Eastern Connecticut	Connecticut, New York
Montauk	Montaukett, Metoac	Central and Eastern Long Island in New York	New York
Nanticoke		Northern Maryland, southern Delaware	Delaware
Narragansett	Narraganset	Rhode Island	Rhode Island
Neutral	Attiwandaronk	Southeastern Ontario	
Nipmuc	Nipmuck	Central Massachusetts, Northeastern Connecticut, Northern Rhode Island	Connecticut, Massachusetts
Ojibwa	Chippewa, Chippeway, Ojibway, Anishinabe	Eastern Minnesota, Northern Michigan, Northern Wisconsin, Southern Ontario	Michigan, Minnesota, Montana, North Dakota, Wisconsin; Manitoba, Ontario, Saskatchewan
Ottawa	Odawa, Odawak	Southeastern Ontario	Michigan, Oklahoma; Ontario
Passamaquoddy	Abenaki	Northeastern Maine	Maine
Pennacook	Pawtucket	Southern New Hampshire, western Maine, Northern Massachusetts	New Hampshire; Quebec
Penobscot	Abenaki	Eastern Maine	Maine
Pequot	Pequod	Eastern Connecticut	Connecticut
Potawatomi	Potawatomie	Michigan's lower peninsula	Kansas, Oklahoma; Ontario
Powhatan	Powhattan	Eastern Virginia	New Jersey, Pennsylvania, Virginia
Sac	Sauk	Eastern Wisconsin	Iowa, Kansas, Nebraska, Oklahoma
Secotan		Northeastern North Carolina	
Shawnee	Shawano	Northern Tennessee	Oklahoma, Ohio
Susquehannock	Suaquehanna, Conestoga, Andaste	Eastern Pennsylvania	
Tobacco	Petun, Tionontati	Southern Ontario	
Wampanoag	Pokanoket	Southeastern Massachusetts	Massachusetts
Wappinger		Southeastern New York, western Connecticut	Connecticut, Wisconsin
Winnebago	Ho-Chunk	Eastern Wisconsin	Nebraska, Wisconsin

Appendix 2. Summary of the responses from the needs assessment.

	Mean	Standard Deviation
Age	42.7	16.1
Number of people in household	3.22	1.99
Income - household	$36,219	$31,753.86
Income - per capita	$15,375.45	$16,921.23
Health in general (r: 1-5)	2.67	1.03
In past 6 months, number of times stayed in hospital	0.12	0.59
of those who stayed at least once	1.84	1.5
How many did you smoke in one day - of smokers	13.33	11.13
How many days did you have at least one drink - all	4.75	8.08
of drinkers	7.57	9.15
How many days did you have 5 or more - all	1.56	4.77
of drinkers	2.51	5.86
During life, number of times used marijuana - all	24.83	44.94
of users	44.01	52.35
Age when tried marijuana for first time - of users	16.31	2.78
During life, number of times used cocaine - all	6.33	17.22
of users	33.87	25.67
30 days, number of times used cocaine - all	0.1098	0.987
of users in lifetime	0.6019	2.264
of users in last 30 days	4.64	4.83
During life, number of times used inhalants - all	0.01	0.145
of users	1.5	0
During life, number of times used steroids - all	0.078	0.915
of users	5.87	6.128
During life, number of times used lsd, pcp, ectasy - all	1.09	4.757
of users	9.6	10.93
Height (inches)	66.399	4.44
Weight (pounds)	185.57	51.54
Weight when 25 years old (pounds)	157.44	44.33
Body mass index	29.52	7.16
Body mass index when 25 years old	24.97	5.85
3 months, number of times walking a mile	1.84	2.54
3 months, number of times jog/run	0.619	1.6475
3 months, number of times ride bike	0.597	1.55
3 months, number of times swim	0.661	1.534
3 months, number of times aerobics/aerobic dancing	0.325	0.97
3 months, number of times dancing	0.286	0.878
3 months, number of times exercise/calisthenics	1.15	2.211
3 months, number of times garden/yard work	1.2	2.29
3 months, number of times lift weights	0.944	2.11
Number of times seen family doc (12 months)	2.63	3.734
of those who had visited at least once	3.74	3.96
Number of times seen specialist (12 months)	1.92	4.05
of those who had visited at least once	3.52	4.94
Satisfied with local health care system (r: 1-4)	2.1	0.91

Satisfied with most recent visit to a doctor (r: 1-5)	2.1	1.11
12 months, number of times attempt suicide	0.0354	0.268
of those who had seriously condsidered suicide	0.403	0.836
of those who had attempted suicide	1.75	0.821
3 months, number of sexual partners (if sex active in last 3 months)	1.29	0.93
How old when touch was unwanted (if molested and if remembered)	9.91	4.16
How old was molester (if molested and if remembered)	30.52	12.67
How old when abused by parent/adult (if happened and if remembered)	7.92	4.41
12 months, number of times in physical fight - all	0.1759	0.703
of those in fight	2.04	1.413
12 months, number of times seek treatment for fight (of those in fight)	1.3	0.67

Appendix 3. List of responses from the needs assessment.

	n	Valid %
Gender		
`male	129	43.1
`female	170	56.9
Marital Status		
`married	106	35.3
`divorced	35	11.7
`widowed	17	5.7
`separated	13	4.3
`single	116	38.7
`member of unmarried couple	13	4.3
Educational level		
`lower than grade 12	49	16.6
`grade 12	128	43.2
`post graduate	119	40.2
Employed		
`yes	177	59.8
`no	119	40.2
Disabled		
`yes	46	17.4
`no	218	82.6
Need job assistance		
`yes	62	24.7
`no	189	75.3
Own or rent residence		
`own	112	40.3
`rent	166	59.7
Type of residence		
`detached, one family house	134	46
`duplex, townhouse, or attached	42	14.4
`apartment	94	32.3
`mobile home/trailer	10	3.4
`homeless	3	1
`other	8	2.7
Military status		
`in military	7	4.2
`not in military	160	95.8
Active in military		
`yes	4	4.1
`no	94	95.9
Military veteran		
`yes	34	62.2
`no	56	37.8
Retired in military		
`yes	6	8.3
`no	66	91.7

Eligible to receive vet benefits		
`yes	29	29.6
`no	69	70.4
In past 6 months, overnight in hospital		
`yes	19	6.4
`no	277	93.6
Arthritis		
`yes	52	19.7
`no	212	80.3
Congestive heart failure		
`yes	4	1.5
`no	260	98.5
Stroke		
`yes	4	1.5
`no	260	98.5
Asthma		
`yes	53	20.1
`no	211	79.9
Cataracts		
`yes	11	4.2
`no	252	95.8
Breast cancer		
`yes	4	1.5
`no	259	98.5
Prostate cancer		
`yes	4	1.5
`no	257	98.5
Colon/rectal cancer		
`yes	2	0.8
`no	261	99.2
Lung cancer		
`yes	0	0
`no	264	100
Other cancer		
`yes	11	4.2
`no	250	95.8
High blood pressure		
`yes	83	31.4
`no	181	68.6
Diabetes		
`yes	46	17.4
`no	218	82.6
Dialysis		
`yes	4	1.5
`no	259	98.5
Sexually transmitted disease		
`yes	17	6.4
`no	247	93.6

HIV		
`yes	0	0
`no	263	100
Blindness in one eye		
`yes	8	2.7
`no	288	97.3
Use glasses/contact lenses		
`yes	192	64.6
`no	105	35.4
How long ago was last visit to eye doc		
`never	27	9.1
`<6 months	55	18.5
`6 months to 1 year	72	24.2
`over 1 year	144	48.3
Color blind		
`yes	14	4.7
`no	281	95.3
Deaf in one ear		
`yes	7	2.4
`no	290	97.6
Use a hearing aid		
`yes	4	1.3
`no	294	98.7
Have trouble hearing		
`yes	10	3.4
`no	288	96.6
How long ago was hearing tested		
`never	37	12.6
`<6 months	18	6.1
`6 months to 1 year	35	11.9
`over 1 year	204	69.4
Tooth filled/replaced		
`yes	127	43.1
`no	168	56.9
Tooth pulled		
`yes	52	17.6
`no	243	82.4
Gum treatment		
`yes	64	21.7
`no	231	78.3
Denture work		
`yes	44	15
`no	250	85
Relief of pain		
`yes	22	7.5
`no	272	92.5
Work to improve appearance		
`yes	74	25.1

`no	221	74.9
Other		
`yes	25	8.3
`no	275	91.7
No dental need		
`yes	73	24.7
`no	222	75.3
How long ago was last visit to dentist		
`never	12	4.1
`<6 months	85	28.7
`6 months to 1 year	67	22.6
`over 1 year	132	44.6
Do you smoke		
`yes	120	40.1
`no	179	59.9
cigarettes		
`yes	95	42.4
`no	129	57.6
Cigars		
`yes	15	8.3
`no	166	91.7
Snuff		
`yes	0	0
`no	176	100
Chewing tobacco		
`yes	1	0.6
`no	176	99.4
Have you evern smoked		
`yes	184	62.2
`no	112	37.8
When did you quit smoking		
`within the last year to one year	9	14
`greater than one year to 10 years	18	28.1
`10-20	20	31.3
`greater than 20 years	17	26.6
Drink alcoholic beverages		
`yes	185	62.5
`no	111	37.5
Marijuana		
`yes	167	56.6
`no	128	43.4
Cocaine		
`yes	55	18.7
`no	239	81.3
Inhalants		
`yes	3	1
`no	295	99
Steroids		

`yes	4	1.3
`no	294	98.7
Dirty needle		
`yes	13	4.4
`no	280	94.3
Lsd, pcp, ecstasy/mushrooms		
`yes	34	11.4
`no	264	88.6
How often do you eat breakfast?		
`Every day	122	41.5
`Some days	99	33.7
`Rarely	55	18.7
`Never	8	2.7
`Weekends only	10	3.4
12 months, had to change diet		
`yes	102	34.7
`no	192	65.3
Overweight/obesity		
`yes	61	48.8
`no	64	51.2
High blood pressure		
`yes	36	29
`no	88	71
High blood cholesterol		
`yes	41	33.1
`no	83	66.9
Diabetes		
`yes	36	29
`no	88	71
Heart disease		
`yes	11	8.9
`no	113	91.1
Allergy		
`yes	5	4
`no	119	96
Ulcer		
`yes	5	4.1
`no	118	95.9
Other		
`yes	28	9.3
`no	272	90.7
12 months, had to wait 3 days for doc		
`yes	90	30.4
`no	151	51
12 months, had to wait 15 min for doc		
`yes	154	52.2

`no	90	30.5
12 months, stay overnight in hospital		
`yes	36	12.2
`no	259	87.8
Commercial insurance		
`yes	152	52.4
`no	138	47.6
Medicare		
`yes	49	16.9
`no	241	83.1
Medicaid		
`yes	40	13.8
`no	250	86.2
VA		
`yes	9	3.1
`no	281	96.9
No insurance		
`yes	65	22.4
`no	225	77.6
Does health insurance adequately cover		
`yes	172	61.4
`no	108	38.6
12 months, time when couldn't see doc because of money		
`yes	89	30.1
`no	207	69.9
12 months, time when couldn't buy drug because of money		
`yes	90	30.4
`no	206	69.6
Particular doc usually go to		
`yes	199	68.9
`no	90	31.1
Underweight/premature babies		
`problem	71	25
`no problem	38	13.4
`don't know	175	61.6
Birth defects		
`problem	50	17.7
`no problem	38	13.5
`don't know	194	68.8
Pregnancy care for low income		
`problem	128	44.9
`no problem	46	16.1
`don't know	111	38.9
Unplanned pregnancy		
`problem	170	59.9
`no problem	20	7

`don't know	94	33.1
Teen pregnancy		
`problem	197	68.6
`no problem	15	5.2
`don't know	75	26.1
STDs		
`problem	168	58.7
`no problem	16	5.6
`don't know	102	35.7
Alcohol		
`problem	211	73.5
`no problem	17	5.9
`don't know	59	20.6
Smoking		
`problem	195	69.1
`no problem	25	8.9
`don't know	62	22
Nutrition		
`problem	167	59.2
`no problem	44	15.6
`don't know	71	25.2
Lack of physical activity		
`problem	183	64
`no problem	32	11.2
`don't know	71	24.8
Problems with teeth/gums		
`problem	130	45.5
`no problem	38	13.3
`don't know	118	41.3
Cancer		
`problem	143	50.7
`no problem	25	8.9
`don't know	114	40.4
Heart disease		
`problem	155	54.6
`no problem	22	7.7
`don't know	107	37.7
Diabetes		
`problem	192	67.6
`no problem	19	6.7
`don't know	73	25.7
Diseases of the elderly		
`problem	178	62
`no problem	15	5.2
`don't know	94	32.8
Depression/suicide		
`problem	126	44.7
`no problem	31	11

`don't know	125	44.3
Access to emergency services		
`problem	113	40.2
`no problem	86	30.6
`don't know	82	29.2
Access to specialty health care		
`problem	139	49.8
`no problem	59	21.1
`don't know	81	29
Adequate housing		
`problem	198	69.7
`no problem	32	11.3
`don't know	54	19
Access to primary care for child		
`problem	158	56.4
`no problem	45	16.1
`don't know	77	27.5
Access to primary care for elderly		
`problem	160	56.9
`no problem	41	14.6
`don't know	80	28.5
Access to primary care –everyone		
`problem	162	57.4
`no problem	43	15.2
`don't know	77	27.3
Murder		
`problem	153	53.3
`no problem	44	15.3
`don't know	90	31.4
Sexual assault		
`problem	155	54.2
`no problem	30	10.5
`don't know	101	35.3
Child abuse/neglect		
`problem	155	54.4
`no problem	25	8.8
`don't know	105	36.8
Elder abuse/neglect		
`problem	123	42.7
`no problem	36	12.5
`don't know	129	44.8
Spouse/partner beating		
`problem	123	43.3
`no problem	37	13
`don't know	124	43.7
Work place violence		
`problem	62	21.7
`no problem	75	26.2

`don't know	149	52.1
Gangs		
`problem	129	44.9
`no problem	51	17.8
`don't know	107	37.3
Injuries – motor vehicle		
`problem	146	51.2
`no problem	36	12.6
`don't know	103	36.1
– farm		
`problem	16	5.7
`no problem	78	27.6
`don't know	189	66.8
- work related		
`problem	65	22.8
`no problem	52	18.2
`don't know	168	58.9
burns		
`problem	39	13.7
`no problem	59	20.8
`don't know	186	65.5
- drowning		
`problem	50	17.6
`no problem	67	2.6
`don't know	167	58.8
- home		
`problem	53	18.6
`no problem	70	24.6
`don't know	162	56.8
- sports		
`problem	55	19.5
`no problem	58	20.6
`don't know	169	59.9
- firearms		
`problem	122	42.7
`no problem	44	15.4
`don't know	120	42
Air pollution		
`problem	148	51.9
`no problem	51	17.9
`don't know	86	30.2
Water pollution		
`problem	131	46.3
`no problem	52	18.4
`don't know	100	35.3
Toxic exposures at work		
`problem	80	28.2
`no problem	64	22.5

`don't know	140	49.3
Toxic exposures at home		
`problem	55	19.4
`no problem	90	31.7
`don't know	139	48.9
Food poisoning		
`problem	52	18.2
`no problem	77	27
`don't know	156	54.,7
12 months, sad or hopeless		
`yes	94	31.6
`no	203	68.4
12 months, consider suicide		
`yes	26	8.8
`no	269	91.2
Did attempt require medical treatment		
`yes	3	1
`no	289	99
Number of times been pregnant		
`0 times	32	18.8
`1 time	26	15.3
`2 or more times	111	65.3
Number of times fathered child		
`0 times	40	31.3
`1 time	30	23.4
`2 or more times	54	42.2
Been touched when unwanted		
`yes	57	20.9
`no	216	79.1
Physically abused by parent/adult		
`yes	40	13.7
`no	252	86.3
Boyfriend, girlfriend hurt you		
`yes	10	3.5
`no	278	96.5
Spouse/partner hurt you		
`yes	10	3.4
`no	280	96.6
Forced to have sex		
`yes	46	15.7
`no	247	84.3
Sweats		
`yes	19	6.6
`no	269	93.4
Cleansing		
`yes	21	7.3
`no	267	92.7

Herbals		
`yes	31	10.8
`no	257	89.2
Vision quest		
`yes	5	1.7
`no	283	98.3
Smudging		
`yes	26	8.7
`no	262	87.3
Prayer		
`yes	133	46.2
`no	155	53.8
Dancing		
`yes	54	18.8
`no	234	81.3
Singing		
`yes	45	15.6
`no	243	84.4
Drumming		
`yes	8	2.8
`no	280	97.2
Medicine man		
`yes	9	3.2
`no	275	96.8
Child current with immunizations		
`yes	152	91
`no	15	9
Taken child for health exam		
`yes	124	77
`no	37	23
Child denied access to healthcare		
`yes	4	1.3
`no	162	97.6

Appendix 4: NEEDS ASSESSMENT RESOURCES LIST

1. Conducting Local Assessments: Locating the needs of elders.
   National Resource Center on Native American aging and the University of North Dakota Center for rural health.

2. Community Health Care Advisory Group.
   Planning for Community-Oriented Health Systems

3. 2001-2002 Youth Risk Behavior Survey – Fort Peck Tribes

4. Community Health Assessment

5. Charging Bear Tribal Nation Needs Assessment

6. 2001 Health Behavior Survey - Fort Peck Tribes
   Indian Community Health Profile Project

7. Needs Assessment (origin unknown)